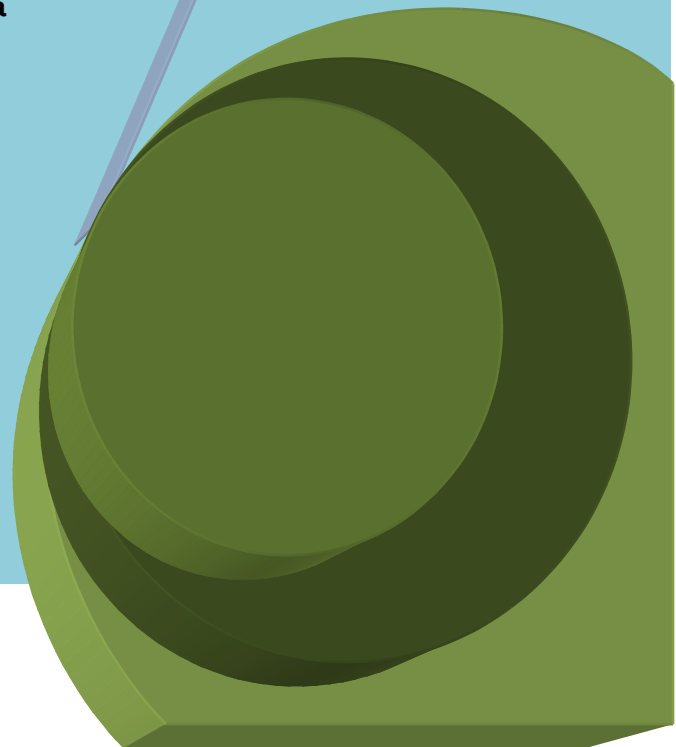**Abstracts of Research Findings Presented on the 2oth Annual Conference of Ethiopian Public Health Association (EPHA)**

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Introduction

Ethiopian Public Health Association(EPHA) The Ethiopian Public Health Association (EPHA) is legally registered national, independent, not-for-profit, voluntary, multi-disciplinary professional Association established in 1990 with a mission of enhancing better health services to the public and professional standards through advocacy, active involvement, and networking to benefit both members of the Association and the public health professionals in general. It is one of the leading and well-known health professional Associations in the country having over 3,500 professionals as members.

One of the major tasks taken care by EPHA are organizing annual conference which is used as a fertile ground for members and other public health professionals to study and conduct various researches as of enhancing the public health. To this effect this abstract booklet is published annually to:

- Improve knowledge, and practices of public health professionals in the areas of HIV/AIDS, STIs and TB.

- Introduce latest research findings, best practices and success stories to the general public through public health practitioners, trainers, planners and researchers.

- Motivate health workers to engage themselves in operational studies through dissemination of abstracts from studies conducted by health professionals working in health units and training institutions.

1. Oral Presentations

1.1. Health Service

1. Promoting Cochrane Collaboration Activities in Ethiopia through an African Cochrane Network

Omar Abdulwadud, PhD., Twinning Center, Addis Ababa, Ethiopia; Jimmy Volmink, MD., Taryn Young, PhD., South African Cochrane Centre, Cape Town, South Africa; Ayalew Tegegn Muluneh, MD., Department of Epidemiology & Biostatistics, Jimma University; Yemane Berhane, MD., Addis Continental Institute of Public Health, Addis Ababa, Ethiopia.

Background: The Cochrane Collaboration (http://www.cochrane.org) is an international, non-profit and independent organization established in 1993. It prepares and disseminates up-to-date systematic reviews on the effects of healthcare interventions to help people make well-informed decisions. Currently more than 15,000 people in over 80 countries participate in this global initiative. However, people in Africa, are markedly under-represented in the Collaboration.

The South African Cochrane Centre (SACC) was set up in 1997 to promote the work of the Collaboration in the African region. The SACC is the only Cochrane Centre in Africa and serves as the reference Centre for individuals in 25 African countries, including Ethiopia, who wish to prepare Cochrane reviews. The Centre's vision is that healthcare decision making in the African region will be informed by high quality, timely and relevant research evidence.

Objective: To engage individuals and institutions interested in advancing evidence-based health care (EBHC) and who are willing to promote Cochrane activities in Ethiopia.

Methods: The SACC has initiated an African Cochrane Network (ACN) for individuals and institutions in Africa who would like to promote EBHC. ACN activities aimed at facilitating the preparation, dissemination and use of Cochrane reviews in the African region will be discussed. In addition, the presentation will highlight opportunities for individuals and institutions in Ethiopia to participate in the ACN through the formation of a network site. The network site will raise awareness of the Cochrane collaboration, recruit volunteers to conduct (or help to conduct) systematic reviews that are relevant to Ethiopia, provide

training for Cochrane review authors and engage with stakeholders including policy makers, clinicians, health care consumers and educators.

Conclusion: The Cochrane Collaboration is a global network consisting mainly of dedicated volunteers. Cochrane systematic reviews of the effects of healthcare interventions are having an impact on healthcare decision-making globally. Join the ACN by establishing network site in Ethiopia and increase the number of high quality, up to date Cochrane systematic reviews relevant to the African region, and strengthen EBHC in the region.

2. Utilization of Health Information System at District Level in Jimma zone Oromia Regional State, South West Ethiopia,

Sultan Abajebel, Challi Jira, Waju Beyene

Introduction: Information systems are increasingly important for measuring and improving the quality and coverage of health services. Reliable and timely health information is a must for operational and strategic decision making that saves lives and enhances health. The reality is that health data is often inaccessible, duplicated and delayed. In Ethiopia information quality and use remain weak within the health sector, particularly at the peripheral levels of district and health facility, which have primary responsibility for operational management.

Objective: To assess the utilizations of health information systems at District levels in Jimma zone south west of the country.

Methods: A cross sectional study was conducted in all the health institutions by including heads/ units/departments of Woreda health offices, Health centers and Health posts based on the inclusion/exclusion criteria from January to February, 2009. Quantitative qualitative and data were collected using structured questionnaires, check lists, observation and interview guide by trained data collectors. Data was analyzed by using SPSS window version 16 and descriptive and logistic regression analysis was carried out to identify the association between dependent and independent variables.

Results: The total outcome of this research paper was found that the utilization of information was 119 (32.9%) in all the study units/departments. The source of data was found as routine and vertical program reports from public institutions only. The utilization of

information was affected by many factors but from this research only documentation of HMIS, catchment population profile charts presentation and quarter plan performance monitoring was found to be significant at 95 % level of significance and P<0.05.

Conclusions: The study concluded that the utilization of information and implementation of health information system was found to be very far below the national expectation in the study area. At the district levels poorly coordinated processes, absence of HMIS guidelines, and lack of interaction with private, NGOs and other sectors. Analysis and utilization of health data/information at districts and facilities was limited due to limited capacity.

Recommendations: This study recommends that integration among the stakeholders and capacity buildings on HMIS, Supportive supervisions with timely and concrete feed backs, establishment of functional HMIS review teams at facilities is encouraged. Strengthening of performance assessment comparison of health facilities at all levels. Continual presence of standards data collection tools, data transmission, processing, reporting rules/guides and use of ICT for HMIS should be given due attention.

3. Assessment of information use in Patients' referral system at Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia

Biruk Abate, Fikre Enquselassie

Background: Referral system is a support system that assists in making health services more effective, efficient, and equitable to its users. Implementation of a functional and well managed referral system leads to good health care quality. Referral systems face many challenges for effective functioning as a result of improper documentation of referral letters, poor feedback, and insufficient supply of referral slips and lack of communication.

Objective: The main objective of this study was to assess information use in patient's referral system, current referral process, and problems associated with documentation in TASH.

Methods: Totally 1600 consecutive referral papers (September to October, 2009) were analyzed for documentation of, socio-economic characteristics of patient, date of referral, clinically important variables (chief compliant, clinical findings, diagnoses, and treatment given), major reason for referral, the status and name of referring health professional, the

presence and absence of feedback slip based on the standard proposed by the MoH. Primary data was collected from 385 respondents (patients) who were interviewed using structured interviews from different OPDs and was analyzed using SPSS. Twelve physicians working at TASH OPD and administrative staffs were the key informants of the study about the use of information and communication.

Results: The analysis of referral slips indicated that substandard formats range from those missing name (0.1%) to missing space for recording time of referral (62.4%). With regard to chief compliant of the patient 991 (61.9%) of the papers got documented, 31(1.9%) of referral papers were omitted while the rest 578(36.1%) didn't have the variable. Clinical findings of patients were written among 1383 (86.4%) collected paper, there was no documentation in 159(9.9%), and the rest 58(3.6%) didn't have the variable. Concerning treatment given 627(39.2%) papers documented the treatment given, 238(14.9%) documented 'Not given', in 675 (42.2%) papers there was no documentation about the treatment, and the variable did not exist in 60(3.8%) referral papers. Majority of the patients (77.9%) are verbally informed about their referral case, while most complained the accessibility of information at TASH in difficult to get services.

Conclusion: There is poor referral documentation, information use and feedback mechanisms by the health professional. There is no operational guide line and proper monitoring system that helps for enhanced information provision and utilization process in general. As a result the use of referral information for improving service provision for specialty care at TASH remains challenging and of less use for improved hospital planning and informed administrative decisions.

4. Modeling Trends of Health and Health Related indicators in Ethiopia (1987-2000E.C) a Time-Series Study

Mulu Abraha (MPH), Tilahun Nigatu (MPH),

Introduction: The Federal Ministry of Health of Ethiopia has been publishing Health and Health related indicators of the country annually since 1987E.C. These indicators have been of high importance in indicating the status of health in the country in those years. However, the trends/patterns of these indicators and the factors related to the trends have not yet been investigated in a systematic manner. In addition, there were minimal efforts to

develop a model for predicting future values of health and health related indicators based on the current trend.

Objectives: The overall aim of this study was to analyze trends of and develop model for prediction of health and health related indicators. More specifically, it described the trends of health and health related indicators, identified determinants of mortality and morbidity indicators and developed model for predicting future values of MDG indicators.

Methods: This time-series study was conducted on Health and health related indicators of Ethiopia from the year 1987 E.C to 2000 E.C. Key indicators of Mortality and Morbidity, Health service coverage, Health systems resources, Demographic and socio-economic, and Risk factor indicators were extracted and analyzed. The trends in these indicators were established using trend analysis techniques. The determinants of the established trends were identified using ARIMA models in STATA. The trend-line equations were then used to predict future values of the indicators.

Results*:* Among the mortality indicators considered in this study, it was only MMR that showed statistically significant decrement within the study period. The trends of TFR, physician per 100,000 population, skilled birth attendance and PNC coverage were found to have significant association with MMR trend. There was a reversal of malaria parasite prevalence in 1999E.C from P.Falciparum to P.Vivax. The MDG target for proportion of people having access to basic sanitation can be achieved 100% by 2011 based on the prediction from the current status.

Conclusion: The current trend indicates the need to accelerate the progress of the indicators to achieve MDGs at or before 2015.

5. Health Seeking Behavior of Households and Determining Factors in Kersa Woreda, Eastern Hararghe, East Ethiopia

Tamirat Gebru, MSc., Department of Medical Laboratory Technology, Faculty of Health Sciences, Haramaya University

Introduction: The health seeking behavior of individuals is based not only on logical considerations of symptoms and methods, but is also affected by socio-economic and

demographic factors. As well, a delay in early and accurate diagnosis of illness is associated with level of knowledge and awareness of a disease.

Objective: The objective of the study is to measure the health seeking pattern of households and determining factors in Kersa Woreda, Eastern Harerghe, East Ethiopia.

Method: A cross-sectional community based survey was conducted in 476 households in the 12 Kebeles of kersa woreda from March to April 2008. Data was collected by the interviewer-administered structured questionnaire. Computer software package, SPSS 16 for windows was used to carry out the analysis.

Result: In this study, treatment was sought by sick family members from one or multiple means. The proportions of people who used home treatment for sick family members in the last six months (22.5%) are comparable to those who have used modern health services (27.3%). 3.6% of sick family members have been taken to religious places to seek out treatment. A quite significant number of households (17.2%) have used drug without medical attention and about 10.0% of the families visited traditional healers for sick family members. Most of the respondents replied that they selected the specific treatment means since they believe that the disease can be effectively treated by the selected measures. There were 29 categories of symptoms of disease reported by respondents that caused them to seek treatment. Headache, abdominal pain, and diarrhea were the most commonly reported, 127 (21.4%), 60 (10.1%), and 46 (7.8%) cases respectively. It was also found out in the study that with the increasing level of income, there is a decrease in the pattern of drug use without medical advice and an increase in the modern health service utilization. In this study, there was a significant association ($P < 0.05$) between perceived cost affordability of health services and health seeking pattern.

Conclusion: In this study, the utilization of self treatment and traditional healers is twice greater than modern health service utilization. Factors that impair households from using modern health service for the sick family members should be avoided. Poor perception of cost affordability towards the modern health service has significantly influenced the health seeking behavior. The use of health services for the treatment of sick individuals should be encouraged through appropriate information, education and communication.

1.2. Child health &Nutrition

6. Interventions in the Workplace to Support Breastfeeding for Women in Employment (Cochrane Systematic Review)

Omar Abdulwadud, PhD., Twinning Center, Addis Ababa, Ethiopia; Jimmy Volmink, MD., Taryn Young, PhD., South African Cochrane Centre, Cape Town, South Africa; Ayalew Tegegn Muluneh, MD., Department of Epidemiology & Biostatistics, Jimma University; Yemane Berhane, MD., Addis Continental Institute of Public Health, Addis Ababa, Ethiopia.

Background: Women of childbearing age constitute much of the workforce and their early return to employment after giving birth may impact the duration and exclusivity of breastfeeding. The effectiveness of workplace interventions has not been subjected to systematic review.

Objectives: To assess the impact of workplace interventions on the rate, duration and prevalence of exclusive breastfeeding, mother-related, infant-level and employer-related outcomes.

Methods: The Cochrane Pregnancy and Childbirth Group's Trial Register and other databases were searched to identify randomized (RCTs) and quasi-randomised controlled trials comparing workplace interventions with either no intervention or one or more other intervention. Two reviews selected and assessed quality of studies independently. We planned to use a fixed-effect meta-analysis for combining data if trials were sufficiently similar. If heterogeneity was found, the plan was to investigate the reasons for heterogeneity using subgroup analyses or incorporate it using the random-effects model, or both. For dichotomous data (primary & secondary), the plan was to present results as relative risks with 95% confidence intervals (CIs) or Peto odds ratios with 95% CIs if events were rare. For continuous outcomes (breastfeeding duration), we planned to use the weighted mean difference with 95% CIs if the outcomes were measured in the same was

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across trials. Otherwise, we planned to use the standardized mean difference to combine trials that measured the same outcome, but used different methods.

Results: No RCTs or quasi-randomized controlled trials were indentified. Hence, no evidence to indicate the effectiveness of any workplace intervention to promote breastfeeding among employed women returning to paid work after giving birth. The impact of such intervention on process outcomes is also unknown. Currently, information on this topic is limited to two US-based, non-experimental studies in which the participants were self-selected and no control groups.

Conclusions: In industrialized countries, no systematic evaluation has yet been conducted to assess the effects of the existing workplace legislation and/or regulations to support female employees to continue breastfeeding when they return to work. There is a need for methodologically-rigorous RCTs to provide reliable evidence on the effectiveness of workplace interventions to promote and support breastfeeding and their impact on mother-related, infant-level and employer-related outcomes.

7. Cereal and Its Products in Ethiopia: How Safe are they?

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Aiming to evaluate the safety of cereal and its products in Ethiopia a retrospective study was conducted in Ethiopian Health and Nutrition Research Institute (EHNRI) by reviewing ten years (1996-2005) records of Public Health Microbiology Laboratory. The data was entered to the computer and analyzed using SPSS version 10 statistical packages. Chi-square test was applied to test whether difference between values was significant and p value < 0.05 was considered statically significant at 95% confidence interval.

There were 404 samples of cereal and its product including locally manufactured weaning formulas submitted from different part of the country. Among 119 grain samples tested 46 %, 87% & 63% and of 235 flour samples 25%, 83% & 71% were exceeded the limit for Total Aerobic Bacteria (APC), fungal & coliform counts respectively. Likewise among 29 pasta samples 52 %, 66 % & 55 % were exceeded the above limits respectively. Unlike the

other only 5 %(1/21) & 14 %(3/21) of Biscuit samples were exceeded the limit for colifrom & fungal counts respectively. Among the dominant bacteria isolated 36% &33% were *Entrobacter species* & Bacillus species respectively. Also *Escherichia coli species* (54%), *Staphylococcus aureus* (14%), *Salmonella*& *Shigella species* (1.5%) were isolated. Among samples that had normal (n=285) and abnormal (n=119) visual appearance 228 (80 %) &109 (92 %) were microbiologically unacceptable respectively and the difference was statically significant (p<0.05). In general of the 404 samples 128 (32 %), 311 (77 %) &262 (65 %) were exceeded the limit for APC, fungal and coliform counts respectively and consequently 337 (83 %) of the samples had unacceptable microbiological quality and unsafe for human consumption.

Therefore based on this study in Ethiopia cereal products could be a major source of food borne illness including Mycotoxicosis and this may pose significant public health problem especially in children and immuno-compromised people. Thus close monitoring of these products and further studies are recommended.

Key words   Cereals and its products, microbiological quality and safety, Ethiopia

8. Factors Affecting Adherence to Exclusive Breastfeeding Practices in Ambo Town Woreda

Lense Gobu, BSc, MPH; Tefera Belachew, MD, DLSHTM, Associate Professor,
Jimma University; Fasil Tesema, BSc, MSc, Associate Proffesor, Jimma University.

Background: Breastfeeding is the best way to feed infants with many advantages. Exclusive breastfeeding, in particular, has many added benefits if it is given for the first 6 months of life, for both the infant and the mother. It has also an economic implication and is one of the key child survival interventions in the fulfillment of the Millennium Development Goal-4. In May 2001, the 54th World Health Assembly urged the member states to promote exclusive breastfeeding for six months as a global public health recommendation. Despite this recommendation, exclusive breastfeeding is not a common practice in both the developed and developing countries. Numerous factors affect these recommended breastfeeding practices of mothers. But in developing countries particularly in Ethiopia, there is a research knowledge gap in the understanding of these factors.

Therefore, this study aimed at assessing factors influencing adherence to the recommended exclusive breastfeeding practice in the study area.

Objective: To assess the factors affecting adherence to exclusive breastfeeding practices in Ambo town and Ambo woreda of West Shoa Zone, Oromiya Regional state.

Methods: A cross-sectional study was conducted to assess the factors affecting the adherence of women to exclusive breastfeeding in Ambo Town and Ambo woreda, West Shoa Zone, from January to March 2007. A total of 702 mother infant pairs (0-6 months) were taken. Systematic random sampling technique was used after the kebeles were stratified into rural, urban and semi-urban. The quantitative and qualitative data were collected by using pre-tested, structured questionnaire; and FDG and in depth interview guides respectively. The qualitative data were analyzed by using both descriptive and inferential statistics after data editing, cleaning and entry to SPSS 15.

Results: The prevalence of exclusive breastfeeding in the study area was 42.3%. Those mothers who timely initiated breastfeeding are about 3 times more likely to continue exclusively than those who didn't (OR-3.35 95% CI: 1.38, 8.100). Mothers who spend more than 6 hours at home are also more likely to exclusively breastfeed than those who spend less. Source of household water supply is also one of the factors independently associated to the duration of exclusive breastfeeding. The longer the duration of time taken to fetch water, the lesser the duration of exclusive breastfeeding (AOR=0.98 95% CI: 0.97, 0.99). Women who decide jointly with their husbands on child care practice were 81% less likely to exclusively breastfeed than those who decide by themselves (AOR = 0.19 95% CI: 0.07, 0.52).

Conclusion & Recommendation: Exclusive breastfeeding practice were influence by different socio-demographic, service related, individual, household, societal and cultural factors. Therefore, training to health professionals, women empowerment to enable them in decision making process, favorable working environments for mothers, and further research focusing on interventions are recommended.
Key Words: Adherence to Exclusive Breastfeeding, Ambo, West Shoa.

9. Assessment of Knowledge and Practice of Polio Vaccination in Gambella Region

Filimona Bisrat, Alemayehu Worku

Background: Polio eradication effort has gained momentum globally, resulting in the drastic reduction of the number of polio-endemic countries, from 125 in 1988 to only four now. Since November 2006 no polio cases reported in Ethiopia. However, until March 2008 when wild polio virus cases were confirmed in Gambella Region. The Region is bordering Sudan with poor infrastructure and limited human resources. Moreover, routine immunization coverage in the region is very low to maintain immunity gap among the communities. Therefore, CORE Group took initiative to assess polio vaccination status in Gamella and forward a workable recommendation.

Objective: This study was conducted to investigate the level of knowledge and practice of mothers or care takers on polio vaccination and AFP surveillance and reasons for not vaccinating the children.

Methods: A community-based cross-sectional study was conducted in July 2008 both in rural and urban households of mothers of children in the age group of 12-23 months residing in Gambella Region. The study used a 30 by 10 modified WHO EPI cluster sampling procedure. The data were processed using Epi Info Version 3.4 for Windows statistical packages.

Results: A total of 301 households were involved in the study and response rate was 97%. Majority of the respondents were females (94.2%). The Overall mean ±SD age was 28SD±8.2 with median age of 28 years. About 56% ever attended school and 84% were Christians. The majority (77%) of the respondents has heard of paralysis and 60% of them knew that paralysis meant to stop walking /crawling. During the recent polio campaign, mothers admitted 96% of the children received polio vaccine. The most common source of information for the last polio campaign were health professionals (83%) followed by community volunteers (9%). Regarding routine immunization activities only 25.6% of the children 12-23 months old could show vaccination card during the survey. The respondents verbally conformed that 56% of the children received polio vaccine during routine EPI activities while OPV3 coverage by card found to be only 12%. Knowledge on the time for the first dose of polio vaccine was low. Overall 39.5% of the respondents said immediately at birth. About 14% of the respondents don't know the time for the first dose of polio

vaccine. The main reason mentioned for those not vaccinated yet was absence of health facility in the locality (36%) as well as health workers not coming and giving vaccine at the village (36%).

Recommendations: This study has showed a number of issues that are important in understanding the knowledge and practices of the mothers or care takers toward immunization service. Attempts should be made to improve knowledge of the mother/care taker by providing relevant information on immunization. Health education on immunization shall be strengthened with due emphasis on interpersonal communication. Emphasis should be given on expansion of static and outreach sites to increase routine immunization coverage. Full and active participation of the local health authorities and stakeholders must be solicited to be successful in future immunization program.

10. Birth Spacing and Risk of Child Mortality at Kalu District, South Wollow Zone of Amhara Regional State, Ethiopia.

Muluneh Yigzaw, Fikre Enquoselassie

Background: Family planning services are usually evaluated in terms of their impact on fertility. Less attention has been given to the way in which changes in family planning related behavior may affect childhood mortality. Identifying the optimal interval between births at which risk of child mortality is the lowest may benefit developing countries to prioritize family planning services and achieve MDG 4.

Objective: To assess the child mortality rate and determine whether birth spacing is associated with increased risk of childhood mortality at a rural district.

Methods: A house to house census carried out in 13 kebeles with an approximate population of 80 thousand to identify all child deaths on e year proceeding to the survey and to determine the child mortality rate at Kalu district. Sex and age group matched case control study was carried out after the census to assess the association between birth spacing & child mortality. A conditional logistic regression was performed to point out the independent effect birth spacing has no children under 5 years mortality.

Result: The neonatal, post neonatal, infant, child and under five mortality rates were found to be 37, 30, 67, 33 and 99/1000 live births respectively. Age group stratified analysis

showed a significant decline in the trend of neonatal (X ^{for} trend =13.23, P=0.0003), post neonatal (X^2 for trend = 4.62, P=0.03) and infant (X^2 for trend = 17.06, P=0.0001) mortality as the interval between births increases from less than 15 months to 48 or more months. Multivariate analysis showed that the odds of under five years mortality was 6.45 (95% CI= 1.18, 8.77) and 2.61 (95% CI = 0.97, 7.01) when the interval between births is less than 15, 15-23, 24-35 and 36-47 months respectively compared to birth intervals 48 or more months.

Conclusion: Risk of childhood mortality was significantly associated with birth spacing.

Recommendation: Mothers at the study district should space births for at least 36 months in order to reduce the risk of childhood mortality.

Reproductive Health
11. Bringing their method of choice to rural women: Community based distribution of injectable contraceptives in Tigray, Ethiopia

Ndola Prata, Amanuel Gessessew, Alice Cartwright, Martine Holston, Deborah Karasek, Malcolm Potts

According to the Ethiopian 2005 Demographic and Health Survey (DHS), 78% of married women say that they either want to delay the birth of their next child or to have no additional children. As only 14% of women are using a modern method of contraception, the unmet need for family planning is one of the highest in the world. Ethiopia has a limited distribution network of public or private providers in rural areas. Community-based distributors are only allowed to deliver oral contraceptives and condoms and are not permitted administer intramuscular injections of DMPA (Depot Medroxyprogesterone Acetate). While Health Extension Workers (HEWs) already provide DMPA in Ethiopia, Community Based Reproductive Health Agents (CBRHAs) currently are not permitted to administer injectable contraception, the preferred method of rural women in Ethiopia. DMPA is the fastest growing contraceptive method in the region, and there is a strong desire to use DMPA among rural Ethiopian women – a single dose offers long-term protection, it is female controlled and non-coital dependent. Limited access to health facilities that provide injectable contraception is a major cause of low contraceptive prevalence in Ethiopia, particularly in rural areas.

To generate evidence that CBRHAs can safely and effectively facilitate the supply of DMPA to rural Ethiopian women, a study comparing the provision of DMPA by HEWs and CBRHAs was conducted in Tigray, Ethiopia. In this study, women self-selected into different arms based on the type of provider they visit: CBRHA (intervention) or HEW (control). Working in conjunction with the Tigray Regional Health Bureau, we trained CBRHAs to deliver DMPA alongside pills and condoms in villages, and compared morbidities, client satisfaction, and continuation outcomes of intervention and control clients. We conducted surveys at enrollment (first injection), after three months (second injection), and six months after enrollment (third injection) to assess continuation and client satisfaction with the method and provider.

The study aimed to recruit 1,000 women. Preliminary data from 976 women showed that more women self-selected into the intervention arm: 59% received DMPA from a CBRHA and 41% received it from a HEW. Both HEW and CBRHA clients are similar in age (29) and reported a low mean age at first marriage (16). While parity is high in both groups, CBRHA clients have a higher number of living children (6.9) than HEW clients (5.5). Educational attainment is low in both groups, with more CBRHA clients reporting no education than HEW clients (90% vs. 78% respectively). Most (91%) are married, and the majority of women report that their husband/partner is supportive of their decision to use DMPA (71%). Women who had received DMPA previously were more likely to receive the injection from a HEW in this study; women getting DMPA for the first time were significantly more likely to get it from a CBRHA. Only 5.1% of women state that their husband/partner is "not aware" of their use of DMPA. Three out of four women (75%) used DMPA to space their children. Common reasons given for choosing DMPA included convenience, long-acting method, husband approval, and privacy.

At this point, data is available for 713 women (73% of enrollment) that have completed the 13 week follow-up questionnaire. Continued use of DMPA was high: only 3% did not receive their second injection. There were no reported pregnancies in the study group. In addition, women reported high acceptability of both the method and the provider. Nearly all women (98%) were satisfied or very satisfied with DMPA as their family planning method. Women were overwhelmingly satisfied with their provider at enrollment, with over 95% of both groups reporting they were satisfied or very satisfied with the care they received at their first injection. In addition, the safety of CBRHAs in administering DMPA is comparable to that of HEWs: there were no significant differences in experience of side effects at the injection site reported by the women by provider, and no report of adverse events in any of the study participants. Only 3% of the women have reported any pain, induration, or

ulceration at the injection site after the first DMPA injection. Clients of CBRHAs were significantly more likely to report difficult getting to a clinic for family planning, indicating that utilizing this lower-level cadre of provider will increase access to modern contraceptives in this rural area. Only 2% have been lost to follow-up.

Community-based distribution of DMPA has the potential to reduce the unmet need for family planning in rural Ethiopia by giving the hardest to reach women in rural areas their contraceptive method of choice.   This study demonstrates that, with proper training and supervisions, community-based agents can deliver DMPA with the same efficacy, safety, and acceptability as HEWs, and has implications for policy change surrounding community-based distribution of injectable contraceptives in other low resource settings.

12. Emergency obstetric intervention by non physician clinicians   : Experience of task shifting to improve maternal health in Tigray region:

Amanuel Gessessew, Gebre Ab Barnabas

The maternal mortality in Ethiopia is still very high. Delay in getting emergency treatment is one of the reasons for the high maternal death in this country. The Tigray Health Bureau trained non physicians in emergency surgery and obstetrics for the last 10 years .These clinicians were assigned in health institutions with no Obstetrician and/or Surgeon. This retrospective study was carried out to determine the maternal outcome after emergency intervention by these clinicians in the region. Delivery and operation theatre registration books and charts   of patients on whom emergency obstetric intervention was conducted were reviewed .All health institutions (11 hospitals and 2 health centers) that performed cesarean section from Januay1, 2006 to December 31, 2008 were included in the study. During this period of time there were 28,555 deliveries conducted in these sites. Of the 2835 cesarean sections performed, 1574(55.5%) were done by non physician clinicians. There were a total of 276 laparatomies done for ruptured uterus and 124 of them were performed by these practitioners (44.9%).About one ruptured uterus was managed for every 100 deliveries in all the study sites. Out of the 1584 instrumental deliveries and 51 destructive deliveries, 781(49.3%) and 23(45.1%) were performed by non physician clinicians respectively. The overall instrumental delivery rate was 5.5%.There were 17 maternal deaths after abdominal deliveries and 8 of them occurred after intervention by non physician clinicians (no statistical difference). The causes of maternal deaths were, ruptured uterus (12), obstructed labour(2),Bleeding(2) and no reason was stated in one case. Obstructed labour was the major indication of cesarean section accounting for 35.7% of non

physician and 27% of physician groups. Majority of the patients on whom surgery was done by non physicians came from rural area (64.2%) as compared to 47.7% of the patients treated by physicians(p<0.01) . No statistical difference was identified in the mean hospital stay and duration of surgery in the two groups. Ruptured uterus and obstructed labour accounted for 75.5% of all fetal deaths. In conclusion non physician clinicians perform significant proportion of the emergency obstetric intervention with no significant difference in maternal mortality and morbidity. Strengthening the training program of non physician clinicians in emergency surgery can be one of the strategies to reduce maternal mortality and morbidity in this country.

13. Emergency Contraceptives Utilization and Influencing Factors among Adama University Female under Graduate Students, South East Ethiopia,

Dejen Tilahun, BSc, MPH/HE/HP, Jimma University; Tsion Asefa, BSc, MPH, PH, Jimma University; Tefera Belachewe, MD, MSc, DLSHTM, Jimma University public health faculty

Background: Unwanted/unplanned pregnancy followed by unsafe abortion is one of the major worldwide health problems, which has many negative consequences on the health and well being of women. In the reduction of unwanted pregnancy, emergency contraceptives use plays a major role although information is limited.

Objective: To assess emergency contraceptives utilization and influencing factors among Adama University female students.

Method: Institution based cross-sectional study was conducted using both quantitative and qualitative data collection methods among Adama University female Students from February 1 to 30, 2009. Sample size for quantitative method was determined using single population proportion formula and saturation of the information was determined for the qualitative participants; study subjects were selected randomly from different department. Data were collected using pre-tested structured self administered questioners. And cleaned, coded and entered in to Statistical Package for Social Sciences (SPSS) for window version 16.0.for analysis; descriptive analysis was followed by bivariate and multiple logistic regression analysis. Thematic analysis was employed for qualitative data analysis and finally both were triangulated.

Result: Of the total, 660 respondents, 194(29.4%) were sexually active, 63(9.4%) had history of pregnancy and 49(7.4%) had history of abortion. About 628 (95.2%) have knowledge about regular modern contraceptives and 309 (46.8%) of the students had heard about emergency contraceptives and from those who heard emergency contraceptives 27.2% had good knowledge. Four hundred fifteen (62.9%) of the students had positive attitude towards it. The finding also showed majority of respondents had low perceived susceptibility 409(62%) and severity 452(68.2%) to unplanned pregnancy and high perceived barriers 420(63.6%), high benefit 410(62.1%) & self efficacy 426(64.5) to ward protective behavior. However, only 31(4.7%) had used emergency contraceptives and 67(10.2%) regular contraceptive methods. Age, marital status, perceived susceptibility, perceived barrier, and perceived benefit were the major predictors for emergency contraceptives utilization among female Adama University students.

Conclusion: The study showed that there is low awareness, knowledge and utilization of emergency contraceptives among college female students. The students had low perceived susceptibility and severity to unwanted pregnancy and high benefit & self efficacy to emergency contraceptives (EC) and high perceived barriers to emergency contraceptives. Hence behavioral change strategies should be considered by services providers and concerned bodies to increase knowledge, bring attitudinal change, avoid/decrease barriers, increase perceived susceptibility, increase perceived severity and enhance need based utilization to prevent youth from life threatening conditions.

14. Factors Associated with Induced Abortion in Bahir Dar City, North West Ethiopia. A Case Control Study

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Abortion is a major case of maternal mortality in developing countries, including Ethiopia. However, much is not known regarding factors associated with induced abortion.
This facility based case-control study was carried out to identify factors associated with induced abortion in Bahir Dar city, North West Ethiopia from October to December, 2008. Information was obtained from a total of 176 abortion care seekers (cases) and 353 antenatal care attendees (control groups) using a structured questionnaire.

The results show that majority of the abortion care seekers (63.1%) were between the ages of 15 and 24 years. High proportion (57.4%) of the respondents was never married, but married women also constituted a significant proportion (38.1%) of the abortion care seekers. In this study, an abortion care seeker is likely to be someone who had at least some secondary education with odds of 3.7 (CI, 1.6, 10.0). More than a third (35.2%) of the respondents was students. The influence of spouses to affect the fate of early pregnancy outcome was also seen in this study.

Respondents terminated their pregnancies mainly because they were students or in fear of discontinuing their school. Having mistimed pregnancy, financial constraint and having too little child as reasons were significantly associated with seeking abortion. However, being too young (minor), having fetal health problem, being non married, being raped, having contraceptive failure, marital problems, partner refusal, conflict with work and being HIV+fell short of statistical significance in this study.

It is obvious from the result that young persons, especially in school adolescents, should be targeted for comprehensive sexuality education to boost their health literacy especially in view of the current HIV/AIDS pandemic. Women and girls need to be empowered economically and be addressed with their family planning needs to avoid mistimed and unplanned pregnancies.

1.3. Tuberculosis

15. Prevalence of Common Possible Bacterial Pathogens among Pulmonary Tuberculosis Suspected Smear Negative Patients Visiting st. Peter TB   Specialized Hospital, Addis Ababa ,Ethiopia

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The global tuberculosis (TB) epidemic has been accompanied by an increase in smear negative TB particularly in HIV Patients. This is become a large and growing burden for TB

control program particularly in areas that are affected by the dual TB/HIV infection. A Cross-sectional study was carried out from February to July 2005 to asses the prevalence of common possible bacterial pathogens that can cause lower respiratory tract infection from sputum samples among smear negative pulmonary TB suspected out patients visiting St. Peter TB specialized hospital. A total of 150 early morning sputum specimens were collected from informed and consented patients that passed the selection criteria & transported within ice box to Ethiopian Health and Nutrition Research Institute (EHNRI) and of these, 123 specimens that passed the sample rejection criteria were analyzed using conventional standard culture methods and automated BACTEC MGIT 960 system liquid medium at EHNRI. Also demographic data and patient's information was collected using well structured questioner. The data were analyzed using SPSS version 10 and Excel statistical packages and P value < 0.05 was considered as statically significant at 95 % confidence interval.

Out of 123 samples, a significant proportion (42.3%, 52) had considerable bacterial growth. Among the dominant bacteria isolated 18 (35 %), 13(25%) and 11(16%) were *Klebsiella pneumonia*, *Staphylococcus aureus* and *Escherichia coli* species respectively. Other bacteria including *Streptococcus pneumonia* and *Pseudomonas aeruginosa* were also isolated in less frequency. Pulmonary tuberculosis was confirmed by culture only in 13 % (16/123) samples and the Common bacteria/Mycobacterium co-infection rate was 11.5 %(6/52). The age prevalence of bacterial isolates was highest (87.5%) among patient's between16-45 years but prevalence by sex was almost the same.

Therefore based on this preliminary study we concluded the likely occurrence of potential pathogens other than mycobacterium in smear negative pulmonary TB suspected patients. So further study in a larger scale and awareness on the area are recommended.

 Key words: Common bacteria, AFB smear negative patient, and Ethiopia

1.4.HIV/AIDS

16 In vitro Susceptibility of Candida Isolates from Oral Cavities of HIV/AIDS Patients to the Commonly used Antifungal Agents in Jimma University Specialized Hospital (JUSH), Southwest Ethiopia

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Background: The genus *Candida* (yeasts) is considered super infecting microorganism and can lead to oral *candidiasis,* sever periodontitis and others especially in immunocompromised patients. The chronic use of antifungal agents, in the treatment of *candidiasis*, mainly in HIV/AIDS patients leads to the selection of isolates resistant to this therapy.

Objective: To evaluate the *in vitro* antifungal susceptibility of *Candida* isolates to commonly used antifungal agents in Jimma University Specialized Hospital (JUSH).

Methods: An experimental study was conducted to determine susceptibility of *Candida* isolates to the commonly prescribed antifungal agents in JUSH. The clinical strains (yeasts) were differentiated from moulds using staining technique, and Germ Tube Test (GTT) was employed to identify *Candida albicans.* Antifungal susceptibility patterns against five different antifungal agents, clinically used drugs, comprising of polyenes (amphotericin B and nystatin) and azoles (ketoconazoles, clotrimazole and fluconazole) were investigated using disk diffusion method.

Results: A total of **77** clinical isolates of yeast was collected from non-hospitalized HIV positive patients at ART clinic of JUSH. **42** clinical *Candida albicans* isolates were identified after GTT. In this study amphotericin B (97.6%) was found to be the most effective drug. Moderate rate of resistance, against Nystatin (11.9%) and clotrimazole (9.5%), were observed. On the other hand, the isolates showed the highest rates of resistance against fluconazole (40.5%) and ketoconazole (40.5%).

Conclusion: The *in vitro* antifungal susceptibility testing of *C. albicans* in this study showed relatively high resistance to fluconazole (40.5%) and ketoconazole (40.5%). Moderate resistance pattern were observed to clotrimazole (9.5%) and Nystatin (11.5%). Amphotericn B (97.6%) was the most active drug according to our study.

Recommendations: Strict infection control measures should be taken to decrease horizontally transferable resistance. Additional routine screening for resistance in all clinical isolates of *Candida Spp.* must be conducted as soon as possible.

17. Selected Micronutrients and Response to Highly Active Antiretroviral Therapy (HAART) among HIV/AIDS Patients Attending St. Paul's General Specialized Hospital, Addis Ababa, Ethiopia

Amare Eshetu, Beyene Petros, Aster Tsegaye

Background: In HIV-infected persons, poor micronutrient levels are associated with an increased risk of progression to AIDS. Poor micronutrient levels are also suggested to influence outcome of HAART. No published data are available on micronutrient levels in Ethiopian HIV/AIDS patients taking HAART.

Objective: To determine the association of micronutrient levels and response to HAART (as measured by $CD4^+$ T cell count and HIV viral load) among adult HIV/AIDS patients attending St. Paul's General Specialized Hospital.

Method: $CD4^+$ T-cell counts and micronutrients (retinol, zinc and iron) levels for 169 subjects and viral load for a subgroup of 44 subjects were determined using standard procedures.

Results: Some proportions of the study participants were found deficient for retinol (14.03%), zinc (47.3%) and iron (2.8%). Among these, patients who were deficient in retinol had a significantly lower median $CD4^+$ T cell counts (P=0.002) compared to non-deficient subjects. Association of micronutrient quartiles with CD4+ T cell count was assessed using adjusted multivariate regression by taking the upper quartile (quartile four) as a reference category. Accordingly, patients who had retinol levels in the upper quartile (quartile 4) had a significantly lower mean $CD4^+$ T cell count compared to quartile 3 (*P*= 0.02). Although 15.9% of the 44 study participants tested had detectable viral load, none of the micronutrients measured were significantly associated with viral load status.

Conclusion: The significantly higher CD4+ T cell counts in patients who were non-deficient in retinol implies the role of retinol in improving the production of CD4+T cell counts. Both lower and higher retinol levels were associated with suppressed immunity (CD4<200

cells/mm^3), suggesting an adverse effect of higher retinol levels. Thus, retinol may be potentially harmful depending on the dose, emphasizing the need for optimized level of retinol in nutrient supplements.

Recommendation: Future research efforts should focus on optimizing use of nutritional supplements in combination with drug therapy in HIV/AIDS patients in Ethiopia.

18. Adult AIDS mortality trends in Addis Ababa

Daniel S. Telake, Georges Reniers[3], Yared Mekonen[4], Tekebash Araya[1], Biruk Tensou[1], Tolcha Kebebew[1]

Background: In this study we asses trends in adult AIDS mortality in Addis Ababa. Monitoring the mortality impact of AIDS as well as examining trends is an important aspect of the response to the epidemic. Vital registration type data are most preferred sources of information in order to realize this. Ethiopia, however, is one of those countries without a vital registration system. In the complete absence of vital registration data, alternative sources such as data from burial surveillance can be utilized. We expect a decline in adult mortality from AIDS especially after the introduction of ART. However, we also expect that there is gender imbalance in benefiting from this decline.

Methods: Data for this study are obtained from two sources; burial surveillance and verbal autopsy (VA). First, we used data from the ongoing registration of burials to estimate trends in all-cause mortality, and adult AIDS mortality in the period 2001-2008 using age ratio analysis. The other method we employed is based on VA interviews which contain signs and symptoms during terminal illness. Based on these information causes of death were assigned by local physicians and the InterVA model.

Results: A total of 158,115 persons were buried between 2001 and 2008. Absolute figure on reported deaths exhibited a decline from the peak years of 2001 and 2002 to 2008. The proportion of deaths age 25-49 relative to all deaths also show a decline over the years. Based on VA reports, AIDS specific mortality fraction has declined from 50% in 2001 to 25% in 2007.

Conclusion: The results of this study revealed that AIDS deaths have declined in Addis Ababa. Faster decline of AIDS related mortality was observed after 2003/4. This period corresponds with the scale up of ART in the city.

19. Assessments of predictors of survival in patients living with HIV/AIDS after the advent of Highly Active Antiretroviral Therapy, Addis Ababa Ethiopia, 2009

Abdo bedru (Bsc, MPHE)*, Alemayehu Worku (PhD),

BACKGROUND: The introduction of highly active antiretroviral therapy in 1996 dramatically improved the prognosis for HIV-infected patients in the industrialized world. Access to ARV drugs will improve survival and quality of PLWHA. This has been shown in developed countries and in very few middle-income countries where more affordable drugs are available.

OBJECTIVE: To asses predictors of survival in PLWHA after the advent of HAART in Addis Ababa, 2008/9

METHODS: A historical institutional based cohort study was conducted in Zewditu Hospital. The sample size was calculated as **1070**. Multistage and consecutive sampling techniques were used to select the study subjects Deaths occurring during the follow-up period were identified on a continuous basis from physician reports or through calling Actuarial life time table was used to estimate survival after the advent of ART, and log rank tests was used to compare survival curves. Step Cox proportional-hazard regression was used to calculate the univariate and adjusted relative hazard (RH) and then determine independent predictors of time to death. Multivariate analysis was used to handle the independent variables. Multicollinearity was checked using Spearman correlation coefficient.

RESULT; One thousand seventy Patients on ART were followed for a median of 34 month (IQR 6, 36.25). The mean age was 36.4 and the median weight of the cohort at the initiation of ART was 51(IQR, 45-60). The mean Hemoglobin was 11.93(SD, 2.43) .The median CD4 count was 94cells/μl (IQR, 46-154). Two hundred forty cohorts had one or more casual sexual partner, and 391 never used condom. The estimated mortality was 24.9%, 29%, 31.7%, 33.1%, 33.5, and 34% at 6, 12, 18, 30, and 48 months respectively. After adjustment, the independent significant predictors of survival in patients living with HIV/AIDS after initiation of ART remain being unemployed (AHR=1.87, 95%CI= (1.49, 2.34)), Advanced WHO staging (AHR=2.47, 95%CI= (1.58, 3.81)), Low CD4 count

(AHR=1.85, 95%CI= (1.35, 2.52)), Anemia (AHR=1.35, 2.56) and poor ART adherence (AHR=3.92.95%CI=(3.13,4.90)).

CONCLUSION: A careful monitoring of patients with low CD4+ ,advanced WHO staging moderate anemia and unemployed is particularly necessary during the first 3 months of HAART. Tracing poorly adhered patients and giving them drug counseling is crucial to improve survival.

20. Assessment of the status, shortcomings and prospects of care and support services provided to PLWHAS by care and support providing firms in Arba Minch town and nearby areas.

Taddese Alemu Zerfu (Bsc, MPH/RH)

Background: - *HIV/AIDS* is the leading cause of death in sub – Saharan Africa, the fourth leading killer worldwide, continues to spread in every corner of the globe. Care for people living with HIV/AIDS (PLWHA) is essential not only to mitigate the impacts of HIV/AIDS among PLWHA but is also an important component of prevention of the disease.

Objective: *To* asses the status, shortcomings and prospects of care and support services provided to PLWHAS by care and support providing firms in Arba Minch town and nearby areas*.*

Method: A cross-sectional quantitative study supplemented by qualitative methods was conducted in Arba Minch town and nearby rural Kebeles. The study populations were randomly selected PLWHAS and judgmentally selected heads of care and support providing firms. Stratified cluster sampling technique was applied to reach the study participants included in the survey. Data was collected using a pre-tested structured interview questionnaire and in-depth interview guideline. Quantitative data was analyzed using SPSS windows based statistical software while qualitative data was analyzed manually using thematic framework analysis methods.

Result and Discussion: - It was learned from this study that the care and support activities ever made are at the stage of infancy reflected by poor coverage, quality and quantity. Despite all these, various supports with diverse approaches were given to the PLWHAs; for instance socio-economic support was given for 25.7%, psychosocial for 32%,

human right and legal support for 31.1% of the study participants. Inadequate external financial support, Lack of sound linkage and referral system between different care givers were among the reasons identified for the meagerness and redundancy of the care and support activities.   Nonetheless, many opportunities and prospects including easily accessible care receivers i.e. PLWHAs, good political and societal will were also implicated.

Conclusions and recommendations: - It was therefore possible to declare that the care and support services ever rendered to PLWHAS in the area are by far lower than expectations and the standard in terms of coverage, quantity and quality; So, Strategies to improve limitations and to tackle the challenges as well as maximum exploitation of available prospects of the program were recommended.

21. Common Mental Disorders among HIV Infected Adults in Ethiopia

Markos Tesfaye,Amare Derib, Yohannes Hailemichael, Shallo Daba, Ajeme Wogi, Tefera Belachew

Background: Depression and other mental disorders are frequently seen among people living with HIV/AIDS. Mental disorders, particularly depression has been shown to be one of predictors of progression of HIV disease. However, data remains to be scanty regarding the prevalence of Common Mental Disorders (CMDs) in Ethiopian HIV patients.

Objective: To estimate the prevalence and explore factors associated with CMDs among HIV patients having follow-up at ART clinics.

Methodology: A total of 580 HIV patients with proportionate samples from each of the ART clinics at Jimma, Nekemt, and Adama Hospitals were enrolled into the study. Participants were administered a structured socio-demography questionnaire and Kessler scale (K10) which has been translated and validated was used to detect potential cases of CMDs. Data was collected by experienced clinical nurses working at the ART clinics of the respective hospitals collected the data through face-to-face interviews. Variables associated with screening positive for CMDs were examined in univariate and multivariate logistic regression analysis.

Results: Nearly sixty percent of the sample was females and the mean age was 33.3years (s.d=8.2). Half of the sample screened positive for CMDs. Eighty-eight participants had co-

infection with tuberculosis and were in the intensive phase of anti tuberculosis treatment. There was no statistically significant association between CMDs and sex, educational status or family support. However, TB co-infection and stigma were significantly associated with CMD (OR= 2.54, 95% CI (1.47, 4.4)) and (OR=1.5, 95% CI (1.02, 2.2)) respectively. Patients with WHO stage III HIV disease had significantly higher rates of CMD than those who are stage I (OR=2.45, 95% CI (1.3, 4.3)).

Conclusions: A significant proportion of HIV patients may also suffer from CMDs. Health workers involved in the care of HIV patients need to actively identify those at high risk of having these treatable disorders.

1.5. Road Traffic Accidents

22. Road Traffic Accidents in Addis Ababa (2001-2008): Evidence from Burial Surveillance

Tekebash Araya, Tolcha Kebebew, Biruk Tensou, Daniel S. Telake

Background: Road traffic accidents (RTAs) are the largest single cause of death and are one of the most serious health problems facing the world today. They are the commonest cause of hospital admission and can result in life-long disability. According to a WHO estimate, accidents are responsible for three-and-a-half million deaths worldwide, with more than two million occurring in developing countries. These injuries are a threat to health in every country and are currently responsible for 7% of world mortality, a figure which is predicted to rise. RTA is one of the major causes of injury leading to death in many developing countries. Strategies for RTA prevention have been extensively studied in many industrialized nations but not in the developing world including Ethiopia.

Objective: We identify and describe the magnitude of mortality due to RTA in Addis Ababa from 2001 through 2008.

Methods: Data are from the death registration of the burial surveillance (BS) by Addis Ababa Mortality Surveillance Program (AAMSP). A prospective BS was initiated in 2001 at all cemeteries within the Addis Ababa city limit. Trained cemetery clerks register information of the deceased including socio-demographics and lay reports of cause of death in a form designed for this purpose. A close caretaker or relative of the deceased provides the

required information while facilitating for funeral. About 20,000 deaths are registered in a year with a total of 158, 101 deaths between 2001 and 2008. Lay causes of death from burial records are recoded into dichotomous variables indicating RTA. Cross-tabulation and chi-square test are used to describe the RTA deaths by some socio-demographic variables. Mortality due to RTA by some variables like age, sex and calendar year are described.

Result: Of the 139,723 burials with reported lay causes of death between 2001 and 2008, 9510 (6.02%) deaths attributed to accidental injuries in Addis Ababa; and the 3277 (34.5%) of them were due to RTAs. The observed death trend in RTA showed a continuous increase from 301 (9.2%) in 2001 to 455 (13.9%) in 2008 with atypical peak in 2006 (496, 15.1%). Of the total RTA burials, 618 (19%) occurred in the 20-29 years age group followed by 460 (14.0%) in 30-39 years old and 407 (12.4%) in the 50-59 years of age. There is a significant difference in RTA deaths among age groups (X^2 test, p<0.01). Road traffic accidents are significantly higher among males 2547 (77.7%) than females 725 (22.3), (OR: 3.27, CI: 3.01, 3.56, p<0.01).

Conclusion: Mortality from RTA in Addis Ababa has increased through time since 2001 with a peak in 2006. Younger age group (20-29 yrs) and males are more likely to die of RTA. Since most road traffic accidents are preventable, their reduction should be considered as a priority.

Key words: Road traffic accident, Mortality, Burial surveillance, Addis Ababa, Ethiopia

23. Road Accidents in Ethiopia- a Common Cause for all Concerned

Dr N Indrasenan, Professor, Arba Minch University

Extremely injury based and fatal accidents in Ethiopian Roads due to sheer negligence on the part of drivers. A Government sponsored study shows that more than 80 percent of the road accidents in Ethiopia are predominantly caused by inefficiency of drivers. Their inefficiency is due to many factors. The study, conducted by the National Road Safety Coordination Office, said most of the accidents are caused by public transport buses while drivers with third and fourth grade driving licenses are causing road accidents with higher frequency. This is a great concern for all road users. There should be some severest guidelines for the drivers as otherwise the road accidents shall continue to be on the increase.

Now, a time has come for the road users to seriously think whether they can take at all road journeys. This is primarily due to their legitimate desire to safeguard the lives of them. The most pathetic situation is that more than 68 % of these accidents involve innocent pedestrians including the youth and children. These accidents are caused by public and as well private transport drivers. The Addis Ababa city is better now known as the one of the greatest international cities with every day increasing the automobile population. The city is under ever greatest pressure from all sectors as the growth of the city is ballooning every now and then.

The fatal accidents in this city are seen to be on the increase day by day. The annual figure for the city and for the sub-urban, rural is also alarming. The health point of view, the road accidents are equally bad in numbers whether they are light injury, major or even fatal. This puts lots of anxiety on the public health system which at the present level can not cope with high rate of accidents. As of now the two wheeler population is finding predominant among the youth and this adds to new dimension in the road accident cases. In fact the General Assembly of the United Nations has time and again issues warning notices and stipulates measures to control/prevent the menace and so far of no avail.

The main paper discusses many of the alarming points of road accidents in Ethiopia and measure to control the menace.

24. A Field Investigation of Safety Belt Usage, Addis Ababa, Ethiopia—2009

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Introduction: In Ethiopia the motor vehicle fatality rate is 181 deaths per 10,000 registered vehicles; nearly 100 times that of developed nations (<2/10,000). Poor road conditions, vehicle maintenance, and inconsistent use of safety belts are frequently cited as contributing factors. Little is known about safety belt usage in these settings. The objective of this pilot study was to determine an estimate of safety belt usage in Addis Ababa, characterize knowledge and attitudes about safety belts, and gain insights into strategies for increasing usage.

Methods: A cross-sectional survey was performed using a structured questionnaire. Data were collected from owners of private vehicles at 4 public locations in Addis Ababa over a 2

day period. Individuals were approached and asked to voluntarily answer questions. Data were entered and analyzed using Epi-Info version 3.3.2.

Results: A total of 401 individuals were interviewed; 340 (85%) were male. Among all respondents 335(84%) had received knowledge about safety belts through public education and indicated usage was very important. However, equal numbers of respondents reported always and never (93, 23%) using safety belts. A greater proportion of females (33%) than males (22%) reported always using safety belts. A large majority 372 (93.2%) stated they are willing to use safety belts if required by law.

Conclusions: Although public awareness about the importance of safety belts is high and most people were aware of public education regarding their use, less than 25% of participants always use them. Data on safety belt usage is lacking and larger scale studies are needed to better characterize safety belt usage in Ethiopia.

Biomedicals

25. Antimicrobials Use, Resistance and Containment Baseline Survey:

Health Facility Assessment on Antibacterial use and Resistance Containment Practices

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Background: Antibacterial resistance is an inevitable natural phenomenon that follows use of antibacterial drugs but it is being accelerated by inappropriate use of the drugs. Health facilities are a critical component of antibacterials resistance as well as they are also eventual sites to initiate and implement containment practices.

Objective: The objective of the survey was to assess health facilities antibacterial use and resistance containment practices

Design and Setting: This is a cross-sectional baseline survey conducted between August to September, 2008 on 73 public health facilities, 37(51%) hospitals and 36 (49%) health centres, distributed in all nine National Regional States and two city councils. Data collection tool was developed based on the review of similar studies. The tool has two parts, part one was structured and semi-structured/open-ended interview questionnaire and part two was structured observation questionnaire. SPSS version 11 was used to describe and

analyze the data. Chi-square analysis was used to examine the differences and similarities between different categorical data. One-way ANOVA test also used to detect mean variations.

Major Findings: The survey revealed that there was no antibacterials prescription and dispensing restriction mechanism in all survey health facilities. No documented regulations to monitor antibacterials prescription and dispensing practices at public health facilities. Only 56% of the survey health facilities had Drug and Therapeutic Committee (DTC) and few facilities (<10%) have held discussions on Antimicrobial Resistance (AMR) as one of the agenda during DTC meetings. Currently functioning Infection Prevention Committees (IPC) were found in 1/3rd of the facilities. About 61% of health facilities have claimed that they had one or more Standard Treatment Guidelines (STGs). No staff in the survey health facilities received in-service training on antibacterial resistance. Only 27% of health facilities have conducted health education on drug use and resistance for clients at OPD level. Though only 8% of health facilities (all hospitals) reported to have currently functional culture and sensitivity laboratory facilities, nearly 25% have claimed that they were aware of occurrence of nosocomial infections in their respect institutions. However, no health facility have reviewed antibacterials sensitivity pattern and took action based on the findings. When considered by level of health care facilities, availability of key antibacterials was 79% for hospitals and 67% for health centers (P<0.05). The average stock out duration of key antibacterials by level of health care facilities was 41days for hospitals and 57 days for health centers (P>0.05). Percentage of facilities with functional steam sterilizer and autoclave were 64% and 88%, respectively. Routine IP supplies such as aprons (41 days), alcohol (40 days) and savlon (35 days) had high stock out duration.   All survey health facilities were without any type of education materials on rational use of antimicrobials and AMR.

Conclusion and Recommendations: The survey has shown that there are multiple factors at the health facilities which directly or indirectly contribute for irrational use of antibacterials and emergence of resistant strains. And the findings of the survey will have significant implications for all parties starting from top policy makers down to frontline health facilities who should work together for collective efforts to curb the problems and promote the rational use of antibacterials
Major recommendations forwarded for different stakeholders are:

Develop policies or regulations on the use of antibacterials by level of prescribers and dispensing staff.

Monitor the establishment and functionality of DTCs and IPCs in all health facilities.

Ensure the availability and monitor utilizations of STGs, drug lists, IP guidelines and IEC materials.

Provide deed-based in-service/on-job trainings for prescribers and dispensing staffs

Improve availability of laboratory facilities, particularly culture and sensitivity tests

Improve the availability of key antibacterials and IP supplies

Conduct on-going public (clients) education on antibacterial use, drug resistance and infection prevention.

26. Establishment of Biochemical Reference Values of commonly requested Liver Function Tests for Apparently Healthy Adult Ethiopian Medical Students

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Abstract

Background: Reference values are ranges of upper and lower limits outside of which values would be considered abnormal. In addition to clinical interpretation, these data could provide us an important safety data for clinical trials. In Ethiopia, a country with highly heterogeneous population and geographical sites, there is no nationally established healthy associated "normal" ranges yet. Laboratory data have been interpreted based on test kits' or text books' adapted ranges. It is mandatory to verify that the test kits' or text books' adapted ranges are appropriate.

Objective: To evaluate the acceptance of company's test kit specific or test books' derived reference values for our population and if host factors influence the reference value for the liver function tests.

Methods: All study subjects (age >18 years) were students from medical faculty of the Addis Ababa University. Self administered questionnaire, anthropometric measurements, and urine and stool examinations were performed. The reference values covering the central 95th percentile of each analyte were established and compared with the test kits' reference

value. Testing the presence of correlation with certain host factors (using non parametric distribution test) were performed on the analyte.

Results: A total of four hundred and twelve students, 209 (50.7%) male and 203 (49.3%) female participated in this study. Age range was 18-55 [median 25].The central 95% reference value for males and female were: ALT(IU/L)-6-42 and 4-27.4; AST(IU/L), 10-58 and 6-45; ALP(IU/L),109-353 and 97- 294 ;GGT(IU/L),8.5-63 and 6-59; Total Bilirubin (mg/dl), 0.6-2.3 and 0.5- 1.72;Direct Bilirubin (mg/dl),0.2-1.47 and 0.1-1.45;Albumin(g/dl), 4.64-7.5 and 4.58-7. Most of the values were different from the test kit's reference values. Certain host factors like age, BMI, smoking, intake of alcohol and khat were observed to affect the biochemical reference values.

Conclusions and Recommendations: Gender specific differences were noticed for most liver function enzymes. ALT, AST, GGT, and bilirubin were the major tests that illustrate variation from the already used reference values. These tests are the most frequently used tests used to asses liver function in clinical and research setting. Host factors should be considered during the interpretation and establishment of reference values. Furthermore, the above findings must be confirmed in a larger scale studies using the relevant population and clinical spectra.

27. Performance Assessment of Clinical Microbiology Laboratories In Ethiopia: Bacterial Identification and Antibiotic Susceptibility Testing

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Background: Bacterial identification and antibiotic susceptibility testing is performed in the clinical microbiology laboratories to guide clinicians and to accumulate reliable epidemiological data on the emergence of resistance pattern of microorganisms. But, many antibiotic agents are prescribed without sufficient laboratory background because prescribers are uncertain of the lab diagnosis. Use of antibiotics other than first-line drugs increases the treatment cost and probability of emerging antibiotic resistance strains. To design interventions, it is vital to do baseline study on the performance of microbiology laboratories.

Objective: To assess the performance of the clinical microbiology laboratories and identify gaps of the diagnostic procedures.

Method: A total of 20 consented laboratories-both public and private institutions from different regions of the country having clinical microbiology laboratory facility were approached for this study; three from Amhara, 1 from Hareri, 2 from Oromya, 1 from Tigray, 1 one from SNNPS, and 12 laboratories from Addis Ababa. Standard test bacterial strains obtained from WHO were dispatched to all laboratories from December, 2007 to February, 2008. These bacterial strains, *Escherichia coli* (ATCC 25922), *Staphylococcus aureus* (ATCC 25923), *Pseudomonas aeruginosa* (ATCC 27853), *Vibrio cholera 01 Inaba* (ATCC 49627) and *Shigella flexnerri* (clinical isolate), were dispatched using general purpose transport media; Trypton soya yeast (TSY) broth and glycerol (anti-freezer) inside cold box. Questionnaires were also used to collect data on the important aspects of diagnostic procedures. The antibiotic susceptibility test results of the participating laboratories were compared with the susceptibility profile obtained from the NCCLS guidelines for each test organism.

Result: Out of 20 laboratories, which were volunteered to participate in this study, only 12(60%) laboratories had responded. Of these 12 participant laboratories, five (41.6%) had standard operational procedure, none of them (0%) had standard control organism and only four (33%) of them had standard biological safety cabinet (safe exhaust outlet). With regard to inoculum preparation, all laboratories were standardizing the inoculum "by eye" only. Zone of inhibition was measured by different methods: five (36%) of the laboratories were using caliper and the rest 7(58%) were using plastic ruler. Eleven (92%) and six (50%) of the laboratories were unable to identify *V. cholera 01* and *S.flexneri*, respectively. One laboratory had correctly identified gram negative test organism (*S.flexneri*) but inappropriately selected penicillin for antibiotic susceptibility testing. Compared with the antibiotic susceptibility test profile of NCCLS for the overall test organism, one laboratory had 100% agreement, four laboratories 85%, one laboratory 81%, and two laboratories 58-65% agreement

Conclusion and Recommendation: From this baseline assessment study, it is evident that there is a problem with regard to willingness to participate in external quality assessment scheme, bacterial identification as well as choosing antibiotics for the targeted

organism and adherence to quality assurance measures. To alleviate these problems, clinical microbiology laboratories in the country should be continuously assessed, technically supported and networked. These initiatives could build clinicians trust on the laboratory diagnostic procedures and frame the emergence of antibiotic resistance strain.

28. Reference Values of Serum Urea and Creatinine in Apparently Healthy Adult Ethiopian Subjects: Baseline Study

Feyissa Challa, Paulos Neguse, Markos Sileshi, Gemechu Tadesse, Gonfa Ayana and Samuel Kinde

Background: Serum urea and creatinine level are the two frequently requested tests used to asses renal physiology. In Ethiopia, clinicians and researchers have long been using text books' or kit manufactures' derived urea and creatinine reference values, which were primarily established for western population. Lack of locally established reference values makes individual changes, due to illness, difficult to diagnose as early as possible. Thus, diagnostic efficiency will become compromised.

Objective: To provide baseline data on the reference values for Urea and Creatinine of apparently healthy adult subjects and assess the appropriateness of test kits derived reference values.

Methods: All study subjects (age>18 years) were students selected, using convenient sampling technique, from medical faculty of the Addis Ababa University. Self administered questionnaire, anthropometric measurements and urine examinations were performed. After exclusion criterion were applied, reference values covering the central 95 percentile [2.5^{th}-97.5^{th}, 90% C.I] of the analytes were established. Non parametric tests were also done for age and gender.

Results: A total of four hundred and twelve apparently healthy subjects, 209 (50.7%) male and 203 (49.3%) female were included for this study. Age range was 18-55 years [median 25 years]. The Median and central 95 percentile reference values for male and female subjects and level of significance (Mann-Whitney test) were: Urea (mg/dl), 23 [11.8-42.0] and 19 [8.0-37.6] (p<0.001); Creatinine (mg/dl), 0.9[0.3-1.5] and 0.76 [0.3-1.2]

(p<0.001), respectively. Among male subjects, age was observed to be significantly correlated (spearman's rank) with Urea (p<0.01) and Creatinine (p<0.03).

Conclusions and Recommendations: The reference values given by the test kits (Urea for male and female were 10-50mg/dl, respectively) and (Creatinine for male and female were 0.6-1.1mg/dl and 0.5-0.9mg/dl, respectively) seem to be different from the present study and difficult to use for clinical and research setting. This baseline study has shown that age and gender have impact on the reference values. Thus, the above findings should be further investigated using pertinent population and large scale study to look for possible host and environmental factors for future establishment of reference values.

29. Bacteriological Analysis of Infected Leprosy Ulcers in Alert , Kuyera and Gambi Hospitals , Ethiopia

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Addis Ababa University

OBJECTIVES: To identify the bacteriology of infected leprosy ulcers and to determine their antimicrobial susceptibility pattern.

METHODS: A descriptive cross-sectional study was conducted during the period of August 2006 and May 2007, a total of 1927 leprosy patients with ulcers were seen at ALERT (1827), at Kuyera (n=80) and Gambo (n=20) leprosy hospitals. Kuyera and Gambo hospitals were visited on 16th January and 23rd March 2007. Convenient sampling was used. Out of 1927, 245 informed and consented patients with ulcers were investigated for bacterial infections. Patients treated with antimicrobials within the preceding one-week were excluded from the study. Data entry and analysis was done using EPI Info version 3.3.2/STATA version 7 computer software.

RESULTS: Of the 245 patients investigated, 64.1% were males and 35.9% females (p < 0.05). According to Ridley-Jopling classifications, 3.7%, 31.4%, 44.5% and 15.9% patients presented with TT, BT, BL and LL types of leprosy, respectively. Plantar and hand ulcers were observed in 92.2% and 7.8% patients, respectively. Proteus spp. accounted for 29.5% of the total isolates followed by Staphylococcus spp. (28.8%), β-hemolytic streptococci (15.1%) and different types of Gram-negative bacteria (26.2%). The Gram-positive and negative bacteria accounted for 44.0% and 56.0%, respectively (p> 0.05).

Multiple organisms (two or three) were isolated from 19.6% patients. Of the 212 wound samples cultured anaerobically, 5.2% were positive for anaerobic culture.

CONCLUSIONS: In general, ciprofloxacin, norfloxacin and gentamicin were the most effective drugs against the tested bacteria mainly for Gram-negative bacteria. Thus, the results obtained from this study will guide the clinicians in the selection of the appropriate antimicrobial therapy that will improve the management of leprosy ulcers.
Key words: Leprosy, ulcers, bacteria, and antimicrobial susceptibility test
Malaria

30. Chloroquine-resistant *Plasmodium vivax* malaria in Debre -Zeit, Ethiopia

Hiwot Teka, Beyene Petros, Lawrence Yamuah, Gezahegn Tesfaye, Ibrahim Elhassan, Simon Muchohi, Gilbert Kokwaro, Abraham Aseffa, Howard Engers

Background
Plasmodium vivax accounts for about 40% of all malaria infection in Ethiopia. Chloroquine (CQ) is the first line treatment for confirmed *P. vivax* malaria in the country. The first report of CQ treatment failure in *P. vivax* was from Debre Zeit, which suggested the presence of chloroquine resistance.

Methods
An *in vivo* drug efficacy study was conducted in Debre Zeit from June to August 2006. Eighty-seven patients with microscopically confirmed *P. vivax* malaria, aged between 8 months and 52 years, were recruited and treated under supervision with CQ (25 mg/kg over three days). Clinical and parasitological parameters were assessed during the 28 day follow-up period. CQ and desethylchloroquine (DCQ) blood and serum concentrations were determined with high performance liquid chromatography (HPLC) in patients who showed recurrent parasitaemia.

Results
Of the 87 patients recruited in the study, one was lost to follow-up and three were excluded due to *P. falciparum* infection during follow-up. A total of 83 (95%) of the study participants completed the follow-up. On enrolment, 39.8% had documented fever and 60.2% had a history of fever. The geometric mean parasite density of the patients was 7045 parasites/µl.

Among these, four patients had recurrent parasitaemia on Day 28. The blood CQ plus DCQ concentrations of these four patients were all above the minimal effective concentration (>100 ng/ml).

Conclusion

Chloroquine-resistant *P. vivax* parasites are emerging in Debre Zeit, Ethiopia. A multi-centre national survey is needed to better understand the extent of *P. vivax* resistance to CQ in Ethiopia.

31. Therapeutic Efficacy of Artemether/Lumefantrine (Coartem®) Against Plasmodium falciparum In Kersa, South West Ethiopia

Ashenafi Assefa, Moges Kass[1], Gemechu Tadese, Hussen Mohamed , Tesfayae Mengesha, Abebe Animut, Adungna weyesa

Artemether/Lumefantrine has been used as a first line treatment for uncomplicated Plasmodium falciparum infection since 2004 in Ethiopia. In the present study, the therapeutic efficacy of artemehter/lumefantrine for the treatment of uncomplicated P. falciparum infection in Kersa wereda, Jima zone, Oromia, was assessed.The study used the 2003 WHO guideline for the assessment of therapeutic efficacy. Patients aged between one and thirty years who, fulfill the inclusion criteria were enrolled and followed for 28 days. Parasite density, body temperature, hemoglobin level and clinical data were collected. Outcomes were classified as early treatment failure (ETF), late clinical failure (LCF), late parasitological failure (LPF) and adequate clinical and parasitological response (ACPR). For an overall view, retrospective data was collected on malaria situation of the area. Malaria was prevalent in the area accounting for 71% of cases in Kersa wereda and the year 2004 was malaria epidemic year. A total of 1628 patients were screened and 90 patients were enrolled and completed the 28 day follow-up period after treatment with artemether-lumefantrine. Cure rate was very high (0.963% with 95% CI of 0.897-0.992)(PCR uncorrected). Age stratified data showed adequate clinical and parasitological response (ACPR) to be 100% for under 5 children and 97.4% and 87.3% for children 5-14 years and adults, respectively. There was no early treatment failure (ETF) in all age groups. Fever was significantly cleared on day 3 (P<0.05) and 98% of parasites where cleared on day 1 and almost all parasites were cleared on day 3. 72.5% of gametes were cleared on day 1, the remaining 27.5% of gametocytes load were maintained up to day 3 irrespective of

treatment and total clearance of gametes were observed on day 7. Hemoglobin concentration showed a slight increase with parasitic clearance however, the mean change in hemoglobin concentration was not statistically significant (P>0.05). No major side effect was observed in the study subjects except the occurrence of stomatitis (peri- oral wound) in 7% of the patients. The current study proved the excellent therapeutic efficacy of artemeter/lumefantherin in the study area and worth using it. However, the proper dispensing and absorption of the drug need to be emphasized in order to utilize the drug for longer period of time. This study recommends further study on the post-marketing toxicity of the drug with particular emphasis on the development of stomatitis in children.

32. The Prevalence of HIV Malaria Co-Infection during Pregnancy in Adama Hospital and Awash Sebat Kilo Health Center, Ethiopia

Heven Sime, Beyene Petros, Afework H/Mariam

The study was undertaken to determine the prevalence and severity of malaria in HIV positive pregnant and non-pregnant women who receive antiretroviral therapy (ART). The level of malaria prevalence, disease severity (as measured by parasite density and Hb level); and immune status (as measured by CD4 $^+$ cell count) were determined for 500 HIV positive women from Adama hospital and Awash Sebat Kilo' health center. 18.4% of the HIV positive women were pregnant and a total of 22.2% were malaria infected. Among the pregnant HIV positive women, 44.6% were malaria infected. Compared to the non-pregnant HIV/malaria co-infected, pregnant HIV/malaria co-infected women, on the average, had a significantly higher (P<0.001) parasite densities (26,595±15,309 versus 15,400 ± 12,278) and a significantly (P=0.05) lower Hb values (7.49±3.34 versus 8.37±3.13). The HIV/malaria co-infected pregnant women also had a lower, but statistically non-pregnant HIV/malaria co-infected women. Compared to pregnant women infected with only HIV, malaria/HIV co-infected pregnant women had significantly lower (P=0.005) CD4$^+$ T cell count (195 ± 123 versus 279±151) and significantly lower (P<0.001) mean Hb level (7.49±3.34 versus 10.53±2.96). Lower CD4$^+$ T cell count and Hb level and higher parasite density were recorded in primigravid HIV/malaria co-infected pregnant women was observed with increasing duration of the use of ART. That is , receiving ART for more than 6 months improved the health condition of HIV/malaria co-infected pregnant women whereby their CD4$^+$ T cell count and Hb levels were increased and malaria parasite densities were

decreased (P=0.001). The study on the whole has indicated that, in malaria endemic areas, extra care must be taken to protect HIV positive pregnant women from malaria infection.

Key words: Malaria, HIV, HIV/malaria co-infection, pregnancy, severe malaria, ART

Environmental Health

33. Knowledge, Attitude and practice of koka flower farm spray workers towards agrochemical handling, application and safety measure in koka town, east showa, Oromia region.
By: Birhanu Cheneke, Amana Jemal

Background: A Flower farm industry in Ethiopia is one of the most recent development in Agricultural sector. There are around 213 flori culture farm are found in our country, Ethiopia. Foreign investor owns most of them, mainly from Europe. The market or the flower is also confined to great extent to Eruope countries. These flower farm industries are distributed to in all four corner of the country including the central part of Ethiopia that is Koka. Koka is located in the Eastern part, and 90 km far from Addis Ababa along the main road of Awasa, with an altitude of 1200m above seal level. There are four flower farm industries, around koka town which are Ethio-cutting, Red fox, Florence and Blen flower farm industries, all are situated in the Southern part of the town which comprises 1200,820,620 and 530 workers respectively of which 160,81,42 and 38 are spray worker respectively. Except for mixing of Agrochemical (Pesticide and Fertilizers) which is done outside of the building, main routine activities in performed inside the greenhouse.

Methods: A cross-sectional study was conducted form Jan 20 to Jan 27, 2009. A stratified random sampling technique was used and 124 spray workers who where engaged in spraying, mixing and cleaning of Agrochemical were sampled from a source population. The date was collected by interviewing using structured questionnaire for spray workers.

Results: About seventy seven percent 95 (76.7%) of the respondents had been sparing agrochemical pesticide for a period of a years or more. Fungicide, insecticide, nematicide and herbicide were the major pesticide used in the study area with estimated application. Only 21(16.9%) of the respondents were able to understand the instruction marked on the

packages. About 53 (42.7%) of the study group did not use proper personal protective equipment. 20(16.1%) of the respondents eat, drink or smoke while handling of pesticide.

Conclusion: the use of hazardous pesticide poses a serious risk to workers' health and the environment. Human exposure to pesticide with a very high toxicity of some commonly used pesticide, the ingestion of even very small amount (1 gram or less), or limited skin contacts with concentrated products can lead to acute poisoning. Routine surveillance data through the health sector could play a key role in helping to control pesticide poisoning, however without careful attention to the biases in such data the extent of the problem could be underestimated, and prevention activities could be easily misdirected.

34. Community Based Survey on household management of waste in Kersa Demographic Surveillance and Health Research Center (KDS-HRC) Field Site

Bezatu Mengiste, Negga Baraki

Background: KDS-HRC is located in Kersa woreda of East Hararghe Administrative Zone in Oromia Regional National State. The study area includes 12 kebeles of which two are urban. These kebeles comprise a population of about 45,000 in 10,239 households (KDS-HRC database, 2008).

Studies have clearly indicated the relationship of human health and improper waste management.. Because of poor sanitation diarrhea occupies a leading position annually leading to illnesses of some 4 billion people and killing about 1.8 million people globally. The majority of these occur in Africa and Asia. The sanitation gap remains un-acceptably large in Ethiopia. Therefore, this study has given an overview of the study area generating information for further actions and in-depth researches.

Objective: This study aimed to assess the status of waste management (both solid and liquid) in KDS-HRC project site in April 2008.

Methods: Data was collected through interview and observation using structured pre-tested questionnaire and checklists. The source population was all houses in the project area. The study subjects were randomly selected 444 households. Heads of households were interviewed. Data was collected by trained data collectors. The data was processed and analyzed using Epi-Info and SPSS statistical packages.

Results: The response rate for the different variables ranged from 426 to 439(96% to98.9%) households. About 93.1% of the households do not have temporary storage means for solid waste. Over 66% of the households dispose solid wastes in open dumps inside or outside their compounds. Most of the available temporary storages lacked covers. About 424(98.4 %) of the respondents revealed that the responsibility of waste management is left for women and girls. However, over 88% of the respondents declared they regularly clean their compounds and around 85.9% indicated they wash their hands after handling solid wastes.

Regarding human excreta management; 37% households had latrines and almost all were simple traditional pits. Flies were observed in over 68% of these latrines, and in nearly 47% of them feces were seen on the floors and walls. Hand washing facilities near the latrines were observed in only 8.1% of them. The habit of hand-washing after defecation was reported to be only about 5.2% of the general households studied.

Conclusion: It is without doubt that the study community suffers the multiple burdens of poor environmental health conditions. Health-workers and local authorities must pay special emphasis to improving these environmental health problems. Further in-depth studies should also be encouraged to look for improved interventions.

Key words: solid waste, liquid waste, hygiene

1.6.Chronic Diseases and Emerging PH Problems

35. Female Genital Mutilation, It's Effect on Women's Health in Kersa District, Easter Hararghe, Oromia Eastern Ethiopia February2008

WONDIMU SHANKO (BSc.) NEGA ASSFA (BSc, MPH), MENGISTU WOLDAY (BSc,MScN)

Introduction: Female genital mutilation is any non-therapeutic surgical modification of female genitalia. It is an ancient traditional malpractice in large parts of Africa. FGM is a common practice in Ethiopia, especially in the eastern part of the country. These studies attempted to l identify the prevalence, type, reason of conducting FGM and factors that are associated with the occurrence of the events.

Methods: A community based cross-sectional survey was conducted January to February 2008 in Kersa demographic Surveillance and health Research Center field site on 858 females of reproductive age group (15-49) selected from 12 kebeles using proportion to size of existing households to assess the prevalence, reasons and factors lead for the contribution of Female Genital Mutilation (FGM) in Kersa district, East Hararge, Oromia region Ethiopia. A structured questionnaire was used by trained data collectors. Complete data was entered and analyzed using SPSS statistical package. Proportions and chi-square is used to describe the data. Statistical test was taken significant at $p<0.05$.

Result: Female Genital Mutilation (FGM) is reported to be known by 327 (38.5%) among participants. Majority 249 (76.1%) of women responded that local healers are the main performer of FGM. Majority of respondents 258 (78.9%) said that clitoris is the one removed during circumcision. The main reason FGM is practiced is to reduce female hyper activity in sexual practice responded by 198 (60.3 %). Daughter circumcision is reported by 288 (88.1 %) of the respondents. Daughter circumcision has shown statistically significant association with religion ($p=0.003$), educational level ($p=0.01$) and ethnicity ($p=0.012$). Majority of the respondents 792(92.3%) were themselves circumcised. Majority (68.8 %) of the respondents does know any problems associated to FGM.

Conclusion: It is only one third of the respondents who said to know the practice. Some mothers have circumcised their daughters and majority of them were circumcised themselves. And it is noted that the local healers are the main actors of this practice. Some of the women know the reproductive health effects of FGM. Some has experiencing it.

Recommendation: FGM endanger the reproductive health of women. Hence, Proper health education in averting this practice should be done. The target for this education should be local healers and those families insisting the practice to be performed on their own child.
Key words: Female Genital Mutilation/cutting, local healer

36. Trend in Cancer Deaths in Addis Ababa from 2001 to 2008

Tolcha Kebebew, Biruk Tensou, Tekebash Araya, Daniel S. Telake

Introduction: Cancer is one of the leading causes of death in the developed world; and is emerging as priority public health problem in developing countries. Death from cancer is

more than the sum of deaths from malaria, TB and HIV/AIDS worldwide. Data on prevalence and trends in cancer deaths are lacking as there is no established means to identify cause of death in developing countries.

Methodology: In this paper, we used burial surveillance (BS) data of Addis Ababa Mortality Surveillance Program (AAMSP) to estimate mortality from cancer, as reported by relatives or caregivers of the deceased. The eight years data of AAMSP were used to estimate the trends in cancer mortality based on the lay report by cemetery clerks. Frequency, cross tabulation with chi-square test and logistic regression were used to calculate relationship between cancer mortality and some relevant variables, using STATA 9 software. The validity of the lay cause of death (the burial records) was checked against the cause of death assigned by physicians from the verbal autopsy (VA) study conducted in 2004, the 'reference standard'. We used 908 death records that were matched from verbal autopsy and burial surveillance to calculate validity measures with respect to the cancer death. Promising sensitivity and predictive value positive were found, 73.7% and 63.6% respectively. The specificity and predictive value negative were near 100%. The kappa agreement between the two is 0.7. These results show that an acceptable estimate can be made by the lay report of the burial surveillance.

Result: A total of 158, 101 death records were made in the last eight years, 2001 to 2008, out of which 139,723 (88.4%) have reported cause of death. Prevalence of mortality from cancer rose from 1.57% in 2001 to 4.05% in 2008. We have characterized the cancer death by age, sex and types (cancer of breast, uterine, head and gastro-intestinal tract-GIT). The age group 50-59 has the highest cancer mortality, 3.04% in 2001 and 8.22% in 2008 followed by 35-49 years age group, 2.04% in 2001 and 5.57% in 2008. Females are highly likely to die of cancer compared to males, 3.9% [2.28% in 2001, 5.78% in 2008] and 1.91% [0.97% in 2001, 2.64% in 2008], respectively, OR: 2.13 [2.00, 2.28], p<0.01. When classified by anatomic location, breast cancer mortality is the highest, 0.29% [0.16% in 2001 and 0.55% in 2008] followed by GIT, 0.26% [0.08% in 2001 and 0.51% in 2007] and uterine cancer, 0.24% [0.14% in 2001 and 0.42% in 2008]. The result shows that breast and uterine cancer together contribute to nearly 20% cancer deaths.

Conclusion: Consistent with researches conducted in other settings, this study shows remarkable rise in mortality from cancer in Addis Ababa. Cancer death is highly likely to affect age group 35 to 59 years and female. We recommend strengthening the cancer prevention and control strategies; awareness raising, early screening, diagnosis and

management of cancer. Further explorative study at the national level could also provide more representative data.

Key words: Cancer, Mortality, Trend, Burial surveillance, Addis Ababa

37. Epidemic Dropsy in Addis Ababa

Ashenafi Assefa

Epidemic dropsy was reported in different parts of the world, the most mentioned nation is India. The epidemics occurs due to the use of contaminated edible oil with *Argemone* Mexicana (Mexican Poppy) oil for cooking. The outbreak of epidemic dropsy in Addis Ababa in 2008 was the first occurrence of the disease in Ethiopia. Massive number of cases were diagnosed to have similar signs and symptoms of epidemic dropsy in Addis Ababa. And around 4 deaths occurred between May and June of 2008, causing great fear, confusion and economic losses. The actual figures are likely to be much higher due to nonreporting of milder cases and /or remoteness of localities. As Epidemic dropsy was a new phenomena to Ethiopia a national effort were undertaken to find out the root cause of the problem. This article illustrate the finding of Argemone Mexican oil contamination from edible oil collected from oil mills in and around Addis Ababa. Some 150 samples were collected and investigated between May 15 and 22. Laboratory analysis of sample for adulteration with Argimone oil (sanguinarine: poisonous active principle in Argemone oil) was made. Standard test methods (Phenol, Nitric acid and tin layer chromatography (TLC)) were used to investigate the samples. Edible oil samples collected in different four days namely 16,20, 21, and 22 of May 2008 showed 83.3%, 61.5%, 15.8% and 13.5% of contamination with Argemne oil (sanguinarine), respectively. The test sensitivity and implication of the results are discussed.

39. Domestic Violence Against Women (DVM) in Kersa District, Easter Hararghe, Oromia Eastern Ethiopia February2008

WONDIMU SHANKO (BSc.) NEGA ASSFA (BSc, MPH), MENGISTU WOLDAY (BSc,MScN)

Induction: Violence, though the form and type vary from place to place it is rampant in Ethiopia. A study conducted in 2005 has identified a prevalence of any form of violence 55% and 95% in Peru, Tanzania and Ethiopia. The main intention of this study was to identify type, perpetuator and reasons of violence against women in the study site and give the information to the concerned bodies working for the betterment of women's life.

Method: A community based cross-sectional survey was conducted January to February 2008 in Kersa demographic Surveillance and health Research Center field site on 858 females of reproductive age group (15-49) selected from 12 kebeles using proportion to size of existing households in each kebele is administered to assess the Knowledge and prevalence of domestic violence among women of reproductive age in Kersa district, East Hararge, Oromia region Ethiopia. A structured questionnaire was used by trained data collectors. Complete data was entered and analyzed using SPSS statistical package. Proportions and chi-square is used to describe the data. Statistical test was taken significant at $p<0.05$.

Result: Out of 849 women interviewed concerning violence only 337 (39.7%) reported to know what violence against women means. Majority (55.2%) reported physical harm is the most common form of violence practiced in the community followed by verbal insult 104 (30.9.6%). Ever experience of violence by intimate partner is reported by 166 (19.5%) of women; and majority (70.3 %) of the perpetuators were husbands. Violence has shown statistically significant association by ethnicity ($p=0.031$), religion ($p=0.019$) and age group ($p=0.05$). Only 33 (19.9 %) who ever had the experience of violence has reported to the legal bodies. Women failed to report to the legal system for two reasons one is they don't want to expose the issue to and the other reason is they don't know where to go for the problem.

Conclusion: Violence against women undermines women right of dignity and degrades their self esteem. Majority of the perpetuators are intimate partners. Failure to report to the legal system is associated with socio-cultural constraints and male dominance in the society.

Recommendation: Woreda female's affairs office and administrative bodies should work in keeping the dignity and social as well physical health of the women, they should facilitate ways of appealing when an incident occurred.

Key words: Domestic Violence, Intimate Partner

40. Prevalence of Unwanted Pregnancy ,Abortion and Preference for Health Care Usage Among Women Of Reproductive Age in Kersa District, Easter Hararghe, Oromia Eastern Ethiopia, February2008

WONDIMU SHANKO (BSc.) NEGA ASSFA (BSc, MPH), MENGISTU WOLDAY (BSc,MScN)

Introduction: There is a high incidence of abortion cases in developing countries like Ethiopia. Due to the nature of subject under study, it used to be difficult to trace abortion in the community. And only cases which are complicated and visiting heath institutions are reported. Majority of women in rural setting doesn't' know what to do when abortion occurs. This study tried to identify the status of unwanted pregnancy, abortion and factors that are associated with the occurrence of the events.

Methodology: A community based cross-sectional survey was conducted from January to February 2008 in Kersa demographic Surveillance and health Research Center field site on 858 females of reproductive age group (15-49) selected from 12 kebeles using proportion to size of existing households in each kebele is administered to assess the Knowledge and prevalence of domestic violence among women of reproductive age in Kersa district, East Hararge, Oromia region Ethiopia. A structured questionnaire was used by trained data collectors. Complete data was entered and analyzed using SPSS statistical package. Proportions and chi-square is used to describe the data. Statistical, test was taken significant at p<0.05.

Result: Prevalence of unwanted pregnancies is 16.7% of which 50 % has experienced the event two times. Only 78 (9.1%) has experienced abortion, of which majority or 40 (51%) experienced abortion only one times. From those cases reported 37 (47.4%) were spontaneous abortion whereas the remaining 41 (53%) were induced. Residence (p=0.024) and age (p=0.000) has shown statistically significant association with occurrence of abortion. Sixty one mothers reported that their most recent abortion was managed at their own house. And only 15 (19 %) of the mothers said that they have managed their case at health institution. Majority of abortion cases have reported that they have induced the abortion by themselves and 32. 8 % has reported some other person has helped them to induce abortion. Places which are not known by another person are preference sites for future termination of pregnancy by majority of the respondents.

Conclusion: The prevalence of unwanted pregnancy and abortion are low. Women uses traditional healers and conduct abortion at home. The most noted complication after

committing abortion is severe bleeding. If in the future incidents occur that necessitate treatment for abortion, majority would like to go to other places than health institutions.

Recommendation: The health extension workers in collaboration with the community should give health education on ways of averting unwanted pregnancy. Education should be given to those people conducting abortion in the community.

Key words: Unwanted pregnancy, Abortion, Maternal death

2. Poster Presentations

1. Factors affecting fertility decisions of married men and women living with HIV in South Wollo Zone, northeast Ethiopia

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Background: In a setting with high HIV prevalence and high fertility rates, addressing fertility issues of PLWHA is crucial. However, understanding of the factors associated with fertility decisions of PLWHA in Ethiopia is remarkably low.

Objective: The study was conducted to assess factors associated with fertility decisions of PLWHA in South Wollo Zone, Northeast Ethiopia.

Methods: The study was conducted from February 1 to March 30, 2008 using cross-sectional design. Quantitative data was collected from a sample of 458 men and 458 women using structured questionnaire. Qualitative data was also collected from six health care providers. Logistic regression was used to analyze the quantitative data.

Results: The study showed that 18.3% of currently married PLWHA have decided to have a child. The factors found to be independently associated with current decision to have a child were higher family income [OR (95% CI) = 2.29 (1.23, 4.26)], partner's decision to have a child [OR (95% CI) = 36.4 (17.0, 77.5)], having knowledge on PMTCT [OR (95% CI) = 2.26 (1.44, 3.54)] and having partner with negative HIV test result [OR (95% CI) = 0.408 (0.219, 0.759)]. During in-depth interview the health care providers indicated the fertility related counseling service to be low.

Conclusion: In spite of the fact that significant proportion of married PLWHA had decided to have a child, the fertility related counseling service is low. Improving fertility related counseling services to enable clients make informed fertility decision is mandatory. The factors identified to be associated with fertility decision could be of major importance and as such should be investigated further.

Key words: fertility decision, PLWHA, South Wollo Zone

2.The importance of antenatal care risk scoring in predicting delivery outcomes in tigray region: a cohort study

Hagos Godefay Mph., Axum St. Mary Hospital, CEO; Tegbar Yigzaw MD, Mph., Gonder University, April, 2008.

Abstract : Ethiopian is one of those countries that use ANC as the core component of safe mother-hood program. Nowadays, however, the role of antenatal care is being increasingly questioned, particularly in resource poor environments. The low predictability of antenatal markers for adverse maternal outcomes has hed some to reject antenatal care as an efficient strategy for safe mother-hood.

This health facility based cohort study was undertaken to measure the importance of ANC resk scoring in predicting delivery outcomes in Tigray region North Ethiopia. The study was conducted in 8 health institutions found in eight districts from December to April 2008. A total of 156 low risk and 156 high risk mothers were identified from antenatal card and followed for their maternal and fetal outcome. Antenatal scoring had a sensitivity of 76% and 77.8% and specificity of 58.2% and 51.7% to predict delivery complication and perinatal deaths, respectively. The positive and negative predictive values are 36.5% and 88.5% for delivery complication and 9.0% and 97.4% for perinatal mortality respectively.

Our study has shown that antenatal care alone may not be an effective strategy to identify those most in need of obstetric service delivery. Therefore any pregnant mother should deliver in concurrence with an effective obstetric care and delivered in skilled hands.

3. Role of Husbands on Family Planning usage in Kersa District, Eastern Hararge zone, East Ethiopia

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Introduction: The continuing growth of world population has become an urgent global problem. Worldwide, over 500,000 women and girls die of complications related to pregnancy and childbirth each year. The estimated for Ethiopia suggest that over 25,000 women and girls die each year due to pregnancy-related complications. People in Ethiopia also disproportionately suffer from the country's unsustainable population growth. Despite of male can participate in family planning in many ways, historically most family planning programs focused exclusively to women and paid little attention to the roles that they might have with respect to women's reproductive health decision-making and behavior. Discussion between spouses is expected to increase contraceptive use because a sizable minority of women cites their husbands' disapproval of contraception as the reason for non use, despite having never discussed family planning with their husband. In many developing countries men desire large family than wives and pround of the number of their

children particularly sons. The study is to assess the role of husbands on contraceptive usage with their wives in Kersa District, Eastern Hararge zone, Ethiopia.

Methodology: A community based quantitative cross-sectional survey was conducted in 12 kebeles in kersa district from March – April 2008. A total of 367 husbands selected proportional to population size of the kebeles' were interviewed on contraceptive knowledge, practice, attitude and communication with their wives about family planning issues.

Result : From a total of 367 respondents 80.9% were illiterate, 92.1% had one wife, 86.4% were farmers and 63% had 3 or more children. Of husbands interviewed 55% heard of at least one family planning method, 18.5% use family planning with their wives currently, and 89.5% had positive attitude toward the use of use of family planning. Only about 135 (36.8) of husband discussed family planning with their wife, from which 120(32.7%) approve the use of contraceptives. In addition, 41% of husbands believe that the power to decide the number of children is only for husbands. 29% husband had desire to have more than 6 children and they were not the users of contraceptive. Almost all women who used contraceptive methods were those who discussed family planning wives previously.

Conclusion: Even though most husbands had a positive attitude toward the use of family planning, their knowledge of family planning and contraceptive use is relatively low. Husbands those had desire to have more than six children were not the users of contraceptive, where as almost all of the contraceptive users with their husbands were those who discuss about family planning with their wives previously.

4. Epidemiological Analysis on Treatment Outcome of Tuberculosis in Rural South West Ethiopia: A Retrospective Cohort Study

Sibhatu Biadgilign, Ermias G/Yohannnes, Abdu Bdru

Background: The scale of the global TB epidemic demands urgent and effective action. It is very important in tuberculosis (TB) control to detect the disease as early as possible and to ensure that those diagnosed complete their treatment and get cured. Incomplete treatment may result in drug resistance, cause transmission of disease and lead to increased morbidity and mortality. Hence, monitoring the outcome of treatment is essential in order to evaluate the effectiveness of the intervention.

Objective: To assess the rates and determinants of treatment success and outcome in Omo-nada District from 1994-2000.

Methods: The setting was Omo-Nade district in the tuberculosis control program in Jimma zone-south west Ethiopia. The surveillance database was analyzed to assess the treatment outcome and identify factors associated with treatment success for TB cases registered. Six treatment outcome criteria were assessed based on guidelines set by the World Health Organization (WHO). Logistic regression was used to estimate risk factors for treatment outcome. Data was entered in to computer and univariate and multivariate analysis were carried out using SPSS statistical software version 12.0.1.

Results: A total of 504 tuberculosis cases registered between 1994 and 2000 (males 257(51%), 247(49%) females) were included in this study. Majority 471(93.5%) were new patients. Two-hundred thirty seven (47%) were smear-positive, 17.3% were smear negative and 35.5% had extra-pulmonary tuberculosis (EPTB). The treatment success rate (including cured and complete treatment) was 71.6%. Ninety (17.9%) patients were defaulter from treatment and 16(3.2%) patients died. In multivariate analysis, treatment success wasn't found to be associated with age, sex, patient's category for TB treatment and type of tuberculosis.

Conclusion: The total treatment success rate in the current study was low to the WHO target (85%). Substantial patients defaulted from the treatment. This recalled an alternative mechanism to trace the patients through strengthen active case-detection, improving service delivery for TB is recommended.

Key words: Tuberculosis; DOTS; TB control; case finding; cohort; Ethiopia

5. Antimicrobial Resistance of Bacteria Isolated from Smear Negative PulmonaryTuberculosis Suspected Patients Visiting St Peter TB Specialized Hospital, Addis Ababa, Ethiopia

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In most Sub-Sahara African countries AFB smear negative patients are registered and treated empirically as smear negative pulmonary tuberculosis (PTB) cases largely on the basis of their clinical finding and lack of response to broad-spectrum antibiotics, occasionally supplemented by chest radiographic findings.

A Cross-sectional study was carried out from February to July 2005 to asses the drug susceptibility patterns of potential chronic lower respiratory tract infection causing bacteria isolated from sputum samples of smear negative PTB suspected out patients visiting St. Peter TB specialized hospital. A total of 52 isolates were tested for antimicrobial susceptibility to 17 commonly prescribed drugs by standard disc diffusion method and PTB was confirmed by sputum culture using automated BACTEC MGIT 960 system liquid medium at EHNRI. The data were analyzed using SPSS version 10 and Excel statistical packages. P-value < 0.05 was considered as statically significant.

The isolates consisted of Klebsiella pneumonia (n=18), Staphylococcus aureus (n=13), Escherichia coli species (n=11), Pseudomonas aeruginosa (n=3), Proteus mirabilis (n=3), Klebsiella ozaenae (n=1), Streptococcus pneumonia (n=1), Acintobacter species (n=1), and Citrobacter species (n=1).of the 52 isolate tested 48 (92 %) showed resistance to any of the drugs tested. Among drugs tested for gram negative isolates Carbenicillin (71.4%) and Ampicillin (71.1%) & for gram positive isolates Penicillin and Augumentin showed resistance rate of 75 % and 50 % respectively. Among drugs tested for both isolates, Cephalotin (44.2%) and Streptomycin (36%) showed the highest resistant rate. In addition significant proportion (50 %,26/52) of the isolates were multiple drug resistance (MDR) to 3 or more drugs predominantly to Ampicillin, Co-trimoxazole, Tetracycline, Cephalotin, Carbenicillin, Chlororamphnicol and Streptomycin. Most interestingly significant proportion (100%) of the samples that had MDR isolates were confirmed as TB culture negative.

In conclusion the likely occurrence of MDR bacteria potentially lower respiratory pathogen in smear -negative TB suspected patients and these may affect the diagnosis, treatment and control of lower respiratory tract infection including TB. Thus Further studies in larger scale particularly cohort/prospective types are recommended.

Key words: Multiple-drug resistant, AFB smear negative patient, and Ethiopia

6. Paying from Poverty: Impoverishing Health care Expenditure

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Introduction: Universal access to basic health services has been the main motto of the global health actors for the last many decades. Accordingly, the payment by clients and patients was considered to be the main financing schemes of the Health service in Ethiopia.

Objectives: To determine the source and amount of health expenditure by households in East Shewa zone, Oromiya regional state, Ethiopia.

Methods: A community-based cross-sectional study was conducted in March 2008. The study was conducted on 330 households of four randomly selected districts of East shewa zone of Oromiya National Regional state, Ethiopia. A pre-tested, structured and interview administered questionnaire was used to collect data on time to reach different categories of health providers and health facilities. Data was entered in to SPSS 15.0 and analysed using statistical summaries, t-tests, ANOVA and their non-parametric analogues.

Results: The survey revealed that, the majority (97.9%) of the households reported household income as a source of payment for medical expenditure, while only 2% mentioned support fm the community for health care expenditure. About 42% of all households reported the expenditure of 100 Birr or less for medical care during the previous month for their household members. Similarly, an equal number (41.8%) of households reported an expenditure of Birr 101-300 during the previous month before the survey. The overall mean (median) expenditure was Birr 271.4 (125.0), ranging from 237.5 (120.0) Birr in Fantalle to 334.8 (150.0) Birr in Bora District. However, this amount of monthly expenditure on medical care by households, particularly in the current study setting seems to be high. The possible explanation for this is that medical care is a major consumer of the household resources perhaps up to 30%. It is clear that out-of-pocket payment for health care services has a substantial economic impact, leading to the considerable economic loss to the households.

Conclusion: Given the high expenditure for health care in household setting developing prompt and robust health care financing systems seems a necessity for poverty reduction through health development.

7. Antimicrobials Use, Resistance and Containment Baseline Survey: Course Content Review on Antimicrobials Resistance Prevention and Containment of Health Professionals Training

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Introduction: Antimicrobial resistance is becoming a global threat to both human beings and animals. Resistance has already emerged to several antimicrobial drugs by several microorganisms. Irrational antimicrobial use has contributed to the wide spread resistance. Curricula of health training programs have major roles to play in the appropriate diagnosis and rational prescribing and dispensing of antimicrobials.

Objective: to identify gaps in the course contents of the various health training programs within Ethiopia in an attempt to come up with possible interventions to fill the gaps.

Methods: The training programs reviewed included Medicine, Pharmacy, Health Officers, Nursing, Veterinary Medicine, Dentistry both degree and diploma (if available). Course contents of Pharmacology, Microbiology, Pharmacotherapeutics, Pharmacy practice and veterinary courses with regard to micro-organisms, and antimicrobial use and resistance. Checklists for the various course contents were first prepared prior to reviewing them.

Findings: The review have shown that course contents were not detailed enough; absence of time allotment for each topic; lack of emphasis on local context of antibacterial use and resistance; chemoprophylaxis; principles for the choice of drugs; drug residue in food animals and knowledge on antibacterial clearance; adherence to treatment; and the concepts of standard treatment guidelines seems to be totally ignored in all course contents. Though it is difficult to set a standard for reasonable time allotment for the topics on "antibacterial use and resistance", most training programs did not have ad equate coverage for the topics. Even if the topics were somehow covered, they didn't give emphasis on the local context. However, topics like mechanisms of antibacterial actions, indications and adverse reactions of the antibacterial drugs were reasonably addressed in the course contents of most programs.

In zoonoses susceptible and resistant micro organisms are transmitted from animals to man and from man to animals. Humans acquire infection from animals during husbandry, but most important avenue is by consumption of foods of animal origin which includes milk, meat and eggs. Man can also acquire infection from leather industries, food processing plants, vaccine production laboratories, and from zoos. High levels of antibiotic residues were detected in milk and meat destined for human consumption. Emphasis was not given to local context in most cases.

Conclusion and Recommendations: Gaps were identified in most course contents with regard to microorganisms and antimicrobial use and resistance. From the findings of the present review, it can be recommended that relevant topics related to antimicrobial use and resistance should be addressed in a reasonable time in the course contents of all health training programs.

9. Antimicrobials Use, Resistance and Containment Baseline Survey: Bacteriological Culture and Sensitivity Retrospective Records Review

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Gabriel Daniel, B. Pharm, MPH

Introduction: Ethiopia, like other developing countries, is affected by high level of infectious diseases. Microbial resistance to antimicrobial agents seriously undermines efforts to control infectious diseases.

Objective: to assess the level and trend of bacterial resistance to antimicrobials from the routine services records

Methods: Antimicrobial resistance data was collected by reviewing all accessible culture and sensitivity test records throughout the country over five years period (1996 to 2000 E.C.).

Findings: A total of 52, 682 culture and sensitivity records were reviewed. The reviews have shown us that antimicrobial resistance ranged from 0% to 100%. Results with 0% or 100% resistant level or too close to 0% or 100% are associated with limited samples and could be attributed to this shortcoming. However, most bacteria that are commonly involved in causing infections to human beings (and animals) show considerable degree of resistance to commonly used first line antibacterials over the five year period.

The following bacteria have particularly shown increment in the level of resistance over the five years period: Coagulase negative *staphylococcus, Streptococcus pneumoniae*, *Salmonella* species, and *Staphylococcus aureus.* Coagulase negative *staphylococcus* showed an increase in resistance to Erythromycin from 21.6% in 1996 to 51.9% in 2000; *Streptococcus pneumoniae* showed an increase in resistance to Erythromycin from 0% in 1996 to 18.2% in 2000. This organism also showed an increase in resistance to chloramphenicol from 0% in 1996 to 17.4 % in 2000. *Salmonella* species showed an increase in resistance to Cotrimoxazole from 33.3% in 1997 to 62.5% in 2000. The other microorganism that showed increase in the level of resistance is *Staphylococcus aureus.* Resistance to Methicillin increased from 87.5% in 1996 to 100% in 2000.

Some organisms have also shown high level of multiple drugs resistance. *Shigella dysentriae* for example showed an over all resistance of 31.8% to Chloramphenicol, 43.8% to cotrimoxazole, 81% to Ampicillin, and 89.5% to Tetracycline over the five years period.

Conclusion and recommendation: Even though prospective antimicrobial resistance surveillance is needed; the available retrospective data suggests that the overall high level of resistance of microorganisms to antibacterials to first line antibacterial is beyond the expected threshold levels and have increased over years. Levels of resistance increased over time. These call for all stakeholders for immediate coordinated action to contain the emergence and spread of antimicrobial resistance.

10. Assessment of Caregivers` Child Feeding Behaviors in Derashe special Woreda, |Southern Ethiopia.

Tseganeh Amsalu (BSc, PH, MPH), Mekitie Wondafrash (MD, DFSN), Mirkuzie Woldie (MD, MPH)

Back ground: Child malnutrition, a major public health problem in developing countries, is usually attributed to growth faltering, which is primarily a consequence of repeated infectious episodes and inadequate nutrient intakes. For a number of reasons, progress in improving child feeding practices in the developing world has been remarkably slow. Infants are often fed diets that are low in nutrient quantity and quality. Recently, however, there has been considerable interest in the caregivers' child feeding behavior as an important determinant of child nutrition and health outcomes.

Objective: to assess caregivers' behavior of feeding young children who are 6-23 months old in Derashe special Woreda, Southern Nations, Nationalities' and Peoples Regional State (SNNPRs), Ethiopia.

Methods: A community based cross-sectional study design was employed in the eight randomly selected Kebeles of Derashe special Woreda. A multistage simple random sampling technique which was preceded by census was used. A total of 845 caregiver-child pairs were included in the sample. Pre-tested structured questionnaire was used for quantitative data collection. Data was analyzed using SPSS version 16.0. Uni-variate and multivariate analysis was carried out. Focus Group Discussion was used to supplement the quantitative part.

Result: A total of 826 caregiver-child pairs were included in this study giving the response rate of 97.7%. The largest group of respondents were mothers 80.6%. Sixty one percent of the index children in this study were in the age range between 12-23 months. Seventy six percent of the immediate caregivers were practicing responsive child feeding behaviour. The rest 11.9% and 11.3% of the immediate caregivers were practicing controlling and lasses-faire type of caregivers' child feeding behaviour. Wide spread bottle with nipple feeding, misconceptions about exclusive breast-feeding and child hunger signs were prevalent in the area. Current breast feeding, caregivers who have enrolled in formal education, immediate caregivers who are biologic mother, immediate caregivers of child having younger brother/sister and way of responding for child's food refusal were found to be independent predictors of responsive caregivers' child feeding behaviour.

Conclusion: Health education should be given for immediate caregivers about appropriate breast feeding and complementary feeding practices.

Key words: Caregivers, Child feeding behaviours, responsive, Ethiopia.

11. Determinations of Acute Malnutrition Among Children Under Five years of Age: A case Study in Haramaya Woreda,East Hararaghe Zone, East Ethiopia

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Background: Worldwide, malnutrition is an extremely serious issue particularly affecting the under five population in general and developing regions in particular. The problem of child under nutrition is among serious public health issues which could be related with different factors.

Objective: To assess the causes of acute malnutrition and child feeding and caring practices among children Under five years of age in Haramaya Woreda, East Hararge Zone of Oromyia National Regional State

Subjects and methods: A case- control community based study supplemented with qualitative study was conducted among a total of 327 children under five which comprises 2:1 control to case ratio, (109 cases and 218 controls). Cases were proportionally selected from all outpatient therapeutic program (OTP) sites in the Woreda randomly, after identifying the total number of malnourished children in every site. On the other hand, controls were systematically selected from all OTP sites after proportionally allocating study subjects to all kebeles where OTP site is currently functional to satisfy the required sample size. In case when more than one child under the age of five are present in a given household, one of them was selected at random to participate in the study. In both cases and controls, mothers or care givers and their respective child were included in the study. Data were collected over a total of 7 days by trained data collectors. Principal investigators were involved in the collection of qualitative information. A standardized pre–tested questionnaire was used to collect quantitative information from mothers and/or care givers. Anthropometric measurements have been obtained by trained data collectors. Supervisors were also trained for the purpose of quality control and involved in processes of entire data collection. Focus Group Discussions were conducted with mothers of reproductive age group who have children under the age of five years and men in the study area to explore additional information. Ethical clearance was obtained from research ethical review committee of faculty of health sciences, Haramaya University and letters of permission were also obtained from local administrative bodies .Verbal consent was also obtained from individual study subjects.

Results: The findings of this study indicated different risk factors of acute malnutrition among children under five. Accordingly the following risk factors were identified as predictors of acute malnutrition among the children under five years of age: Sex of the child, presence of two or more under five children in household, estimated monthly income of household, presence of trained attendants on delivery, pre-lacteal feeding, exclusive breast feeding for the first 6 months and size of plots of land for food crops, are independently associated with acute malnutrition. The size of plot of land for crops and number of children under the age of five in households were found to significantly differ between the cases and controls.

Conclusion: it can be concluded from the findings of this study that most of the risk factors identified are those for which doable actions exist at household, community and institutional levels. Therefore, collaborative efforts are needed to mitigate acute malnutrition of children under five in the study area.

12. Lipid profiles of hiv/aids patients and the effect of combination antiretroviral therapy. cross-sectional study in jimma university specialized hospital,

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Background: Highly active antiretroviral therapy (HAART) has been well documented to reduce both the morbidity and mortality associated with Human Immunodeficiency Virus (HIV) infection. However, many HAART regimens incur treatment-limiting side effects, such as hyperlipidemia, insulin resistance, and lipodystrophy, which along with HIV itself may party account for premature cardiovascular events in HAART, treated HIV infected patients.

Objective: To determine the lipid profiles of HIV/AIDS patients and to asses the effect of combination antiretroviral therapy.

Methods: A cross sectional comparative study was conducted from February 1 to march 30, 2009 on HIV/AIDS patients attending HAART program, HIV treatment naïve patients and HIV negatives at Jimma University Specialized Hospital ART clinic and VCT unit.

Results: A total of 150 subjects were included in the study of which 59 (39.3%) were males and 91 (60.7%) were non-pregnant and non-lactating females. Their median age was 31 years. The mean serum lipid profiles of HIV patients receiving HAART were as follows: Total cholesterol (TC) = 207mg/dl, Triglyceride (TG) = 322mg/dl, Low Density Lipoprotein cholesterol (LDL-c) = 110mg/dl and High Density Lipoprotein cholesterol (HDL-c)=32.5mg/dl. The mean serum lipid profiles of HIV treatment naïve patients were as follows: TC = 133.5mg/dl, TG =254mg/dl LDL-c = 45.6 mg/dl, HDL-c =37mg/dl. The mean serum lipid profiles of HIV negative individuals were as follows: TC = 146.8mg/dl, TG=231.4mg/dl, LDL-c 61.2mg/dl, HDL-c39.2mg/dl. According to the cut off values for high risk for coronary artery disease recommended in the US-NCEP-ATP II guidelines, high

TC, TG, LDL-c and low HDL-c was found in 25,84.3,22 and 79.6% of HIV patients receiving HAART respectively. High TC, TG, LDL-c and low HDL-c was found in 1.8, 69.6, 0 and 71.4% of HiV treatment naïve patients respectively. High TC, TG LDL-c and low HDL-c was found in 10, 73.3, 0 and 53.3% of HIV negatives respectively. The difference in the mean lipid values of HIV positives on HAART and HIV treatment naives were statisticall significant (P<0.05). In addition, the difference in the mean lipid values of HIV positives on HAART and HIV negatives was also statistically significant (P<0.05). Patients receiving Neverapine containing regimens had higher lipid and lipoprotein values.

Conclusion: Hypertriglyceridemia was the most common type of dyslipidemia. Dyslipidemia was prevalent among patients receiving HAART in which patients receiving Neverapine containing regimens had higher lipid and lipoprotein values.

13. Bacteriological quality of drinking water sources cross sectional study in serbo town, jimma zone, south west ethiopia,

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Background: The most common and widespread health risk associated with drinking-water is microbial contamination. The guide line adopted for microbiological quality is that no water intended for human consumption shall contain E. coli in 100ml sample. But, a 1-19 E.coli count per 100ml is acceptable that needs regular sanitary checks for untreated water.

Objective: To determine the bacteriological quality of drinking water sources in Serbo town, Jimma Zone, south west Ethiopia.

Methods: A Cross – sectional study on bacteriological analysis of drinking water was conducted in Serbo town from February 20, 2009 to March 5, 2009. Water samples were collected in sterile bottled and tested for presumptive coliform count followed by E.coli confirmation.

Results: A total of twenty four drinking water samples were analyzed. Eighteen (75%) the water sources examined were from unprotected wells. Twenty three out of the total (95%) had unacceptable faecal coliform count, in all of which E.coli was isolated.

Conclusion: Majority of the water sources were not safe for drinking.

14. Differentials of AIDS Mortality: evidence from Addis Ababa, Ethiopia

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Background: AIDS related death is the leading cause of adult death in Addis Ababa. The magnitude of AIDS death varied among different demographic groups of the population with significant temporal variation. Knowledge about differential in AIDS mortality is useful to develop targeted health intervention programs. In this study we assess whether deaths attributable to AIDS have shown variations before and after the scale up of anti retroviral therapy (ART) in the city. Further, our analysis examined differentials in AIDS mortality according to socio-demographic variables between 2003 and 2007.

Methods: Data for this study is obtained from verbal autopsy (VA) conducted at 10% (n=2029) random samples of burial surveillance (2003-2007). The VA interviews contain signs and symptoms during terminal illness. Based on these information causes of death were assigned by local physicians and the InterVA model. Identical AIDS death classifications of both methods are considered for defining AIDS related mortality. We estimated a regression model using AIDS and TB/AIDS death as outcome variables.

Results: The level of agreement between physician review and InterVA for classifying AIDS and TB/AIDS is 78% and 82%, respectively. The proportion of AIDS and TB/AIDS deaths are 27.9% and 35.5%, respectively. Our analysis also shows that deaths attributable to AIDS have declined after the scale up of ART in the city through government sponsored programs (from 44% to 29%). In terms of gender differential, females are highly likely to die of AIDS compared to males (OR=1.54, 95%-CI: 1.2-2.0, P<0.05). Those age 25-29 are more likely (OR=2.0, 95%-CI: 1.3-3.1, P<0.05) to die of AIDS than those age less than 25.

Conclusion: This study quantitatively describes differentials of AIDS mortality in Addis Ababa. Women remain to have comparatively higher AIDS mortality than men. Nevertheless, differences observed between gender and other groups may be due to previous differences in the rising of the epidemic or different levels of access to the treatment offered by the public health system. Further analysis is necessary to assess the

role of more explanatory factors in AIDS differential. In general, these findings may serve to inform resource allocation and public health interventions for AIDS care.

Key Words: HIV/AIDS, mortality, verbal autopsy, InterVA, Addis Ababa.

15. Prevalence of Human Immunodeficiency virus-1 (HIV-1) infection in newly diagnosed tuberculosis patients in Adama hospital, Ethiopia

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Background: Tuberculosis and HIV are public health problems disproportionally affecting the low-income countries.

Objectives: The aim of this study was to determine the prevalence of HIV infection in patients with newly diagnosed untreated tuberculosis.

Methods: Blood samples were collected from 258 adult tuberculosis patients aged 18-70 years and screened for HIV by repaid HIV test kits according to the national testing algorithm. Ziehl Neelsen smear microscopic examination of sputum was done for all specimens collected on three consecutive days from from all patients attending the TB clinic.

Results: A high proportion of the patients had smear negative PTB (40.7%) followed by extrapulmonary TB (38.4%) and smear positive PTB (20.9%). The overall HIV prevalence among TB patients in the study was 26.4% (68/258) and was slightly higher in females than in males (28.8% and 24.1% respectively). The prevalence was 65% and 55% in divorced and widowed patients, respectively but 21.3% in married TB patients (p=0.00). Occupation wise, government employees were most affected (50%) than other groups with new TB and HIV. Type of TB, educational status of patients and sex has no association with HIV infection in TB patients. Of all the 68 HIV positive patients, only 14.7% knew their HIV serostatus prior to the study.

Conclusion: High proportion of HIV infected newly diagnosed TB patients are unaware of their HIV status. The provider initiative HIV/AIDS counseling and testing (PIHCT) recently started in health institutions, especially in TB clinics should be strengthened.

Key words: Tuberculosis, HIV/AIDS, Co-infection, prevalence, Ethiopia.

16. Antimicrobial Effects of the Extracts of Some Selected Aromatic Medicinal Plants

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ABSTRACT

Introduction: The plants *Ocimum gratissimum* Linn, *Coriandrum sativum* Linn and *Thymus shimperi* Linn are known in Ethiopian traditional medicine for their use in the treatment of various illnesses like *Mitch*, taeniasis, ascariasis, eye diseases, tooth ache, etc.

Objective: To evaluate inhibitory effects of the extracts of selected aromatic medicinal plants against selected bacterial and fungal strains.

Methods: An in *vitro* screening of the antimicrobial effects of the essential oils and gradient solvent extracts of selected aromatic medicinal plants was conducted from January to May, 2009 using agar disc diffusion technique. Preliminary mode of action of the extracts was assessed.

Result: *S.aureus P. aerogenosa* and *E.coli* were inhibited by the petroleum ether extract of *O. gratissimum* at the minimum dose of 500, 1000 and 1500µg/disc respectively. Acetone fraction of *O. gratissimum* was also exhibited inhibitory effect against *S.aureus* and *P. aerogenosa* at 500µg/disc. Candida was sensitive only at higher (4000 µg/disc) concentration of petroleum ether and acetone fractions. On the other hand, the methanol extract showed superior antibacterial activity against *S.aureus,* (≥ 500 µg/disc) and *P. aerogenosa* and *E.coli* (1000µg/disc), but devoid of activity against *Candida* at the test doses used. Flavonoids, alkaloids and phytosterols detected in the various fractions could be responsible for the observed activity. Regarding the activity of the essential oils, the oils from *Thymus shimperi* and *Ocimum gratissimum* were active against the entire microorganisms at 5, 10 and 15µL/disc. Similarly, coriander oil showed inhibitory activity against *P. aeruginosa*, *E. coli* and *S.typhi* at 5, 10 and 15µL/disc and only at higher 15µL/disc against *S.aureus* Essential oils of *Thymus schimperi* showed lethal effect against *E. coli* and *S.typhi* at all test concentrations used while that of *Corriander sativum* was static against *S.typhi* below 15µL.

Conclusion and recommendation: In line with the traditional medicinal claim, the plant extracts were active against most of the microorganisms in a dose dependent manner. The methanol fraction and the essential oils investigated showed comparable activity with that of the positive control gentamicin (10 µg/disc), which was active against all the bacterial strains. Accordingly, further work is recommended to elucidate the active principle(s) and to formulate phytopharmaceuticals from these plants.

Key words: Medicinal plants, Antimicrobial activity, Essential oils and Gradient extracts, Agar disc diffusion.

17. Bacteriology of Compound (open) Fracture Wounds in Tikur Anbessa University Hospital, Addis Ababa, Ethiopia

Yishak Abraham (MSc.), Daniel Asrat (MD, M.Sc, PhD), Yimtubezinash W/Amanuel (MD, M.Sc, PhD), Tezera Chaka (MD, FCS-ECSA), Dereje Negash (MD)

Compound (open) fractures are those exposed to the outside environment through a skin wound. They are at risk of complications such as infected no-union and other comorbid conditions. Sixty to seventy percent of compound fractures are believed to be contaminated with bacteria at the time of injury from both skin and environment. Infection of open fractures depends on the microbial and host factors.

In Ethiopia, a high incidence of open fracture wound infection is suspected though the magnitude of the problem is not known. No documented report on bacterial isolates from open fracture wounds and their drug resistance pattern. This study was conducted in TAUH which represents the highest tertiary level for referred and some directly visiting orthopaedic and traumatology patients from all parts of the country.

The study was conducted with a view to determining the pattern and prevalence of bacterial isolates and their antimicrobial sensitivity profile from open fracture wounds of inpatients and outpatients seen at Orthopedic Surgery Department of TAUH.

A cross-sectional prospective study was conducted on 200 open fracture wounds of 191 consecutive orthopaedic patients of all age group during November 2007 and May 2008. The G-A grades of the investigated fractures were 46 (23.0%) I, 83 (41.5%) II, 28 (14.0%) IIIA, 11 (5.5%) IIIB, and 32 (16.0%) IIIC. The causes of the fractures varied widely from which RTA was the major one. The patients involved were 158 (82.7%) males and 33 (17.3%) females with an overall male to female ratio of 4.8:1. Their age ranged from 4 to 75 years. Three swab specimens were taken from each of the open fracture wounds. The

specimens were placed in transport medium and transpoted to bacteriology laboratory within an hour for bacterial isolation and their antimicrobial sensitivity testing. Direct microscopy examination was done for each specimen. Culture and antimicrobial sensitivity testing were performed using the standard procedure.

Most of the fractures (60.0%) occurred in lower extremities. Of the 200 compound fracture wounds from which swab specimens were obtained 82 (41%) were culture-positive. The typical clinical features of infected wounds were erythema, pain, drainage with foul odour, and fever >38.5ºC. Swab specimens of 30.5% of the open fracture wounds were direct microscope-positive and almost all of them were culture-positive. A total of 162 bacterial organisms were isolated from culture-positive wounds. The main isolate in this study was *S. aureus*, followed by *Acinetobacter* spp. The prevalence of isolated bacteria were as: aerobic Gram-positives 29.0%, aerobic Gram-negatives 66.0% and anaerobes (*Clostridium* spp.) 5.0%. The bacterial occurrence in the culture-positive wounds was as: monomicrobial 51.2% and polymicrobial 48.8%. In our patients, wounds of 71.4% of those who received prior antimicrobials were culture-positive as compared with 31.1% culture positivity rate of open fracture wounds of those who did not receive any prior antimicrobial.

Ciprofloxacin, norfloxacin and gentamicin were the most effective drugs against the tested gram-positive and gram-negative bacteria. Among total bacterial isolates 115/162 (71%) had multi-drug resistance. Gram-negative bacteria were dominant in higher grade open fracture wounds and showed increasing multi-drug resistance. This indicates that compound fracture wound infection in TAUH is mainly caused by nosocomial bacteria. Hopefully, further studies with full complement of facilities may provide additional information on both aerobic and anaerobic bacteriology of compound fracture wounds in TAUH.

Key words: Open fracture wounds, Bacteria, Antimicrobial susceptibility testing

18. Prevalence of bacterial otitis infection, isolates and antimicrobial susceptibility pattern

Surafel Fantaw , Theodros Gtachew ,Negga Asamene ,Asaye Birhanu,Dawit Ferede,Kassu Desta and Samuel Kinde

Background: Otitis media is most commonly caused by infection (usually bacterial, although occasionally fungal), but it may also be associated with a variety of noninfectious systemic or local dermatologic processes. Otitis media is an infection or inflammation of the middle ear. This inflammation often begins when infections that cause sore throats, colds, or other respiratory or breathing problems spread to the middle ear. These can be viral or

bacterial infections. The presence of middle ear fluid *and* redness or inflammation of the ear drum is usually referred to as acute otitis media, is typically due to bacterial infection, and is usually treated with antibiotics. This is one of the major challenges facing those of treating otitis media. Interestingly, the problem is not as visible to many families and clinicians as it might be because most of the infections (unfortunately, not all) improve regardless of whether antibiotics are used and whether antibiotics really work well or not.

Objective: To assess prevalence of bacterial isolates and the performance of antibiotics used to treat ear infection and address the problem to responsible body

Method: All preferred patients for the diagnosis of bacterial otitis media are included in the study. Non probability retrospective study of bacterial isolation and antimicrobial susceptibility test on isolates of ear infection. All referred samples during the study period

$$n= \frac{Z_{1-\alpha/2}\ P(1-P)}{d^2}$$

Result: Out of 393 patients , who were included in the study 196 were female and 197 were male, and the age distribution is from year one old to sixty years old, from these harboured 50(12.7%) Diphteroids, 40 (10.2%)K.pneumoniae, 46(11.7%) S.aureus, 36(9.2%) P.mirabilis, 37(9.7) P.vulgaris, 30(7.6%) P.aureginosa, 32(8.1%) E.coli, 49(12.5%)and the remaining are other micro organisms. Of the isolates 219 (64.8%) were sensitive to Chloramphinicole, 9 (2.7%) intermediate 110(32.5%) resistant to this antibiotic, Gentamycine 315(93.2%) Sensitive, 4(1.2%) Intermediate and 19(5.6%) resistant,

Conclusion and Recommendation: From this assessment study, it is evident that most microorganisms are becoming resistant to more antibiotics which are prescribed routinely as a first line of antibiotic. The responsible body should be aware of this problem and give solution before severe problem is consequenced. This type of study should be carried out in nation wide

19. Strategies to Enhance Diaspora Participation in National Development

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The continued loss of educated and skilled individuals from developing to developed countries has remained a complex development challenge and a subject of extensive debate

among development thinkers. It is estimated that there are 200 million migrants globally (3 percent of the world population). Among these migrants are millions of highly educated and skilled people including health professionals. It is estimated that for many countries in Africa, about a quarter of their citizens with tertiary education live in OECD (Organization For Economic Co-operation and Development) countries. With globalization, the outflow of skilled and educated individuals from poor countries is expected to increase and many developing countries are taking strategic steps and are making special efforts to attract and utilize the knowledge, skill and talents of people in their respective Diasporas.

In Ethiopia the exodus of educated and skilled professionals began since the mid 1970s and the country continues to loose its qualified human capital.   Approximately over 2 million Ethiopians live outside their country. Over the last three decades it is estimated that between 30-35% of   the country's skilled and educated professionals have left the country, and the health sector is among the most affected. However not much attention was paid to have a clear understanding of the dynamics of brain drain; and, very little is done to stem the problem and reverse the brain drain into Ethiopia's brain gain.

Since 2006, HLM, the first indigenous non-governmental, non-profit development organization is established to serve as a link between qualified professionals in the Diaspora and friends of Ethiopia with institutions and professionals to enhance brain-gain. Recent experiences with national universities and with the health sector confirm that HLM can serve as a strategic development partner to enhance Diaspora's participation for national development. Determination of priority needs and knowledge gaps and maintaining a user friendly database of professionals in the diasporas are critical prerequisites to facilitate brain gain. Streamlining processes and procedures and having in place evidence based policy frameworks are essential to creating enabling environment for Diaspora participation. International and regional development organizations could play an active role in creating platforms for dialogue by which source countries are compensated for the investment made in the development of these lost brains. Important is also the development of national systems that would encourage staff retention and attenuate the exodus of qualified professionals from the country.

The paper aims to raise questions, identify key issues and generate ideas to stimulate the sector and the country at large to establish effective systems for active and sustainable engagement of professionals in the Diaspora for the country's development

20. Cost-effectiveness analysis of Clinical Specialist Outreach in Ethiopia: An economic evaluation

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Introduction:

Access to health services is one of the major problems that people from developing countries like Ethiopia suffer from. To improve this condition, the Ethiopian government uses a four tier health care delivery system which includes four levels of health facilities expected to be connected through referral system. Due to shortage of skilled human resources in regional and zonal hospitals, people suffering from disease conditions which require clinical specialist services like urology, plastic surgery, orthopedics and gynecologic problems which need special skills get referred to Central Referral Hospitals located in Addis Ababa, the capital of the country.

With the purpose of contributing to solve this problem, AMREF in Ethiopia has been implementing a clinical specialist outreach project by mobilizing voluntary clinical specialists from Central Referral Hospitals to regional and zonal hospitals. Mobilized specialists were expected to provide specialist services to scheduled patients and at the same time conduct on the jobs training to local staff with the intention of transferring skills and knowledge. However, the cost effectiveness of this strategy in using scarce health human resources was not known in the local context.

Alternative Strategies:

This cost effectiveness analysis compared the costs and consequences of two alternative strategies of investing the time of scarce clinical specialists:

Clinical specialist outreach service by which specialists from Central Referral Hospitals move to zonal and regional hospitals

Referral system for clinical specialist service through which patients eligible for specialist care will be referred to Central Referral Hospitals

Evaluation Question:

This economic evaluation was designed to answer the question

"Is clinical specialist outreach service a cost effective way of using scarce health expertise to provide clinical specialist care as compared to provision of such services through referral system in Ethiopia?"

Methods and Materials:

The perspective of analysis was societal covering analytic horizon and time frame from 1 April 2007 to 31 December 2008. Measurement of outcomes and costs included all constituents including patients/care takers, the project implementer (AMREF in Ethiopia) and care providers. The main outcome measure was taken to be number of surgeries conducted per a limited time period of clinical specialists spent.

Costs of alternative strategies were identified, measured and valuated under five mutually exclusive categories:

Direct medical cost

Direct non-medical cost on patients and care takers/companions

Indirect cost on patients and care takers/companions

Indirect cost on voluntary clinical specialists

Project cost to organize outreach activities

Data was collected by a team of trained data collectors cross sectionally from 4 to 24 February 2009 in four purposively selected outreach hospitals and three central referral hospitals. Project reports, financial documents, hospital operation room registration books, patient charts, post-operative patients/care takers, participating voluntary specialists and project focal persons at outreach hospitals were the sources of data for the range of methods employed in the study. Financial costs were used as proxies whenever measurement of economic costs is found to be difficult with the limits of resources. Intangible costs were not considered in this analysis.

To ensure the propriety standards of evaluation, prior to data collection the proposal has passed through the process of ethical review at Jimma University and gets approval. During data collection, informed consent was obtained from all participants in the study.

Quantitative data was analyzed using SPSS and Ms-Excel was used to calculate summary values for alternative strategies. Findings are presented in tables, graphs and narratives.

To facilitate the use of findings for decision making AMREF in Ethiopia will disseminate findings to appropriate stakeholders and the article will be published on a reputable journal by the principal investigator.

Results:

During the life of Clinical Specialist Outreach Project, a total of 67 specialist visits were made in 45 sessions and 1,629 patients who would have been referred to central referral hospitals were operated at regional and zonal hospitals.

Analysis of costs and effectiveness in the four selected hospitals for the four clinical specialties (urologic surgery, plastic surgery, orthopedic surgery and gynecologic surgery with special skills) showed that 125 clinical specialist days were spent to conduct surgery.

As a result 532 patients who otherwise would have been referred to central referral hospitals were operated at outreach hospitals. The cost of surgical procedures through this approach was found to be ETB 4,499.43 per patient.

On the other hand, it was found that if the 125 clinical specialist days were spent to serve patients referred from zonal and regional hospitals at central referral hospitals, 438 patients could have been served for similar disease conditions. And the cost of surgical procedures provided through referral would have been ETB 6,523.27 per patient.

This makes clinical specialist outreach 1.45 times more cost effective way of using scarce clinical specialists' time as compared to referral system to provide clinical specialist services for people outside of Addis Ababa. The approach was found not only cost effective but it was also cost saving; voluntary participation of clinical specialists in central referral hospitals costing ETB1.0 with an investment of ETB 3.3 to coordinate activities was found to save ETB 25.9 for patients/care takers during provision of clinical specialist services.

Conclusion:

Clinical specialist outreach is a cost effective and cost saving way of spending clinical specialists' time for the provision of clinical specialist services as compared to provision of similar services through referral system.

Recommendation:

Clinical specialist outreach should be considered as a potential strategiy to improve access to specialist services for the people of Ethiopia living outside of the capital where such specialist services are not available in near by zonal and regional hsopitals.

21. Assessment of Patient Satisfaction on the Laboratory Services of in Jimma University Specialized Hospital and Jimma Health Center

Addisu Gize, School of Medical Laboratory Science, Jimma University, South west Ethiopia.

Back Ground:-Satisfaction is one of the meaningful indicators of the patient experience of health care service in general and laboratory service in particular.

Understanding the level of patients satisfaction with both private and public laboratory services are the most important for the improvement of health care delivery in any country.

Objective:- To assess level of patient satisfaction and to determine the factors that will affect patient satisfaction on the laboratory services of Jimma University Specialized Hospital and Jimma Teaching Health Center.

Methodology:-A cross-sectional study design was conducted from January 26 to February 13, 2009 in both health institutions. The study assessed patient's satisfaction with laboratory services where by a total of 312 patients were interviewed with structured questionnaire and observation check list.

Result:-A total o f 312 patients, outpatient laboratory service users were interviewed after their result was completed, and analyzed by SPSS program. The majority of the patients were in the age groups 20-24(23.4%) and 25-29(22.7%). About 74.6 %(n=233) of the interviewees reported as they were satisfied with laboratory services provided. Satisfaction of the respondent was not statistically associated with the cost of the laboratory services and their educational levels.

Conclusions and Recommendations:-The analyzed data shows that there is dissatisfaction rate of more than 15% in all respects of both institutions of laboratory services, the most prominent causes of dissatisfactions being inappropriateness of the waiting place, lack of privacy of the patients and unavailability of the requested laboratory tests. Therefore hospital and health centers administrators as well as laboratory heads should do their level best to improve the services more responsive to the client's needs.
Key word: patient satisfaction.

22. Assessment of Utilization of Community Participatory Mapping in HIV and AIDS Interventions in Ethiopia

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Background:-AIDS threatens Ethiopian economies, social and political stability as well as civil society's ability to cope with the ramifications of the epidemic. To this effect, the Ethiopian Government has given due considerations to HIV/AIDS including it in its development programs and strategies document and among the national priorities. Currently, the national adult HIV prevalence rate is estimated at 2.1% and an estimated number of 901,893 people are living with HIV/AIDS. Although there are some encouraging trends, surveillance results indicate that the epidemic is still progressing. Different studies related to HIV/AIDS shows that low level of behavioral change of the people though high level of awareness in Ethiopia. Despite sustained efforts to mitigate the epidemic in Ethiopia, the achievement does not weigh as equal as expected. As one of the undertaking

efforts was employing quantitative methodology of estimations of HIV epidemics and resultant of substantial changes in estimates of numbers of persons living with HIV in Ethiopia. However, the qualitative interpretations of the effectiveness of HIV interventions, the sources and spots of HIV myths, the factors for establishing and rising number of hot spots for aggravating the spread of HIV/AIDS, the sexual networks that fueled up HIV/AIDS, the severity and implications of the pandemic through participatory community mapping with the perspective of societal mapping approach is done little. In a country where the heterogeneity of culture, religion and traditions is dominant, blanket recommendations or interventions may be unwise approach.

Objective: - The objective of the paper is to make highlights how the potential of community participatory mapping is utilized in drawing effective behavioral change interventions particularly in donor supported HIV/AIDS projects in Ethiopia.

Methods: - The study is purely qualitative. The study uses mainly desk review, focus group discussion and in-depth interview with key informants. The data is colleted from twelve active projects and three from phased out projects that work in different parts of Ethiopia. It is not attempted to cover or represent all over Ethiopia. Rather, I believe it may stir up the interests of public health researchers to investigate at wider scale.

Results:- The study findings show that community participatory mapping is an effective and a major tool in identifying real needs of community, hotspots for HIV/AIDS, sexual networks, sources and spots of HIV myths and in selecting effective and needs felt approaches and interventions.

Conclusion:-Though significant implications for HIV/AIDS interventions,

23. Community participatory mapping is not intensively and widely used among HIV/AIDS projects implementing organizations. Thus, there should be an internal drive from all stake holder s to value community mapping approach for HIV/AIDS curative and preventive messages and approaches.

Strengthening the Education of Healthcare Providers to Improve Public Health in Ethiopia

Tegbar Yigzaw

Background: Severe shortage of human resources for health (HRH) is one of the major challenges to improving public health in Ethiopia. With PEPFAR funds provided through CDC, Jhpiego supported the Government of Ethiopia in strengthening pre-service education of healthcare providers with focus on HIV/AIDS in five public and two private higher education institutions.

Project design and Approach: The project started in 2006 with consensus building and formation of working groups with broad stakeholder involvement. Eth technical working group conducted needs assessment, which, together with evidence-based pre-service education principles, informed the project design. Jhpiego in collaboration with local and international partners implemented a number of interventions: strengthening the curriculum; building the capacity of faculty and preceptors; creating an enabling teaching-learning environment; introducing educational equality management framework; and advocacy and partnership.

Achievements

While the activities are ongoing, the major achievements include the following. HIV/AIDS core competencies for different healthcare cadres have been identified and integrated into their respective curricula improving the content and standardization of HIV/AIDS education. Electronic HIV/AIDS learning materials have been produced. Competency-based learning and assessment tools have been developed for essential nursing and midwifery competencies. A total of 182 instructors and preceptors have received HIV/AIDS knowledge and skills standardization training. Moreover, 300 to 400 faculty members have been given capacity building training on evidence-based teaching and assessment methods. Based on the resource gaps identified, educational materials and technologies worth millions of Birr were also donated creating a more enabling environment for teaching and learning. A program for monitoring and improving quality of education has been put in place. Those schools which did two assessments have found remarkable improvements in teaching-learning practices, as high as 153% in a nursing school and 168% in a medical school. Perhaps of greatest significance is the establishment of educational development centers in

the three universities, a sustainable institutional mechanism to assure educational quality. Because of the different work we did, we have raised the visibility of quality of education as national priority agenda.

Conclusions and Recommendations: The pre-service education strengthening project is complementing the Government's effort to redressing the HRH challenge. While this will contribute to Ethiopia's endeavors to meet its public health goals, the need for support remains great.

24. Knowledge of Adolescent Reproductive Health and Related Reproductive Behaviors among Adolescents of Kersa District, East Hararghe Zone of Oromiya National Regional State, East Ethiopia,

Nega Assefa (MPH, Ph.D Students) and Gudina Egata

Background: Adolescent Reproductive Health (ARH) is part of reproductive health (RH) by which adolescents are able to have a satisfying and safe sexual life and that they have the capacity to reproduce and the freedom to decide when and how to do so. This aspect of RH is currently becoming a broad agenda as the world is experiencing unprecedented and escalating health hazards of young people which are multifaceted in developing nations.

Objective: To assess the knowledge of adolescent reproductive health and related reproductive behaviours among adolescents

Subjects and methods: A cross – sectional community based study was conducted among 864 adolescents of 12 – 19 years of age in Kersa District east Hararge zone which is the newly established demographic and surveillance and health research center (KDS – HRC) of Haramaya University . A multistage sampling procedure was employed to obtain the required number of study subjects. Data were collected by trained data collectors of KDS – HRC under the supervision of trained supervisors and the principal investigators. Data analysis was made by the principal investigators using SPSS 16.0 version computer soft wares. Ethical clearance was obtained from Haramaya University ethical clearance review committee before the actual task of data collection.

Results: A total of 864 adolescents, 448(51.9%) males' □and 416 (48.1 %) females, were included in the study. Only 175(20.3 %) of the study subjects claimed to know what

adolescent reproductive health (ARH) means while the majority 689 (80.0%) did not. Reproductive health (RH) is family planning for 122 (71.3%), accessibility to RH information for 96(58.2%) , accessibility to RH services☐ for38(48.7%, decision about when to rear child for ☐60 (35.1%), decision on initiation of sexual intercourse for 55(32.9%) , decision about with whom to engage in sexual intercourse for47(28.0%) , decision on number of children one wants to have for 46(27.4%), treatment of sexually transmitted infections for 52(30.8%) ,maternal and child health for 29(17.35) and others for 26 (28.6%) respectively.

Female adolescents were asked about menstruation and only 146 (17.0%) of them knew about it before the age of menarche. Male adolescents were also asked about semen ejaculation and 156(36.1%) have known about it before the age of coitarche. Only 38.4% of adolescents have known some method of preventing pregnancy. Very few (7.0%) of male adolescents have ever coerced females for sexual intercourse without their consent

Among adolescents who claimed to know about ARH nearly 28.0 % of them were found to be knowledgeable. A bivariate analysis indicated that adolescents' and their parents level of education, and receiving information on RH were found to be predictors of adolescents' knowledge of reproductive health.

Conclusions: In sum the level of knowledge reproductive health among adolescents of the study area is limited. Sexual coercion among both sexes was found to be insignificant

25. Cosmetics Utilization Pattern and Common Cosmetic Related adverse Reactions among Female Students of Mekelle University, Mekelle, Northern Ethiopia,

Diriba Yadesa(B. Pharm), Haimanot Dibaba(B. Pharm), Befikadu Legesse(B. Pharm).

Background: Cosmetics are articles meant to be rubbed, poured, sprinkled, sprayed, introduced into or otherwise applied to the human body or any part thereof for cleansing, beautifying, promoting attractiveness or altering the appearance. In the last few years, the consumption of cosmetics has touched new heights and the curve is shooting upwards. Along with this, cosmetics are causing alarming side effects to consumers and hence controls sought to be exercised on drugs have been extended to cosmetics to a certain extent (1).

Objective: To assess cosmetics utilization pattern and common cosmetics related adverse reactions among female students of Mekelle University, May 18 to 29, 2009.

Method: A cross-sectional study was carried out on cosmetics utilization pattern and common cosmetics related adverse reactions among female students of Mekelle University. The study was conducted from May 18 to 29, 2009 on 390 regular female students of the university. The study participants were selected by stratified sampling technique from all colleges of the University. Data was collected by using self-administered semi-structured questionnaire through trained data collectors.

Result: 95.03% (342) of the study participants have a habit of using cosmetics. The most frequently used cosmetic products include: lotions (72.92%), hair cosmetics (69.23%), and deodorants (66.77%). 17.23% of the respondents have a habit of using traditional cosmetics. 30.46% of cosmetic users encountered cosmetics related adverse reactions primarily on their face (63.63%), hair (38.38%), and skin (33.33%). The primary adverse reaction causing cosmetic products were lotion (58.58%), hair cosmetics (34.34%), body cream (28.28%), and deodorant (14.14%).

Conclusion and recommendation: The study revealed that very large proportion of the respondents, 325 (95.03%) is cosmetics users. Lotion, hair cosmetics and deodorant are the most frequently used cosmetic products and almost similar types of cosmetics are found to be associated with many adverse reactions. Since significant cosmetics related adverse reactions are obtained in the present study, further studies need to be conducted in this study area as well as in others. In addition, all responsible bodies should act in a direction to educate the public on appropriate utilization of cosmetics so as to decrease the possibility of high cosmetics related adverse reactions.

Key words: cosmetics, cosmetics utilization, cosmetics related adverse reaction,

26. Acceptability of Provider- Initiated HIV Counseling and Testing (PIHCT) among Adult Out Patient Department Clients Visiting Hospitals in Tigray Region, Ethiopia

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Introduction: In response to HIV/AIDS pandemic, different nations including Ethiopia are introducing provider initiated HIV counselling and testing (PIHCT) besides to Voluntary Counselling Testing (VCT) in line to the efforts to scale up access to Antiretroviral Therapy (ART), prevention and care support programs. However acceptability of this new approach in Ethiopian set up is not yet adequately assessed hence this study was to assess the

acceptability of PIHCT among outpatient department (OPD) clients in selected hospitals in Tigray Region, Ethiopia.

Methodology: In this study a cross sectional survey in July 2008 was conducted in purposefully selected two hospitals, Axum Saint Mary and Adigrat Hospitals. Adult OPD clients who were willing to participate in the study and come to the hospitals during the data collection period were included in the study. A pre-test structured questionnaire was used for interview. Interviewers were trained data collectors.

Result: A total of 439 OPD clients were interviewed. Out of the total respondents 229(52.2%) were females and 210(47.8%) were males. More than half (56.0%) were married. More than 90% of the respondents had correct knowledge on ABC rules of HIV/AIDS prevention (ABC = Abstinence, be faithful and Use condom). However only 172(39.2 %) and 216(49.2%) of the respondents knew HIV/AIDS is not transmitted through mosquitoes and HIV/AIDS doesn't have vaccine respectively. One hundred ninety five (44.4%) of the respondents perceive that they are at risk of acquiring HIV/AIDS. Almost all 415(95.5 %%) of the respondents have heard about HIV counseling and testing but only 340(77.4%) of the respondents heard about PIHCT. The major source of information for PIHCT were health workers and mass media as reported by 302(68.8%) and 206(46.9%) of respondents respectively. Three hundred eighty eight (88.4%) of the respondents said every person should be tested for HIV/AIDS but 253(57.6%) of the clients have ever had a test for HIV/AIDS. Out of these who had a test, only ninety nine (39.1%) had test in the hospitals included in the study. Four hundred twelve (93.8%) of the respondents said PIHCT is important but only 147(33.5%) of the respondents were initiated for HIV counseling and testing.

Conclusion and recommendations: This study found that OPD clients do have satisfactory knowledge on HIV/AIDS transmission and prevention but less practice in uptake of HIV counseling and testing. Clients were also have found to have positive attitude to provider initiated HIV counseling and testing but health professionals are not initiating HIV Counseling and Testing (HCT) to all clients. This might be fear of stigma from the client side, workload from the professionals' side. Hence to promote PIHCT further orientation on PIHCT to health professionals and strengthening HIV/AIDS activities to combat sigma are recommended.

27. Effects Of Social Stigma And Discrimination On Care Seeking Behavior Of Plwhas, In Arba Minch Town And Surrounding Areas, Southern Ethiopia; Application Of The Extended Parallel Process Model.

Taddese Alemu & Yaliso Yaya

Background: - HIV/AIDS is among the major public health problems in Ethiopia which could be avoided through appropriate prevention practices. Prevention interventions directed on alleviating the problem of stigma and discrimination will therefore be critical to altering the future course of the pandemic. To bring about effective behavior change, empirically-grounded and theory-based behavior change communications are crucial.

Objective: To examine the impact of stigma and discrimination on the psychosocial and care seeking behavior of PLWHAS in Arba Minch town and surround areas, SNNPR, Ethiopia; through the application of the extended parallel process model.

Method: A cross-sectional qualitative study using both in-depth interviews and FGDs was conducted in Arba Minch town and nearby Kebeles in the catchments of Medanacts Ethiopia, A/Minch branch. The study populations were purposively selected PLWHAS and other key informants. A judgmental and snowball sampling technique was applied to reach the study participants included in the survey. Data was collected using a pre-tested semi-structured interview questionnaire and FGD guideline. Data was analyzed manually using content and thematic framework analysis methods.

Result and Discussion: - Though the magnitude of stigma and discrimination in the area has reduced to a significantly lower level, Susceptibility and severity to the problem is still affected by various factors including residence, disclosure status and level of community's awareness about HIV/AIDS. It was also learned that the care and support given to PLWHAs was well accepted and majority of them are dare enough to utilize any available of that. Study participants have also identified the health information messages that so long been disseminated to the public via mass medias has played a significant role for the current prevailing problem of stigma and discrimination of PLWHAs.

Conclusions and recommendations: - It was therefore concluded that stigma and discrimination has come to a level that can be tolerable by most PLWHAs, especially to those who have disclosed themselves and live in urban area; so, Strategies to improve sero-

status disclose after VCT and integrated IEC/BCC were recommended to further alleviate the problem.

28. Assessment of sexual risk behaviors of in-school youth: effect of living arrangement of students; West Gojam zone, Amhara regional state, Ethiopia.

Anenmaw Asrat,Gail Davey

Background: Contemporary threats to adolescents health are primarily the consequence of risk behaviors and their related adverse outcomes. Identifying factors associated with adolescents risk behaviors is critical for developing effective prevention strategies. A number of risk factors have been identified, including familial environment; however, to the investigators best knowledge, there have been only one previous study of possible differential vulnerabilities of in school adolescents to risky sex in reference to parental influences and living arrangements in Ethiopia.

Objective: To assess and compare sexual risk behaviors of preparatory students in West Gojam zone, in reference to their living arrangements.

Methods: A comparative cross-sectional study was done in ten preparatory schools; West Gojam zone, Amahara National Regional State, Ethiopia. The study participants were selected based on probability proportional to size. A total of 314 student [104 living permanently in the corresponding towns and 210 not], were included in the study.

Results: Seventy three (23.2%) respondents had ever had sexual intercourse with an individual of the opposite sex. Disaggregated by sex, 55 (25.0%) of males had had sex compared to 18 (19.4%) of females. Twenty two students (33.3%) reported having had two or more sexual partners in their lifetime (range 1-7, average 1.56).

Conclusion: A greater sense of connectedness to parents decreases the likelihood of sexual activity regardless of living arrangement, Parental monitoring, gender, khat and alcohol consumption, and parental education. Students with peer pressure to have sex are more likely to initiate sexual intercourse.

29. Parents and peers should be targeted more frequently in reproductive health intervention for adolescents

Mulugeta Tarekegn, Liyawk Melak

Back Ground: In Ethiopia, the magnitude of self medication is not yet well known. The type of illness that necessitate self medication, drug or category of drug products that are commonly self medicated needed to be understood in order to design intervention.

Objective: - To assess the attitudes and practices of self medication among Students of Faculty of Medical Sciences, Jimma University.

Method: - A cross sectional study was conducted using structured open and close ended questionnaires. Sample students were selected using random sampling technique. Pilot study was conducted before the main study. Data analysis was carried out using hand tallying and scientific calculator.

Result: - Of the 400 students studied, 207 were sick, of which 95 (45. 89%) were self medicated by modern medicine and 55(26.57%) visited health facilities and also 1 (0.48%) used traditional medicine. Majority of illnesses was headache 35 (16.91%) and cough 22 (10.63%). About 44 (46.33%) sick students reported that the major reason for self medication practices is the previous experience with similar illness treatment. The source of drugs for self –medication is obtained from drug outlets 88 (92.63%).The majority of drugs used were analgesics 40 (49.38%) and antibiotics 29 (35.80%).About 38 (40%) were not able to finish drugs used for self medication and the major reason not to finish was 24 (63.18%) immediate relief. Out of 95 Self medicated students, majority of students 56 (58.95%) agreed to practice self mediation for the future.

Conclusion:-Self mediation is widely practiced for different minor illnesses or symptoms with both OTC drugs and prescription only drugs. Lack of proper information and the ease of access from drug outlets are the most important problems.

Recommendation:-Even though self medication is very difficult to stop; intervention must be made to discourage inappropriate use of drugs. Thus, MOH and JUSH together should avoid waiting longer time for the students for treatment and also as a whole for the public.

(**Key words**: self medication, attitude, practice, minor illnesses, over the counter (OTC) drugs).