INDEPTH Network

Better Health Information for Better Health Policy

ISC 2015
GHION HOTEL
ADDIS ABABA
11th-13th NOVEMBER 2015

INDEPTH SCIENTIFIC CONFERENCE (ISC)

THEME *"Health and Demographic Research to Inform the Post-2015 Development Agenda"*

PROGRAMME

HOST INSTITUTIONS:

BUTAJIRA HDSS
UNIVERSITY OF ADDIS ABABA

DABAT HDSS
UNIVERSITY OF GONDAR

GILGEL GIBE HDSS
JIMMA UNIVERSITY

KERSA HDSS
HARAMAYA UNIVERSITY

KILITE AWLAELO HDSS
MEKELLE UNIVERSITY

SPONSORS:

Federal Democratic Republic of Ethiopia Ministry of Health

Sida

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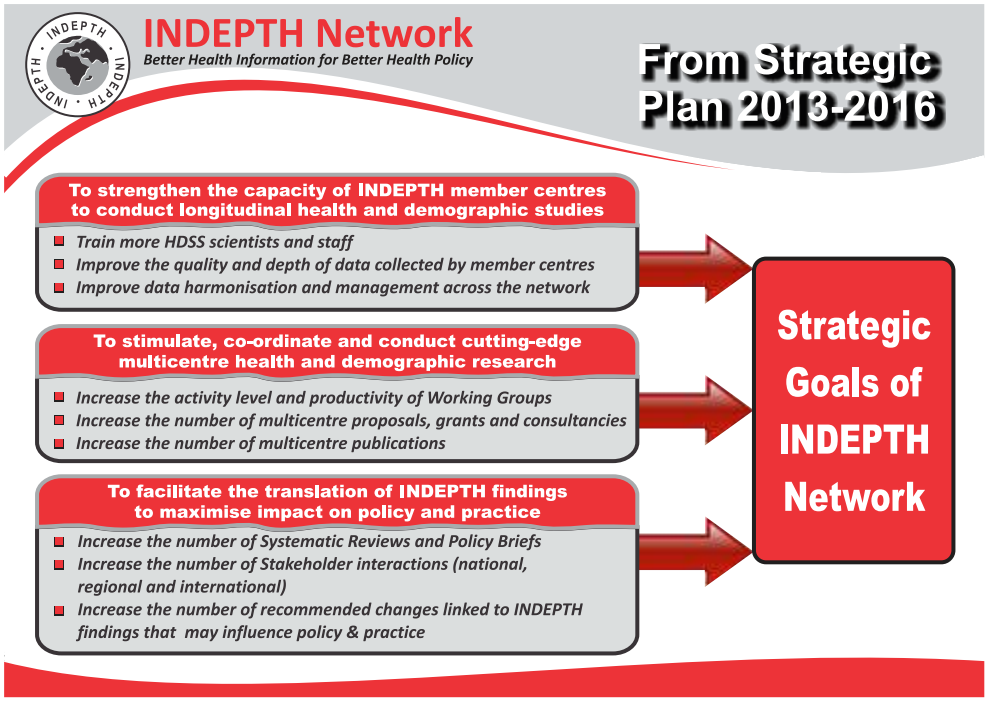

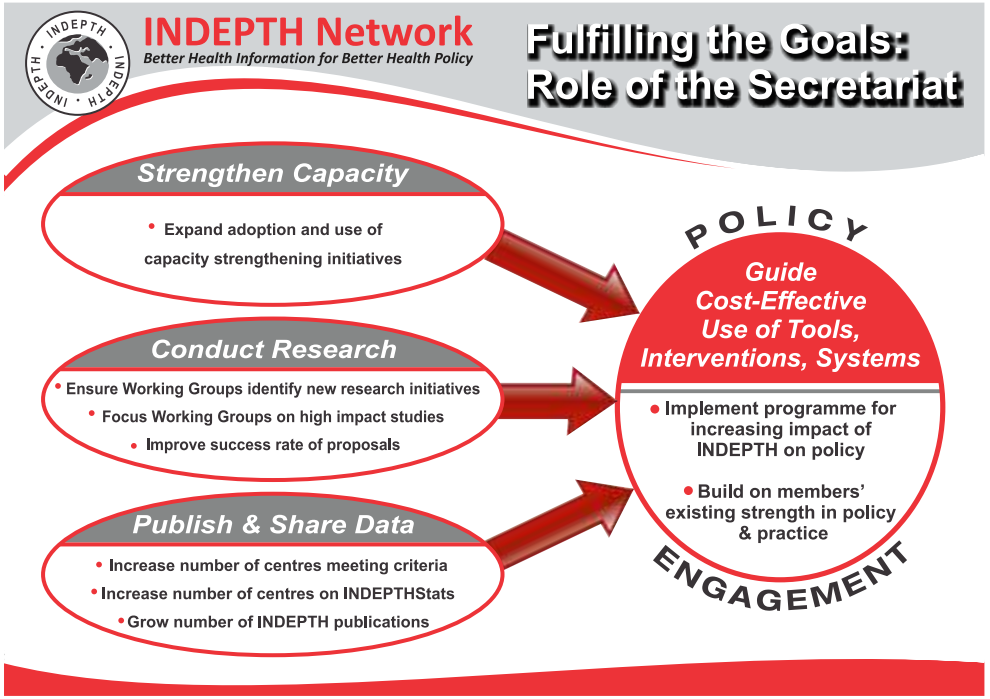

INDEPTH Network

Better Health Information for Better Health Policy

INDEPTH SCIENTIFIC CONFERENCE (ISC 2015)

THEME:

Health and Demographic Research to Inform the Post-2015 Development Agenda

Date: November 11 – 13, 2015

Venue: Ghion Hotel, Addis Ababa, Ethiopia

HOSTED BY:

Butajira HDSS, Addis Ababa University

Dabat HDSS, University of Gondar

Gilgel Gibe HDSS, Jimma University

Kersa HDSS, Haramaya University

Kilite Awlaelo HDSS, Mekelle University

Welcome by the Scientific Committee

Since the Network's founding in 1998, INDEPTH has made a major impact on the huge gaps in population-based health data across Africa, Asia and Oceania. Despite considerable growth over recent years in efforts to compile global estimates of the world's health from a top-down perspective, ultimately having good bottom-up data, directly related to individual observations, is equally essential. We all look forward to some future era where routine national health information systems function well throughout the world, but for the time being global health status can only be understood through what we have today: a mixture of surveys, longitudinal surveillance sites (such as INDEPTH HDSS members), and mathematically clever estimates made by international agencies and projects. The importance of sharing findings and methods publicly and accessibly is a key aspect of contributing to the public good.

Against this background, we are delighted to welcome you to INDEPTH's 2015 International Scientific Conference in Addis Ababa, Ethiopia. As we approach the end of the Millennium Development Goals, it is fitting that we are meeting in one of Africa's most successful countries in terms of meeting those goals. At the same time, the world is gearing up to understand and engage with the demands of the UN's new set of Sustainable Development Goals in the so-called "Post-2015 Development Agenda". INDEPTH is totally committed to scientific engagement with the measurement issues underlying the new goals, bringing its expertise in gathering and interpreting detailed individual data across health and development sectors.

During the meeting, we will work with plans to upgrade current models of health and demographic surveillance to a new level that incorporates systematic morbidity surveillance, as well as stronger integration with health services and civil registration systems. We will hear scientific experiences from across the Network which demonstrate the crucial role INDEPTH has in illuminating the details of population health across the lifespan in low- and middle-income countries.

Undoubtedly we will go away with many new ideas on how we can generate useful health information and build the evidence base more effectively. And, especially if you have not visited Ethiopia before, you will take away memories of a unique and fascinating part of the African continent.

Welcome to INDEPTH's ISC 2015!

Profs. Peter Byass and Steve Tollman, Co-chairs, ISC 2015 Scientific Committee.

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Acknowledgements by Executive Director

I feel greatly honoured and privileged to welcome you all to the INDEPTH Scientific Conference (ISC 2015) in this great city of Addis Ababa.

INDEPTH is proud to host this important gathering of researchers, academics, funding partners, journalists and other professionals from around the world.

ISC has over the years become a very important forum for advancing scholarship within and among the INDEPTH member Health and Demographic Surveillance Systems (HDSSs) and their collaborators through sharing knowledge on population and health related issues, interaction of scholars and practitioners and also exposure to new methods and developments in the field of population health.

The ISC has also been a forum to demonstrate to colleague member centres, partners and collaborators what has worked at the various member centres, challenges and experiences encountered in HDSS work and how to chart a common agenda forward. It is the flagship activity of the Network that has been held consistently since 2000 (annually and biennially since 2011) in rotation from one country to another.

ISC has recorded progressive and incremental success in regularly assembling scientists in health and demographic surveillance research and many other international participants from the scientific and funder or donor communities who have come to embrace this noble idea of the scientific conference and always look forward to sharing and developing experiences and ideas, and debating world class research that will shape the future of Low-and Middle –Income Countries.

This meeting comes barely two months after the United Nations summit for the adoption of the post-2015 development, which is an opportunity for us to reflect on the relevance of our research work to the post-MDGs agenda in LMICs.

To enable us run this organisation and hold a conference of this magnitude we require, amongst other things, financial means. I wish to thank our funders, especially our core support funders (Sida/Research Cooperation Unit, Wellcome Trust, and William & Flora Hewlett Foundation), for their many years of committed support to INDEPTH.

The conference would not been possible were it not for the support of Ethiopian government, INDEPTH Board and SAC, our member HDSSs and their parent universities in Ethiopia and staff at the Secretariat.

I should give special thanks to all presenters as they have put in a lot of time and commitment to prepare for this important meeting, similarly I appreciate the kindness of our colleagues who have offered to chair the sessions.

Finally, I wish to thank all of you for finding time to be with us and to share your knowledge, experience and insights.

Prof. Osman Sankoh, Executive Director, INDEPTH Network

Description of the sessions

Profiling Critical INDEPTH Projects

As the title implies, papers in this session present key ideas, results and findings from ongoing INDEPTH multi-centre projects as well as highlight some of the key contributions in the field from the participating centres

Maternal, Child and Neonatal Health

Papers cover issues of poor maternal, newborn and child health, which remain a significant problem in low- and middle-income countries. These include socioeconomic determinants of neonatal, child and maternal mortality; morbidity; maternal and child health interventions, and behavioural factors.

Population and Health Policies

Papers examine population health issues with emphasis on how governments and actors in the health and population sector can intervene to improve universal health coverage, health conditions for the poor and promote health equity.

Socio-economic disparities

Papers discuss equity in access to services, health disparities including education, progress in female education and achievement of the Millennium Development Goals as well as the post-2015 agenda.

Transition and its implications post 2015

Papers under this topic discuss demographic and health transitions and expected changing patterns of mental health, health behaviour, genes and health, ageing, cause of death and morbidity, including trends in chronic and degenerative diseases. Papers could also discuss the concept of demographic dividend, factors boosting the demographic dividend; implications of demographic transition on demographic dividend; opportunities and challenges in realizing the demographic dividend.

Vaccination

Papers cover issues related to immunization campaigns (coverage, associated factors) and the effects on overall mortality and more specifically child mortality (MDG4), evaluation of various child health interventions, and behavioural factors.

Clinical Trials, cross-sectional and nested studies

Papers here discuss findings from nested studies and cross-cutting HDSS issues: drug resistance, vaccine and drug trials, interactions between fertility, migration, and mortality.

Community Health and Health System

Papers discuss community health issues, knowledge, attitudes, determinant and behavioural practices that population health.

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Fertility, Family Planning, Sexual Behaviour and Reproductive Health

Papers examine issues of unintended pregnancies, family planning, abortion, diseases related to sexual behaviour, fertility transition, and changes in reproductive behaviour: union, childbearing pattern; adolescent sexual and reproductive health; changes in fertility intention; adolescent risk behaviours.

Population Dynamics, Migration, Urbanisation and Development

Papers analyse the consequences of rapid urbanisation and migration on equity in access to resources (health, education, water and sanitation, electricity…), sexual and reproductive health as well as on individual and community wellbeing.

Population, Environment and Development

Papers analyse how population size, environmental change and development interact with each other as well as relationships between demographic dynamics, agriculture, and food security; environmental change, migration, education, and adaptation and climate change and health outcomes. They also analyse households' transition into and out of poverty as well as intra- and inter-household inequality, vulnerability and marginalisation. Included here could be work on trends in impoverishing effects of health expenditures.

OpenHDS and Electronic data capture

Presentations from the first pilot centres present the challenges, experiences and their achievement of migrating from paper capture to the electronic data capture using the open-source platform offered by OpenHDS. They also highlight the real-time benefits of this migration and discuss the ways to facilitate the process for those preparing to join.

Global health and emerging development agendas post 2015

Papers present concepts ideas and debates about how INDEPTH, might more effectively contribute to emerging global health and development agendas, such as Sustainable Development Goals, Chronic, Non-Communicable Diseases and Injury, evidence-informed health systems policies and reform, Universal Health Coverage, Civil Registration & Vital Statistics, tobacco, environmental health.

Innovation in HDSS data systems and methods

Papers present innovative solutions to improving data quality, standardisation - measurement and data challenges, reliable statistical and quality control methods for HDSSs data analysis, including spatial modelling, transition and event history analyses.

HDSS and CRVS in LMICs

Discussions here will examine INDEPTH's contribution (or potential contribution) to policy and practice in LMICs where real-time registration of vital events is weak. More specifically, the discussion will focus on the contributions that proliferation of HDSSs across LMICs can offer to the ongoing efforts to improve the coverage and reliability of vital events in the respective countries, including the relevant designs/interventions needed to make this happen.

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OVERVIEW OF SESSIONS

Pre-ISC: Monday , 9th November 2015

Time	Saba Hall	Dashen Hall	Safari Hall	Tana 1 Hall	Tana 2 Hall	Restaurant area
09:00 – 17:00		INDEPTH Scientific Advisory Committee (SAC) Meeting			SPAP PC meeting	

Pre-ISC: Tuesday, 10th November 2015

Time	Saba Hall	Dashen Hall	Safari Hall	Tana 1 Hall	Tana 2 Hall	Restaurant area
09:00 – 11:00		**INDEPTH Board Meeting**	Young Scientist training workshop	SAC Subgroup meeting on Comprehensive Health and Epidemiological Surveillance System (CHESS)	SPAP PC meeting	

DAY ONE: Wednesday, 11th November 2015

Time	Saba Hall	Dashen Hall	Safari Hall	Tana 1 Hall	Tana 2 Hall	Restaurant area
08:00 – 09:00						
09:00 – 11:00	**Plenary Session** 1:Conference Opening Session					
11:00 – 11:30					**Group Photo**	**Health Break**
11:30 – 13:00	**Plenary Session 2**: Profiling Critical INDEPTH Projects 1					
13:00 – 14:00			**Poster Reviews during lunch by SAC**			**Lunch**
14:00-16:00	**Plenary Session 3:** Profiling Critical INDEPTH Projects 2					
16:00 – 16:30			**Meet journal editors**			**Health Break**
16:30 – 18:00			**Parallel Session 4C:** Socio-economic disparities	**Parallel session 4A:** Vaccination	**Parallel session 4B:** Population and Health policies (1)	
18:30 – 20:00						Official Reception

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DAY TWO: Thursday, 12th November 2015

Time	Saba Hall	Dashen Hall	Safari Hall	Tana 1 Hall	Tana 2 Hall	Restaurant area
09:00 – 11:00	**Plenary Session 5:** Transition and its implications post 2015					
10:30 – 11:00						**Health Break**
11:00-12:30		**Parallel Session 6C:** Community health/ Health System		**Parallel Session 6A:** Maternal and child health	**Parallel Session 6B:** Clinical Trials	
12:30-13:30	**Poster Reviews during lunch by SAC**					**Lunch**
13:30-15:00		**Parallel Session 7A:** Fertility, Family Planning and sexual behaviour	**Parallel Session 7B:** Population Dynamics	**Parallel Session 7C:** Transition/Pop&Env/ Household poverty/FP		
15:00-15:30	**Meet journal editors**					**Health Break**
15:30-17:30	**Parallel session 8:** WORKING GROUPS I: Migration, Urbanisation and Health;Education; Adult health and ageing; and fertility	**Parallel session 8:** WORKING GROUPS I: Antibiotic Resistance	**INDEPTH FUNDERS SESSION**	**Parallel session 8:** WORKING GROUPS I: Vaccination and child survival	**Parallel session 8:** WORKING GROUPS I: Maternal and Newborn Health	
18:00-21:00						**Conference Dinner**

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DAY THREE: Friday, 13th November 2015

Time	Saba Hall	Dashen Hall	Safari Hall	Tana 1 Hall	Tana 2 Hall	Restaurant area
09:00 – 11:00	**Plenary Session 9**: OpenHDS: A new platform for electronic data capture – experiences from Pilot Centres					
10:30-11:00						**Health Break**
11:00-13:00		**Parallel Session 10A:** Global Health and Development Agenda	**Parallel Session 10B:** Population and Health Policies (2)	**Parallel Session 10C:** Innovation in HDSS data systems and methods		
12:30 – 13:30						**Lunch**
13:30-15:00	**Plenary Session:** PANEL DISCUSSION: HDSS and CRVS in LMICs – Potential for Policy					
15:00-15:30						**Health Break**
15:30-17:00	**Plenary Session**: CLOSING					

DAY FOUR: Saturday, 14th November 2015

Time	Saba Hall	Dashen Hall	Safari Hall	Tana 1 Hall	Tana 2 Hall	Restaurant area
09:00 – 17:00	**AGM**					

DAY ONE: Wednesday, 11 November 2015

Plenary Session 1: Conference Opening Session

Venue: SABA Hall

Chair: Prof. Marcel Tanner, INDEPTH Board Chair, Swiss TPH, Switzerland

Rapporteur: David Mbulumi, INDEPTH Secretariat, Ghana

08:00 – 11:00	Title	Speaker
08:00 – 09:00	**Registration**	
09:00 – 09:10	**Welcome Remarks**	**Dr. Admassu Tsegaye, President**, Addis Ababa University, Ethiopia
09:10 – 09:20	**Statement from the INDEPTH Board Chair**	**Prof. Marcel Tanner**, Swiss TPH, Switzerland
09:20 – 09:40	**The State of the Network Address**	**Prof. Osman Sankoh,** INDEPTH Secretariat, Ghana
09:40 – 10:00	**Keynote Address by the Minister of Education**	**H.E. Shiferaw Shigute,** Ministry of Education, Federal Democratic Republic of Ethiopia
10:00 – 10:20	**Keynote Address by the Minister of Health**	**H.E. Dr. Kesetebirhan Admasu,** Ministry of Health, Federal Democratic Republic of Ethiopia
10:20 – 10:40	**Highlights on HDSS work in Ethiopia**	**Mr. Fasil Tessema,** Gilgel Gibe HDSS, representing the Network of HDSSs in Ethiopia
10:40 – 11:00	**Guests of Honour** • **Haramaya University** • **Mekelle University** • **University of Gondar** • **Jimma University** • **Arba Minch University**	**University presidents** • **Prof. Chemeda Fininsa** • **Dr. Kindeya Gebrehiwot** • **Dr. Takele Tadesse** • **Dr. Berhanu Belay Abunie** • **Dr. Feleke Woldeyes**
11:00 – 11:30	**GROUP PHOTO & HEALTH BREAK**	

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DAY ONE: Wednesday, 11 November 2015

Plenary Session 2: Profiling Critical INDEPTH Projects 1

Venue: SABA Hall

Chair: Peter Byass, Umeå University, SAC Chair

Rapporteur: Martin Bangha, INDEPTH Secretariat, Ghana

11:30 – 13:00	Title	Speaker
11:30 – 11:45	Conducting Phase IV studies in Africa – the INESS experience	**Fred Binka,** University of Health and Allied Sciences, Ho, Ghana
11:45 – 12:00	Strengthening genomic studies of cardio-metabolic diseases in Africa – the AWI-Gen experience	**Michele Ramsay,** Wits Health Consortium; **Osman Sankoh** INDEPTH Secretariat, Ghana
12:00 – 12:15	Developing and validating innovative methods to improve measurement of out-of-pocket payments for health services in low and middle-income countries – the iHOPE study	**James Akazili,** INDEPTH Secretariat, Ghana
12:15 – 12:30	Monitoring real life effects of child health interventions – the Optimunize study	**Peter Aaby,** Bandim HDSS, Guinea Bissau
12:30 – 12:45	Generating cause of death data in low and middle income countries – The INDEPTH cause of death study	**Peter Byass,** Umeå University, Sweden
12:45 – 13:00	**General discussion on INDEPTH Projects**	
13:00 – 14:00	**LUNCH** **Poster Reviews during lunch by SAC**	

DAY ONE: Wednesday, 11 November 2015

Plenary Session 3: Profiling Critical INDEPTH Projects 2

Venue: SABA Hall
Chair: Carla AbouZahr, INDEPTH SAC
Rapporteur: Soter Ameh, Agincourt HDSS, South Africa

14:00 - 16:00	Title	Speaker
14:00 – 14:15	Generating the metrics for every newborn action plan (ENAP) in the SDG era – the INDEPTH contribution	**Peter Waiswa,** Iganga/ Mayuge HDSS, Uganda
14:15 – 14:30	Community level antibiotic access and use in low- and middle-income countries – the INDEPTH study	**Heiman Wertheim,** University of Oxford, UK
14:30 – 14:45	Healthy or Unhealthy Migrants? Testing the Selection and Adaptation Hypothesis in a Comparative Analysis of Migration Effect on Mortality using African Rural and Urban HDSSs	**Mark Collinson,** Agincourt HDSS, South Africa
14:45 – 15:00	Facilitating the translation of research evidence to policy and practice – the INDEPTH experience	**David Mbulumi,** INDEPTH Secretariat, Ghana
15:00 – 15:15	Harmonising data collection, management and sharing – the INDEPTH experience	**Kobus Herbst,** Africa Centre HDSS, South Africa
15:15 – 15:30	Building the evidence on aging in low- and middle-income countries – the INDEPTH study	**Steve Tollman,** Agincourt HDSS, South Africa
15:30 – 16:00	**General discussion on INDEPTH Projects**	
16:00 – 16:30	**HEALTH BREAK** **Meet journal editors** – *The Lancet Global Health* (Zoë Mullan), *The Lancet Diabetes and Endocrinology* (Justine Davies), *International Journal of Public Heath* (Peter Waiswa), *Parasite Epidemiology & Control* (Marcel Tanner), *Global Health, Epidemiology & Genomics* (Population Surveillance Theme Editors: Osman Sankoh, Cheikh Mbacké and Siddhi Hirve), *International Journal of Epidemiology* (Fred Binka, Osman Sankoh), *Global Health Action* (Peter Byass, Julia Schröders)	

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DAY ONE : Wednesday, 11 November 2015

Parallel 4A: Vaccination

Venue: Tana Hall 1
Chair: Jocalyn Clark, SAC/Icddr,b
Discussant: Don de Savigny, SAC/Swiss Tropical
Rapporteur: Doris Sarpong, Dodowa HDSS, Ghana

16:30 – 18:00	Title	Speaker
16:30 – 16:45	National immunization campaigns with oral polio vaccine (OPV) and H1N1 have contrasting effects on overall mortality. An analysis of the effect of campaigns on mortality within seven randomised trials in Guinea-Bissau	**Peter Aaby,** Bandim HDSS, Guinea Bissau
16:45 – 17:00	Measles vaccination and MDG4: Reducing out-of-sequence vaccinations and reducing child mortality in Northern Ghana	**Paul Welaga,** Navrongo HDSS, Ghana
17:00 – 17:15	Fully immunised children's children coverage, associated factors, and association with mortality	**Ane Fisker,** Bandim HDSS, Guinea Bissau
17:15 – 17:30	Effects of low birth weight on time to BCG vaccination in an urban poor settlement in Nairobi, Kenya: an observational cohort study	**Martin Kavao Mutua,** Nairobi HDSS, Kenya
17:30 – 17:45	The WHO review of the possible non-specific effects of diphtheria-tetanus-pertussis vaccine	**Peter Aaby,** Bandim HDSS, Guinea Bissau
17:45 – 18:00	An Integrated Surveillance platform for the evaluation of vaccine programmes in sub-Saharan Africa	**Ifedayo Adetifa,** Kilifi HDSS, Kenya
18:30 – 20:00	**OFFICIAL RECEPTION – funded by Addis Ababa University**	

DAY ONE : Wednesday, 11 November 2015

Parallel 4B: Population and Health policies (1)

Venue: Tana Hall 2

Chair: William Muhwava, UNECA, Ethiopia

Discussant: Halima Mwenesi, SAC/Academy for Educational Department, Washington

Rapporteur: Kwabena Asare, Dodowa HDSS, Ghana

16:30 – 18:00	Title	Speaker
16:30 – 16:45	Effectiveness of an integrated chronic disease management model in improving patients' health outcomes in rural South Africa: a controlled interrupted time-series analysis	**Soter Ameh,** Agincourt HDSS, South Africa
16:45 – 17:00	The state of enrolment on the National Health Insurance Scheme in a rural Ghana after a decade of implementation	**Anthony Kwarteng,** Kintampo HDSS, Ghana
17:00 – 17:15	Objectively assessed physical activity and associated factors among adults in peri-urban and rural Uganda	**Barbara Eva Kirunda,** Iganga/Mayuge HDSS, Uganda
17:15 – 17:30	Alcohol, tobacco and drug use among young people in rural coastal Kenya: a three way assessment of the situation	**David Barney Walumbe,** Kilifi HDSS, Kenya
17:30 – 17:45	Building research capacity on social determinants of health in low- and middle-income countries: lessons from the INTREC program	**Heiko Becher,** Hamburg, Germany on behalf of the INTREC study group
17:45 – 18:00	**General discussion**	
18:30 – 20:00	**OFFICIAL RECEPTION – funded by Addis Ababa University**	

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DAY ONE : Wednesday, 11 November 2015

Parallel Session 4C: Socio-economic disparities

Venue: Safari Hall

Chair: Cheikh Mbacké, SAC/Senegal

Discussant: Barbara McPake, SAC/Queen Margaret University, Edinburg, UK

Rapporteur: Kazienga Adama, Nanoro HDSS, Burkina Faso

16:30 – 18:00	Title	Speaker
16:30 – 16:45	Under five mortality and its predictors in Gilgel Gibe Health and Demographic Surveillance System Site	**Fasil Tessema,** Gilgel Gibe HDSS, Ethiopia
16:45 – 17:00	Trends in socio-economic disparities in a rapid under-five mortality transition? Findings from a longitudinal study in rural Tanzania	**Almamy Malick Kante,** Ifakara HDSS, Tanzania
17:00 – 17:15	Survival Benefits of Childhood Vaccinations: WHO schedule versus BCG, OPV and Penta1 combined	**SM Manzoor Ahmed Hanifi,** Chakaria HDSS, Bangladesh
17:15 – 17:30	Spatial variation in risk factors of under-5 mortality in two urban informal settlements in Kenya	**Maurice Mutisya,** Nairobi HDSS, Kenya
17:30 – 17:45	A qualitative investigation on community perceptions regarding routine vaccinations in Nouna, Burkina Faso: reasons for incompleteness or non-vaccination	**Moubassira Kagone,** Nouna HDSS, Burkina Faso
17:45 – 18:00	**General discussion**	
18:30 – 20:00	**OFFICIAL RECEPTION – funded by Addis Ababa University**	

DAY TWO: Thursday, 12 November 2015

Venue: Dashen hall

Convener: Heiman Wertheim

Time	Title
7:30 – 9:00	Pre-inception meeting: Community level antibiotic access and use in low and middle countries – Finding targets for social interventions to improve rational antimicrobial use

DAY TWO: Thursday, 12 November 2015

Plenary Session 5: Transition and its implications post 2015

Venue: SABA Hall

Chair: Fred Binka, University of Health and Allied Sciences, Ho, Ghana

Discussant: Jocalyn Clark, SAC/iccdr,b

Rapporteur: Mamusu Kamanda, INDEPTH Secretariat, Ghana

09:00 – 10:30	Title	Speaker
9:00 – 9:15	Use of linked hospital-based morbidity surveillance to explain trends in mortality in Kilifi Health and Demographic Surveillance System	**Amare Deribew,** Kilifi HDSS, Kenya
9:15 – 9:30	Childhood mortality, childhood morbidity, and subsequent fertility decisions	**Marwan-al-Qays Bousmah,** Aix-Marseille University and SESSTIM, Paris
9:30 – 9:45	Elimination of measles by 2020 and the non-specific effects of measles vaccine on child survival	**SM Manzoor Ahmed Hanifi,** Chakaria HDSS, Bangladesh
9:45 – 10:00	The potential of the INDEPTH network to contribute towards urgently needed data for the SDG a case study from the Agincourt HDSS	**Wayne Chilton Twine,** Agincourt HDSS, South Africa
10:00 – 10:15	How editors at top journals deal with papers	**Justine Davies,** The Lancet Diabetes and Endocrinology
10:15 – 10:30	Publication and research ethics	**Zoë Mullan,** The Lancet Global Health
10:30 – 11:00	**HEALTH BREAK**	

DAY TWO: Thursday, 12 November 2015

Parallel Session 6A: Maternal and child health

Venue: Tana Hall 1

Chair: Peter Waiswa, Iganga/Mayuge HDSS, Uganda

Discussant: Kate Kerber, Save the children, Canada

Rapporteur: Samuelina Arthur, INDEPTH Secretariat, Ghana

11:00-12:30	Title	Speaker
11:00 – 11:15	Utilization of Postnatal Care in Southern Ghana: evidence from the Dodowa HDSS	**Kenneth Nartey,** Dodowa HDSS, Ghana
11:15 – 11:30	Cause of deaths (2008-12) among neonates: an experience from CRHSP Ballabgarh	**Sanjay Rai,** Ballabgarh HDSS, India
11:30 – 11:45	Neonatal mortality and causes of death in Kersa Health and Demographic Surveillance System in the period from 2008-2013	**Nega Assefa Kassa,** Kersa HDSS, Ethiopia
11:45 – 12:00	Does it matter the type of fuel we use for cooking in our household? The effects of cooking fuel on pregnancy outcome	**Solomon Ayertey Narh-Bana,** Dodowa HDSS, Ghana
12:00 – 12:15	Country Characteristics and Variation in Neonatal Mortality Across 49 sub-Saharan African Countries	**Gbenga Ayodele Kayode,** Julius Global Health, Julius Centre for Health Science, Netherlands
12:15 – 12:30	**General discussion**	
12:30 – 13:30	**LUNCH** **Poster Reviews during lunch by SAC**	

DAY TWO: Thursday, 12 November 2015

Parallel Session 6B: Clinical Trials

Venue: Tana Hall 2
Chair: Anna Mia Ekström, SAC, Karolinska, Sweden
Discussant: Benhard Ogutu, INDEPTH
Rapporteur: Anthony Kwarteng, Kintampo HDSS, Ghana

11:00-12:30	Title	Speaker
11:00 – 11:15	Treatment Outcomes in an observational study to evaluate the safety after the administration of a fixed-dose Artemisinin-based Combination Therapy, Eurartesim (dihydroartemisinin/piperaquine [DHA/PQP]) in public health facilities in 4 sub-Saharan African countries.	**Alexander Adjei,** Dodowa HDSS, Ghana
11:15 – 11:30	Baseline characteristics of alcohol and tobacco use in the Kintampo north and south districts of rural Ghana	**Gyabaa Lawrence Febir,** Kintampo HDSS, Ghana
11:30 – 11:45	Case management of febrile illness among under-five children in Southern Ghana: analysis from a cohort monitoring event (CEM)	**Kwabena Asare,** Dodowa HDSS, Ghana
11:45 – 12:00	Factors influencing adverse events reporting within the Ghana health care system: The case of artemisinin-based combination treatments (ACTs) in the Kassena-Nankana Districts of Northern Ghana	**Tamti Samuel Chatio,** Navrongo HDSS, Ghana
12:00 – 12:15	Effect of neonatal vitamin A supplementation on mortality in infants in Tanzania (Neovita): a randomised, double-blind, placebo-controlled trial	**Honorati Masanja,** Ifakara HDSS, Tanzania
12:15 – 12:30	**General discussion**	
12:30 – 13:30	**LUNCH** **Poster Reviews during lunch by SAC**	

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DAY TWO: Thursday, 12 November 2015

Parallel Session 6C: Community health/ Health System

Venue: Dashen Hall
Chair: Anastasia Gage, SAC, Tulane University, USA
Discussant: Cheryl Moyer, SAC, University of Michigan, USA
Rapporteur: Barbara Eva Kirunda, Iganga/Mayuge HDSS, Uganda

11:00-12:30	Title	Speaker
11:00 – 11:15	Socio-economic determinants of ownership and use of treated bed nets in rural communities of Ghana: results from the Kintampo Health and Demographic Surveillance System (KHDSS)	**Emmanuel Mahama,** Kintampo HDSS, Ghana
11:15 – 11:30	The influence of knowledge on attitudes and behavioural practices towards cholera in Central Ghana: a cross-sectional study	**George Adjei,** Kintampo HDSS, Ghana
11:30 – 11:45	Perspectives of community leaders on intimate partner violence during pregnancy in the Kassena-Nankana district of Northern Ghana	**Raymond Aborigo,** Navrongo HDSS, Ghana
11:45 – 12:00	Migration and network structure: specificities of circular migrants' networks in Senegal	**Yacine Boujija,** Niakhar HDSS, Senegal
12:00 – 12:30	**General discussion**	
12:30 – 13:30	**LUNCH** **Poster Reviews during lunch by SAC**	

DAY TWO: Thursday, 12 November 2015

Parallel Session 7A: Fertility, Family Planning and sexual behaviour

Venue: Dashen Hall
Chair: Cheikh Mbacké, SAC, Senegal
Discussant: Anastasia Gage, SAC/Tulane University, USA
Rapporteur: Paul Welaga, Navrongo HDSS, Ghana

13:30-15:00	Title	Speaker
13:30 – 13:45	Fertility research at INDEPTH using the HDSS platform from 1998-2013: What is INDEPTH saying?	**Samuelina Arthur,** INDEPTH Secretariat , Ghana
13:45 – 14:00	ART-Related Changes in Fertility at Population Level	**Estelle McLean,** Karonga HDSS, Malawi
14:00 – 14:15	Fertility transition in rural Africa: a mode of production-oriented pattern?	**Valerie Delaunay,** Niakhar HDSS, Senegal
14:15 – 14:30	Ideal family size, acceptability of contraceptive use and social network processes	**John Sandberg,** The George Washington University, USA
14:30 – 14:45	Fertility in Sub Saharan Africa: what can we learn from INDEPTH sites?	**Clementine Rossier,** Ouagadougou HDSS, Burkina Faso
14:45 – 15:00	**General discussion**	
15:00 – 15:30	**HEALTH BREAK** **Meet journal editors** – *The Lancet Global Health* (Zoë Mullan), *The Lancet Diabetes and Endocrinology* (Justine Davies), *International Journal of Public Heath* (Peter Waiswa), *Parasite Epidemiology & Control* (Marcel Tanner), *Global Health, Epidemiology & Genomics* (Population Surveillance Theme Editors: Osman Sankoh, Cheikh Mbacké and Siddhi Hirve), *International Journal of Epidemiology* (Fred Binka, Osman Sankoh), *Global Health Action* (Peter Byass, Julia Schröders)	

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DAY TWO: Thursday, 12 November 2015

Parallel Session 7B: Population Dynamics

Venue: Safari Hall
Chair: Cheryl Moyer, SAC, University of Michigan,USA
Discussant: Halima Awenesi, SAC
Rapporteur: Miriam-Diana Abagale, Navrongo HDSS, Ghana

13:30-15:00	Title	Speaker
13:30 – 13:45	Population Dynamics in Dabat Health and Demographic Surveillance System Sites, Dabat District, Northwest Ethiopia: A four-year surveillance report (2009 to 2012)	**Yigzaw Kebede Gete,** Dabat HDSS, Ethiopia
13:45 – 14:00	Magnitude and patterns of migration: Evidence from the Gilgel Gibe Health and Demographic Surveillance System	**Fasil Tessema,** Gilgel Gibe HDSS, Ethiopia
14:00 – 14:15	Injury mortality analysis within the middle belt of Ghana using the Kintampo HDSS	**Ayuurebobi Kenneth Ae-Ngibise,** Kintampo HDSS, Ghana
14:15 – 14:30	HIV testing, prevalence and related factors among older persons in rural Tanzania, 2013	**Angelina Mtowa,** Ifakara HDSS, Tanzania
14:30 – 14:45	Spatial and Space-time clustering of mortality due to malaria in rural Tanzania: evidence from Ifakara and Rufiji Health and Demographic Surveillance System sites	**Majige Selemani,** Rufiji HDSS, Tanzania
14:45 – 15:00	**General discussion**	
15:00 – 15:30	**HEALTH BREAK** **Meet journal editors** – *The Lancet Global Health* (Zoë Mullan), *The Lancet Diabetes and Endocrinology* (Justine Davies), *International Journal of Public Heath* (Peter Waiswa), *Parasite Epidemiology & Control* (Marcel Tanner), *Global Health, Epidemiology & Genomics* (Population Surveillance Theme Editors: Osman Sankoh, Cheikh Mbacké and Siddhi Hirve), *International Journal of Epidemiology* (Fred Binka, Osman Sankoh), *Global Health Action* (Peter Byass, Julia Schröders)	

DAY TWO: Thursday, 12 November 2015

Parallel Session 7C: Transition/Pop&Env/Household poverty/FP

Venue: Tana Hall 1
Chair: Carla AbouZahr, INDEPTH SAC
Discussant: Philippe Bocquier, SAC, Universite Catholique de Louvain, Belgium
Rapporteur: Kenneth Nartey, Dodowa HDSS, Ghana

13:30-15:00	Title	Speaker
13:30 – 13:45	Contributions of different factors to HIV prevalence trends in rural Uganda	**Jessica Nakiyingi-Miiro,** Kyamulibwa HDSS, Uganda
13:45 – 14:00	Investigating linkages between livelihood shocks, food security, and environment in the Agincourt Health and Demographic Surveillance System, South Africa	**Wayne Chilton Twine,** Agincourt HDSS, South Africa
14:00 – 14:15	Field experiences, in collecting sensitive information from young people in a cross sectional survey in rural coastal Kenya	**Onesmus Kyalo Muiya,** Kilifi HDSS, Kenya
14:15 – 14:30	Transition from primary to secondary school among children	**Mamusu Kamanda,** INDEPTH Secretariat, Ghana
14:30 – 14:45	Levels and causes of migration in the urban surveillance site of Kersa Health and Demographic Surveillance System	**Wondimye Ashenafi Cheru,** Kersa HDSS, Ethiopia
14:45 – 15:00	**General discussion**	
15:00 – 15:30	**HEALTH BREAK** **Meet journal editors** – *The Lancet Global Health* (Zoë Mullan), *The Lancet Diabetes and Endocrinology* (Justine Davies), *International Journal of Public Heath* (Peter Waiswa), *Parasite Epidemiology & Control* (Marcel Tanner), *Global Health, Epidemiology & Genomics* (Population Surveillance Theme Editors: Osman Sankoh, Cheikh Mbacké and Siddhi Hirve), *International Journal of Epidemiology* (Fred Binka, Osman Sankoh), *Global Health Action* (Peter Byass, Julia Schröders)	

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DAY TWO: Thursday, 12 November 2015

Parallel session 8: Working Groups, Funders session

15:30-17:30	Title	Hall
15:30-17:30	Maternal and Newborn Health	Tana Hall 2
15:30-17:30	Vaccination and Child Survival	Tana Hall 1
15:30-17:30	Antibiotic Resistance	Dashen Hall
15:30-17:30	Migration, Urbanisation and Health	SABA Hall
15:30-17:30	Education	SABA Hall
15:30-17:30	Adult Health and Aging	SABA Hall
15:30-17:30	Sexual and Reproductive Health – Fertility	SABA Hall
15:30-17:30	**INDEPTH FUNDERS SESSION – Safari Hall** **Convener: Hewlett Foundation**	
18:00-21:00	**CONFERENCE DINNER** **Sponsored by the Ethiopian Ministry of Health**	

DAY THREE: Friday, 13 November 2015

Plenary Session 9: OpenHDS: A new platform for electronic data capture – experiences from Pilot Centres

Venue: SABA Hall
Chair: Ime Asangani, SAC, Nigeria
Discussant: Nicolas Maire, Swiss TPH, Switzerland
Rapporteur: David Barney Walumbe, Kilifi HDSS, Kenya

09:00 – 11:00	Title	Speaker
9:00 – 9:15	Data Quality Checks in a Paperless HDSS: Lessons from the Cross River HDSS, Nigeria	**Iwara I. Arikpo,** Cross River HDSS, Nigeria
9:15 – 9:30	Replacing paper-based data collection with electronic data collection in Nanoro HDSS: is there really an advantage?	**Kazienga Adama,** Nanoro HDSS, Burkina Faso
9:30 – 9:45	The experience of implementing OpenHDS in Ifakara	**Isaac Lyatuu,** Ifakara HDSS, Tanzania
9:45 – 10:00	Manhica HDSS OpenHDS implementation: challenges, achievements and lessons learned	**Paulo Filimone,** Manhica HDSS, Mozambique
10:00 – 10:15	OpenHDS training, data migration and paper based update experience in Ethiopian HDSS sites	**Fasil Tessema,** Gilgel Gibe HDSS, Ethiopia
10:15 – 10:30	OpenHDS: recent developments and experiences	**Nicolas Maire,** Swiss TPH, Switzerland
10:30-11:00	**Coffee break**	

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DAY THREE: Friday, 13 November 2015

Parallel Session 10A: Global Health and Development Agenda

Venue: Dashen hall
Chair: Barbara McPake, SAC/Queen Margaret University, Edinburg, UK
Discussant: Harry Campbell, SAC/University of Edinburgh, UK
Rapporteur: Mamusu Kamanda, INDEPTH Secretariat, Ghana

11:00-13:00	Title	Speaker
11:00 – 11:15	Burden of intestinal parasites in remote, hilly forest area of Bandarban HDSS	**Wasif Ali Khan,** Bandarban HDSS, Bangladesh
11:15 – 11:30	Cardiometabolic disease risk and HIV status in rural South Africa: establishing a baseline	**Francesc Xavier Gomez-Olive Casas,** Agincourt HDSS, South Africa
11:30 – 11:45	Cognitive dysfunction and mortality in the presence of abdominal obesity and hypertension in a rural elderly population in Central Java, Indonesia: results from the INDEPTH WHO-SAGE Collaboration.	**Julia Schröders,** Umeå University, Sweden
11:45 – 12:00	Metabolic Syndrome in Rural Indian Population: Evidence from a Health and Demographic Surveillance System	**Anamitra Barik,** Birbhum HDSS, India
12:00 – 12:15	The association between common mental illness and tuberculosis, a case control study from Guinea Bissau.	**Lena Larson,** Bandim HDSS, Guinea Bissau
12:15 – 12:30	**General discussion**	
12:30 – 13:30	**LUNCH**	

DAY THREE: Friday, 13 November 2015

Parallel Session 10B: Population and Health Policies (2)

Venue: Safari Hall
Chair: Philippe Bocquier, SAC, Universite Catholique de Louvain, Belgium
Discussant: Anna Mia Ekström, SAC, Karolinska Institute, Sweden
Rapporteur: David Mbulumi, INDEPTH Secretariat, Ghana

11:00 - 13:00	Title	Speaker
11:00 – 11:15	Causes of Infant Death in Kersa Health and Demographic Surveillance System (Kersa HDSS), Ethiopia: Verbal Autopsy Method	**Nega Assefa Kassa,** Kersa HDSS, Ethiopia
11:15 – 11:30	The unfair economics of health insurance in rural West Bengal: assessing the potential effectiveness of India's Rashtriya Swasthya Bima Yojana (National Health Insurance Scheme)	**Sumit Mazumdar,** Birbhum HDSS, India
11:30 – 11:45	Access and Catastrophic Health Care Payment and Reasons in Ghana	**Doris Sarpong,** Dodowa HDSS, Ghana
11:45 – 12:00	Injuries: A neglected cause of morbidity and mortality of young people in a rural region of coastal Kenya	**George Mochamah,** Kilifi HDSS, Kenya
12:00 – 12:15	Trend and causes of adult mortality using verbal autopsy in Kersa health and demographic surveillance site, Eastern Ethiopia	**Wondimye Ashenafi Cheru,** Kersa HDSS, Ethiopia
12:15 – 12:30	The Contribution of Road Traffic Accidents to Mortality in the Kassena-Nankana Districts, Ghana	**Miriam-Diana Abagale,** Navrongo HDSS, Ghana
12:30 – 13:30	**LUNCH**	

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DAY THREE: Friday, 13 November 2015

Parallel Session 10C: Innovation in HDSS data systems and methods

Venue: Tana Hall 1
Chair: Don de Savigny, SAC, Swiss TPH, Switzerland
Discussant: Martin Bangha, INDEPTH Secretariat, Ghana
Rapporteur: Gyabaa Lawrence Febir, Kintampo HDSS, Ghana

11:00 – 12:30	Title	Speaker
11:00 – 11:15	Linking health and demographic surveillance data to hospital and clinical data: Challenges and opportunities to understand disease dynamics in HDSS	**Dickman Gareta,** ACDIS, South Africa
11:15 – 11:30	Evaluation of census data with Health and Demographic Surveillance Systems: a study in three HDSS in rural Senegal	**Valerie Delaunay,** Niakhar HDSS, Senegal
11:30 – 11:45	The Components of Population Change in Kersa Demographic surveillance and **Africa** Health Research Centre (KDS_HRC) Field site, 2008 to 2013	**Desalew Zelalem Ayel,** Kersa HDSS, Ethiopia
11:45 – 12:00	Linking health facility and Demographic Surveillance System (DSS) data for young adults 18-24 years: The Kilifi Experience	**Christopher Nyundo Baya,** Kilifi HDSS, Kenya
12:00 – 12:15	The relationships between structure, process and outcome as a measure of the quality of care in the integrated chronic disease management model in a rural South African setting: a structural equation model	**Soter Ameh,** Agincourt HDSS, South Africa
12:15 – 12:30	**General discussion**	
12:30 – 13:30	**LUNCH**	

DAY THREE: Friday, 13 November 2015

Plenary Session 11: PANEL DISCUSSION

HDSS and CRVS in LMICs – Potential for Policy

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Looking at new Collaborations

Venue: SABA hall
Chair: Peter da Costa, Hewlett Foundation, Kenya
Rapporteur: David Mbulumi, INDEPTH

13:30-15:30	Title	Speaker
13:30 – 14:00	Overview of INDEPTH's role in policy process	**Rutuja Patil,** Vadu HDSS, India
14:00 – 15:00	Panelists: **Raj Mitra,** UNECA, Ethiopia **Don de Savigny,** INDEPTH SAC/Swiss TPH, Switzerland **Cheikh Mbacké,** SAC, Senegal **Mark Collinson,** Agincourt HDSS, South Africa	
15:00 – 15:30	**INDEPTH/Stanford Collaboration** **Chair: Osman Sankoh**	
15:30 – 15:45	**HEALTH BREAK**	

DAY THREE: Friday, 13 November 2015

Plenary Session 12: CLOSING

Venue: SABA Hall
Chair: Marcel Tanner, INDEPTH Board Chair, Swiss TPH, Switzerland
Rapporteur: David Mbulumi, INDEPTH Secretariat, Ghana

15:45-17:30	Title	Speaker
15:45-16:00	Funder representative	**Hewlett Foundation**
16:00-16:10	Host representative	**Mitike Molla,** Butajira HDSS, Ethiopia
16:10-16:20	Centre leaders' representative	**Fasil Tessema,** Gilgel Gibe HDSS, Ethiopia
16:20-16:35	New INDEPTH partnership	**Michele Barry,** Stanford University, USA
16:35-16:45	Scientific Advisory Committee chair	**Peter Byass,** SAC, Sweden
16:45-17:05	Independent ISC assessment	**Carel IJsselmuiden,** COHRED, Switzerland
17:05-17:30	Executive Director's Appreciation	**Osman Sankoh,** INDEPTH Secretariat, Ghana
	DEPARTURES START...	

DAY FOUR: Saturday, 14th November 2015 AGM 2015	
Venue: Dashen Hall	
09:00 – 17:00	**Meeting of Centre Leaders and the Board**

INDEPTH Network
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DAY ONE: Wednesday, 11th November 2015

Parallel Session 4A: Vaccination

Venue: Tana Hall 1

Title: National immunization campaigns with oral polio vaccine (OPV) and H1N1 have contrasting effects on overall mortality. An analysis of the effect of campaigns on mortality within seven randomised trials in Guinea-Bissau
Speaker: Peter Aaby, Bandim HDSS, Guinea Bissau
Co-authors: A Andersen A Fisker Christine Stabell Benn

Abstract: Introduction: The potential impact on overall child survival of the many campaigns with oral polio vaccine (OPV) which have been conducted in the last 15-20 years has not been evaluated. However, vaccines may have non-specific effects (NSE). We reasoned that if natural experiments in the form of national campaigns modified the age-adjusted mortality rate within randomised controlled trials (RCTs) it would suggest that the vaccine has NSEs. Using this approach we tested the potential NSEs of OPV, vitamin A supplementation (VAS) and H1N1 influenza vaccine in Guinea-Bissau. Data and Methods: Between 2001 and 2014 Guinea-Bissau experienced a large number of national OPV campaigns targeting children aged 0-4 years. In this period we conducted seven RCTs of health interventions among children, measuring the impact on overall survival. We used Poisson model adjusted for age, seasonality and time trends in mortality to assessed whether the mortality rate (MR) among children participating in the RCTs was lower after the OPV, VAS or H1N1 campaigns than before these campaigns. Preliminary results: The combined age, season and time-trend-adjusted mortality rate ratio (MRR) after-campaign-OPV versus before-campaign-OPV was 0.83 (0.71-0.97). With additional doses of campaign OPV, the benefit increased. In the same model the MRR for after-VAS versus before-VAS on the mortality rate was 0.91 (0.72-1.14). The effect of H1N1 campaign (MRR(after/before H1N1)=1.53 (0.85-2.57)) differed significantly from the effect of OPV. Discussion and conclusions: There was no polio infection in Guinea-Bissau so campaign OPV had non-specific beneficial effects by reducing the adjusted mortality rate. Several other studies suggest that OPV has beneficial effects. The phasing out of OPV and OPV campaigns may affect general child mortality levels in low-income countries negatively.

Title: Measles vaccination and MDG4: Reducing out-of-sequence vaccinations and reducing child mortality in Northern Ghana
Speaker: Paul Welega, Navrongo HDSS, Ghana
Co-authors: Abraham Oduro Cornelius Debpuur Peter Aaby Henrik Ravn Abraham Hodgson

Abstract: Background: Studies suggest that diphtheria-tetanus-pertussis (DTP) vaccinations administered simultaneously with measles vaccination (MV) or DTP administered after MV are associated with increased child mortality. We tested this in Navrongo where the prevalence of out-of-sequence vaccinations has declined. Methods: As part of the Health and Demographic Surveillance System, children under two years of age had their vaccination status assessed by inspection of the health card during home visits in the last quarter of each year from 1996-2012. Using HDSS data, we assessed survival within the next 12 months and until five years of

age in relation to the most recent vaccination for children aged 12-23 months. We used a Cox proportional hazards model to compare the mortality rates of different vaccination groups and adjusted for common determinants of vaccination status and child mortality. We examined whether oral polio vaccine (OPV) and MV campaigns affected the effect of out-of-sequence vaccinations by censoring follow-up at the beginning of the campaign. Results: The frequency of out-of-sequence vaccinations with DTP-containing vaccines and MV declined from 86% in 1989 to 24% in 1996 and 0.7% in 2012. Between 1996 and 2012, 38,070 children who had their vaccinations status assessed. The adjusted hazard ratio (HR) for out-of-sequence vaccinations compared with the recommended sequence of MV-after-DTP3 was 1.45(1.10-1.92) during the first 12 months after assessment of vaccination status and 1.33(1.07-1.64) with follow-up to five years of age; the negative effect was the same in the periods DTP and penta were used. Censoring for the annual campaigns with OPV or MV, the adjusted HR increased to 1.84(1.33-2.53). From 1989-2012, the reduction in out-of-sequence vaccinations may have lowered mortality rate among measles vaccinated children by 29.4%. Conclusion: Out-of-sequence vaccinations with DTP and MV are associated with higher mortality than MV as most recent vaccination. Improvement in the organization of immunization programmes leading to fewer out-of-sequence vaccinations may have contributed to mortality decline towards MDG4. It should be considered to maintain a strict policy of not giving DTP with MV or DTP after MV.

Title: Fully immunised children's children coverage, associated factors, and association with mortality
Speaker: Ane Fisker, Bandim HDSS, Guinea Bissau
Co-athours: Henrik Ravn Andreas Andersen Christine Benn Sanne Thysen Cesaırio Martins Peter Aaby Martin Mutua Paul Welaga Charles Zandoh Moubassira Kagona

Abstract: Background: During the first 40 years of the global immunization programme, coverage of DTP3 has been the main programme indicator. GAVI wants to have a more embracing target for the post-2015 era and has started to emphasize the fully immunized child (FIC) as a key concept and indicator. Data and methods: Five African and one Asian INDEPTH HDSS centres contributed vaccination data collected between 2001-14 from 109,473 12-23 months old children to analyse the FIC coverage trend over time, determinants of being FIC, and the association between being FIC and subsequent child mortality. Results: There was an upward trend over time in the proportion being FIC at all centres except one, the coverage in 2013 ranging between 71%-88%. Cultural and socio-economic factors indicating better conditions were positively associated with FIC but there was no difference between sexes. Encouragingly, with increasing coverage the differences in FIC associated with education and wealth tended to disappear. The age of DTP-containing vaccines and OPV went down over time. One centre in Northern Ghana had a major decline in the median age of BCG vaccination from 28 to 3 days but most centres showed little difference. For measles vaccination, several centres showed slight increases in the age of vaccination. The predominant cause of not being FIC was lack of measles vaccination. Controlling for background factors, being FIC was associated with 22% lower mortality (95% confidence interval: 12-31%) than not being FIC. Discussion and conclusion: The main reason for not being FIC was lack of measles vaccination and the results suggest that lack of measles vaccination is associated with higher mortality. In conclusion, it should be possible to improve both FIC coverage and child survival with a stronger emphasis on getting children measles vaccinated on time.

Title: Effects of low birth weight on time to BCG vaccination in an urban poor settlement in Nairobi, Kenya: an observational cohort study
Speaker: Martin Kavao Mutua, Nairobi HDSS, Kenya
Co-authors: Rhoune Ochako Remare Ettarh Henrik Ravn Elizabeth Echoka Peter Mwaniki

Abstract: Background: The World Health Organization recommends Bacillus Calmette-Guerin (BCG) vaccination against tuberculosis be given at birth. However, in many developing countries, pre-term and low birth weight (LBW) infants get vaccinated only after they gain the desired weight. In Kenya, the ministry of health recommends pre-term and LBW infants to be immunized at the time of discharge from hospital irrespective of their weight. This paper seeks to understand the effects of birth weight on timing of BCG vaccine. Data and methods: The study was conducted in two Nairobi urban informal settlements, Korogocho and Viwandani which hosts the Nairobi Demographic Surveillance System. All infants born in the study area since September 2006 were included in the study. Data on immunization history and birth weight of the infant were recorded from child's clinic card. 3,602 infants were included in this analysis. Log normal accelerated failure time model was used to assess the association between LBW and time to BCG immunization. Results: 6.4% infants were LBW. 16.6% of the LBW infants weighed less than 2000grams. Results showed 60% of the LBW infants received BCG vaccine after more than five weeks of life. General model showed private health facilities were less likely to administer a BCG vaccine on time compared to public health facilities. The effects of LBW on females was 0.60 and 0.97-times that of males for infants weighing 2000-2499grams and for infants weighing <2000grams respectively. Interaction model showed effect of LBW among infants born in public health facilities was 1.52 and 3.94-times that of infants delivered in private health facilities for infants weighing 2000-2499grams and those weighting<2000grams respectively. Discussion and conclusion: LBW infants received BCG immunization late compared to normal birth weight infants. LBW infants delivered in public health facilities were more likely to be immunized much later compared to private health facilities.

Title: The WHO review of the possible non-specific effects of diphtheria-tetanus-pertussis vaccine
Speaker: Peter Aaby, Bandim HDSS, Guinea Bissau
Co-authors: Henrik Ravn Christine Stabell Benn

Abstract: Introduction: WHO's Strategic Advisory Group of Experts on Immunization recently reviewed the possible non-specific effects (NSEs) of BCG, diphtheria-tetanus-pertussis (DTP) and measles vaccine (MV). BCG and MV had beneficial NSEs. For DTP it was concluded that most studies suggest a deleterious effect, but results were inconsistent. Data and Methods: We reviewed whether the inconsistent results reflected true differences in effect or differences in methodologies between the studies. In several studies the control group of unvaccinated children was a default group such that all children with no information on vaccination status would be classified as unvaccinated. As a consequence vaccinated children who died and whose vaccination card had not been seen would end up in the unvaccinated group - not because they were unvaccinated but because they had died. The mortality rate in the unvaccinated group becomes unnaturally high. To measure this bias, we defined a

"bias indicator" as the mortality rate ratio (MRR) between unvaccinated and vaccinated (any vaccine) children in the SAGE- reviewed studies. Results: In the five studies of DTP with a poorly defined control group with frailty or survival bias, the "bias indicator" was between 2 and 8 and the estimated effect of DTP was 61% (17-82%) lower mortality. In the eight studies which had determined "unvaccinated" by vaccination card or register data, the bias indicator was between 0.5 and 1.7; the effect of DTP was a 100% (50-167%) higher mortality. Available data indicate that the healthiest children are vaccinated first and DTP-vaccinated children have therefore inherently a lower mortality rate. Discussion and conclusions: In conclusion, the inconsistent results are due to differences in methodology. Commonly considered biases cannot explain the higher mortality associated with DTP. 15 years ago we reported DTP to be associated with significantly higher mortality. This has still not been disproven.

Title: An Integrated Surveillance platform for the evaluation of vaccine programmes in sub-Saharan Africa
Speaker: Ifedayo Adetifa, Kilifi HDSS, Kenya
Co-author: Ifedayo MO Adetifa Tahreni Bwanaali Jackline Wafula Alex Mutuku Boniface Karia Anne Makumi Pauline Mwatsuma Evasius Bauni Laura L Hammitt Sa

Abstract: Introduction: Over the last decade, there has been an unprecedented expansion of routine childhood vaccination and rapid introduction of new vaccines in developing countries. To assure long-term sustainability, funding mechanisms such as GAVI, the Vaccine Alliance and recipient countries will need evidence of effectiveness and cost effectiveness of new vaccine programmes. Good quality epidemiological data are needed to inform vaccination policy at national level and to assure society vaccine programmes are safe. Data and Methods: Integrated surveillance systems linking continuously updated demographic data from a population of interest to complete and accurate vaccination records for a catchment population; and morbidity records for vaccine preventable diseases can provide the required epidemiological data. Unfortunately, only a few GAVI supported countries have the national surveillance systems required to assess vaccine impact, effectiveness and safety. Results: Here we describe, the Kilifi Vaccine Monitoring System (KIVMS), a unique integration of a health and demographic surveillance system (HDSS) with a vaccine registry and morbidity surveillance system. It is a generic platform that can be used to examine effectiveness, impact, coverage, safety and indirect vaccine effects. It can also be used to explore the determinants of vaccine coverage and acceptability. The system is built on the platform of the Kilifi HDSS and is transferable to HDSS in other settings. It has been used to evaluate Haemophilus influenza b conjugate vaccine and currently supports the Pneumococcal Conjugate Vaccine Impact Study in Kenya. Discussion and conclusions: HDSS sites across the developing world can be networked and outputs standardized to optimise the efficiency of results from vaccine monitoring systems. If properly done, high epidemiological standards will be achieved producing credible results produced that are generalizable across Africa and elsewhere.

DAY ONE: Wednesday, 11th November 2015

Parallel Session 4B: Population and Health Policies (1)

Venue: Tana Hall 2

Title: Effectiveness of an integrated chronic disease management model in improving patients' health outcomes in rural South Africa: a controlled interrupted time-series analysis
Speaker: Soter Ameh, Agincourt HDSS, South Africa
Co-author: Francesc Xavier Gómez-Olivé Kathleen Kahn Kerstin Klipstein-Grobusch

Abstract: Background: South Africa faces a dual burden of HIV/AIDS and non-communicable diseases. In 2011, a pilot Integrated Chronic Disease Management (ICDM) model was introduced by the national health department into selected Primary Health Care (PHC) facilities, one of the first of such efforts by an African ministry of health. This study assessed the effectiveness of the ICDM model in improving key health outcome indicators, blood pressure (BP) and CD4 counts, of patients treated in PHC facilities in the rural Bushbuckridge sub-district of Mpumalanga province. Methods: A controlled interrupted time-series study was conducted from 2011 to 2013. Patients ≥ 18 years were recruited by proportionate sampling from the ICDM pilot (n=435) and comparison (n=443) facilities. Health outcome data for each patient were retrieved from facility records at 30-time points. The effect of the ICDM model on the control of BP (<140/90 mmHg) and CD4 counts (>350 cells/mm^3) was assessed by controlled segmented linear regression analysis. Individual- and facility-level factors associated with BP and CD4 count control were determined by multilevel logistic regression analysis. Results: The number of patients with controlled CD4 count increased month-on-month by 1.8% (95% CI: 1.09-2.43) in the ICDM pilot and 0.4% (95% CI: -0.28-1.02) in the comparison facilities. There was a 1.6% (95% CI: -0.97-0.12) and 0.6% (95% CI: -1.22-0.001) month-on-month decrease in the number of patients with controlled BP in the ICDM pilot and comparison facilities, respectively. The odds of controlling BP were high with increasing age and female gender while the odds of controlling CD4 count were increased by utilising care at the ICDM pilot facilities and female gender. Conclusion: Application of the ICDM model appeared effective in controlling CD4 count but not for BP control, suggesting that the HIV programme should be more extensively leveraged for hypertension treatment in health facilities in South Africa.

Title: The state of enrolment on the National Health Insurance Scheme in a rural Ghana after nearly a decade of implementation
Speaker: Anthony Kwarteng, Kintampo HDSS, Ghana
Co-authors: James Akazili Paul Welega Jane Goudge Philip Ayizem Dalinjong Kwaku Poku Asante Doris Sarpong Samuelina Arthur Seth Owusu-Agyei Martin Bangha Osman Sankoh

Abstract: Background: In 2004, Ghana implemented a national health insurance scheme (NHIS) as a step towards achieving universal health coverage. In this paper, we assessed the level of enrolment in the NHIS in two districts of northern Ghana after a decade of implementation, with a focus on the poor and vulnerable. Methods: A cross-sectional survey was conducted from July to December 2012 among 11,172 households, randomly sampled from the database of Navrongo Health and Demographic Surveillance System. With heads of

household as respondents, information on NHIS membership, household assets and housing characteristics were obtained using structured questionnaire. Using principal component analysis, household were categorized into wealth quintiles. The enrolment status of individual household members was evaluated against their socio-economic status (SES) and other factors. Results: Of the 55,853 individuals from the sampled households, 86.7% live in a rural setting, about 25% had no formal education and same belong to the poorest SES. About two thirds of the population reported having a valid NHIS card (63.3%), half of these were from the informal sector (52.9%) whilst the formal sector had 2.7%. Those exempt from paying premiums (i.e. children under 18 years, adults over 70 years, pregnant women and the poor) constituted 44.4%. Although exemptions were predominately meant for the poor, only 1.1% (159/14,126) of those in the poorest SES were actually exempted. Moreover, 81.8% of those who failed to renew and 93.8% of those never enrolled on the scheme said that the cost of premium was the main barrier. The multivariate regression analysis showed that those with higher education, better SES and lived in the urban areas were significantly more likely to be enrolled on the scheme. Conclusions: Despite the cost of premium being the main barrier to NHIS membership, the poor was rarely identified for exemption much to the advantage of other vulnerable groups. The government must urgently resource the Department of Social Welfare to identify the poor for NHIS membership as an equity measure.

Title: Objectively assessed physical activity and associated factors among adults in peri-urban and rural Uganda
Speaker: Barbara E. Kirunda, Iganga-Mayuge HDSS, Uganda
Co-authors: Lars T. Fadnes Henry Wamani Jan Van den Broeck Thorkild Tylleskär

Abstract: Background: Physical inactivity is a risk factor of growing importance for non-communicable diseases in low- and middle income countries. Yet, data on physical inactivity and its associated factors in sub-Saharan Africa, is almost absent. We assessed physical activity patterns and factors associated with physical inactivity among adults in peri-urban and rural Uganda. Data and methods: A population-based study of 1,208 randomly selected adults aged ≥ 18 years was conducted in the Iganga-Mayuge Health and Demographic Surveillance Site, eastern Uganda. Physical activity was assessed in each individual using an accelerometer-pedometer for 7 consecutive days. We dichotomized physical activity into 'physically active' for a daily average of at least 7,500 steps and 'physically inactive' for a daily average of <7,500 steps. Logistic regression was conducted to identify factors associated with physical inactivity. Preliminary results: Of the participants, 37.6% were physically inactive (28.5% of men; 46.6% women, p<0.001). Physical inactivity was higher among older age groups 55-64 years (46.3%) and ≥ 65 years (59.3%) compared to 18-24 years, p<0.001. Physical inactivity was higher among peri-urban compared to rural residents (54.0% versus 32.2%, p<0.001). Physical inactivity was higher among overweight (47.9%) and obese participants (66.3%) compared to normal weight participants (31.9%), p <0.001. Factors associated with physical inactivity were being female adjusted odds ratio (AOR) 2.1 [95% confidence interval (CI) 1.6-2.8], older age 55-64 years AOR 2.1 [1.3-3.5], ≥ 65 years AOR 4.2 [2.6-7.0], peri-urban residence AOR 2.5 [1.9-3.2], overweight AOR 1.6 [1.2-2.2] and obesity AOR 2.5 [1.5-4.1]. Discussion and conclusion: Physical inactivity was prevalent among adults in this area. Being physically inactive was associated with female sex, age 35 years and older, peri-urban residence, overweight and obesity. Context specific interventions are needed to promote physical activity.

Title: Alcohol, tobacco and drug use among young people in rural coastal Kenya: a three way assessment of the situation
Speaker: David Barney Walumbe, Kilifi HDSS, Kenya
Co-authors: Mark Otiende Christopher Nyundo George Mochamah David Ross Tom Williams Aoife Doyle Evasius Bauni

Abstract: Background: Young people (10-24) in Kilifi comprise 33% of the population but the various health problems affecting them are not well understood. We interviewed various stakeholders and key-informants, and conducted a community cross-sectional survey of young people to identify and assess important health problems. We report on alcohol, tobacco and drug use. Objective: To assess the situation of alcohol, tobacco and drug use among young people in Kilifi. Methods: Three different approaches that were used to identify health problems faced by the young people include: focus-group discussions with stakeholders (4) and ten in-depth interviews with key-informants were used to identify the problems, and a cross-sectional health survey of young people aged 13-24 years to measure the magnitude of the problems. The recorded in-depth interviews were successfully transcribed and analysed with IN-VIVO. The main findings were summarized in several themes. Results: A total of 1,524 young people aged 13-24 were interviewed. From the focus group discussions and indepth interviews, drugs and substance abuse emerged as the second important health problems after irresponsible risky sexual behaviour. By age 13, 11% had started taking, at least once in the past one month and 3% smoking cigarettes respectively. The prevalence of alcohol consumption, cigarette smoking and other drugs was 9%, 6% and 5% respectively. By age 13, 17% of males were taking alcohol compared to 4% of their female counterparts, 3% and 1% of males and females had started using drugs respectively. Majority (60%) were light drinkers (1 or less drinks) but 8% binged (5 or more drinks for males and 4 or more drinks for females) Most young people either bought (42%), or were given alcohol by friends (32%) (32%). Conclusion: The early age at which young people indulge in alcohol, tobacco and drug use has implications to youth programmes providing targeted preventive services.

DAY ONE: Wednesday, 11th November 2015

Parallel Session 4C: Socio-economic disparities

Venue: Safari Hall

Title: Under five mortality and its predictors in Gilgel Gibe Health and Demographic Surveillance System Site
Speaker: Fasil Tessema, Gilgel Gibe HDSS, Ethiopia

Abstract: Background**:** In spite of global decline in under-five mortality, the goal of achieving MDG 4 still remains largely unattained in low and middle income countries as the year 2015 closes-in. To accelerate the pace of mortality decline, proven interventions with high impact need to be implemented. This paper estimates mortality rates and identify potential predictors of under-five mortality. Methods**:** Data for this analysis is extracted from the Gilgel Gibe Field Research Centre Health and Demographic Surveillance System database that

employed an open-cohort design with biannual population update through the registration of birth, death and migration. Total of 5,446 live births from 2006 to 2008 were included for the analysis with a maximum follow-up period of five years. The Kaplan and Meier method was used to estimate mortality rates and the Cox proportional hazards model was used to identify predictors of under-five mortality. Results**:** During the follow-up period 554 children died before celebrating the fifth birth day that gave an under-five mortality rate of 104.2 per 1000 person years with neonatal and infant mortality rates of 44.8 and 75.6 per 1000 person years. Among the household, individual and residence variables considered as potential factors, rural residents, households with no toilet facility and soap in the house, older mothers (30-34 & 35+ years old compared with 25-29 year olds), multiple births and being boy had a significantly higher risk of death throughout the observation period compared to their counterparts. Conclusion and recommendation**:** The rates of infant and under five mortalities remained high in the surveillance population. Emphasis should be given for rural children as they are mostly at disadvantage in terms of health services and others than that of urban. In addition, as sanitation is the most important factor for the reduction of the main killers of children like diarrhoeal diseases, households should be encouraged and supported to construct toilet facilities that include pit latrines and have soap in the house for keeping personal hygiene of children and other family members.

Title: Trends in socio-economic disparities in a rapid under-five mortality transition? Findings from a longitudinal study in rural Tanzania
Speaker: Almamy Malick Kante, Ifakara HDSS, Tanzania
Co-authors: Rose Nathan Elizabeth Jackson Francis Levira Stephane Helleringer Honorati Masanja James Phillips

Abstract: Introduction: This study explores trends in social and economic disparities in under-five mortality rates (U5MR) in three rural districts of Tanzania between 2000 and 2011, a time of rapid mortality decline. Using longitudinal data from Health and Demographic Surveillance Systems in Rufiji district and Ifakara (Kilombero and Ulanga districts), this study assesses disparities in the cumulative probability of death among under age five children by maternal educational attainment and household socioeconomic status while the decline in childhood mortality progressed. Methods/Data: on births, deaths, and migrations were prospectively recorded in 120-day home visitation rounds since 2000 in Ifakara and Rufiji where the 2011 surveillance population was about 190,000 individuals. Maternal educational attainment and household characteristics were compiled annually. Time-conditional multivariate hazard regression models were estimated to derive net time period conditional effects of covariates on the U5MR. Results: The U5MR declined by half in Ifakara from 132.7 [119.3-147.4] in 2000 to 66.2/1,000 [59.0- 74.3] in 2011 and by one-third in Rufiji, from 118.4 [107.1-130.7] to 76.2/1,000 [66.7-86.9]. Mortality disparities by socio-economic status persisted despite this decline, however. By comparing mortality between maternal educational attainment, results showed that disparities were reduced over time in Ifakara as well as in Rufiji. Regarding wealth-based mortality disparities, results showed opposite patterns between the two HDSS areas. In Ifakara, mortality disparities between children living in least poor households and those living in poorer quintiles of households lessened over time. In Rufiji however, wealth-based disparities in mortality widened significantly over time. Conclusion: While improvement in childhood survival in rural Tanzania is evident, the mortality disparities between poor and least poor have widened over time in Rufiji and remained constant in Ifakara. Such findings attest to the need for policies and programs that not only reduce child mortality, but also address disparities by social and economic factors.

Title: Survival Benefits of Childhood Vaccinations: WHO schedule versus BCG, OPV and Penta1 combined
Speaker: SM Manzoor Ahmed Hanifi, Chakaria HDSS, Bangladesh
Co-authors: Henrik Ravn Abbas Bhuiya Peter Aaby

Abstract: Background: WHO recommended BCG given with oral polio vaccine (OPV) at birth, Penta and OPV at 6,10 and 4 weeks of age and measles vaccine (MV)and OPV at 9 months of age - the national EPI policy of Bangladesh does not always follow this schedule. BCG and OPV and Penta1 are often given together which we shall the “BCG and Penta combined” schedule in contrast to the “WHO schedule”. The health implications of the change in sequence have so far not been examined. We examined their effect on child survival using data recorded from a comprehensive surveillance in Chakaria, Bangladesh. Methods: Survival analysis was done for 7,546 children between 6 weeks and 9 months of age when measles vaccine would usually be given. Mortality rate ratio was compared between children received BCG with OPV and BCG, OPV and penta1 combined. There were 58 deaths between 6 weeks and 9 months of age. Results: Ninety six percent of children between 6 weeks and 9 months of age was vaccinated either BCG or PV1. Among the children who received vaccine, 32% (2290) of infants received with WHO sequence (BCG<PV1) and 62% (4525) of children received BCG and PV1 combined. The mortality rate between 6 weeks and 9 months of age was 8.7/1000 for children who followed WHO sequence where as it was 6.5/1000 for children who received BCG and PV1 combined. The effects after adjusting for background factors receiving BCG<PV1 were associated with higher mortality than children receiving BCG and PV1 simultaneously, MRRs being 1.65 (0.73-3.74). Interpretation: This finding indicates that focusing only on increasing coverage may not be sufficient to improve child survival, sequence of vaccination and their impact on health of the children also need to be closely monitored. Keywords: Sequence of vaccination, mortality, infant, Bangladesh.

Title: Spatial variation in risk factors of under-5 mortality in two urban informal settlements in Kenya
Speaker: Maurice Mutisya, Nairobi HDSS, Kenya
Authors: Cheikh Faye Patricia Elungata Donatien Beguy

Abstract: Background: Under-five mortality in Kenya is often associated with individual level factors including socio-economic status, nutritional status, and poor access to health services. Geographical factors are less documented as important predictors of child mortality in Kenya. There is a need to refine estimates and correlates of under-five mortality, accounting for spatial variations of risk factors. Using a Bayesian geo-additive survival model, this study aims to identify predictors of under-five mortality in two slums in Nairobi city, Korogocho and Viwandani, accounting for spatial random effects at the village level. Data and methods: Longitudinal data

from the Nairobi Urban Health and Demographic Surveillance System that runs in Korogocho and Viwandani slums were used. This paper utilizes data collected from the fourteen villages in the two slums between 2006 and 2011 for a total of 30339 under-5 children. A spatial analysis was carried out using a Geo-additive regression model in BayesX. The Geo-additive regression model estimates the risks of death within a village, taking into consideration the neighboring spatial effects. Preliminary results: In addition to determinants such as mother's education and age of the household head, size of the household and ethnicity, our findings show a clear spatial structure in under-5 mortality at the village level. In particular, spatial differences in child mortality risk were strongly evidenced between some villages in Viwandani slum while no spatial variations were observed in Korogocho. Discussion and conclusion: These findings call for specific efforts from policy makers and health authorities in Kenya to refine maternal and child health programs in view of the urban slum's distinctiveness and their important population. Targeted actions to reduce child mortality in Korogocho and Viwandani slums should be given priority to diminish social inequities and ensure socio-economic development in the Kenya capital is not hampered.

Title: A qualitative investigation on community perceptions regarding routine vaccinations in Nouna, Burkina Faso: reasons for incompleteness or non-vaccination
Speaker: Moubassira Kagone, Nouna HDSS, Burkina Faso
Co-authors: Kagon M. Ya M. Nabi E. Beiersmann C Sie A Muller O

Abstract: Background: Vaccination has contributed to major global reductions in morbidity and mortality. The interrelation between population and health systems, the way that the vaccination information is given to the community, and the organization of the health team during the vaccination sessions may play a major role in explaining vaccination completeness or refusal. Data and methods: The study was conducted in the area of the Nouna Health and Demographic Surveillance System (HDSS) from March to April 2014, in rural Burkina Faso. We employed a combination of in-depth individual interviews (n=29) and focus group discussions (n=4) including mothers of children, health workers, godmothers, community health workers and traditional healers. All material was transcribed, translated and analyzed inductively using the software ATLAS.ti4.2. Preliminary results: There was a better social mobilization in the rural compared to the urban area. Most of mothers know the EPI target diseases, but the great majority of informants reported that the mothers don't know the vaccination program. Nearly all respondents indicated that mothers of children know the importance to immunize the children. There is awareness that some children are incompletely vaccinated. Reasons mentioned for this were migration, mothers being busy with their work, the number of children required to open a vaccine vial (e.g. the strategy of not opening a BCG vial unless 10 children are present), poor interaction between women and health workers during immunization sessions, potential adverse events associated with vaccination, geographical inaccessibility during rainy season, and lack of information. Discussion/conclusion: Well organized vaccination programs are an important factor for the improvement of child health and need to consider community perceptions. In Burkina Faso programs appears to be better organized in rural compared to urban areas.

DAY TWO: Thursday, 12th November 2015

Plenary Session 5: Transition and its implications post 2015

Venue: SABA Hall

Title: Use of linked hospital-based morbidity surveillance to explain trends in mortality in Kilifi Health and Demographic Surveillance System
Speaker: Amare Deribew, Kilifi HDSS, Kenya
Co-authors: Jennifer C Mosi D. James Noke Evasius Bauni Mark Otiende Christopher Nyundo Lilian Mwango John Ojal Kevin Marsh Robert W.

Abstract: Background: The Kilifi Health and Demographic Surveillance System (KHDSS) is the largest population under continuous mortality surveillance in tropical Africa. Admissions to Kilifi County Hospital, the only inpatient facility in KHDSS, are linked to the KHDSS population register creating passive morbidity surveillance. We analysed the cause-specific incidence of hospital admissions and prevalence to interpret mortality trends in the KHDSS. Methods: We studied all deaths in children and adults and all childhood (<5 years) admissions among residents of KHDSS from January 2004 to December 2013. We estimated mortality rates as the number of deaths divided by the person-years-at-risk (PYAR) of KHDSS residents during each study period. We used ecological regression analyses of observations from 15 locations in each of 10 years to estimate the association between admission rates and prevalence for major infectious diseases and child mortality rates. Results: Among 2,449,153 PYAR in all ages, 13,615 deaths were observed; among 450,632 PYAR in children aged <5 years, 3592 deaths occurred (rate 8.2/1000/y). Mortality rates in children, infants and neonates declined by approximately 53% between 2004 and 2008 but remained stable subsequently. Mortality rates also declined for older children and young adults but not for individuals over 50 years of age. The admission rates of neonatal syndromes remained stable throughout the study period. Admission rates for severe malaria among infants (1-12m) and children (1-4 years) declined by 93% and 72%, respectively, between 2004 and 2008 but remained stable subsequently. By contrast, admission rates for severe pneumonia, invasive bacterial disease (IBD) and acute diarrhoeal diseases declined steadily throughout the whole period. Examining historical data from 1994-6, mortality in children aged 1-59 months fell by 89% over 20 years whilst malaria prevalence declined by 97%. In ecological analyses from 2004-2013, childhood mortality was significantly associated with both prevalence of malaria and incidence of hospitalised malaria; under-5 year mortality increased by 11·5/1000 PYAR for each 10 percentage points increase in the background prevalence of malaria. Conclusions: Mortality rates declined precipitously in children and young adults but not in those aged >50 years. Although admission rates for most infectious diseases in children have declined steadily throughout this period, those for malaria most closely reflect the biphasic pattern of mortality reductions.

Title: Childhood mortality, childhood morbidity, and subsequent fertility decisions
Speaker: Marwan-al-Qays Bousmah, Niakhar HDSS, Senegal

Abstract: Background: The effects of childhood mortality and morbidity on the fertility decision-making process are analyzed using longitudinal micro data from a Senegalese rural community, for the period 1984-2011. We are able to identify the causal effect of individual child mortality, and also that of community child mortality and morbidity, on subsequent

fertility choices. Results: The results provide consistent support for both the child-replacement hypothesis and the precautionary demand for children. We find that community child mortality and morbidity attributable to malaria, which capture exogenous changes in the epidemiological context, exert a joint influence on fertility behaviours. Community-level malaria incidence among children has a positive effect on subsequent fertility choices, and this positive effect is stronger the more the disease is fatal to children who are infected. Conclusion: We argue that the persistently high childhood disease incidence is not responsible per se for sub-Saharan Africa sluggish demographic transition. Rather, childhood morbidity contributes to the slow transition to the extent that uncertainty about child survival remains a major concern in the region.

Title: Elimination of measles by 2020 and the non-specific effects of measles vaccine on child survival
Speaker: SM Manzoor Ahmed Hanifi, Chakaria HDSS, Bangladesh
Co-author: Henrik Ravn Abbas Bhuiya Peter Aaby

Abstract: Background: The Global Measles and Rubella Strategic Plan 2012-2020 has targeted the eliminate measles and rubella by 2020. It is very likely that measles immunization will be stopped or scaled down once this target is met. The current study thus aims to investigate the effect of measles vaccine on child survival in a rural area of Bangladesh. Methods: A cohort of 6156 children born between 2011 and 2014 was followed for survival from 9 to 35 months of age. Morality rate was compared between the children who received measles vaccine and who did not. Further a cause of death analysis was also carried out using verbal autopsy data. InterVA was used to ascertain the cause of death and a total 47 deaths were observed; accidental deaths (12), unspecified neoplasm (1) and epilepsy(1) cases were excluded from the mortality rate analysis. Results: The mortality rate was lower for the vaccinated group compared to those unvaccinated resulting in a Mortality Rate Ratio (MRR) of 0.68 (0.30-1.55). The reduction in mortality was more marked for females (MRR: 0.45(0.17-1.28) than for males (MRR: 1.20(0.30-4.41). Results from the verbal autopsy of the 47 death cases observed found no death due to measles. Apart from 12 accident, one neoplasm, and one epilepsy cases, rest of the deaths was mostly due to malaria (8), pneumonia (7), diarrhea (6), pertussis(1) , meningitis (1), indeterminate (3) , and missing (7). Conclusions: None of the death cases observed was due to measles. These findings highlight the importance of measles vaccine for reasons beyond elimination of the disease itself. Further research is required before a decision to abandon measles vaccine following the probable elimination of the disease is made.

Title: The potential of the INDEPTH network to contribute towards urgently needed data for the SDG a case study from the Agincourt HDSS
Speaker: Wayne Chilton Twine, Agincourt HDSS, South Africa
Co-author: Tor Vagen Anja Gassner Leigh Winowiecki

Abstract: Background: As the SDGs/post 2015 debate is coming to final negotiation and agreements, critics have pointed out that providing badly needed data for the new targets might be an impossible task. The Copenhagen Consensus estimated that the cost would be twice the total annual spend on Official Development Assistance. In light of this, using existing longitudinal data initiatives, like the INDEPTH Network, is crucial. The present paper is a proof-of-concept of using HDSS datasets to quantify links between natural resources and human wellbeing. Data and methods: We chose the Agincourt HDSS in South Africa because of the availability of natural resource use and food security data, and because it is located in sub-Saharan Africa, which faces the co-varying development challenges of poverty, food insecurity and vulnerability to climate change. Data were obtained from the household food security module (2004, 2007 and 2010), socio-economic status module (every second year), and household composition data from the annual census for 14,000 households. We quantified the relationship between food security and use of fruit trees (indigenous and domestic) in homestead gardens and ploughed fields, using mixed-effects models. The influence of spatial variability in environmental parameters was also explored. Preliminary Results: Households were significantly and substantially more likely to have indicated having produced enough food throughout the year if they used fruit trees in their gardens and fields, after controlling for the significant negative effect of having a female head, and the influence of rainfall zone. Similarly, households that used fruit trees in their yards were less likely to have experienced food shortage in the past month. Discussion and conclusion: These exploratory analyses demonstrate the potential value of HDSSs to provide data needed for addressing development goals. Our findings point to the importance of natural resources for wellbeing, such as food and nutritional security.

DAY TWO: Thursday, 12th November 2015

Parallel Session 6A: Maternal and child health

Venue: Tana Hall 1

Title: Utilization of Postnatal Care in Southern Ghana: evidence from the Dodowa HDSS
Speaker: Kenneth Nartey**,** Dodowa HDSS, Ghana
Co-authors: Emmanuel Kwame Darkwa Alfred Kwesi Manyeh Gabriel Odonkor Margaret Gyapong

Abstract: Background: The postnatal period begins immediately after the birth of the baby and extends up to six weeks after birth. This period is critical to the health and survival of a mother and her newborn. Lack of care in this time period may result in death or disability as well as missed opportunities to promote healthy behaviours, affecting women, newborns, and children. This paper is aimed at assessing the utilization of timely postnatal care and its associated factors in southern Ghana. Methods: The data was extracted from postnatal care (PNC) data collected in 2013 as part of HDSS routine data collection. Mothers who delivered in the past 6 months were interviewed. Multiple logistic regression analysis was performed to ascertain the factors determining postnatal care utilization. Results: Among 2,695 mothers who delivered, 89.5% received postnatal check-up within 48 hours of delivery. Majority received postnatal care from health facilities (82.7%) whilst only 10.3% received from TBA Home. The reasons why mothers sought postnatal care are; ensuring good health care (76%), health-worker recommendation (6.2%) and mother's health difficulties (5.8%). The reasons for not obtaining postnatal care are that; PNC is not necessary (45.4%), followed by PNC is not customary (12.3%), mother not informed by health worker (8.5%) and lack of money (6.3%).The number of antenatal visits, mothers education, place of delivery, person conducting delivery were significantly associated (P<0.005) with utilization of post natal

check-up. Conclusion: The findings highlight the need for coordinated effort from policy makers to improve women's education. Furthermore, there is the need to encourage early utilization of antenatal and scale up postnatal care services backed by improved and equitable access, availability and quality of skilled delivery care services.

Title: Cause of deaths (2008-12) among neonates: an experience from CRHSP Ballabgarh
Speaker: Shashi Kant, Ballabgarh HDSS, India
Co-authors: Sanjay K Rai Priti Gupta Rahul Srivastava Puneet Misra CS Pandav

Abstract: Introduction: Neonatal mortality rate contributes a major proportion of infant and child mortality and hence reducing neonatal morality could have a large impact on infant and child mortality. Present study was conducted to assess the causes of neonatal deaths at Ballabgarh Health and Demographic Surveillance System (HDSS) site. Methods: Present study is a secondary data analysis of cause neonatal mortality in Ballabgarh HDSS. All neonatal deaths from 1st January 2008 to 31st December 2012 were included in the study. Cause of death was ascertained by verbal autopsy questionnaire for neonates. Cause specific mortality rate (CSMR) was calculated for all neonatal causes of deaths. Contributors to infant deaths were assessed by using social autopsy questionnaire for neonatal deaths in 2012 and were analysed using a three delay model. Results: A total of 9,647 live births occurred in the study area during the period of 2008 to 2012. Amongst the live births, 216 resulted in neonatal mortality. The neonatal mortality rate ranged from 23.3 per 1000 live births in 2008 to 28.5 in 2010. Most common cause for neonatal deaths were birth asphyxia and birth injuries (32%) followed by low birth weight and prematurity (23%). Next in order were other infections and sepsis (11%), pneumonia (9%) and congenital malformation (8%). No statistical difference was observed for various cause specific mortality rates among males and females. Most common level of delay observed was 1st level delay followed by 3rd level delay. Conclusions: In-spite of high level institutional deliveries in the HDSS area, most common cause of mortality was birth asphyxia and birth injuries.

Title: Neonatal mortality and causes of death in Kersa Health and Demographic Surveillance System in the period from 2008-2013
Speaker: Nega Assefa, Kersa HDSS, Ethiopia
Co-author: Yihune Lakew Haji Kedir

Abstract: Background: Neonatal deaths account for 40% of under five deaths in the world. The majority of neonatal deaths occur in developing countries outside of the formal health care system. Neonatal deaths were grouped either childhood or perinatal which is difficult to identify specific causes of neonatal deaths. This study is intended to estimate neonatal mortality rates and identify leading causes of death using surveillance data over six years period in Kersa health and demographic surveillance system (HDSS) site, eastern Ethiopia. Methods: Kersa HDSS site was established in 2007 to follow an open dynamic cohort populations. The surveillance was started with baseline census followed by population update and events registration on house-to-house visits in every six months. Subsequently, any causes of death in the population were identified using VA method by physician reviewers. Results: During the period from 2008 to 2013, a total of 301 neonatal deaths were registered from a total of 10934 live births. The overall neonatal death rate in the study period was 27.5 per 1000 live births. Nearly all neonatal deaths (94%) occurred at home and the remaining was at hospital and health centres. Higher than four-fifth (82.4%) of the deaths occurred in the first week of birth and the rest were in three weeks of neonatal period. Although it shows persistent decline, the patterns of neonatal and early neonatal death rates over the study period was significantly higher than late neonatal death rates. More than 80% of the deaths were due to perinatal causes. Bacterial sepsis of the newborn predominantly accounted for 31.2% followed by birth asphyxia and perinatal respiratory disorder (28.2%), and prematurity (17.3%). Higher concentration of death was detected in two villages of southern parts of the study site. Conclusion: Declining pattern of neonatal death rates was observed. Early neonatal death rates were significantly out wait from late neonatal death rates over the study periods. Male newborn deaths were significantly higher than female newborns. The leading causes of neonatal death were bacterial sepsis of newborn and birth asphyxia. The occurrence of neonatal mortality in the first seven days of life at home and its leading cause being birth and perinatal asphyxia imply that community-based care for delivery and immediate postnatal care need to be strengthened.

Title: Teenage Pregnancy and Adverse Birth Outcome in Rural West Bengal, India
Speaker: Saikat Majumdar, Birbhum HDSS, India
Co-author: Ashoke Gorain

Abstract: Background: With a population of over 1.25 billion, teenage pregnancy remains a grave concern for the Indian public health system. If conceived, teenagers face a greater risk of obstetric complications as compared to women in their twenties. Coupled with poor socio-economic status, a suboptimum prenatal care poses even greater risk of prospective teenage mothers and their children. The objective of this study was to compare obstetric outcomes of pregnancy in teenagers and older women. Data and methods: During January 2011 to 2013, an antenatal and postnatal tracking survey was conducted at the Health and Demographic Surveillance System, Birbhum (HDSS-BIRPOP), India. Total sample of 2719 women were sampled to compare teenagers (aged <19 years) with older (aged 19-35 years) women. Possible adverse birth outcomes taken into consideration were low birth weight (LBW), abortion, and still births. Socio-economic and demographic variables were statistically tested whether they are associated with the birth outcomes. Results: Of total mothers, over 21.5% were teenagers experiencing at least one pregnancy during the tracking survey. Over 17% of these teenagers delivered LBW babies, whereas the estimate was lower (15%) for older women. Among teenagers, the 7.7% had abortion and 1.9% had stillbirths, whereas 5% and 1.6% of older women had abortion and stillbirths respectively. Odds ratio from multivariate logistic regression suggests that teenagers are more likely to experience adverse birth outcome. Conclusions: Teenage pregnancy was significantly associated with a higher risk of LBW, abortion, and Stillbirths. Despite various legislations and government programmes, teenage pregnancies are still a common occurrence in rural India. Keeping with the socio-economic gradient of the community, a household based intervention should be designed to educate family members to prevent early marriage, which will in turn help curbing teenage pregnancy and its associated adverse birth outcome.

Title: Does it matter the type of fuel we use for cooking in our household? The effects of cooking fuel on pregnancy outcome
Speaker: Solomon Ayertey Narh-Bana, Dodowa HDSS, Ghana
Co-authors: Vida Ami Kukula Gabriel Odonkor Alfred Manyeh Margaret Gyapong

Abstract: Background: Worldwide, cooking fuel was found to play a potential role in birth outcome. A child is described as having a low birth weight (LBW) if s/he weighs less than 2.5kg when s/he is born. Factors including smoke from most widely used cooking fuel, wood, has been found to play a potential role in birth weight. Our objective was to examine the effects of households fuel use on birth weight, miscarriage and stillbirth in southern Ghana. Data and Methods: We analyzed secondary data from DHDSS in Ghana from 2010 to 2012. Information on household socioeconomic data including main fuel for cooking and pregnancy outcome was available for the analysis. Type of cooking fuel was classified as high (wood, straw, kerosene and charcoal) and low (electricity, liquid petroleum gas) pollution. Independent logistic regression was employed to examine factors available in the data for LBW, Stillbirth and Miscarriage using STATA 12.0. Results: Total of 2,171 pregnancy outcomes were identified over the period. Compared to women who use low pollution fuel (n=268), high pollution fuel users (n=1752) were 1.4 times more likely to deliver babies with weight less than 2.5kg (95% CI: 1.08 -1.90), more likely to get miscarriage (AOR 2.33, 95% CI: 0.71-7.61) and are 1.2 times more likely to have Stillbirths (95%CI: 0.57-2.60) after adjusting for socio-demographic factors of the woman and the child. In the LBW logistic regression model, child's sex, mother's age and mothers who trade were found to be significant. The mother's occupation and religion at different levels were associated with Miscarriages and child's sex and woman farmer were associated with Stillbirths. Conclusions: Use of high pollution fuel for cooking is associated with low birth weight but insignificantly associated with stillbirth or Miscarriage which are consistent with growing literature displaying the effect of cooking fuel on pregnancy outcomes.

Title: Country Characteristics and Variation in Neonatal Mortality across 49 sub-Saharan African Countries
Speaker: Gbenga Ayodele Kayode, Julius Global Health, Julius Centre for Health Science, Netherlands
Co-authors: Diederick E Grobbee Mary Amoakoh-Coleman Evelyn Ansah Olalekan A. Uthman and Kerstin Klipstein-Grobusch

Abstract: Background: Achieving a substantial reduction in neonatal mortality is the main priority to actualize Millennium Development Goals 4 especially in sub-Saharan Africa that has the highest rate. Having a clear understanding of variation in neonatal mortality and the underlying causes is important for targeted intervention. This study aims to explore variation in neonatal mortality and to identify underlying causes of neonatal mortality in sub-Saharan Africa. Methods: This ecological study used publicly available data from the World Health Organization, United State Agency for International Development and World Bank. We explored variation in neonatal mortality across 49 sub-Saharan African countries using control chart and explanatory spatial data analysis. Association between country-level characteristics and neonatal mortality was examined using linear regression analysis. Results: The results of the control chart showed that 55% (n=27) of sub-Saharan Africa countries exhibited special-cause variation (unexpected variations), 13 countries were below the average and 14 countries were above the average. The remaining 45% (n=22) showed common-cause variation (expected variations). No spatial clustering was observed for neonatal mortality (Global moran's I statistic = -0.0925; P-value =0.7393; Geary's C statistic = 1.0640; P-value = 0.7116). Linear regression analysis showed HIV/AIDS prevalence among people of reproductive age to be positively associated with neonatal mortality (Î² 0.463; confidence interval 0.135 to 0.790; P-value < 0.01). Declining socioeconomic deprivation (Î² -0.234; confidence interval -0.424 to -0.044; P-value < 0.05) and good performance in health governance (Î² -1.327, confidence interval -2.073 to -0.580; P-value < 0.01) were inversely associated with neonatal mortality. Conclusion: This study showed a wide geographical variation in neonatal mortality among 49 sub-Saharan African countries; we found no evidence spatial clustering. A substantial part of the variation in neonatal mortality could be explained by the differences in the health governance performance, prevalence of HIV and socioeconomic deprivation across sub-Saharan African countries.

DAY TWO: Thursday, 12th November 2015

Parallel Session 6B: Clinical Trials

Venue: Tana Hall 2

Title: Treatment Outcomes in an observational study to evaluate the safety after the administration of a fixed-dose Artemisinin-based Combination Therapy, Eurartesim (dihydroartemisinin/piperaquine [DHA/PQP]) in public health facilities in 4 sub-Saharan African countries
Speaker: Alexander Adjei, Dodowa HDSS, Ghana
Co-author: Solomon Narh-Bana Alberta Amu Richard Nagai Afedi Vida Kukula Seth Owusu-Agyei Abraham Oduro Bernard Ogutu Rita Baiden Fred Binka Margaret G

Abstract: Background: Dihydroartemisinin-piperaquine (DHA-PQ) is one of the five WHO recommended ACTs for the treatment of uncomplicated malaria. DHA-PQ provides a longer post-treatment prophylactic effect against re-infection and new infections; however, new infections have been reported within few weeks of treatment. Objective of this paper is to report the clinical outcomes of DHQ-PQ under real life conditions for the treatment of uncomplicated malaria in Burkina Faso, Ghana, Mozambique and Tanzania. Methods: Observational, non-comparative, longitudinal study was conducted on 10,591 participants with confirmed uncomplicated malaria in 7 Health and Demographic surveillance system sites from September 2013 to April 2014. Patients of different ages were enrolled, treated with DHA-PQ based on bodily weight and followed for 28 days. Nested cohort of 1002 was intensely investigated to assess the effect of DHA-PQ on blood chemistry and hematology. Clinical outcome was assessed using the number of participants who reported with signs and symptoms of malaria after completing the 3 days treatment. Results: A total of 11,097 clients were screened and 11,017 enrolled. Of these, 94 participants were lost to follow up, 332 withdrawn and 10,591 (96.1%) aged 6 months to 85 years completed the 28 days follow up and used in the analysis. Under 5 population was 48.5% and 52.8% of the participants were females. Diagnosis was by rapid diagnostic test in 29.9% and microscopy in 69.8%. No Plasmodium vivax was isolated. At day 28, the unadjusted risk of recurrent symptomatic parasitemia was 0.5% (51/10591) and majority were children under 5 years. The mean

haemoglobin level decreased from 10.6g/dl to 10.2g/dl and there was no significant liver or renal impairment among the nested cohort within the first 7 days of follow up. Conclusion: DHA-PQ is effective and well tolerated for the treatment of uncomplicated malaria and provides an excellent alternative to other first line ACTs in sub-Saharan Africa.

Title: Baseline characteristics of alcohol and tobacco use in the Kintampo north and south districts of rural Ghana
Speaker: Gyabaa Lawrence Febir, Kintampo HDSS, Ghana
Co-author: Kenneth Asayah Charles Zandoh Kofi Tchum Kwaku Poku Asante Seth Owusu-Agyei

Abstract: Background: Alcohol and tobacco use have been recognized as important risk factors for chronic Non-Communicable Diseases (NCDs). Alcohol consumption is estimated to be responsible for 5.9% of global deaths and 4·6% of global disability-adjusted life-years. Tobacco use also accounts for 6 million deaths each year. More than five million of those deaths are attributed to direct use of tobacco, whilst more than 600,000 attributed to exposure of non-smokers to second-hand smoke. Data and methods: A cross-sectional study was conducted between February and June 2012 to determine baseline data of alcohol and tobacco use by residents within the Kintampo Health and Demographic Surveillance System. Preliminary results: A total of 2906 household heads were randomly sampled. The sampled population was predominantly rural 1,809 (62.3%) with close to half not having any education 1,434 (49.4 %). 1307 (45 %) of the participants have ever consumed alcohol and 999 (34.4 %) are current alcohol drinkers. Locally brewed 434 (43.5 %) and locally distilled 309 (31.0 %) spirit beverages were predominantly consumed. Current tobacco smokers were 329 (11.3 %) of the population surveyed. Manufactured cigarettes were mostly consumed 443 (52.0 %). Females (OR=0.53; 95%CI=0.39, 0.72; p<0.01), the elderly (60 years and above) (OR=0.34; 95%CI=0.19, 0.61; p<0.01) rural residency (OR=0.63; 95%=0.46, 0.88CI p<0.01) were less likely to drink alcohol. Females (OR=0.05; 95%CI=0.03, 0.9; p<0.01), rural residency (OR=0.54; 95% CI=0.35, 0.84 p<0.01) were less likely to use tobacco and its use was associated with increasing age. Non-alcohol drinkers (OR=0.28; 95%CI= 0.11, 0.66; p<0.01), were less likely to smoke tobacco. Discussion and conclusion: Alcohol consumption and tobacco use was high in the study area. There is the need to design appropriate interventions that targets the youth and alcohol use and smoking among the elderly.

Title: Case management of febrile illness among under-five children in Southern Ghana: analysis from a cohort monitoring event (CEM)
Speaker: Kwabena Asare, Dodowa HDSS, Ghana
Co-authors: Solomon Narh-Bana Alexander Adjei Vida Ami Kukula Jerry Yeboah Annan Margaret Gyapong Richard Naggai Gabriel Odonkor

Abstract: Background: Malaria remains the single most important cause of mortality and morbidity especially among children under five years. In Ghana, under five fever is mainly diagnosed presumptively as malaria and treated with an ACT. The WHO has recommended a parasitological confirmation of malaria in vulnerable populations such as under-five children due to the fatality of the disease in such groups and to also improve the differential diagnosis of other febrile illnesses. Knowledge on current case management is important for future treatment policies and guidelines. Methods: A Cohort Event Monitoring Methodology (CEM), one of the INDEPTH modules for monitoring drug safety was used. Patients having been prescribed an ACT in selected public health facilities were recruited and information such as age, mode of diagnosis, drugs prescribed, presenting symptoms and were recorded. Results: The study recruited 1,262 under five patients. All participants came to the facilities with a history of fever in the previous five days. Out of these 59.75 %(n=754) had a malaria diagnostic test (Microscopy or RDT) with 74% (n=561) confirmed. Thus 44.4 %(561/1262) of the cohort had a confirmatory diagnosis with the rest done presumptively. ACTs were prescribed to 99.92% of the patients with 79.16% (n=999) receiving a fixed dose and 20.84 %(n=263) receiving a loose dose. The commonly prescribed ACT was Arthemether Lumefantrine 50.95 %(n=643), followed by Artesunate Amodiaquine 45.17% (n=570) and Dihydroatemisinin Peperaquine 3.80% (n=48). Conclusion: The study shows that, ACTs have been fully adopted as the first line treatment for uncomplicated malaria case management in Ghana. Although the diagnostic procedures conform to those enshrined in the IMCI, it's very important to emphasize and improve confirmatory diagnosis of malaria in vulnerable groups such as under five children to improve the differential diagnosis of other febrile illness as recommended recently by the WHO.

Title: Factors influencing adverse events reporting within the Ghana health care system: The case of artemisinin-based combination treatments (ACTs) in the Kassena-Nankana Districts of Northern Ghana
Speaker: Tamti Samuel Chatio, Navrongo HDSS, Ghana
Co-authors : Raymond Aborigo Philip Baba Adongo Thomas Anyorigiya Patricia Akweongo Abraham Oduro

Abstract: Background: The use of artemisinin-based combination treatments (ACTs) as first line treatments for uncomplicated malaria was a policy recommended by World Health Organization. In 2004, Ghana changed her antimalarial to use ACTs. This study examined factors affecting adverse events reporting in Northern Ghana after the introduction of these ACTs. Methods: This was a qualitative study based on sixty in-depth interviews with health workers, chemical shop owners and patients with malaria who were given ACTs at the health facilities. Purposive sampling method was used to select study participants. The interviews were transcribed, coded into themes using Nvivo 9 software. The thematic analysis framework was used to analyze the data. Results: The most frequent side effects reported by patients were body weakness and dizziness. Others were swollen testes, abdominal pain and shivering were also reported. These side effects were mostly associated with the use of artesunate-amodiaquine compared to other ACTs. Patients were not provided information about the side effects of the drugs and so did not report when they experience them. Also long queues at health facilities and unfriendly health worker attitude were the main factors affecting adverse events reporting. Other factors such as wrong use of ACTs at home, farming and commercial activities also affected effective adverse events reporting in the study area. Conclusion: Patients lack of knowledge and health sector drawbacks affected side effect reporting on ACTs. Intensive health education on likely side effects of ACTs should be provided to patients by health workers. Also, improving health worker attitude toward clients will encourage patients to visit the health facilities when they react negatively to these ACTs and subsequently, will improve on adverse events reporting.

Title: Effect of neonatal vitamin A supplementation on mortality in infants in Tanzania (Neovita): a randomised, double-blind, placebo-controlled trial
Speaker: Honorati Masanja, Ifakara HDSS, Tanzania
Co-authors: Emily Smith Alfa Muhihi Christina Briegleb Salum Mshamu Julia Ruben Ramadhani Noor Polyna Kudyakov Sachiyo Yoshida Jose Martinez Rajiv Bahl

Abstract: Background: Supplementation of vitamin A in children aged 6months improves child survival and is implemented as global policy. Studies of the efficacy of supplementation of infants in the neonatal period have inconsistent results. We aimed to assess the efficacy of oral supplementation with vitamin A given to infants in the first 3 days of life to reduce mortality between supplementation and 180 days (6 months). Methods: We did an individually randomised, double-blind, placebo-controlled trial of infants born in the Morogoro and Dar es Salaam regions of Tanzania. In Kilombero, Ulanga, and Kilosa districts, women were seen at home as part of the health and demographic surveillance system. We randomly assigned infants to receive one dose of 50 000 IU of vitamin A or placebo in the first 3 days after birth. We assessed infants on day 1 and day 3 after dosing, as well as at 1, 3, 6, and 12 months after birth. The primary endpoint was mortality at 6 months, assessed by field interviews. The primary analysis included only children who were not lost to follow-up. Results: Between Aug 26, 2010, and March 3, 2013, 31 999 newborn babies were randomly assigned to receive vitamin A (n=15 995) or placebo (n=16 004; 15 428 and 15 464 included in analysis of mortality at 6 months, respectively). We did not find any evidence for a beneficial effect of vitamin A supplementation on mortality in infants at 6 months (26 deaths per 1000 live births in vitamin A vs 24 deaths per 1000 live births in placebo group; risk ratio 110, 95% CI 095126; p=0193). Interpretation: Neonatal vitamin A supplementation did not result in any immediate adverse events, but had no beneficial effect on survival in infants in Tanzania. These results strengthen the evidence against a global policy recommendation for neonatal vitamin A supplementation.

DAY TWO: Thursday, 12th November 2015

Parallel Session 6C: Community health/Health system

Venue: Dashen Hall

Title: Socio-economic determinants of ownership and use of treated bed nets in rural communities of Ghana: results from the Kintampo Health and Demographic Surveillance System (KHDSS)
Speaker: Emmanuel Mahama, Kintampo HDSS, Ghana
Co-authors: Kwaku Poku Asante Ernest Nettey Yeetey Enuameh George Adjei Abubakari Sulemana Seth Owusu-Agyei

Abstract: Background: Malaria remains a major cause of morbidity and mortality in sub-Saharan Africa and its burden was expected to be half by 2015 according to the Millennium Development Goals. This may not have been achieved as prevention measures such as insecticide treated bed nets (ITNs) may not adequately reach the poor women and children who are mostly affected. Data and Methods: Questions about household ownership of (ITNs) and use by children under five years old (Cu5) and pregnant women (PW) were incorporated in the (KHDSS) between 2012 and 2014. Multivariate logistic regression was used to determine associations between ITN use and poverty is the primary covariate. Preliminary Results: About 79% (16,406/20,896) of households had at least one ITN. Poor [adjusted odds ratio (aOR) 1.99 (95% CI: 1.73, 2.29) p=0.001] and rural [aOR 1.97 (95% CI: 1.74, 2.22) p<0.001] households were more likely to own ITNs. In households with nets, 6% (1,020/16,406) of PW and 47% (7,648) of Cu5 slept under an ITN the previous night before this interview. PW from households with ITNs were more likely to sleep under nets [aOR 1.14 (95% CI: 1.01, 1.29) P=0.037] Cu5 from most poor households were less likely to sleep under ITNs [aOR 0.51 (95% CI: 0.32, 0.73)]. Rural households were more likely to have Cu5 sleeping under ITNs [aOR 1.89 (95% CI: 1.67, 2.14)]. Households with male heads were less likely to have Cu5 sleeping under net [aOR 0.82 (95% CI: 0.74, 0.90)]. Household heads with university education were more likely to have Cu5 under ITNs [aOR= 1.91 (95% CI: 1.33, 2.74)]. Discussion and Conclusion: Despite high ITNs ownership, utilization among pregnant women and children under five years old in poor household is low. A targeted health intervention has to be employed to increase utilization of ITNs if new goals are to be met.

Title: The influence of knowledge on attitudes and behavioural practices towards cholera in Central Ghana: a cross-sectional study
Speaker: George Adjei, Kintampo HDSS, Ghana
Co-authors: Yeetey Enuameh Kwaku Poku Asante Emmanuel Mahama Obed Ernest A. Nettey Seth Owusu-Agyei

Abstract: Background: Cholera remains a public-health threat due to its substantial contribution to morbidity and mortality in developing countries. Having people with good knowledge of the condition could facilitate the right attitude and appropriate behavioural practices that would help prevent and control cholera outbreaks. Cognisant of the cholera outbreak in Ghana in 2014, we carried out this study to assess the knowledge, attitudes and behavioural practices about cholera in the Kintampo Health and Demographic Surveillance System (KHDSS). Data and methods: A cross-sectional study was conducted within 153 communities between August and October 2014 among a randomly sampled community members aged 15-65 years. Pretested close-ended questionnaires which were administered to the study participants to enquired about their knowledge, attitude and behavioural practices about cholera. Socio-demographic and household assets data of each study participant were accessed from the KHDSS database. Univariate and multivariate logistic regressions were used to explore the predictors of knowledge about cholera. Preliminary results: Of the 1028 respondents involved in this study, 883 (85.9 %) of them had heard of cholera. Among the 883 respondents, 452 (51.3%) had good knowledge about cholera whereas 429 (48.7%) had poor knowledge. In the mutivariate regression, urban residents were 39% less likely to have good knowledge about cholera as compared to rural residents (aOR=0.61, 95% CI [0.41- 0.89], p=0.01). Respondents positive attitude (aOR=1.90, 95% CI [1.38-2.61], p<0.001) and appropriate behavioural practices (aOR=3.42, 95% CI [2.48-4.71], p<0.001) were found to be associated with good knowledge of cholera. Household wealth was associated with knowledge of cholera (aOR=2.28, 95% CI [1.27-4.06], p=0.005]). Discussion and conclusion: Findings from the study reveal that having good knowledge of cholera in the KHDSS area may lead to positive attitudes and appropriate behavioural practices towards it. Educational campaigns about cholera need to be intensified among risk groups identified in this study to help in the prevention and treatment of cholera.

Title: Perspectives of community leaders on intimate partner violence during pregnancy in the Kassena-Nankana district of Northern Ghana
Speaker: Raymond Aborigo, Navrongo HDSS, Ghana
Co-authors: Pascale Allotey Daniel Reidpath

Abstract: Background: Gender-based violence is a significant public health problem, particularly in countries where patriarchal traditional systems persist. Historically, most victims of domestic violence seek help from community leaders who serve as peace makers. This paper explored the perspectives of community leaders on intimate partner violence during pregnancy and elicited community-based strategies to discourage it. Methods: A grounded theory qualitative approach was employed. We conducted 10 focused group discussions with community leaders (Chiefs, elders, assemblymen, leaders of women groups) and 16 in-depth interviews with healthcare providers (District directors of health, Medical assistants in-charge of health centres, district public health nurses and midwives). The interviews and discussions were audio recorded, transcribed verbatim and imported into NVivo 10 for content analysis. Results: Intimate partner violence during pregnancy contributes to physical trauma, miscarriages and foetal death. Currently, no formal screening exists within the health system to identify victims of intimate partner violence and therefore it is difficult to estimate the magnitude of the problem. Causes include alcoholism, use of illicit drugs, disobedience and neglect of spousal duties. Pregnancy was reported to trigger violence within the home but in some cases, it was protective. Community leaders disapproved of violence against women and especially during pregnancy because of dangers it poses to the woman and the foetus. Some community leaders have instituted by-laws to punish perpetrators. Punishments included public reprimands of perpetrators, fines in the form of animals, kola-nuts and tobacco. A ban on the sale of some alcoholic beverages in order to reduce alcohol-related violence was also advocated. Conclusions: Community leaders have taken the lead role in reducing intimate partner violence and their efforts require support from the health system. Replication of their initiatives could go a long way to promote safe motherhood and protect women in general from the adverse effects of violence.

Title: Migration and network structure: specificities of circular migrants' networks in Senegal
Speaker: Yacine Boujija, Niakhar HDSS, Senegal
Co-authors: Valerie Delaunay Laetitia Douillot

Abstract: Background: Social networks are often addressed as the explicative rather than dependant variable in migration studies. These studies generally use inadequate network proxies to measure the effect of social networks as a determinant for migration or their role in migrant integration at destination. Little empirical work covers how migration is associated with differences in social network structure at origin with proper network analysis. Yet, this question is particularly relevant for circular migration where the migrants are split between two communities. Method/Data: Measuring both circular migration and network structure is difficult due to particular and costly data needs. By using an innovative combination of an extensive network survey (The Niakhar Social Network and Health Project) and surveillance data (Niakhar HDSS), we are able to overcome these limits and identify: 1- circular migrants from the Ngayokhem village in Niakhar and 2- the village's network structure according to 15 name generators, defined after extensive qualitative research. This allows us to observe the migrants' network position in the sending community and how their relationships are structured with, and relative to, those staying put. Results: Preliminary results show that migrants are less central in networks (interaction, affective, support and exchange). Being in migration or not at the time of survey also plays a large impact. We will further explore in this paper how circular migrants, being more isolated, manage to fill in their missing functional ties and whom they choose to do so. Conclusion: But the interpretation of these results has to be done with care. It is difficult to assume causality; a selectivity effect could also explain the link between migration and network structure. Also, location of interview might partly determine which alters are cited. Nonetheless, the results can strongly inform us on various possible health or sociodemographic outcomes related to network structure.

DAY TWO: Thursday, 12th November 2015

Parallel Session 7A: Fertility, Family Planning and Sexual Behavior

Venue: Dashen Hall

Title: Fertility research at INDEPTH using the HDSS platform from 1998-2013: What is INDEPTH saying?
Speaker: Samuelina Arthur, INDEPTH Secretariat, Ghana
Co- Authors: Clifford Odimegwu

Abstract: Background: Fertility in low- and middle-income countries presents a severe impediment to development and can lead to school dropout, lost productivity, and the intergenerational transmission of poverty. To be able to achieve MDGs 4&5, fertility must reduced or decline. INDEPTH scientists over the years have published in different areas of fertility but no single study has managed to synthesize all these findings together as one document. The objective of this study is to synthesize and highlight the contributions of INDEPTH research on fertility to inform policy. Methodology: the authors adapted the systematic review methods. Peer reviewed publications on fertility research conducted by or on behalf of the INDEPTH Network Centres were identified from an existing database of INDEPTH research reports from 1998 to 2013.The publications were based on data generated through the HDSS platform. Articles were included if they reported original research on fertility and were based on studies conducted at the Centres member of the INDEPTH Network. Reviews or commentaries were excluded. Out of the 65 papers reviewed, 31 papers were included in this paper. Results: The study revealed that fertility has generally declined rapidly for about two decades in most of the study areas. While fertility has declined rapidly among all women over age 18 years, fertility levels among adolescents have not changed in decades. Stall fertility was recorded in some of the sites i.e KwaZulu-Natal. Reduction in fertility among HIV women was observed in all the studies that sought to find the relationship between HIV and fertility. The study also found that uptake of contraceptives reduces fertility and contraceptive usage was more pronounced in HIV infected women. Conclusion: The INDEPTH Network has contributed extensively to research evidence on fertility research in the area of trends and patterns, premarital fertility, contraception, HIV and the religious and social context. There is need to consider the local context when planning fertility reduction interventions

Title: ART-Related Changes in Fertility at Population Level
Speaker: Estelle McLean, Karonga HDSS, Malawi
Co- Authors: Alison Price Menard Chihana Ndoliwe Kayuni Milly Marston Olivier Koole Moffat Nyirenda Basia Zaba Amelia Crampin

Abstract: Background: Declining fertility levels in sub-saharan Africa have been attributed to different causes, including the HIV pandemic. HIV-positive women are more likely to have had unprotected sex and thus become pregnant, but may be biologically less fertile or less likely to want to become pregnant due to societal disapproval or concern over maternal longevity. As access to ART increases and fertility of HIV positive women recovers, an effect on the overall population level of fertility may be apparent. At a demographic surveillance site (DSS) in northern Malawi, we examined birth rates by maternal HIV status and ART use before, during and after introduction of an ART programme. Data & Methods: The Karonga DSS captures vital events in a population of 35,000. Four rounds of HIV sero-surveillance were conducted during 2006-11. Date of initiation of ART is obtained from consenting individuals attending ART clinics. We calculated fertility rates by HIV status and ART use. Preliminary Results HIV positive teenagers had the highest fertility rates (210 vs. 191/1000 for HIV negative), although later in child-bearing life HIV negative women were more fertile. Total fertility was 4.4 and 5.9 respectively for positive and negative. Hazard ratios comparing HIV positive women with HIV negative women adjusted for age, marital status and schooling were approximately 0.8 for both those on and not on ART. As ART became more widely available, age-specific fertility rates for HIV positive women increased closer to those who remain negative in older age groups. Discussion and conclusions: With the scale-up of ART, women who are HIV-positive are more likely to continue child-bearing at older ages at a similar level to HIV-negative women. This may have an effect on the population fertility rate and affect service requirement for ante-natal care of women with the additional increased requirement for follow-up of HIV-exposed infants.

Title: Fertility transition in rural Africa: a mode of production-oriented pattern?
Speaker: Valerie Delaunay, Niakhar HDSS, Senegal
Co-Authors: Ambre Buiatti Laetitia Douillot Djibril Dione

Abstract: Background: Fertility transition in Sub Saharan Africa has been slow in the last two decades compared to other developing regions. Most of changes are registered in urban context, but women in rural environment still have high fertility indicators. Our hypothesis is that the household's mode of production is one of the driving forces of fertility change. High fertility in rural society should be considered as a part of family farming economic system. All other factors act directly on family economic system (migration, occupation, education) and modify the demand for children. They also provide access to fertility control (knowledge, empowerment, cost). Objectives: This paper aims to describe fertility trends in Niakhar HDSS and to give some explanations on observed changes. Methods: From Niakhar HDSS data, we used biographical analysis to compute fertility indicators by year and periods for women. We also compute indicators by characteristics of women (education, religion) and of household (modern level, farming wealth). Household wealth is measured from a survey conducted in 2003. Results: Biographical approach allows us to confirm the onset of fertility transition and to draw key determinants of those changes. Total fertility rate is slightly declining from 8 in 1984 to 6 in 2012. We observe a delay in first birth, conducting to a significant reduction in age-specific fertility rates before 25 years old. Education, modern wealth and farming wealth are associated to fertility level. Higher education is associated with lower fertility. Higher modern wealth is also associated with lower fertility. Inversely, higher farming wealth is associates to higher fertility, suggesting an important role of economic system on fertility behaviors and confirming the hypothesis of a mode of production-oriented fertility pattern in rural Senegal.

Title: Ideal family size, acceptability of contraceptive use and social network processes
Speaker: John Sandberg, The George Washington University, USA
Co-Authors: Laetitia Douillot Valerie Delaunay

Abstract: Background: Social network analyses of diffusion of belief and behaviour have a prominent place in the demographic and health literatures. Despite the theoretical importance of ideation concerning family size and the acceptability of contraceptive use, and the emphasis given to diffusion related to these, no prior research has addressed the association between these ideational elements and social network characteristics. Such research is particularly important in areas where fertility remains high, as ideation concerning family size (and potentially the acceptability of contraceptive use) may be a bell-weather for potential fertility declines. Data and methods: We model social learning and influence mechanisms related to ideal family size and perceived acceptability of contraceptive use as a function of individual, social network, neighbourhood and community level characteristics, presenting the first results from the Niakhar Social Networks and Health Project (NSNHP). The NSNHP represents perhaps the most extensive survey social network data ever collected and is linked to high-quality, prospectively collected, bio-demographic, economic, and social data from the Niakhar Demographic and Health Surveillance System. Preliminary results: Controlling for individual factors such as age, education, health beliefs and own parity as well as village and household levels of education and fertility, we find higher fertility among social network alters is strongly positively associated with the likelihood of non-numeric response concerning ideal family size, ideal family size among those giving numeric responses (which is also significantly associated with average education), and negatively associated with the likelihood that women who use contraception are perceived as respectable. Discussion and conclusion: In most cases the marginal effects of these social network effects were as large as or larger than individual effects associated with respondents own prior fertility or education. This has important implications for how fertility beliefs and preferences are formed.

Title: Fertility in Sub Saharan Africa: what can we learn from INDEPTH sites?
Speaker: Clementine Rossier, Ouagadougou HDSS, Burkina Faso
Co-Authors: Valerie Delaunay Jacques Emina Pauline Adamopoulos Martin Bangha

Abstract: Most researchers studying fertility in sub Saharan Africa use evidence from the Demographic and Health Surveys (DHS) These surveys are nationally representative, exist for many countries and years, and are easily available. The Health and Demographic Surveillance

Systems (HDSS), grouped in the INDEPTH network, growingly constitute an alternative source of evidence on reproductive change in the region. This paper compares fertility estimates from 17 HDSS to those from the DHS, zooming on the region containing the HDSS; it will also summarize the literature on reproductive change produced today in African INDEPTH sites. The goal of this analysis is not only to contribute to the debate on the quality of the fertility data collected in the DHS and in the HDSS, but also to reflect on what the study of fertility trends in small, localized areas can contribute to scientific knowledge, in complement to the usual analyses performed at aggregate levels.

DAY TWO: Thursday, 12th November 2015

Parallel Session 7B: Population Dynamics

Venue: Safari Hall

Title: Population Dynamics in Dabat Health and Demographic Surveillance System Sites, Dabat District, Northwest Ethiopia: A four-year surveillance report (2009 to 2012)
Speaker: Yigzaw Kebede Gete, Dabat HDSS, Ethiopia
Co-Authors: Gashaw Andargie Biks

Abstract: Introduction: The Dabat HDSS was launched by the Gondar College of Medical Sciences in 1996. The main reasons for establishing the surveillance system were to produce demographic and health related evidence in Dabat district and build capacity of the college staff in managing surveillance systems including managing and analyzing longitudinal data. The objective of this report is to describe the population dynamics in Dabat Health and Demographic Surveillance System sites. Methods: Data for this population based surveillance system has been collected months. This report includes the analysis of the follow up data from January 01, 2009 to December 31, 2012. Data was entered using HRS2 and analyzed by STATA Results: The population counts were 45369 in 2009, 45815 in 2010, 46178 in 2011, and 47253 in 2012. The CBR ranged from 25.2 in 2011 to 30.0 births/1000 population in 2009. Similarly, TFR ranged from 3.6 in 2011 to 4.4 in 2009. The CDRs were 7.6 in 2009, 7.8 in 2010, 5.3 in 2011, and 6.6 per 1000 population in 2012. IMR decreased from 74.2 in 2009 to 60.0 per 1000 live births in 2012. In the same manner, U5MR decreased from 92.5 in 2009 to 75.8 per 1000 live births in 2012.The net-migration rates were negative in all the surveillance years. Conclusion: While the decreases in fertility rates were not remarkable there were substantial reductions in childhood mortality rates. The District Health Office and the health institutions in the area with other stakeholders need to maximize their curative, preventive, and promotive health services to significantly reduce the fertility and mortality rates.

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Title: Magnitude and patterns of migration: Evidence from the Gilgel Gibe Health and Demographic Surveillance System
Speaker: Fasil Tessema, Gilgel Gibe HDSS, Ethiopia
Co-Authors: Tizta Tilahun Muluemebet Abera Lelisa Sena, Makonnen Asefa Frehywot Eshetu Tariku Dejene Yihunie Lakew

Abstract: Background**:** Migration is becoming recognized as a dominant force shaping family livelihoods and well-beings throughout the developing world. In this regards health and demographic surveillance system provide a unique opportunity to study migration as multiple episodes that are captured overtime. Objective: The objective of this study was to assess patterns and trends of migration at the Gilgel Gibe health and demographic surveillance system. Methods: Gilgel Gibe health and demographic surveillance system is undertaking registration of vital events since September 2005 with an every six months population update system in more than 12,000 households and 58,000 population. During each update, data on in- and out-migration including background characteristics and time were collected. Data are immediately entered into the HRS 2 database and exported to STATA for analysis. Result: A total of 299,544 person years were observed with out- and in-migration rates of 26 and 20 per 1000 person years respectively. The rate of out-migration was higher in females (27.4 per 1000) compared to males (24.5 per 1000), urban (46.5 per 1000) than rural (18.4 per 1000) and higher rates of in and out-migration was observed in the age group 15 to 29 year olds. Migration out of the country increased from 7.2% in 2005-06 to 17.8% in 2010-11. In general, over the surveillance period, the rate of out-migration increased from 11.0 in 2005-06 to 48.3 per 1000 person years in 2010-11 and the in-migration rate for the same period varied between 9.0 and 40.2 per 1000 person-years. Conclusion: The rate of in- and out-migration among the productive age group is on the rise and more females migrated out of the country compared to males. With the magnitude and distribution are determined, further analysis is required to look on the effect of migration on household structure, fertility, mortality, health and social networking and identify the pull and push factors. Key words: Gilgel Gibe HDSS, Migration, Magnitude, Trend, Southwest Ethiopia

Title: Injury mortality analysis within the middle belt of Ghana using the Kintampo HDSS
Speaker: Ayuurebobi Kenneth Ae-Ngibise, Kintampo HDSS, Ghana
Co-Authors: Ernest Obed Nettey Francis Agbokey Emmanuel Mahama Kwaku Poku Asante Seth Owusu-Agyei

Abstract: Background: Injuries are ranked among the top causes of death and disability, killing over 5.1 million people and injuring more than 50 million globally. About 90% of injury deaths occur in low and middle income countries, making the achievement of the Millennium Development Goals impossible. We analysed the risk factors and trend in injury mortality as well the cause-specific injuries in the Kintampo Health and Demographic Surveillance Area of Ghana. Data and methods: We used data from Kintampo HDSS covering the period 2005 to 2012. Verbal Autopsy data was used to determine the causes of death. Trend test and Cox regression was used to investigate association between risk factors and injury mortality. Tests for associations were based on p-values at 5% significance level. Preliminary Results: There were 230178 residents contributing 916723.6 Person Years [PYs] over the period. A total of 368 injuries deaths were recorded. Overall injury mortality rate was 40 per 100,000 PYs [95% CI=36.1 – 44.3]. Injuries contributed 5% [368/7293] of total mortality burden in the Kintampo

HDSS area. Females were less likely to die from injuries than males [HR=0.35, 95%CI=0.28 – 0.44, P<0.001]. Injury deaths were associated with increasing age with the 65+ more likely to die from injuries compared to children under 15 years [HR=6.84, 95%CI=4.89 – 9.58, P<0.001]. Participants who attained secondary education and above were less likely to die from injuries than those without formal education [HR=0.46, 95%CI=0.30 – 0.69, P<0.001]. The leading causes of injury deaths were road transport accidents (48.9%, 180/368), accidental fall [10.6%, 39/368], drowning [9.0%, 33/369] and snakebite [7.9%, 29/368]. Discussion and Conclusion: Injury remains an important cause of death in the Kintampo DSA, although preventable. Life saving interventions including road safety education, regular road maintenance and use of life jackets for recreational swimmers would help reduce the burden of injury mortality.

Title: HIV testing, prevalence and related factors among older persons in rural Tanzania, 2013
Speaker: Angelina Mtowa, Ifakara HDSS, Tanzania
Co-Authors: Annette Gerritsen Eveline Geubbels Sally Mtenga Mary Mwangome

Abstract: Background: Like in other African countries, most HIV research in Tanzania focuses on adults 15-49 years, ignoring persons aged 50 years and above. Some studies in Sub-Saharan Africa have however reported a high HIV prevalence among older people. This study aimed to estimate socio-demographic inequalities in HIV testing and prevalence among adults aged 50+ years, living in Ifakara town in 2013. Methods: This is a cross-sectional study using data from the baseline measurement of the Ifakara MZIMA cohort study conducted in 2012/13. Information on prior testing behaviour, age, marital status, place of residence, occupation, gender, ethnicity, religion, education (PROGRESS framework indicators) was retrieved from the interviewer administered questionnaires. Multivariable logistic regression analysis was used to establish associations between HIV testing and prevalence with the socio-demographic indicators. Preliminary Results: Among the 1,708 adults 50+ years included in the study, HIV prevalence and the HIV testing rate (ever tested) were 6% and 11.4% respectively. Multivariable analysis showed that the HIV testing rate decreased with increasing age (OR=0.19 (95% CI 0.09-0.41 for 75+ versus 50-54); those separated/divorced/widowed had higher odds of testing than those married (OR=1.46; 1.02-2.10); and "other Christians" had higher odds than Muslims (OR=1.95; 1.06-3.58). With respect to HIV prevalence, it is decreasing with age increasing (OR=0.27; 0.11-0.66 for 75+ versus 50-54); those residing in Mlabani have a higher odds to be HIV positive than those in Kiungani (OR=4.16; 1.43-12.40); and Catholics have a lower odds compared to Muslims for HIV prevalence (OR=0.54;0.34-0.85). Discussion and Conclusion The higher HIV prevalence among older adults than that of the national average 5.1% and low HIV testing behaviour call for more efforts on HIV prevention, treatment and care. Also additional studies should investigate the sexual behaviour of HIV infected elderly to assess this.

Title: Spatial and Space-time clustering of mortality due to malaria in rural Tanzania: evidence from Ifakara and Rufiji Health and Demographic Surveillance System sites
Speaker: Majige Selemani, Rufiji HDSS, Tanzania
Co-Authors: Sigilbert Mrema Amri Shamte Josephine Shabani Johnson M Mahande Amina S Msengwa Maurice C Y Mbago Angelina M Lutambi

Abstract: Background: Although malaria control interventions are widely implemented to eliminate malaria disease, malaria is still a public health problem in Tanzania. Understanding the risk factors, spatial and space-time clustering for malaria deaths is essential for targeting malaria interventions and effective control measures. In this study, spatial methods were used to identify local malaria mortality clustering using Verbal autopsy data. Methods: The analysis used longitudinal data collected in Rufiji and Ifakara Health Demographic Surveillance System (HDSS) sites for the period 1999 to 2011 and 2002 to 2012 respectively. Two models were used. The first was a non-spatial model where logistic regression was used to determine a household's characteristic or an individual's risk of malaria deaths. The second was a spatial Poisson model applied to estimate spatial clustering of malaria mortality using SaTScan™, with age as a covariate. ArcGIS Geographical Information System software was used to map the estimates obtained to show clustering and the variations related to malaria mortality. Results: A total of 11,462 deaths in 33 villages and 9,328 deaths in 25 villages in Rufiji and Ifakara HDSS respectively were recorded. Overall, 2,699(24%) of the malaria deaths in Rufiji and 1596 (17.1%) in Ifakara were recorded during the study period. Children under five had higher odds of dying from malaria compared with their elderly counterparts aged five and above for Rufiji (AOR= 2.05, 95%CI =1.87-2.25), and Ifakara (AOR= 2.33, 95%CI=2.05-2.66) respectively. In addition, ownership of mosquito net had a protective effect against dying with malaria in both HDSS sites. Moreover, villages with consistently significant malaria mortality clusters were detected in both HDSS sites during the study period. Conclusions: Clustering of malaria mortality indicates heterogeneity in risk. Improving targeted malaria control and treatment interventions to high risk clusters may lead to the reduction of malaria deaths at the household and probably at country level. Furthermore, ownership of mosquito nets and age appeared to be important predictors for malaria deaths.

DAY TWO: Thursday, 12th November 2015

Parallel Session 7C: Transition/Pop&Env/Household poverty/FP

Venue: Tana Hall 1

Title: Contributions of different factors to HIV prevalence trends in rural Uganda
Speaker: Jessica Nakiyingi-Miiro, Kyamulibwa HDSS, Uganda

Abstract: Uganda National HIV prevalence increased from 6.4% in 2004-05 to 7.3% in 2011, after a reduction in the 1990s. Limited data from longitudinal population-based cohorts make it difficult to ascertain factors likely to explain this increase. We report factors contributing to HIV prevalence trends in a rural Ugandan cohort followed from 1989 to-date. **Methods:** Between 1990 and 2012, a longitudinal prospective population-based cohort of 10000 adults (16+years) contributed annual socio-demographic, health, and HIV serology data. Free Antiretroviral Therapy (ART) was introduced in the area in 2004. Annual age-standardised prevalence was obtained using direct standardisation; and ART uptake was estimated as the percentage on ART among all HIV-infected adults. Contributions of different factors to HIV prevalence were obtained by calendar years, periods (1990-1999, 2000-2004, 2005-2012), and by Person Years of Observation (PYOs). **Results:** Adult HIV prevalence declined from 8.9% [95%CI=8.0%-9.8%] in 1991 to 6.2% [5.8%-7.0%] in 2001, after which it increased to 10.0% [9.3%-10.7%] in 2012. HIV incidence decreased from 9.5/1000 [95%CI=6.8-13.5] Person

Years-At-Risk (PYARs) in the early 1990s to 4.0/1000 [2.6/1000-6.1/1000] in 2011.Among HIV-infected adults, ART uptake increased from 14% in 2004 to 42% in 2012, while mortality declined from 10.9% [95%CI=8.1%-14.8%] in 1991 to 0.9% [0.5%-1.8%] in 2012.New HIV infections (706/2261) accounted for 33% of new HIV cases; while HIV-positive in-migrants contributed the majority (42%) of new cases. Among HIV-infected, PYOs lost because of death in 2005-2012 were 30% those of 1990-1999, while PYOs of net-migration in 2005-2012 were 1.2 times those of 1990-1999. **Conclusion:** The recent increase in HIV prevalence despite decreasing HIV incidence may be due to: the increasing ART uptake resulting in declining mortality among HIV-infected adults; compounded by the positive net HIV prevalence among in/out-migrants in the recent years. HIV incidence trends remain the most accurate measure of epidemiological trends.

Title: Investigating linkages between livelihood shocks, food security, and environment in the Agincourt Health and Demographic Surveillance System, South Africa
Speaker: Wayne Chilton Twine, Agincourt HDSS, South Africa
Co-Authors: Lori Hunter Mark Collinson Barend Erasmus

Abstract: Background: As the SDGs/post 2015 debate is coming to final negotiation and agreements, critics have pointed out that providing badly needed data for the new targets might be an impossible task. The Copenhagen Consensus estimated that the cost would be twice the total annual spend on Official Development Assistance. In light of this, using existing longitudinal data initiatives, like the INDEPTH Network, is crucial. The present paper is a proof-of-concept of using HDSS datasets to quantify links between natural resources and human wellbeing. Data and methods: We chose the Agincourt HDSS in South Africa because of the availability of natural resource use and food security data, and because it is located in sub-Saharan Africa, which faces the co-varying development challenges of poverty, food insecurity and vulnerability to climate change. Data were obtained from the household food security module (2004, 2007 and 2010), socio-economic status module (every second year), and household composition data from the annual census for 14,000 households. We quantified the relationship between food security and use of fruit trees (indigenous and domestic) in homestead gardens and ploughed fields, using mixed-effects models. The influence of spatial variability in environmental parameters was also explored. Preliminary results: Households were significantly and substantially more likely to have indicated having produced enough food throughout the year if they used fruit trees in their gardens and fields, after controlling for the significant negative effect of having a female head, and the influence of rainfall zone. Similarly, households that used fruit trees in their yards were less likely to have experienced food shortage in the past month. Discussion and conclusion: These exploratory analyses demonstrate the potential value of HDSSs to provide data needed for addressing development goals. Our findings point to the importance of natural resources for wellbeing, such as food and nutritional security.

Title: Field experiences, in collecting sensitive information from young people in a cross sectional survey in rural coastal Kenya
Speaker: Onesmus Kyalo Muiya, Kilifi HDSS, Kenya
Co-Authors: Mark Otiende Christopher Nyundo George Mochamah David Walumbe Tom Williams Evasius Bauni

Abstract: Self-reported data collection methods are increasingly gaining popularity in social and clinical trial data surveys. This has seen the use of electronic devices rather than pen-and-paper as an accurate and more efficient method of data collection. Collecting sensitive data on alcohol, drug and sexual abuse is a challenge, especially from youths under 18 years who are often not at home and whose consent has to be provided by a parent. We present field experiences from a community cross-sectional survey of young people aged 13-24 years. Objective To describe field experiences in collecting sensitive data from young people aged 13-24 in a household based survey Methods: A team of 7 counsellors trained in communication skills, sexual violence, trauma, alcohol and substance abuse and the use of ACASI collected data between August and December 2014. ACASI was flexible to use any of the three languages, English, Kiswahili or Kigiriama at any point of the interview. Experiences shared daily and weekly group debriefing were documented. Tracking young people started before 6 am in the morning to after 6 pm in the evening making appointments for weekends and public holidays. Results: A minimum sample size of 1514 was recommended, 2,071 potential participants were visited and 1524 consented to participate in the study. 90% used ACASI unassisted while 10% were assisted in answering at least 1 question. 93% of the respondents used Swahili language. In the first visit 22% were not consented because they were not at home and 11% had migrated. In the second visit, 204 were not consented largely (168/204) because they were not at home. There was a huge burden of call backs at 22% (451/2,071). Conclusion Finding young people at home for research is a nightmare. Surprisingly they prefer Kiswahili and English to their local Kigiriama.

Title: Transition from primary to secondary school among children
Speaker: Mamusu Kamanda, INDEPTH Secretariat, Ghana
Co-authors: Francis Levira Moses Ngware Timothy Awine Pascal Zabre Osman Sankoh

Abstract: Background: The framework for expanding children's school access in low- and middle-income countries (LMICs) has been directed by universal education policies as part of Education for All since 1990. In measuring progress to universal education, a narrow conceptualisation of access which dichotomises children's participation as being in- or out- of school has often been assumed. Yet the actual promise of universal education goes beyond this simple definition to include: retention, progression, completion and learning. Objective*:* Our first objective was to identify gaps in the literature on children's school access using the zones of exclusion of the Consortium for Research on Educational Access, Transition, and Equity (CREATE) as a framework. Secondly, we gave consideration to how these gaps can be met by using longitudinal and cross-country data from Health and Demographic Surveillance System (HDSS) sites within the International Network for the Demographic Evaluation of Population and Their Health (INDEPTH) in LMICs. Method: We conducted a literature search using Web of Science of studies published in international peer-reviewed journals between

1998 and 2013 in LMICs. The phrases we searched included six school outcomes: school enrolment, school attendance, grade progression, school dropout, primary to secondary school transition, and school completion. From our search, we recorded studies according to: (1) school outcomes; (2) whether longitudinal data were used; and (3) whether data from more than one country were analysed. Results: The area of school access most published is enrolment followed by attendance and dropout. Primary to secondary school transition and grade progression had the least number of publications. Of 132 publications which we found to be relevant to school access, 33 made use of longitudinal data and 17 performed cross-country analyses. Conclusions: The majority of studies published in international peer-reviewed journals on children's school access between 1998 and 2013 were focused on three outcomes: enrolment, attendance and dropout. Few of these studies used data collected overtime or data collected from more than one country for comparative analyses. The contribution of the INDEPTH Network in helping to address these gaps in the literature lies in the longitudinal design of HDSS surveys and the diversity of countries within the Network.

DAY THREE: Friday, 13th November 2015

Plenary Session 9: OpenHDS: A new platform for electronic data capture – experiences from Pilot Centres

Venue: SABA Hall

Title: Data Quality Checks in a Paperless HDSS: Lessons from the Cross River HDSS, Nigeria
Speaker: Iwara I. Arikpo, Cross River HDSS, Nigeria
Co-Authors: Ideba Mboto Anthony Okoro Martin Meremikwu

Abstract: Background: Health and demographic surveillance systems (HDSS) provide reliable longitudinal data on vital events such as, pregnancies, births, deaths, migrations, verbal autopsy, and other socio-economic indicators in low-income settings where routine vital health information is incomplete or absent. Data on these events is collected routinely (4- or 6-monthly) as HDSS update rounds. Methods The quality of policies and decisions that can be made from the longitudinal HDSS data depends on the quality of data generated from HDSS update rounds. To achieve high data quality, the INDEPTH Network has over the years established a standard data quality control process for all HDSS sites within the Network. One of these quality control measures is a re-interviewing of at least 5% of all events captured in each household registration book (HRB) in every update round. The conventional INDEPTH data quality checks (routines) have been based on the traditional paper-based data collection methods. However, the ongoing migration to electronic (particularly mobile) methods of routine data collection by most HDSS sites has tremendously changed the way data quality checks are performed. Discussion and conclusion This paper presents the lessons learned from a paperless HDSS where the procedure for checking and maintaining data quality has reasonably gone electronic. Some of the attendant benefits, such as, reduced time for data quality checks, automated data validation, etc as well as challenges and solution strategies are also discussed in this paper. Keywords: Health, demographic surveillance system, mobile technology, update round, data quality, validation.

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Title: Replacing paper-based data collection with electronic data collection in Nanoro HDSS: is there really an advantage?
Speaker: Kazienga Adama, Nanoro HDSS, Burkina Faso
Co-Authors: Karim Derra Sayouba Ouedraogo Eli Rouamba Marc Christian Tahita Hermann Sorgho Innocent Valea Halidou Tinto

Abstract: Background: The Nanoro HDSS was established in 2009 by the Clinical Research Unit of Nanoro. The paper- based data collection is used since the initial census. In order to shorten the delay between in terms of time of data collection, data availability at the end of each round and also the data quality itself we decided to move from the paper-based to electronic data collection using OpenHDS. We report here the result of this comparative study between these two kinds of data collection system. Methods: For the study we have selected two villages within our HDSS: Basziri and Gouroumbila. We have recorded the duration between data collection and entry duration for each round since the initial census. We estimated all the parameters for the paper based data collection as staff prices, papers and printers costs. The HDSS vital events have been uploaded on the tablet and then proceed to the data collection. Results: We will complete this part after the end of the study because it's on going. We expected that we will have this part before the ISC date. Conclusions: Before the end of the study, we can say that Electronic data capture offers direct data entry in the field by fieldworkers. It has numerous advantages and has also the potential to replace the paper-based data collection in Nanoro HDSS. This part will be reviewed at the end of the study the next coming weeks.

Title: Manhiça HDDS OpenHDS implementation: challenges, achievements and lessons learned.
Speaker: Paulo Filimone, Manhiça HDSS, Mozambique
Co-authors: Orvalho Augusto Agnaldo Samuel Aura Hunguana John Jairo Aponte Ariel Nhacolo Edgar Jamisse Vivaldi Nobela Charfudin Sacoor Eusébio Macete

Abstract: Introduction: Manhiça HDSS has been running since 1996 using paper based data collection; then between 2012 and 2014 a PDA based data gathering system was introduced paving the setup of OpenHDS in 2015. This happens in a context of HDSS rapid expansion to accommodate sample size constrains. We aim to document the challenges and lessons learned from this endeavour. Methods: We deployed OpenHDS using MySQL (*5.5*) on one GNU/Linux server (14.04). All forms implemented in OpenHDS were translated into Portuguese and to accommodate specific data collection from our HDSS we extended those forms by modifying the source code to trigger forms in ODK (1.4.4). For security reasons all connections to the server are through HTTPS. Tablets based on Android *version* 4.4.2 were prepared with ODK and the modified OpenHDS app. To transfer the collected data and to synchronize with the server we use only Wi-Fi connections on headquarters office or on the replicate office with internet connection. All tablets have their storage encrypted and after upload the uploaded ODK forms are deleted from the tablet. Results: We quickly trained 24 field workers including 6 supervisors to visit 165000 HDSS members in almost 37500 households. Field operations manuals that include tablet and data collection system procedures were developed. Data control checks were implemented both at the tablet level and database level to reduce errors

from data entry, upload and storage as well. The data from the field is uploaded every week and the synchronizations is made every 15 days. Nevertheless, important shortcomings included logistics for prevention of battery outage, connectivity and hardware acquisition, and human resources with technical skills willing to live in a remote and rural site. Furthermore, the OpenHDS data model is complex imposing new challenges for the data analysts. Also an upload might bring large volume of data sometimes enough to crash the core transference system based on MIRTH. Due to OpenHDS strong reinforcement of data validation we couldn't migrate all our old DSS data. We have chosen to just migrate member and household information including last known residency status and death. Migration and fertility data will be migrate after the current data collection round. Conclusion: OpenHDS or other electronic data capture based on tablets is feasible in rural settings such as Manhiça HDSS but emphasis on good planning, especially for hardware acquisition, connectivity, power-source and data migration. Hiring appropriate human resources must be considered carefully.

Title: OpenHDS: recent developments and experiences
Speaker: Nicolas Maire, Swiss TPH, Switzerland

Abstract: Background: OpenHDS is an HDSS data system with client-server architecture. It provides both a web-based user interface to the central database for supervisory functions and an intuitive Smartphone and tablet computer application for enumerators. OpenHDS completely removes the need for paper in the data pipeline. We present recent developments and the current status of the openHDS platform as well the experiences from different sites that have implemented openHDS as their data management platform. Data and methods: The OpenHDS software has been continually developed and improved in an iterative way over the past years, integrating the experiences and feedback from the implementing sites. A particular focus was on the development of tools to exploit the near-time nature of data aggregation to improve quality and timeliness of data. In addition, the data system was integrated with the iShare2 platform for data harmonization and sharing, and quality control. Where possible, performance and quality metrics were documented. We also explored the possibility of using auxiliary data for quality control. Specifically, remote-sensed data served as a basis for estimating completeness of population coverage of the HDSS operations. Preliminary results: We present experiences with tools for implementing quality assurance and process monitoring, and report on operational and quality metrics from different sites using openHDS. Discussion and conclusion: We discuss implications of the experience with OpenHDS for the future development of the data system.

DAY THREE: Friday, 13th November 2015

Parallel Session 10A: Global Health and Development Agenda

Venue: Dashen Hall

Title: Burden of intestinal parasites in remote, hilly forest area of Bandarban HDSS
Speaker: Wasif Ali Khan, Bandarban HDSS, Bangladesh
Co-Authors: Sabeena Ahmed Mohammad Mahbubul Karim Sharif Hossain Jacob Khyang Shafiul Alam David A. Sack.

Abstract: Background: Estimates of persons infected with intestinal nematodes (soil-transmitted helminths, STH: *Ascaris lumbricoides, Trichuris trichiura, Strongyloides stercoralis* and the hookworms) are lack from the Chittagong Hill tracts (CHT), south east region of Bangladesh. We investigated the burden of STH infection in our Indepth HDSS area. Method**:** Between February-April 2014, we captured stool microscopy data from baseline parasitological surveys of 2003 randomly selected children aged 2-17 years out of 5,000 households with 21,000 populations. We used Kato Katz method to detect common helminths and estimate the egg burden. We followed Harada-Mori culture technique to identify larval-stage of hookworm and *Strongyloides stercoralis.* Intensity of burden was quantified by egg count (light = 1–1,999 epg; medium = 2,000-3,999 epg; heavy = over 4,000 epg). Infections were treated with appropriate dose of albendazole. Result**:** The isolation rate of STH was 38% (n=754). *Strongyloides stercoralis* (SS) was the most prevalent parasite, with an overall prevalence of 23% (n= 456), followed by *Ascaris lumbricoids (9.4%,* n=187*),* hookworm (7.9%, n=157) and *Trichuris trichiura* (7.6%, n=152). Harada-Mori culture alone revealed 96% (n= 438) of *Strongyloides stercoralis* infection. Intensity of burden estimated by egg load for all the worms was light. Conclusion**:** Treating high burden of *Strongyloides stercoralis* infection that leads to chronic disease with fatal consequence should be consider with appropriate antihelmintics. High STH infection rate in Bangladesh inspite of ongoing national de-worming programme among children for years re-emphasize to revisit the National De-worming Programme strategy.

Title: Cardiometabolic disease risk and HIV status in rural South Africa: establishing a baseline
Speaker: Francesc Xavier Gomez-Olive Casas, Agincourt HDSS, South Africa
Co-Authors: Samuel J Clark Brian Houle Margaret Thorogood Kerstin Klipstein-Grobusch Nicole Angotti Chodziwadziwa Kabudula Jill Will

Abstract: Background: To inform health care and training, resource and research priorities, it is essential to establish how non-communicable disease risk factors vary by HIV-status in high HIV burden areas; and whether long-term anti-retroviral therapy (ART) plays a modifying role. Methods: As part of a cohort initiation, we conducted a baseline HIV/cardiometabolic risk factor survey in 2010–2011 using an age-sex stratified random sample of ages 15+ in rural South Africa. We modelled cardiometabolic risk factors and their associations by HIV-status and self-reported ART status for ages 18+ using sex-stratified logistic regression models. Results: Age-standardised HIV prevalence in women was 26% (95% CI 24-28%) and 19% (95% CI 17–21) in men. People with untreated HIV were less likely to have a high waist circumference in both women (OR 0.67; 95% CI 0.52-0.86) and men (OR 0.42; 95% CI 0.22-0.82). Untreated women were more likely to have low HDL and LDL, and treated women high

triglycerides. Cardiometabolic risk factors increased with age except low HDL. The prevalence of hypertension was high (40% in women; 30% in men). Conclusions: Sub-Saharan Africa is facing intersecting epidemics of HIV and hypertension. In this setting, around half the adult population requires long-term care for at least one of HIV, hypertension or diabetes. Together with the adverse effects that HIV and its treatment have on lipids, this may have serious implications for the South African health care system. Monitoring of the interaction of HIV, ART use, and cardiometabolic disease is needed at both individual and population levels.

Title: Cognitive dysfunction and mortality in the presence of abdominal obesity and hypertension in a rural elderly population in Central Java, Indonesia: results from the INDEPTH WHO-SAGE Collaboration.
Speaker: Julia Schröders, Umeå University, Sweden
Co-Authors: Stig Wall Muhammad Hakimi Lars Weinehall Hari Kusnanto Nawi Ng

Abstract: Background: Both, obesity and hypertension are well-established risk factors for non-communicable diseases (NCDs), cognitive dysfunction (CD), and mortality. This study assesses the independent and joint effects of hypertension and high waist circumference (WC) on CD and mortality among adults over 50 years in rural Purworejo district, Indonesia. Data and Methods: In 2010, the mortality status of 11,753 adults aged 50+ who lived in the Purworejo HDSS and participated in the INDEPTH WHO-SAGE baseline in 2007 was assessed. Outcomes were "death" and self-reported CD for those alive in 2010. Independent variables were self-reported hypertension and measured WC; covariates included functional disabilities, NCD history, and socio-demographic indicators. Cox-proportional hazard regression was used to model independent and joint effects of hypertension and WC for mortality and CD. Preliminary Results: During 36 months follow-up period, 1,199 people (10.2%) died. Fifty-six percent of women and 45% of men who were alive in 2010 reported CD. In 2007, a higher WC was significantly associated with a higher prevalence of hypertension in both sexes. The prevalence of hypertension was higher for women across all WC categories. The highest prevalence of hypertension (20.6%) was among women in the highest WC category and the lowest (7.6%) among men in the lowest WC category. Central obesity exercised a protective effect against mortality and CD among women aged 60-69 years but not among younger (50-59) or older (70+) women or men. Among younger (50-59) men, hypertension acted as a risk factor for CD and for mortality among the oldest (70+) men. No significant interaction between hypertension and obesity was observed. Discussion and Conclusion: It appears that hypertensive men and women with non-increased WC are at greatest risk of mortality and CD, respectively. This study generates evidence for better understanding the independent and joint effects of hypertension and obesity on healthy ageing.

Title: Metabolic Syndrome in Rural Indian Population: Evidence from a Health and Demographic Surveillance System
Speaker: Anamitra Barik, Birbhum HDSS, India
Co-Authors: Rajesh Kumar Rai Abhijit Chowdhury

Abstract: Background: South Asians have an increased propensity for metabolic syndrome (MS) and associated risk of chronic diseases. Using cross-sectional data from a Health and Demographic Surveillance System, Birbhum (HDSS-BIRPOP), India, this study aimed to assess the factors associated with MS. Data and methods: Randomly selected 5117 adults, aged ≥18 years representing over 12,000 households were included in the study. Anthropometry and blood pressure were recorded, along with overnight fasting venous blood for serum lipids and plasma glucose. The definition of Metabolic Syndrome guided by the modified NCEP ATP III criteria for South Asians, include at least three or more of five components - (i) abdominal obesity (waist circumference: men >=90 cm, women >=80 cm), (ii) elevated triglycerides (>=150 mg/dl), (iii) low HDL< 40 in males; < 50 in females),(iv) elevated blood pressure (>=130/>=85 mmHg or use of antihypertensive), and (v) elevated fasting glucose (>=100 mg/dl). Bivariate and multivariate (logistic regression) methods were employed to attain the study objective. Results: Over 13.3% of total selected population was diagnosed with MS, and 23.% of individuals aged ≥60 years had MS. Among those with Metabolic Syndrome, 86.6 % had low HDL, followed by Hypertriglyceridemia (67.1%). Odds ratio (OR) with 95% confidence interval (CI) estimated applying logistic regression indicate that MS is likely to be higher among females (OR 2.36, CI: 2.23-3.87), elderly persons and people with Body Mass Index of ≥25 kg/m^2 (OR: 7.6, CI: 5.6-10.4). With increasing waist hip ratio, MS is likely to increase (OR 1.87, CI: 1.43-2.46). Conclusion: The age linked increase in prevalence, the female preponderance as well as association with increasing wealth have implications in formulation of strategies for surveillance and prevention. The cohort assembled can serve to be informative for long term outcome studies in cardio vascular risk , dynamics of development of diabetes as well as defining phenotypes for mechanistic studies in its' genesis – evolution .

Title: The association between common mental illness and tuberculosis, a case control study from Guinea Bissau.
Speaker: Lena Larson, Bandim HDSS, Guinea Bissau
Co-Authors: Grethe Lemvik Frauke Rudolf Victor Francisco Gomes Andreas Schroder Cristian Wejse

Abstract: Background: Tuberculosis (TB) and mental illness are important global health burdens. Several studies indicate an association between TB and mental illness, but data from areas with high prevalence of TB are limited. We aimed to explore the association between mental illness and TB, in a case control study in Guinea Bissau, an area with high prevalence of TB. Data and methods: Cases were included from a well-described cohort of TB patients. A randomized sample of unmatched controls was obtained from surveillance data from a demographic surveillance site. Screening for anxiety and depression was performed once for controls. TB patients were screened when visiting the healthcare center. 36 % of TB cases were screened both at inclusion and follow up at 2, 4 or 6 months, and 64 % of cases where only screened at inclusion or follow-up. Kessler 10 (K10) and a brief version of Symptom Checklist 90 (SCL-8) were used as screening instruments. Cases' mean scores at each time point were compared with controls' score by means of t-test. Between-group effect sizes (cohen's d) and correlation of the two measures were calculated. Preliminary results: 419 interviews were performed for 218 TB cases included from the TB cohort. 571 controls were interviewed. TB patients screened at inclusion in the TB-cohort had significantly higher scores than controls on both screening instruments (SCL-8: TB cases 0.398, controls 0.223; K10: TB-cases 1.357, controls 1.191, all p <0.0001). Effect sizes were moderate (SCL-8: 0.61, K10: 0.68), indicating a clinically relevant difference. Pearson correlation of SCL-8 and K10 was 0.64. At 6 months TB-patients showed statistically, but not clinically, significantly lower scores on both K10 and SCL-8 (Cohen's d SCL-8: 0.20; K10: 0.29). Discussion and conclusion: Our preliminary results support the evidence of an association between mental illness and TB at time of diagnosis.

DAY THREE: Friday, 13th November 2015

Parallel Session 10B: Population and Health Policies (2)

Venue: Safari Hall

Title: Causes of Infant Death in Kersa Health and Demographic Surveillance System (Kersa HDSS), Ethiopia: Verbal Autopsy Method
Speaker: Nega Assefa**,** Kersa HDSS, Ethiopia
Co-Authors: Tariku Dingeta Bitseat W/gebreal

Abstract: Background: Infant Mortality Rate is a proxy indicator of health and socio-economic status of a country. It also allows to better understand the situation of children health status in a given country. Knowing the causes of child death helps to better design the health delivery. A targeted intervention is set if the cause of death is known. In poor countries where, registration of vital events is nonexistent and majority of the deaths occur at home without known medical reasons for the death, it is very difficult to implement proper health care. In such condition, identifying the cause of death using an indirect method of verbal autopsy (VA) has been widely accepted. This method equally helps to identify the cause of death among children. Objective: The main objective of this analysis is to identify the trend and common cause of infant mortality in Kersa Health and Demographic Surveillance System (Kersa HDSS) during the period of 2008-20012. Methods: Using data from a well established Kersa HDSS, we utilized verbal autopsy (VA) data collected from January 2008 to December 2013. Physician reviews and assigned diagnosis were coded using VA coding system from ICD-10. Descriptive analysis was done using STATA-11. Causes of death are tabulated by sex, residence and year of death. In addition, cause specific mortality fractions are calculated. Results: Of the recorded deaths majority 372 (94.18%) were from rural places and 221(55.95%) were male infants. The overall infant death rate in surveillance site was 36 per 1000 live births. The highest infant death rates 40 per 1000 live birth were registered in the year 2010 which decreased to 28.6 per 1000 in 2013. The leading cause of death are communicable and infectious disease attribute to 256(64.8%) of the infant death. Among the communicable causes of death, acute lower respiratory infection including pneumonia 133(33.67%) and gastro-intestinal infections 80 (20.35%) were prominent. Conclusions and Recommendations: Infectious disease including acute lower respiratory infection and gastro-intestinal infections attributed for the death of majority of infants. The six year infant mortality rate showed decreasing trend. Further analysis to identify clustering and spatial orientation is necessary to devise a targeted intervention. Further studies should be also initiated to determine the facilitators of the causes.

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Title: The unfair economics of health insurance in rural West Bengal: assessing the potential effectiveness of India's Rashtriya Swasthya Bima Yojana (National Health Insurance Scheme)
Speaker: Sumit Mazumdar, Birbhum HDSS, India
Co-Authors: Rajesh Kumar Rai Anamitra Barik Abhijit Chowdhury

Abstract: Background: The Rashtriya Swasthya Bima Yojana (RSBY, a targeted national health insurance scheme) was launched in India in 2008 extending insurance coverage for hospitalized ailments, to poor families in designated, mostly private hospitals. This paper assesses the extent of unfair health economic outcomes arising out of supplier-driven, unnecessary medical care while assessing extent of financial risk-protection. Comparing longitudinal trends and patterns in hospitalization and health expenditure, we test whether RSBY is actually extending expected financial coverage among the insured, or ending up in encouraging medical malpractices or inefficient, unnecessary care. Data and methods: We use three unique datasets from the Birbhum Health and Demographic Surveillance System, West Bengal, India; a socioeconomic survey containing illness and health expenditure particulars from 2012, a pilot-survey on RSBY coverage in 2013, and a detailed health expenditure and insurance survey in 2014. The data for the last two surveys are a sub- sample of 12,250 HDSS households, eligible for the insurance coverage. Results: Findings suggest that the coverage extended by RSBY is only partial, with high risks of incomplete insurance among the poor. Between 2012 and 2013, average out-of-pocket expenditures have fallen among those enrolled under RSBY and using the Smart Cards for hospitalizations; However, in 2014, a significantly higher expenditure (INR 1625) was reported among the insured as compared to the uninsured (INR 1200), of similar economic status. Results also indicate that the insured persons are hospitalized more for the so called planned procedures such as, cataract surgeries, hysterectomies and others, whereas, the uninsured mostly hospitalize for childbirth, gastroenteritis, respiratory emergencies. Conclusions: In the light of the findings, the paper argues for a strong system of auditing hospitalization claims and monitoring systems to be installed among empanelled institutions. Else, misplaced economic incentives can lead to substantial health system inefficiency and poorer quality of care.

Title: Access and Catastrophic Health Care Payment and Reasons in Ghana
Speaker: Doris Sarpong, Dodowa HDSS, Ghana
Co-Authors: Akazili James Welaga Paul Dalinjong Philip Kwarteng Anthony Gyapong Margaret Oduro Abraham Arthur Samuelina Bangha Martin Goudge Jane

Abstract: Background: Globally, over 90% of people affected by catastrophic health care payments are found in low-income countries. And it is estimated that about 100 million people are pushed into poverty due to out-of-pocket payments for health care services. Ghana's health care financing has undergone many policy changes and in order to reduce the burden of out-of-pocket payment for health care services; and to ultimately achieve universal health care coverage, its National Health Insurance Scheme became operational in 2004. This paper examines the differentials in accessing health care and its associated burden of catastrophic health care payment in two northern districts of Ghana. Data and Method: Data source was obtained from the Navrongo Health and Demographic Surveillance System involving randomly sampled 11,726 households consisting of 57,100 individuals. Data were

collected using structured questionnaires between July and December 2012 and the Chi Square test was used to test the differences in proportions. Preliminary findings: Preliminary findings showed that out-patient (48.3 per person/month) and in-patient (14.6 per person/year) health service utilization were highest among those with chronic illness respectively. Forty-three percent of those in-needs did not seek care. Self-treatment (57.6%) and lack of money (95.2%) were some reasons cited for not utilizing health care services. Factors such as socio-economic status, age, sex, area of residence, insurance status, self-assessed health status and having chronic illness were associated with out-of-pocket payment for health care with the poor, the aged, the uninsured and more rural respondents facing the outermost barriers. Discussion and recommendation: Rural households are still exposed to the risk of unanticipated medical expenses in the era of NHIS. Innovative public health interventions to bridge the gap in the incidence of catastrophic health expenditure might be effective in protecting the poor and the vulnerable as part of the Post-2015 health agenda.

Title: Injuries: A neglected cause of morbidity and mortality of young people in a rural region of coastal Kenya
Speaker: George Mochamah, Kilifi HDSS, Kenya
Co-Authors: Yadeta Dasie

Abstract: Background: Injuries are an important cause of mortality accounting for about 10 % of total deaths worldwide. In developing countries, data on deaths and their causes remain unknown in the vital registration systems. In this study, we describe mortality patterns from injuries among residents of the Kilifi Health and Demographic Surveillance System (KHDSS) using data obtained by verbal autopsy (VA). We also investigated the factors associated with deaths from injuries compared with deaths from other causes. Methods: VA interviews were conducted on 7068 deaths recorded within the KHDSS, from 2008 to 2013. Causes of death were determined using InterVA4 model while longitudinal data obtained from the linked routine surveillance were extracted to provide person-time denominators for mortality rates. Logistic regression models were used to investigate the factors associated with deaths from injuries. DALYS will be calculated later on. Results: VA were complete for 6366 (90.1%) of all deaths, of which 52.0% were males. Overall, the prevalence of injuries was 605 (9.5 %, 95% confidence interval (95%CI) 8.7-10.2%) of mortality. Among males, injuries contributed 14.1% of the total deaths but contributed 4.5% of all deaths in females. The main cause of deaths from injuries were assault 209 (34.5%), road accidents 144 (23.8%), accidental falls 80 (13.2%), intentional self-harm 69 (11.4%) and accidental drowning and submersion 51 (8.4%). In a multivariable logistic regression model, male gender (Odds Ratio (OR) 4.65, 95%CI 3.66-5.95), epilepsy (OR 4.65, 95%CI 2.43-10.09), alcohol (OR 1.48, 95%CI 1.16 – 1.91) and smoking (OR 1.53, 95%CI 1.15-2.06) were found to be associated with deaths from injuries. Age greater than 10 years was also found to be associated with deaths from injuries ($p<0.001$). Mortality rate from injuries reduced significantly over the study period ($p<0.001$). There was no significant decline in mortality rate ratio for injuries over the six year period (Incident mortality rate ratio 1.00 (95%CI 0.95 -1.05), p value 0.984). Conclusion: Mortality from injuries has been persistently high in this region and men bear the brunt. Most of the factors associated with mortality in this region are majorly preventable.

Title: The Contribution of Road Traffic Accidents to Mortality in the Kassena-Nankana Districts, Ghana
Speaker: Miriam-Diana Abagale, Navrongo HDSS, Ghana
Co-Authors: Yin Luu Samson Abagale Paul Welaga James Akazili Rexford Abraham Oduro

Abstract: Background: Road traffic accidents (RTAs) are increasingly becoming a public health challenge. Using Verbal Autopsy data, we examined the trends in RTAs in the Kassena Nankana Districts (KNDs) in northern Ghana. We also assessed the cost of RTAs to households and employers through a survey. Methods: Individuals aged 15 to 59 years who died from RTAs in the study area from 2007 to 2011 were identified through verbal autopsy. Also, 123 survivors of RTAs between 2009 and 2011 and five key employers whose staff were involved in RTAs were interviewed. Victims of RTAs were identified through household visits by the Navrongo Health and Demographic surveillance system. Results: In all causes of death data was available for 2,410 adults aged 15 to 59 years. 4.6% of all deaths aged 15-59 years were due to RTAs. RTAs constitute 46% of all injury related deaths from 2007 to 2011. There was an increasing trend of deaths due to RTAs, from 2.74% in 2007 to 5.2% in 2011. RTAs were the 2nd, 3rd and 3rd leading cause of ward admissions in 2009, 2010 and 2011 respectively. The annual cost to households with 123 RTAs victims included in the study was US$6,341.27 and for employers, US$7,625. The annual mean cost of a RTA to a household is US$154.67, and this represents 5.5 times of a poor household annual mean income whilst this represents 15.6% of a rich household annual mean income. Conclusion: RTAs are a critical catastrophic social risk and contribute greatly to mortality and morbidity in the KNDs. These call for urgent interventions to reduce their incidence.

DAY THREE: Friday, 13th November 2015

Parallel Session 10C: Innovation in HDSS data systems and methods

Venue: Tana Hall 1

Title: Linking health and demographic surveillance data to hospital and clinical data: Challenges and opportunities to understand disease dynamics in HDSS
Speaker: Dickman Gareta, ACDIS, South Africa
Co-Authors: Siyabonga Nxumalo Kobus Herbst

Abstract: Background: To fully realise the value of the data collected in HDSS field sites, it is important to efficiently link HDSS data with other health related data. Linkage of HDSS data with clinical and hospital information data offers an opportunity to conduct a vast array of research studies which otherwise would have been difficult using HDSS data alone. We therefore describe Africa Centre's experiences in linking HDSS data systems with clinical and hospital information data systems. Data and Methods: As part of demographic surveillance system, dried blood spots are collected and tested for HIV. Data for individuals engaging in HIV care in 17 primary clinics located in the demographic surveillance area (DSA) were routinely collected and stored in ART treatment and care programme (ARTemis) database. In addition, data for individuals admitted at the district hospital covering the DSA is collected and

stored in a hospital information system database. We linked these three data systems using deterministic and probabilistic record linkage methods. Preliminary Results: Between 2003 and 2014, 13,562 HIV infected individuals in the demographic surveillance data system were linked to ARTemis. 2,766 individuals had at least one hospital admission. 4,942 individuals who engaged to HIV care and treatment had at least one episode of hospital admission. These data linkages resulted in a number of high impact publications. Discussion and Conclusion: HDSS data offers a unique platform which can be used to robustly provide answers to problems currently affecting low and middle income countries. By linking HDSS data with other data sources, complex questions can be answered. Africa Centre has demonstrated the capability that HDSS sites have in linking HDSS data with other data sources.

Title: Evaluation of census data with Health and Demographic Surveillance Systems: a study in three HDSS in rural Senegal
Speaker: Valerie Delaunay, Niakhar HDSS, Senegal
Co-Authors: Bruno MASQUELIER Cheikh Tidiane NDIAYE Gilles PISON Ndéye Binta Diémé COLY Samba NDIAYE Ibrahima DIOUF Lucie LECOMTE

Abstract: Background: Strengthening CRVS systems is a standing item in discussions around SDGs, but censuses and surveys will remain the main data sources on population dynamics in low-income countries in the near future. Health and Demographic Surveillance Systems (HDSS) can help in assessing the quality of cross-sectional demographic data. Objective: We compared key demographic parameters obtained from the 2002 and 2013 Population and Housing Censuses (PHC) in Senegal with data from three HDSS: Bandafassi, Mlomp and Niakhar. Methods: We extracted from censuses all records referring to areas covered by HDSS and compared population sizes, the number of households and compounds, age structures, trends in under-five and adult mortality, and recent age-specific fertility and mortality rates. Results: Population pyramids were broadly similar in HDSS and census data, although differences remain among young adults and the elderly. A large fraction of temporary migrants considered as long-term residents in HDSS were not enumerated in censuses because censuses were conducted during the dry season and had less inclusive residency rules than HDSS. Indirect estimates of under-five and adult mortality obtained from census reports were lower than expected from prospective mortality data and not very robust. By contrast, age-specific mortality rates based on recent household deaths were consistent with surveillance data except for children aged less than 1 (only one third of infant deaths having been declared in the 2002 census). Recent births were correctly reported and census estimates were in line with fertility rates among non-migrants in HDSS. Conclusion: Triangulation of survey and census data with HDSS can help to evaluate the quality of retrospective reports and also contribute to expand HDSS databases with socio-economic information. Collecting comprehensive data on seasonal migrations in both national censuses and HDSS is needed to adequately reflect demographic patterns in local areas and reduce biases caused by selective migration.

Title: The Components of Population Change in Kersa Demographic surveillance and Health Research Centre (KDS_HRC) Field site, 2008 to 2013
Speaker: Desalew Zelalem Ayel, Kersa HDSS, Ethiopia
Co-Authors: Nega Assefa Balewgizie Sileshi Negga Baraki Melake Damena Lemessa Oljira Melkamu Dedefo Wondimiye Ashenafi

Abstract: Introduction: KDS-HRC is one of 48 INDEPTH member Demographic Surveillance Sites throughout the developing world and one of six in Ethiopia. It has been in operation since 2007 and operates in 12 Kabeles of the district (2 semi-urban & 10 rural). Population projections play an important role in planning for populations. Knowing what a population may look like in the future is essential for providing adequate services and infrastructure for the population being served. The purpose of this paper was to examine how these different vital events shaped the population and demographic structure of KDS-HRC and make projections of the KDS-HRC population based on the rates calculated previously. Methods: The data for looking the pattern of fertility, mortality, migration and population by age and sex composition was used from KDS-HRC database. Using the population information from 2008 to 2013 from the center and by employing both mathematical models and the cohort-component method of projection four projections, i.e., constant exponential growth, constant age-specific exponential growth, cohort component method using constant rates and cohort component method using declining fertility rates were made. Results: Cohort component projections showed greater population growths than constant exponential growth projection. The population growth rate for constant exponential growth projection was 2.5% per year throughout the projection period while the population growth rate for constant age-specific exponential growth projection increased from 2.6% per year in 2018 to 3.2% per year in 2043. For cohort component method using constant rates and cohort component method using declining fertility rates projections, population growth increased slightly between 2013 and 2033, and then began to decline from 2038 to 2043. The dependency ratios slightly increased from 2013 to 2028 then it starts declining. Conclusion: The KDS-HRC population is projected to continue growing and changing in age composition over the next 30 years until 2043. The cohort-component projections of the population predict that growth will continue until it reaches its peak in 2028, then decrease to 2043.

Title: Linking health facility and Demographic Surveillance System (DSS) data for young adults 18-24 years: The Kilifi Experience
Speaker: Christopher Nyundo Baya, Kilifi HDSS, Kenya
Co-Authors: Aoife Doyle David B. Walumbe Michael Kahindi Mark Otiende Michael Kinuthia David Amadi Boniface Jibendi George Mochamah Norbert Kihuha Tom Williams David Ross Evasius Bauni

Abstract: Background: Kilifi Health and Demographic Surveillance data management system is linked to clinical surveillance at Kilifi County Hospital. However, linking health services with DSS data at the periphery health facilities has not been tested. We piloted linking health facility and demographic surveillance data in two health facilities within the KHDSS area. Methods: A health facility feasibility checklist was administered to 6 health facilities. Two facilities with youth friendly services, adequate space, reliable electricity and who were willing to participate

in the study were selected. Demographic surveillance data hosted on laptops stationed at the health facility was updated weekly. Participants who consented to the study were searched and matched by data clerks using names, sex, date of birth, location of residence, homestead head, and other members of the homestead. Results: At total of 628 participants who were approached consented to the study. Matsangoni health centre registered 386 (61%) and Pingilikani dispensary 242 (39%). 96% (605) were successfully matched and 23 (4%) were unmatched. Participants were searched using combined variables of names, date of birth, sex ethnicity, homestead head name, location and sub location of residence while others were searched using national ID numbers. Conclusion: The ability to successfully link health facility and DSS data provides comprehensive data for effective monitoring and evaluation of health care outcomes and public health interventions.

Title: The relationships between structure, process and outcome as a measure of the quality of care in the integrated chronic disease management model in a rural South African setting: a structural equation model
Speaker: Soter Ameh, Agincourt HDSS, South Africa
Co-Authors: Francesc Xavier Gomez-Olive Kathleen Kahn Kerstin Klipstein-Grobusch

Abstract: Background: South Africa is undergoing an epidemiological transition, with a dual burden of chronic communicable disease and chronic non-communicable diseases. In response, the Integrated Chronic Disease Management (ICDM) model was initiated in 2011 in selected Primary Health Care (PHC) facilities in the Agincourt HDSS site and other areas in South Africa to improve patient health outcomes. This study assessed the effectiveness of the ICDM model in improving health outcomes [CD4 count and blood pressure (BP)] of chronic disease patients. Data and methods: A review of health facility records was conducted between January 2011 and June 2014 in 12 PHC facilities in Bushbuckridge sub-district of Mpumalanga Province, an area underpinned by the Agincourt HDSS. A three-step process was used to recruit the study participants from seven PHC facilities implementing the ICDM model (n=435) and five PHC facilities not implementing the ICDM model (n=440). Individual and facility predictors of controlled BP (systolic blood pressure < 140 mmHg and diastolic blood pressure < 90 mmHg) and CD4 count above 350 cells/mm3 were determined by multilevel binary logistic regression. Results: In the multivariate model, the odds of having a CD4 count > 350 cells/mm3 was increased by age 50 years (OR=7.03, 95% CI: 2.54-19.41) and utilisation of PHC facilities implementing the ICDM model (OR=6.55, 95% CI: 3.96-10.81), while men were less likely than women to have CD4 count > 350 cells/mm3 (OR=0.27, 95% CI: 0.14-0.51). The odds of having controlled BP was increased by age > 50 years (OR=23.17, 95% CI: 7.46-72.16) and utilisation of PHC facilities implementing the ICDM model (OR=1.64, 95% CI: 1.11-2.41). Discussion and conclusion: There is potential for the ICDM model to improve health outcomes of chronic disease patients in the study settings; hence the need to scaling-up the ICDM model in all PHC facilities in South Africa.

DAY ONE: Wednesday, 11 November 2015

Poster Reviews

Venue: SABA Hall

Title: Comparison of web based online registration of births, deaths, and migration with home visits in Chakaria, Bangladesh
Speaker: Mohammad Abubakar Siddik, Chakaria HDSS, Bangladesh
Co-Authors: S.M Manzoor Ahmed Hanifi Abdur Razzak Ali Sorker

Abstract: Background: Paper-based data collection involving face to face interviews requires a significant amount of time and money for maintaining health and demographic surveillance system in developing countries where vital registration is absent or not functioning well. Development of web based online data collection has the potential replacing face to face interview reducing time and cost. Thus it is important to test the feasibility of the online data collection and evaluate the quality of data and cost. This paper reports findings from a study which compared web based data collection systems with face to face interview in Chakaria, a rural area of Bangladesh, as a part of ongoing health and demographic surveillance system. Objective: To compare face-to-face interview and web based online data collection system in terms of data collection, management time, quality of data, use of data and cost of data. Methods: Chakaria HDSS had been collecting data from 15,000 households through household visit every three months between 1999 and 2012. We-based online data collection introduced in 2013. The HDSS software application has been designed and developed three tier architecture using J2EE platform. Surveillance workers are collecting and updating health and demographic events regularly using TAB devices. Time and cost data collection and management, quality of data were compared between home visit and web based online data collection. Results: Web based data collection performed better results in terms of time and cost. Researchers and scientist cans use real time online data where ever he or she lives. The dashboard features provides the graphical presentation of various health and demographic indicators timely. Conclusion: Web-based on line data collection is an efficient system for collecting health and demographic events, preparing report and using real time data by the researchers and scientist. Keywords: Chakaria, INDEPTH, Bangladesh, vital events, web-based, data collection, HDSS.

Title: Socio-demographic determinants of birth weight in southern rural Ghana: evidence from Dodowa Health and Demographic Surveillance System
Speaker: Manyeh Alfred, Dodowa HDSS, Ghana
Co-Authors: Vida A. Kukula David E. Akpakli Elizabeth Awini Sefiamor

Abstract: Introduction: Low birth weight (LBW) is a major public health problem worldwide especially in the developing countries and it is a major determinant of mortality, morbidity and disability in neonates, infancy and child hood and has long term impact on health outcomes in adult life. It also results in substantial costs to the health sector and imposes a significant burden on the society as a whole. This study investigates the incidence of LBW and

determinants of birth weight in southern rural Ghana. Method: Pregnancy, birth, demographic and socioeconomic information of 6,777 mothers who gave birth between 2011 and 2013 as well as information on their babies were extracted from the database of Dodowa Health and Demographic Surveillance System which is a longitudinal follow-up of over 24,000 households. The incidence of LBW was calculated and the univariable and multivariable associations between exposure and outcome variables were explored using logistic regression. STATA 11 was used for analysis. Result: The result revealed that 40.21% of the infants were not weighed at birth and the incidence of LBW for the 3 years is 8.72, 7.04 and 7.52 respectively. Women aged 20-24, 25-29, 30-34 were more than twice more likely to have babies weighed 2.5kg compared to those <20years (OR:2.32, 95%CI:1.65-3.26, OR:2.73, 95%CI:1.96-3.79, OR:2.87, 95%CI:2.06-4.01) and mothers who were above 34 years were more than thrice more likely to have babies weighed 2.5kg (OR: 3.59, 95%CI:2.56 -5.04).Women with parity 2 and >3 were 30% and 81% more likely to have babies weighing 2.5kg (OR: 1.30, 95%CI: 1.03-1.63, OR: 1.81, 95%CI: 1.38-2.35) compared to those with parity1.Male infants were 52% more likely to weigh 2.5kg at birth (OR: 1.52, 95%CI: 1.32-1.76) compared to females. Conclusion: The findings suggest that parity, maternal age and infant gender were significant determinants of birth weight in southern rural Ghana.

Title: Factors associated with under five mortality in Iganga/Mayuge Districts, Uganda
Speaker: Noah Kasunumba, Iganga/Mayuge HDSS, Uganda
Co-Author: Carin Andrews

Abstract: Background: The dramatic decline in preventable child deaths over the past quarter of a century is one of the most significant achievements in human history. The global mortality rate has declined by nearly half (49 per cent) since 1990, dropping from 90 to 46 deaths per 1,000 live births in 2013. Despite this admirable accomplishment worldwide, African counties are still struggling with child mortality rates that are high at 95 per 1000 live births. Aim: To determine socio-economic factors associated with under five mortality. Methodology: A census of all children below the age of one year was done in December 2008. These children were then followed up to December 2012 through a longitudinal bi-annual survey that monitors births, deaths and migrations in Iganga/Mayuge health and demographic surveillance site. By the end of the study, of the 2286 enumerated children 479 had died, 519 had out migrated with families and 1288 were alive. Considering children who had died and those that were still living a logistic regression model was built to identify the factors that affect under five child mortality. Key results: The variables that were found to be associated with under five mortality were death of the father, the child not living with parents, mother cohabiting with partner, low socioeconomic status of household compared to high and the household head being a farmer as compared to being involved in business or trade. Conclusions and recommendations: It is important for health system planners to put extra focus on households with orphans or un-married mothers and also encourage parents to live with their children for health promotion and interventions for children under 5. Strategies to increase income generating activities and accessibility to health care for poor households have the potential to contribute to higher child survival in Uganda.

Title: High Prevalence of Cryptococcal Antigenemia among HIV-infected Patients Receiving Antiretroviral Therapy in Addis Ababa, Ethiopia
Speaker: Abere Shiferaw Alemu, Kersa HDSS, Ethiopia
Co-Authors: Russell R. Kempker Admasu Tenna Christopher Smitson Nega Berhe Henry M. Blumberg Abraham Aseffa

Abstract: Background: Cryptococcal disease is estimated to be responsible for significant mortality in Sub-Saharan Africa. The current WHO Rapid advice guidelines for cryptococcal disease recommends to consider implementation of cryptococcal antigen screening and pre-emptive anti-fungal therapy in areas with a high prevalence of cryptococcal disease. However, the prevalence of cryptococcal infection is not well known in Ethiopia. Objectives: To determine the prevalence of and risk factors for cryptococcal antigenemia among HIV-infected adults in Addis Ababa, Ethiopia. Methods: Consecutive adult HIV infected patients from the outpatient ART clinics of both Black Lion Hospital and ALERT hospital were enrolled into the study between May and August 2011. A CD4 count < 200 cells/Î¼l was required for study participation. Patients receiving anti-retroviral therapy (ART) were not excluded. A cryptococcal antigen test was performed for all patients along with an interview, physical exam, and medical chart abstraction. Logistic regression analysis was used to assess risk factors for cryptococcal antigenemia. Result: 369 HIV-infected patients were enrolled; mean CD4 count of 123 cells/Î¼l and 74% receiving ART. The overall prevalence of cryptococcal antigenemia was 8.4%; 11% in patients with a CD4 count <100 cells/Î¼l 8.9% with CD4 100 to 150 cells/ Î¼l and 5.7% with CD4 150 200 cell/Î¼l. Eighty four (84%) of patients with cryptococcal antigenemia were receiving ART. In multivariable analysis, increasing age, self-reported fever, CD4 count <100 cells/ Î¼l, and site of screening were associated with an increased risk of cryptococcal antigenemia. No individual or combination of clinical symptoms had optimal sensitivity or specificity for cryptococcal antigenemia. Conclusion and recommendation: Cryptococcal antigenemia is high in Addis Ababa, Ethiopia and rapid scale up of screening programmes is needed. Screening should be implemented for HIV infected patients with low CD4 counts regardless of symptoms or receipt of ART. Further study into the effect of location and environment on cryptococcal disease is warranted.

Title: Psychometric evaluation of the Major Depression Inventory used in a cross-sectional survey of young people in Rural Coastal Kenya
Speaker: Mark Otiende, Kilifi HDSS, Kenya
Co-Authors: Amina Abubakar George Mochamah David Walumbe Christopher Nyundo Aoife Doyle Evasius Bauni David Ross

Abstract: Background: Lack of reliable standardized measures of mental health for use in SSA is one of the key challenges for epidemiological studies on mental health. Objective: To evaluate the psychometric characteristics of the Major Depression Inventory (MDI). Specifically, the internal consistency, factorial structure and discriminative validity of the scale in a rural setting in Kenya. Methods: Factor analysis was performed to establish predominant factors and to assess construct validity. A general factor was that which explained at least 50% of the variance. Internal consistency was examined using Cronbach-alpha. Sex, age and language differentials in Î± were also assessed. A coefficient of 0.80 was considered sufficient.

For discriminative validity, mean MDI scores between drinkers and non-drinkers; on-bullied, less-bullied and often-bullied were compared using Student test and ANOVA. Results: Factor analysis of the MDI items showed only one factor, which explained 47% of the variance. Confirmatory Factor analysis showed good construct validity. Overall coefficient for internal consistency was Î±=0.84; 0.81 for females and 0.85 for males, and ranged between 0.82-0.84 for age groups 13-14, 15-19 and 20-24. Interviews in Kiswahili had the highest coefficient (Î±=0.84) compared to Giriama and English both with Î±=0.75. Mean MDI score was higher for drinkers. The difference in mean MDI scores between drinkers and non-drinkers was -0.4 (95% CI -0.7, -0.2) and was statistical significance at Î±=0.05. Mean MDI score was 6.1 (95% CI 5.8, 6.5) for the non-bullied, 10.4 (95% CI 9.6, 11.3) for the less-bullied, 15.8 (95% CI 13.1, 18.8) for the often-bullied and these differences were statistically significant. Conclusions: The MDI presented with good psychometric characteristics. Given its brevity, relative ease of usage and ability to identify at-risk youth it can be recommended for use in epidemiological studies of mental health in Africa. Further studies to establish clinical cut-off are recommended.

Title: Hospitalization among adults resident in the Africa Centre Demographic Surveillance area in Rural KwaZulu-Natal: South Africa
Speaker: Irene Tampuri Azindow, Kintampo HDSS, Ghana
Co-Authors: Kerstin Klipstein-Grobusch Portia Mutevedzi, Dickman Gareta Emmanuel Mahama Kwame Adjei Seth Owusu-Agyei

Abstract: Background: Morbidity is still high in developing countries due to the enormous burden of communicable and non-communicable diseases. Serious morbidity resulting in hospitalizations are costly to both the individual and to the public sector hence there is a need to understand causes of hospitalization for efficient patient monitoring and planning health programmes to reduce morbidity. Linked hospital and population based data was used to describe the causes of and factors associated with hospitalization among adults 15 years and older resident in the Africa Centre Demographic Surveillance. Methods: The cohort consisted of all resident adults of Africa Centre Demographic Information System ACDIS as at 1st January, 2011 and followed till 31st December, 2013. Hospitalization was the outcome and causes of hospitalization were based on discharge diagnosis. Factors associated with hospitalization were assessed using cox proportional hazard model. Results: The cohort consisted of a total of 41,477 individuals with 24,068 (58.03%) females with a median age of 29 years (IQR 20-45). 1,172 (2.83%) individuals contributed to 1,381 episodes of hospitalization. The top 5 causes of hospitalization for the period were maternal conditions 338(25.07%), tuberculosis 248(18.40%), injuries 126(9.35%), infectious and parasitic diseases 104(7.72%) and cardiovascular diseases 91(6.75%). After adjusting for confounders females were 74% more likely to be hospitalized [adjusted hazard ratio (aHR) 1.74 95%CI: 1.54-1.97] and participants on grants were 36% more likely to be hospitalized [aHR 1.36 95%CI: 1.13-1.62]. Married and widowed participants were 46% and 43% respectively less likely to be hospitalized [aHR 0.54 95%CI: 0.45-0.66] and [aHR 0.57 95%CI: 0.45-0.72]. Discussion and conclusion: The analyses suggest that maternal conditions, tuberculosis, injuries and infectious and parasitic as well as cardiovascular disease are themain causes of hospitalization.

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Title: Spatial Epidemiology of Tuberculosis in Kisumu and Siaya Counties, Western Kenya, 2013
Speaker: Peter Sifuna, Kombewa HDSS, Kenya
Co-Author: Ben Andagalu

Abstract: Background: The occurrence of TB in Kenya is characterized by spatial variations across the country. Nyanza region in western Kenya has the highest TB burden with an estimated prevalence of 500-600 cases per 100,000. Effective management of TB and reduction of TB incidence rates relies on knowledge of where, when and to what degree the disease is present. Objective: The objective of this study was to determine the spatial variability of TB disease within a holoendemic region and investigate the factors associated with the observed distribution. The study area covers both the Kisumu and Kombewa HDSS. Data and methods: Data on TB occurrence for the year 2013 was abstracted from TB clinic registers (N=235) in Siaya and Kisumu counties. Locator information in the registers was used to link TB cases to lowest formal administrative units referred to as sub-locations. The average annual TB cases per 100,000 population was estimated by dividing the TB cases by the population estimate in the same time period. The ArcView application was used to generate maps showing the spatial distribution of TB. Preliminary results: A total of 5,528 tuberculosis patients were abstracted from TB clinic registers. The notified TB prevalence for the entire study area was 278 cases per 100 000 population. There was substantial variation in the TB burden at the sub location level, from 0.0 to 433 for new smear positive cases and from 0.0 to 1205 for all treated cases. Discussion and conclusion: TB occurrence varies geographically even within a holoendemic region thus providing opportunities for prioritizing earliest responses and confirmatory studies to areas deemed at highest risk. Results from this study can guide targeted TB screening and control efforts with the goal of reducing TB incidence.

Title: Trends in HIV service coverage and mortality along the HIV care cascade: results from a population based open cohort study in rural Uganda between 1990 and 2014
Speaker: Ivan Kasamba, Kyamulibwa HDSS, Uganda

Abstract: Objective: To assess changes in HIV service coverage and mortality among HIV-infected adults.
Methods: Between 1990 and 2014, a population-based cohort study collected annual socio-demographic, HIV surveillance, and clinic data. Participants diagnosed with HIV were referred to the study clinic, for enrolment into HIV care and/or treatment. Free Antiretroviral Therapy (ART) became available in 2004. We consider three transitions: Sero-conversion → HIV care; Care → ART initiation; ART initiation → death. Cumulative incidence graphs and Cox regression were used in this analysis includes HIV-positive adults (aged 15+years). Time to enrolment into pre-ART care or ART initiation were the main events and death was the competing risk at each step. Cohorts were defined by the start of exposure: before ART (1990-2003); early ART availability (2004-2008); ART availability (2009-2014). Results: 2,337 HIV-positive adults (63% females, 50% 15-29 years at first HIV-positive test) accumulated 32,307 person-years; 30% died during follow-up. Time from sero-conversion to HIV care, and mortality before HIV care have significantly reduced over successive sero-conversion cohorts. Before ART became available, rates of enrolment into care were similar by sex, but men had a lower rate of enrolment after ART availability. Older HIV-positives had higher enrolment rates

than the younger ones. Time from enrolment into HIV care to initiating ART has increased from 1.7 years in 2004-2008 to 2.3 in 2009-2014. After enrolling into HIV care, ART initiation rates and mortality before ART initiation were similar by sex. Discussion: HIV-infected people are starting care earlier and staying in care longer before initiating ART. Death before contact with an HIV care programme has reduced recently. Men and younger adults had lower access to care during the ART period. Interventions towards regular HIV tests and earlier HIV diagnosis could significantly reduce mortality and onward transmission.

Title: Predictors of Low Birth Weights in rural northern Ghana
Speaker: Awintuen Isaiah Agorinya, Navrongo HDSS, Ghana
Co-Authors: Edmund Kanmiki James Akazili Engelbert Nonterah Abraham Oduro

Abstract: Background: Normal birth weight is essential for child survival, development and health later in life. Foeto-maternal, environmental and economic factors known to be associated with birth weight have limited description in northern Ghana. The study examined biological and environmental factors that influence normal and low birth weights in the two Kassena Nankana districts of north-eastern Ghana. Methods: Eight thousand two hundred and sixty-three mother-infant pairs were recruited from January 2009 to December 2011 as part of the Navrongo Health Research Centre's routine data collection for the study. Infants born at term and singleton were included in the study. Data on foetal characteristics (birth weight and sex), maternal characteristics (age, parity, education, marital status, and ethnicity and religious affiliation) and socio-economic characteristics were collected and studied. Results: There were 8,263 live births of which 44.9% were females. The overall average birth weight was 2.85 kg; 2.9kg for males and 2.8 kg for females. The average maternal age was 28 years, median parity 2, literacy rate 69.5% and married women 83.3%. The average birth weight for males was significantly higher 2.9kg than females 2.8kg at P<0.0001. The proportion of low birth was 13.8% and more in females than males (15.5% vs 12.2% p<0.0001). Predictors of low birth-weight after controlling for confounding factors were sex of neonate, maternal age, maternal marital status and wealth index. Conclusion: This study reveals that female neonates, neonates born to teenage mothers and neonates of single mothers are more prone to be born with low birth weight relative to their counterparts in this poor setting, therefore interventions geared at reducing the effect of low birth weight of infants in resource poor settings should put more emphasis on this category of neonates so as to decrease the effects of birth weight on the health and survival of neonates.

Title: Larval Source Management (LSM) for Malaria in Africa: Application to Nouna HDSS
Speaker: Issouf Traore, Nouna HDSS, Burkina Faso

Abstract: Background: Despite the wide used of mosquito bednets, vector control with DDT and the availability of drugs, malaria is still the big killer in Burkina Faso and in the Nouna HDSS in particular. The LSM mains to reduction the density of mosquitoes transmitting malaria, and thus a reduction in the transmission of malaria especially in under five years age in Nouna HDSS. Bacillus thuringiensis israelensis (Bti) is the larvicide used. Data and methods: Designed over 3 years (2013-2015), the LSM intervention cover the complete Nouna HDSS divided into 3 arms: i) all mosquito breeding sites are treated in 42 villages; ii) only most productive breeding sites are treated in 42 villages; iii) breeding sites are left untreated in 43 villages. Each 10 days breeding sites received appropriate treatment with Bti. Adult mosquitoes were captured using light trap (CDC) to assess the LSM impact in 36 villages (12/intervention arm). Baseline data were collected in 2013 and intervention years are 2014-2015. Preliminary results: Compared to 2013, the intervention in 2014 shows a reduction of mosquito population in the Nouna HDSS. Per study arm, respectively, numbers of mosquitoes/trap/night were 7.62, 7.12 and 7.47 vs. 5.96, 6.18 and 7.94. Considering only Anopheles species results were 2.49, 1.99 and 2.20 vs. 1.07, 1.30 and 2.52. In 2014 the average number of Anopheles/trap/night is reduced by 58% in the arm i) and 48% in the arm ii). Discussion and conclusion: A significant reduction in the density of mosquitoes needs a long term running of LSM in rural Nouna HDSS. A new hope is given through the LSM to effectively control malaria in Africa.

DAY ONE: Wednesday, 11 November 2015

Poster Reviews

Venue: SABA Hall

Title: Alcohol Use Disorder among a Rural Indian Population of West Bengal: an Application of the Alcohol Use Disorders Identification Test (AUDIT)
Speaker: Anamitra Barik, Birbhum HDSS, India
Co-Authors: Rajesh Kumar Rai Abhijit Chowdhury

Abstract: Background: In India, the dynamics of alcohol use disorders (AUDs) is poorly understood. Previous studies on alcohol consumption are primarily concerned with urban drinking patterns, with insufficient emphasis on rural areas where over two thirds of the population resides. Using a unique dataset based on a Health and Demographic Surveillance System (HDSS) site in India, we apply the Alcohol Use Disorders Identification Test (AUDIT) developed by the World Health Organization to examine the extent and major correlates of AUD among the survey population. Data and methods: A total sample of 36,611 individuals (18274 men and 18337 women) aged â‰¥18 years participated in the study. Guided by the AUDIT, a composite index was developed to gauge the AUD among current alcohol users (reported using alcohol preceding 30 days of survey date) of different socio-economic groups. Bi-variate and multivariate ordered logit regression methods were applied to fulfil the study objective. Results: Nearly a fifth (19%) of the males but only about 2% of women reported alcohol consumption. The mean ethanol consumption was also higher among men (96 g) than women (57 g). On the AUDIT measure, results from ordered logit regression suggest that AUD was lower among women [coefficient (Î²): -1.639; 95% Confidence Interval (CI): -1.927, -1.351], among those from indigenous ethnic groups [Î²:-0.514; CI: -0.664, -0.365] and unmarried people [Î²:-0.508; CI: -0.832, -0.184]; Surprisingly, although consumption of alcohol among Muslims is forbidden, we find a higher extent of alcohol use disorders among them [Î²: 0.469; CI: 0.049, 0.890]. Conclusions: The AUDIT scores indicates that almost 70% of current alcohol users are affected with AUD, which demands an intervention programme to curb the level of alcohol use and its related problems. Targeting men, a household based intervention with counselling, monitoring, and diagnostic evaluation and treatment are the need of the hour.

Title: Socio-economic Disparities in Tobacco Consumption in Rural India: Evidence from a Health and Demographic Surveillance System
Speaker: Anamitra Barik, Birbhum HDSS, India
Co-Authors: Rajesh Kumar Rai

Abstract: Background: India houses over 275 million tobacco users, with 164 million users of only smokeless tobacco, 69 million are exclusive smokers, and 42 million users of both smoking and smokeless tobacco. Previous studies on tobacco use conducted in India either focused on urban sampled populations (most of them were poorly designed) or an analysis of a nationally representative population. This study aims to examine the socio-economic factors associated with types of tobacco use in selected rural Indian population. Data and methods: A cross sectional study was conducted with surveillance data from the HDSS Birbhum. Total respondents of 29,783 individuals (16,038 men and 13,745 women) aged >=15 years were surveyed between October 2010 and January 2011. Apart from bivariate analyses, a binary logistic regression was applied to estimate the adjusted odds ratio for socio-economic factors (religion, social group, education, occupation, and wealth quintile) associated with current tobacco use in any form. Results: Bidi is the major mode of smoking. Nearly 22% of men and 26% women were using smokeless tobacco. 46% men and only 4% women reported smoking bidi. Overall, men are more likely to use tobacco. Irrespective of gender, with increasing years of education, people are less inclined to use tobacco; and unemployed people are less likely to use tobacco. With increasing income, the odds of smokeless tobacco use and the odds of smoking bidi are higher among women and men, respectively. Conclusions: The BIRPOP study indicates that irrespective of gender and income, raising the level of awareness through household based health education could be an effective intervention to minimize the level of tobacco use. The taxation on bidi and other forms of tobacco should be increased as per cigarettes for a major impact. The vulnerable populations in rural India can thus be prevented taking on a disproportionate health burden.

Title: Nutritional Status and associated factors of Adolescents from Southern Ghana: Evidence from a Health and Demographic Surveillance System
Speaker: Adjoa Serwah Brenya, Dodowa HDSS, Ghana
Co-Authors: Irene Tsey Mary Attaa-Pomaa Georgina Badu-Gyan Doris Sarpong Aoife Doyle Margaret Gyapong

Abstract: Background: Nutrition and physical growth are integrally related. Poor nutrition during adolescence can affect the adult body size, resulting in shortness or thinness. During adolescence, teenagers grow and develop at different rates and it is sometimes difficult to accept a changing body. Being overweight or underweight can be a concern during adolescence. This study aims to determine the nutritional status of adolescents and its associated factors among adolescents in Shai-Osudoku and Ningo-Prampram districts of southern Ghana. Data and methods: Anthropometric and socio-demographic information from INDEPTH Healthy Transitions into Adulthood Study (2014) was used in data analysis. A total of 1,689 adolescents (10-24years old) were selected from the Dodowa HDSS using stratified random sampling. Height-for-age and BMI-for-age were compared to the 2007 WHO growth reference. Data were analyzed using SPSS, Version 19. Preliminary results and discussion: A high prevalence of underweight (40.2 %) and overweight/obesity (5.4%) in the present study was found among adolescent males respectively. Among the females, the prevalence of underweight (30.7%) and overweight/obese (14.5%) was reported higher among adolescents and the differences in the distribution were significant at 0.05 levels. Prevalence of underweight differed by region (from 28 % to 48 %) and was higher in rural v. urban and peri urban areas. Prevalence of overweight also differed by region (from 5% to 14%) and was higher in urban and peri urban v. rural areas. These differences were mediated by socio-economic factors such as marital status and level of education, as the distribution were significant at 0.05 levels. Conclusion: The possible reasons for both forms of malnutrition among Ghanaian adolescents could be traced to poverty, nutrition transition and socioeconomic condition. Strategies to break the intergenerational cycle of malnutrition are therefore needed for this adolescent population.

Title: Assessment of exposure to DDT in newborns from Manhiça after successive rounds of Indoor Residual Spraying for malaria control
Speaker: Paulo Filimone, Manhiça HDSS, Mozambique
Co-Authors: Joan O. Grimalt Marta Fort Raquel Gonzalez Alfredo Mayor Eusebio Macete Jordi Sunyer Carlota Dobaño Clara Menendez

Abstract: Background: The past and present use of dichlorodiphenyltrichloroethane (DDT) for malaria vector control through Indoor Residual Spraying (IRS) can lead to human exposure to this compound and its metabolites (DDE, DDD). Methods: We investigate the presence of DDT in 98 umbilical cord samples from infants born between 2011 and 2012 in Manhiça district, after IRS with DDT. We analyzed the relationship of this exposure with maternal variables and compared with concentrations found before DDT reintroduction. Results: DDT and metabolites were detected in more than 50% of samples. The mean concentration of 4, 4'-DDT in samples was 1.3 ng/mL (SD 2.2 ng/mL), while its main metabolite 4, 4'-DDE had a mean concentration of 1.4 ng/mL (SD 1.6 ng/mL). The mean ratio between 4, 4'-DDE and 4, 4'-DDT was 1.3 (SD 0.71), and 36% of samples had more 4, 4'-DDT than 4, 4'-DDE. No association with age or BMI was found after adjusting for potential confounders, but the concentration of 4,4'-DDE and the ratio between 4,4'-DDE and 4,4'-DDT were negatively associated with parity. Discussion and conclusions: After 7 years of DDT use in Manhiça area for IRS, levels of 4,4'-DDT and 4,4'-DDE in cord blood serum increased 3.1 and 1.7 times respectively. Although levels of both metabolites are lower than those reported in different populations during the last years of DDT use in agriculture or up to 10 years after its banning, the continued use of it may still increase its concentrations in cord serum samples. The current use is reflected in lower 4,4'-DDE/4,4'-DDT ratios than those reported between 2003 and 2006, just before its implementation, as well as with the negative association of both 4,4'-DDE levels and 4,4'-DDE/4,4'-DDT with parity. The expected increasing levels due to the current use represent a great cause for concern for the future growth and health of the children in this area. Keywords: DDT-cord blood concentrations-Malaria vector control.

Title: Assessing data quality using Census and HDSS outputs for Navrongo
Speaker: George Wak, Navrongo HDSS, Ghana
Co-Authors: Martin Bangha Stephen Kwankye Abraham Oduro

Abstract: Background: Common sources of demographic data in Africa are population and housing censuses, household surveys as well as vital registration systems. These sources have some problems, among which are coverage and content errors, inadequate sampling size, and recall problems. These problems affect the quality and reliability of the results from these sources. An important system of demographic data collection system that is now gaining popularity is Health and Demographic Surveillance Systems (HDSS). Objective: The objective of this paper is to assess data quality by comparing the demographic outputs of the HDSS and that of the census for 2010 for the Navrongo HDSS area. Data: Validate Data for this analysis come from the Navrongo HDSS and the 2010 Population and Housing Census (PHC) of Ghana. The HDSS data was generated as at 28th September 2010, which was the reference date for the census (census night). The main areas of comparison include population size, age-sex distributions, accuracy of age reporting and mortality levels in the study area. T-test was used to check for any significant difference between the outputs from the two systems. Results: The results of this analysis showed a high level of comparability between the census and HDSS data. Even though the census recorded higher population than the HDSS, the age-sex distribution shows no significant difference. Similarly, the crude death rate and the age-specific death rate show close similarities between the census and the DSS. However, the HDSS has a better age reporting than the census. The census and HDSS approaches show similarities in the population characteristics of the study area. Given that the two systems are independent of each other, the similarity in the outputs lends credence to the accuracy and reliability of our data systems and methods.

Title: Vexation of Ethical Guidance: Walking the Tight Rope of Research Involving Pre-collected Data
Speaker: Evelyn Anane-Sarpong Swiss TPH, University of Basel
Co-Authors: Tenzin Wangmo Osman Sankoh Marcel Tanner Bernice Simone Elger

Abstract: Background: Current advances in information technology and analytical procedures motivate research using pre-collected data (RUPD). Such data have already met their primary uses, and may yet hold potential for further use. The ethics community has focused previous discussion of such research on data sharing, with less attention to other intrinsic RUPD features that challenge some long standing research ethics principles. Methods: Literature was reviewed on new models of public health (PH) that incorporate health and demographic surveillance systems under the INDEPTH network, with capacity to pool identifiable data for RUPD. We aimed to: conceptualise RUPD; identify challenges in applying existing research ethics guidance; explore international guidelines, codes, frameworks and regulations for provisions that could be adopted or adapted to address RUPD's challenges; and propose recommendations. Observations were descriptively analyzed. Discussion and Conclusion: Current research ethics guidance is generally based on justificatory principles developed for research involving contact with humans and real-time data collection. The distinctive characteristics of RUPD are reliance on pre-collected data and non-human-contact. Because RUPD is necessarily preceded, and dependent on data from PH activities, it inherently adheres to lower, less obligatory ethical and often legal requirements for PH rather than the generally higher international normative ethical ideals set for health research. Issues that incur risks to ethical compromise include: reciprocity and beneficence; respect for autonomy; and dignity, privacy and other fundamental rights. The poster will present these vis-à-vis ethical solutions and available guidance that could be adopted for, or adapted to RUPD. We conclude that existing ethical standards have successfully guided health research, but are inadequate in the face of paradigms like RUPD. New thinking, reflection and analysis are needed to build upon selected existing ethical provisions to develop a new stand-alone guidance that addresses RUPD's challenges.

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Brief profiles of HDSSs in Ethiopia

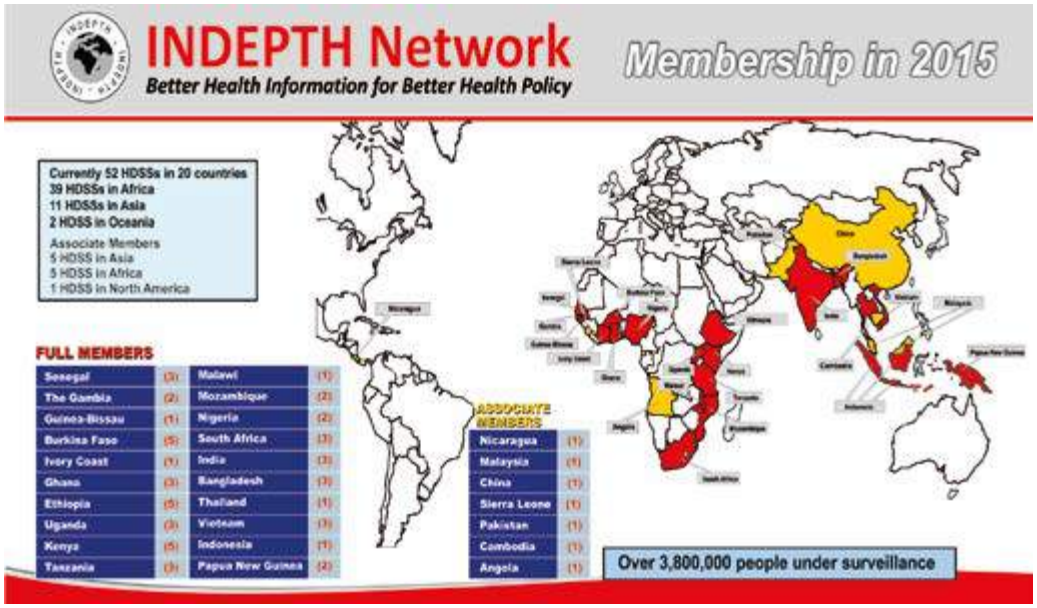
Butajira HDSS - University of Addis Ababa: The Butajira Rural Health Programme was initiated in 1986 following a population census of randomly selected nine peasants association (rural communities) and one urban dwellers association (urban village) using the probability proportionate to size technique. It was established as a collaborative programme between the then Department of Community Health (now School of Public Health), Faculty of Medicine, Addis Ababa University and the Division of Epidemiology, Department of Epidemiology and Public Health, Umea University (Sweden). The collaboration started as a doctoral-study project (Shamebo 1993). Later, it grew into a departmental collaboration and included the development of the study-base infrastructure and involvement of a multidisciplinary group of researchers. The original HDSS population in 1987 was around 28 000 and grew over 28 years to about 78 000 individuals. BRHP is located in one of the most densely populated parts of Ethiopia, Meskan, Mareko and Silti districts.

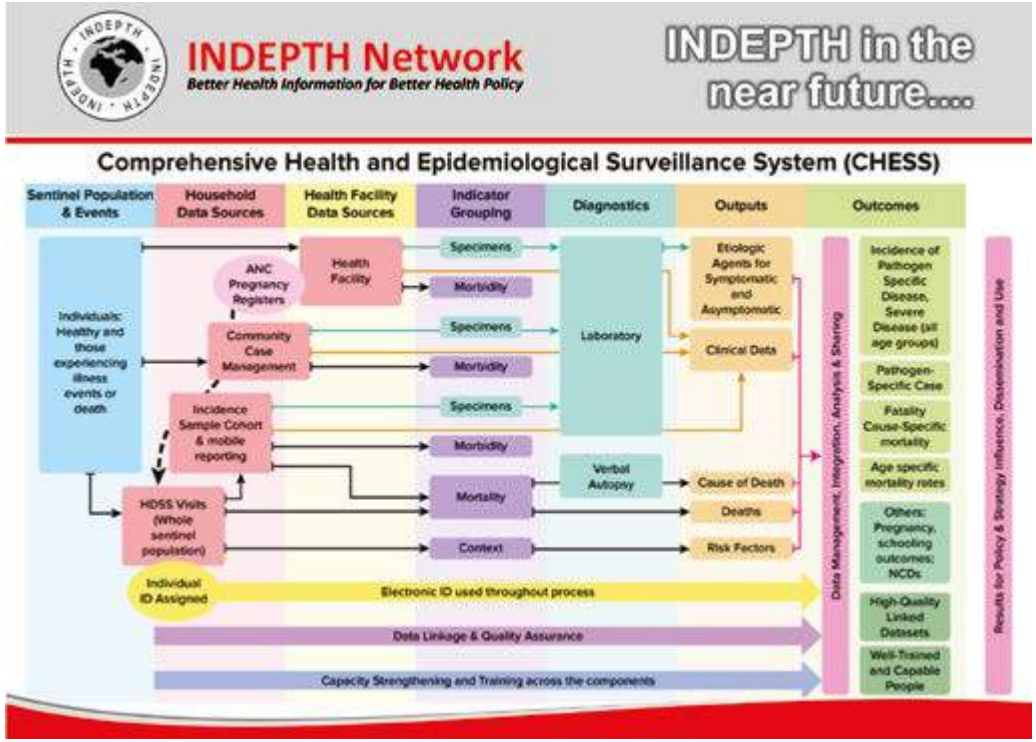
Dabat HDSS - University of Gondar: Established in 1995 Dabat Research Centre is the first of 3 Research Centres at the University of Gondar. The need for valid, reliable and timely information for further research and to direct health interventions is acute in developing countries. In Ethiopia, there is an inadequate vital event registration system. Population and housing census, national sample and health facility reports are the main source of information on population health. However, retrospective sources fails to provide essential information on the timing of events and the causes of consequences of problems remain poorly understood. In order to produce information to aid in better health policy formulation, evidence based decision making and health practice that the University of Gondar established the Dabat Health and Demographic Surveillance System (HDSS) in Dabat District.

Gilgel Gibe HDSS - Jimma University: Brief Introduction Gilgel Gibe Field Research Centre Health and Demographic Surveillance System is located surrounding the Gilgel Gibe Hydroelectric dam, within four districts of Jimma Zone, Oromia Region, Southwest Ethiopia. Its global position is between latitudes 07.4253 and 07.5558oN and longitudes 037.1153 and 037.2033o E with agroclimatic zone of midland. The centre comprised of 11 kebeles (smallest administrative structure in Ethiopia) of which 3 are small towns.

Kersa HDSS - Haramaya University: Kersa Demographic Surveillance and Health Research Centre (KDS-HRC) is located in Kersa District of Eastern Hararege, Oromia region, Eastern Ethiopia. It was established in 2007 with the vision of becoming centre of excellence in health science research in Ethiopia. The field site has 12 Kebeles, ten are rural and two are urban (Kersa and Weter towns). It conducts health and demographic surveillance. The major work on the ground are monitoring demographic altering events such as birth, death, and migration; and health related conditions such as pregnancy, immunization, and morbidity. It also conducts verbal autopsy for the deceased to identify causes of death.

Kilite Awlaeelo HDSS - Mekelle University: The Kiltie Awlaelo HDSS includes 10 Kebeles (districts) selected from Eastern zone considering agro climatic, rural/urban and other several other factors to assure representations. Nine of the study districts are rural and only one is from urban. The site is located 802km North of Addis Ababa, the capital of Ethiopia. The surveillance was started in 2009, with a baseline population of 65, 848 (urban 87.2% and 13.7% from rural) living in 14,454 households





GENERAL STRUCTURE

Monday-Tuesday **9th – 10th November 2015**	• SPAP PC meeting Study
Monday **9th November 2015**	• INDEPTH Scientific Advisory Committee (SAC) Meeting
Tuesday **10th November 2015**	• INDEPTH Board Meeting • Young Scientists Scientific Writing Workshop (facilitated by The Lancet editors) • SAC Subgroup meeting on Comprehensive Health and Epidemiological Surveillance System (CHESS)
Wednesday **11th November 2015**	• Opening Session • Plenary and Parallel Sessions • Official Reception
Thursday **12th November 2015**	• Plenary and Parallel Sessions • Working Group Sessions • Funders' Session • Social Event: Dinner
Friday **13th November 2015**	• Plenary and Parallel Sessions • Closing Session
Saturday **14th November 2015**	• Annual General Meeting (closed)

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