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INTERMITTENT PREVENTIVE THERAPY POST-DISCHARGE (IPTPD); AN INNOVATIVE APPROACH IN THE PREVENTION OF REBOUND SEVERE MALARIA ANAEMIA AND MORTALITY IN YOUNG CHILDREN

Kamija Phiri[1,2] Michael Esan[2], Michael Boele van Hensbroek[3], Sarah White[2], Brian Faragher[4], Feiko ter Kuile[4]

1Haematology Department, College of Medicine, Malawi
2Malawi-Liverpool Wellcome Trust Programme, College of Malawi, Malawi
3AMC, University of Amsterdam, The Netherlands
4Liverpool School of Tropical Medicine, United Kingdom

Introduction

Severe malarial anaemia requiring blood transfusion is a major cause of in-hospital childhood morbidity and mortality in sub-Saharan Africa. Previous follow-up studies from high malaria transmission areas in southern Malawi and western Kenya have shown that transfused children with severe malarial anaemia are also at high risk of dying after discharge from the hospital. We hypothesize that failure to clear the initial malaria infection due to ineffective antimalarial treatment and the acquisition of new infections after discharge, negate the initial improvements in haemoglobin concentrations that result from the blood transfusion. The study aims to compare the efficacy of a single treatment course with lumefantrine-artemether (Coartem®) at discharge to three treatment courses with Coartem® given at discharge, 1 and 2 months (IPTpd) in the post-discharge management of children who have recovered from severe malarial anaemia

Methods

This is a randomised double-blind placebo controlled trial in which children aged between 4-59 months will be randomised to receive IPTpd with Coartem or with placebo. Children are followed up for a period of 6 months with the primary efficacy endpoint being the incidence of recurrent severe anaemia or death.

Results

The study recruitment and follow-up is complete and data is being analysed.

Discussion and Conclusion

This study showing that preventing recurrent severe anaemia and death in this vulnerable group of children would lead to important policy recommendations. At the conference, we shall present important preliminary results

PRELIMINARY RESULTS OF PREVALENCE OF HUMAN BIRTH DEFECTS IN FIVE REFERRAL HOSPITALS IN MALAWI

K. Bultemeier[1], A . Mwakikunga[2], J. Mwale[3] K. Chimwemwe[4] , M. Chirwa[5], F. Mgawedere[6]

1 University of Malawi/KCN/Blantyre, Malawi
2 University of Malawi/COM/Blantrye, Malawi
3 University of Malawi/College of Health Sciences/Zomba, Malawi
4 St. John's College of Nursing/Mzuzu, Malawi
5 University of Malawi/KCN/Lilongwe, Malawi
6 University of Malawi/KCN/Lilongwe, Malawi

Objectives

To determine the incidence, type, and regional distribution of congenital birth defects in Malawi.

Study Methods

Prospective study reviewing neonatal nursery and stillbirth clinical logs and records at five regional hospitals in Malawi. Data collection hospitals include: QECH, Kamuzu Central, Zomba Regional, Mzuza Central, and Bwaila. Data compiled includes maternal age, gravid, para, infant's gestational age, gender, birth weight, and congenital abnormalities. Birth defects are categorized consistent with the international birth defects coding system.

Results

Preliminary results of this ongoing one year study indicate a higher than expected incidence of neural tube defects and abdominal wall defects. The results represent data from approximately 3000 deliveries per month, beginning July 1, 2010 and continuing until June 30, 2011, representing all regions of Malawi.

Conclusions And Recommendations

A continuation and expansion of data collection regarding birth defect incidence is needed. The long term inclusion of area health centers and district hospitals in the data collection is vital. Implementation of stricter guidelines for health personnel regarding the documentation of malformations noted in stillborn infants is vital for accurate examination of the incidence of birth defects.

SEASONAL AND GEOGRAPHIC DIFFERENCES IN TREATMENT SEEKING AND HOUSEHOLD COST OF FEBRILE ILLNESS AMONG CHILDREN IN MALAWI

V.L. Ewing[1,2], D.G. Lalloo[2], K.S. Phiri[1,3], A. Roca-Feltrer[1,2], L.J. Mangham[4,] M.A. SanJoaquin[1,2]

1 Malawi-Liverpool-Wellcome Trust Clinical Research Programme, Blantyre, Malawi
2 Liverpool School of Tropical Medicine, Liverpool, UK
3 University of Malawi, College of Medicine, Malawi
4 London School of Hygiene & Tropical Medicine, London, UK

Background

The Ministry of Health in Malawi has defined certain villages as hard-to-reach on the basis of distance from health facility or inaccessibility. Some hard-to-reach villages have a community health worker (CHW), who among other activities is responsible for referring febrile children to a health facility. We compared health facility utilisation and associated household costs for individuals living near the district hospital and those in hard-to-reach villages.

Methods

Two cross-sectional household surveys were conducted in the Chikhwawa district of Malawi; one during each of the wet and dry seasons. Half the participating villages were located near the hospital, the others were in hard-to-reach areas. Data was collected on attendance to health facilities and economic costs incurred due to recent childhood febrile illness.

Results

Those in hard-to-reach villages were less likely to attend a health facility than those living near the hospital in both seasons (Dry: OR0.35, 95%CI0.18-0.67; Wet: OR0.46, 95%CI0.27-0.80). Including CHWs as a source of formal healthcare decreased the strength of this relationship, as most children who attended a CHW did not go on to a health facility. However those in hard-to-reach villages were still less likely to access formal healthcare (Dry: OR0.53, 95%CI 0.25-1.11; Wet: OR0.60, 95%CI 0.37-0.98). Household costs were greater for those in hard-to-reach villages (Dry: USD5.24; Wet: USD5.60) than for those near the district hospital (Dry: USD3.45; Wet: USD4.46).

Conclusions And Recommendations

Those living in hard-to-reach areas were less likely to attend a health facility for a childhood febrlie event and experienced greater associated household costs. Attendance to community health workers was infrequent but may have been a result of substition for health facility attendance in those that attended. Policy makers should consider methods to reduce inequities in access to formal healthcare.

THE MALAWI DEVELOPMENTAL ASSESSMENT TOOL (MDAT): THE CREATION, VALIDATION, AND RELIABILITY OF A TOOL TO ASSESS CHILD DEVELOPMENT IN RURAL AFRICAN SETTINGS

Melissa Gladstone[1], Gillian A. Lancaster[2], Eric Umar[3], Maggie Nyirenda[1], Edith Kayira[4], Nynke R. van den Broek[5], Rosalind L. Smyth[6]

1 Department of Paediatrics, College of Medicine, Blantyre, Malawi
2 Postgraduate Statistics Centre, Department of Mathematics and Statistics, Lancaster University,
Lancaster, United Kingdom
3 Department of Community Health, College of Medicine, Blantyre, Malawi
4 Wellcome Trust Research Labs, Blantyre, Malawi
5 Liverpool School of Tropical Medicine, Liverpool, United Kingdom
6 School of Reproductive and Developmental Medicine, Institute of Child Health, University of Liverpool, Liverpool, United Kingdom

Objective

To create a reliable, valid and culturally appropriate developmental assessment tool.

Study Methods

Preliminary and qualitative studies produced a draft tool with 4 domains of development. Face, content validity and piloting created a tool of 185 items. 1,426 normal rural children aged 0–6 y were assessed and age-standardized norms for all items were derived. Performance of items was assessed using logistic regression as well as reliability through kappa statistics. All items were then considered at consensus meeting. We used construct validity to compare age-matched normal children with those with malnutrition (120) and neurodisabilities (80).

Results

The Malawi Developmental Assessment Tool (MDAT) had 136 items. Reliability demonstrated 94%–100% of items scoring kappas >.0.4 (good – excellent) for inter-observer immediate, delayed, and intra-observer testing. We demonstrated significant differences in mean scores for children with neuro-disabilities (35 versus 99 [p,0.001]) when compared to normal children. Using a pass/fail technique, 3% of children with neuro-disabilities passed in comparison to 82% of normal children, demonstrating good sensitivity (98%) and specificity (83%). Overall mean scores of children with malnutrition (weight for height ,80%) were also significantly different from scores of normal controls (62.5 versus 77.4 [p,0.001]). In terms of pass/fail, 28% of malnourished children versus 94% of controls passed overall.

Conclusions

A culturally relevant developmental assessment tool has been created for Malawi which shows good reliability, validity, and sensitivity.

Recommendations

The MDAT is a tool which may be used in surveillance and developmental assessment of children of 0 - 5 years in Malawi.

A NEW WAY TO ASSESS MUAC IN PAEDIATRIC ANAESTHESIA

G. Pollach, S. Mndolo
Department of Anaesthesia and Intensive Care, College of Medicine, Blantyre, Malawi

Introduction

Because of its implications for cardiac function, fluid administration, immunological function and metabolism it is important to identify malnutrition in paediatric anaesthesia. MUAC is probably the most useful anthropometric parameter to obtain the diagnosis. Reality in a big african hospital shows that even the cheapest tape disappears, will be out of stock and is not available the moment you need it.

Study methods

We conducted a study with 182 volunteers in Queens, COM and on the streets of Blantyre (divided in four professional groups). In a deliberately short training of 5-10 min we provided them with gauze bandages of 11 cm circumference (substitutes for upper arms) and asked them to measure the circumference with their own fingers, nails and interphalangeal crests. A test with 4 different bandages should determine whether it is possible to detect the different sizes.

Results

665 of 728 decisions (91.3%) were correct. 708 (97.2%) were acceptable to identify a malnourished child. 164 of 182 participants (90.1%) would have identified the severely malnourished child perfectly. The subgroup of anaesthetic trainees recognized all children in danger; even the non-medical group scored in 80.6 %. The other groups reached 90.8-94.9%. The child not in need of special resources was recognized by all 182 participants (100%). 1 collaborator (0.55%) made contradictory decisions.

Conclusion and Recommendations

We showed, that a indestructible, semi-quantitative measurement of MUAC is possible without a tool, with minimal training, in one second and for free. To alert the anaesthetist for the problems involved in the treatment of severely malnourished children we should train all of them in MUAC measurement with their own fingers.

DRIVERS OF MIDLEVEL PROVIDER'S JOB SATISFACTION AND RETENTION: PULL FACTORS AND PUSH FACTORS

W. Chimwaza, Effie K. Chipeta, Linda Kalilani-Phiri, F. Taulo, F. Kamwendo
Center for Reproductive Health, College of Medicine, University of Malawi

Objectives

To determine what factors optimize the retention of mid-level providers and support their performance in Malawi.

Setting

Central, District, Rural, Christian Hospitals Association of Malawi (CHAM) Hospitals and Health Centres.

Methods and Materials

This was a multi-country descriptive study. Health facilities and providers were selected throughout Malawi, Mozambique and Tanzania on the basis of whether or not they offered Emergency Obstetric and Newborn Care (EmONC). In Malawi 84 facilities and 631 providers were selected. Data was collected using facility inventories, self-administered provider questionnaires and Critical Incident Interviews (n=84). Data was analyzed using SPSS and NVivo software.

Results

This study revealed that the majority of the middle level providers are satisfied with their Job with 70% of the respondents agreeing or strongly agreeing that they are satisfied with their job. However the results show that most mid-level providers are unsatisfied with certain aspects of their Jobs which influence their motivation and willingness to remain in their jobs. The study identified the push factors which are factors influencing the MLPs intention to leave and the push factors which are factors influencing the MLPs commitment to remain in their Jobs. Some of these factors include: interactional justice, procedural and distributive justice, emotional exhaustion, staff and resources, opportunities for career advancement and control over practice.

Conclusions and Recommendations

The issues of procedural and distributive justice need to be seriously looked into as these are critical in retention of Mid-level providers. In addition Basic equipment, supplies and medicine gaps need to be filled urgently as this affect performance of the Mid-level providers. Further Management support needs to be strengthening in-order to motivate the Midlevel providers.

PERCEPTIONS OF TRADITIONAL BIRTH ATTENDANTS ON THEIR NEW ROLES IN MZIMBA DISTRICT: AN EXPLORATORY STUDY

H J Mwale [1], ANK Simwaka[2]

1.Ekwendeni Mission Hospital
2.Kamuzu College of Nursing, Lilongwe

Objectives

This is a qualitative study whose purpose was to explore the perceptions of Traditional Birth Attendants on their new roles from that of being actively involved in deliveries to that of being advocates and counselors in maternal and neonatal health.

Settings

This study was conducted around Ekwendeni Mission Hospital catchment area in Mzimba district.

Methods

Convenience sampling was used to recruit 23 participants into the study and data was collected using 3 focus group discussions. Data was analyzed using Collaizi's method of content analysis.

Results

The study revealed that TBAs have knowledge of the changes in their role but have different views on the reasons

for such changes. The study also found that despite having knowledge of the changes some TBAs still continue conducting deliveries.

Conclusions and Recommendations

This study has concluded that there is minimal compliance to the TBAs changed roles. There is need for policy makers to revisit the policy and find other strategies of gradually replacing the TBAs with skilled attendants.

DEVELOPMENT OF MID-LEVEL PROVIDERS (MLPs) - SUPERVISION AND CAREER PROGRESSION: A PRE-REQUISITE FOR IMPROVING AND EXPANDING THE PROVISION OF EMERGENCY OBSTETRIC CARE IN MALAWI.

F. Kamwendo[1], L. Kalilani[1], W. Chimwaza[1], E. Chipeta [1], H. D. Pinho [2], R.J. Waxman[2]

1. University of Malawi, College of Medicine, Centre for Reproductive Health.
2. Averting Maternal Death and Disability Program, Heilbrunn Department of Population and Family Health, Mailman School of Public Health, Columbia University, New York, NY

Overall Objective

To better understand the factors necessary to optimize and support mid-level provider performance..

Setting

Health Centres, Christian Hospitals Association of Malawi (CHAM), Rural, District and Central Hospitals.

Materials and Methods

Health facilities (n=84) and providers (n=631) were selected if they offered Emergency Obstetric care (EmOC). Data collection used facility inventories and self-administered provider questionnaires. These data were triangulated with District Health Management Team (DHMT) interviews (n=63) and Critical Incident Analysis (CIA) interviews (n=84) with MLPs. Data was analyzed using SPSS and NVivo software.

Results

Nearly 50% of MLPs sampled reported either no supervision or supervision that provides only negative feedback. CIA interviews identified the critical impact of not being appreciated by management and need for supportive supervision to improve skills, performance and motivation. Lack of supervision was particularly crucial in maternity and in the context of chronic staff shortages. DHMT interviewees confirmed this challenge and their lack of capacity for this supervisory role. Career progression was a key motivating factor for many MLPs. Clinical Officers and Medical Assistants were particularly demotivated by lack of a clear career path. Staff reported working long periods without promotion and unclear process of eligibility for promotion and upgrading that lacked transparency and fairness.

Conclusions and Recommendations

Malawi depends upon overworked and frequently unsupervised mid-level cadres to deliver EmOC. The need to improve supervision systems to enhance health worker motivation and productivity is critical. Career progression is an important incentive in all knowledge-based professions, contributing to job satisfaction, good performance and retention of employees.

LEADERSHIP BEHAVIOUR IN HEALTH CENTRES; PERSPECTIVES FROM 3 DISTRICTS IN MALAWI

J. Hana[1,2], K.Maleta[1]

1.Department of Community Health, University of Malawi, College of Medicine, Blantyre, Malawi.
2.National Centre for Rural Medicine, Institute of Community Medicine, University of Tromso, Faculty of Health Sciences, Tromso, Norway

Objective

To asses the leadership behaviour at health centres (HC) and it's associations with in charge (IC) and health trained staff (HTS) characteristics, and context.

Setting

Health centres in Mangochi and Chiradzulu districts and Blantyre City, Malawi.

Materials and Methods

47 health centres were surveyed through self administered questionnaires; background data, leadership behaviour and effect variables. 348 (95%) HTS and 46 IC responded. Behaviour variables were factor analysed and new and predetermined (Task/Relation/Change oriented) factors were correlated with background variables.

Results

IC-responders; one MD, 8 clinical officers (CO), 23 medical assistants (MA) and 14 nurses. 48% claimed no management training; nurses largest with 79%. IC-nurses were stable at the health centres, 79% > 2 years (CO 50% and MA 37%). Factor analysis of 23 behaviour variables revealed two components; one mixed Task, Relation and Change oriented, and another 5 variables component; evaluation/HMIS/ statistics (Evaluative). Analysis on HTS-subgroups and rural/urban centres added another major factor covering change/receptiveness of new ideas (ChangeNewIdeas). IC-nurses scored significantly higher than CO and MA on Task, Change and Evaluative behaviour. No significant correlation between leadership behaviour and management training. IC-age negatively correlated with all behaviour groups. Government centres significantly better than CHAM on leadership behaviours.

Conclusions and Recommendation

Too many reported no management training. Time of training was not associated positively with leadership behaviours. Least trained scored better than others. Factor analysis did not reflect established leadership theories and indicated a narrow leadership perspective based on statistics (HMIS). This underlines an urgent need to assess management training for PHC professions to secure quality service through relevant leadership/management competency.

VALIDATION OF UTILITY OF THE WHO (2006) CLINICAL CRITERIA FOR 'PRESUMPTIVE DIAGNOSIS' OF SEVERE HIV DISEASE IN INFANTS AND CHILDREN UNDER 18 MONTHS REQUIRING ART IN SITUATIONS WHERE VIROLOGIC TESTING IS NOT AVAILABLE

Tumwesigye Nathan[1], Kiwanuka Julius[1], Mwanga Juliet[2], Lyazi Ivan1, Monjeza Edson[3], Kinabo Grace[4], Goings Stella[5], Duale Sambe[6], Bowsky Sara[5], and Oluwole Doyin[6]

1ANECCA (African Network for Care of Children Affected by HIV/AIDS),
2Mbarara Regional Referral Hospital, Uganda,
3Malamulo Mission Hospital, Malawi,
4Kilimanjaro Christian Medical Centre, Tanzania,
5USAID - Bureau for Africa and 6Africa`s Health in 2010

Background
Timely diagnosis of paediatric HIV infection is critical for effective antiretroviral treatment. The WHO clinical criteria for presumptive diagnosis of severe HIV disease in children under 18 months when HIV virologic testing is not available were formulated on "expert opinion" basis; its utility in clinical settings was not scientifically validated. This study aimed to determine the sensitivity, specificity and predictive values of this algorithm in predicting the requirement for ART.

Methods
Symptomatic HIV-exposed children <18 months were prospectively enrolled over a 17-month period at 3 hospitals in Malawi, Tanzania and Uganda and evaluated for clinical features of severe HIV disease. All were tested for HIV using DNA-PCR on dried blood spots. The algorithm's utility and discriminating accuracy in predicting ART need was determined against a gold standard for ART eligibility (2008 revised WHO guidelines for initiating ART in children).

Results
301 symptomatic HIV-exposed children were evaluated; median age 6 months, 248 (82.4%) were <12 months. 141 (46.8%) were HIV-DNA PCR positive; 118 (39.2%) met the criteria for presumptive diagnosis of severe HIV disease. 122 children met the gold-standard criteria for ART. The WHO algorithm correctly predicted ART requirement with a sensitivity of 68.9% (95% CI 59.8 - 76.9); specificity 81.0 % (95% CI 76.6 - 85.4); and 74.5% accuracy of discriminating between those who do and do not need ART.

Conclusion
The WHO (2006) algorithm performed with reasonable sensitivity and specificity, correctly identifying 68.9% of symptomatic HIV-exposed infants requiring urgent, potentially lifesaving ART. Viewed from the urgency of making a decision to initiate ART in settings where virologic testing is not readily available, and the potential mortality averted, results confirm the utility of this simple clinical algorithm as a tool to support recognition of HIV-exposed infants requiring urgent ART.

ENHANCING QUALITY HEALTH FACILITY DELIVERY IN THYOLO DISTRICT, MALAWI

A. Mateyu[1], T. van den Akker[1,2], G. Radge[1], S. Scheffer1, B. Mwagomba2, M. Bemelmans[1], M. Manzi[3], R. Zachariah[3]

1.Medecins Sans Frontières Belgium, Malawi Mission
2.Thyolo District Health Office, Malawi Ministry of Health and Population
3.Medecins Sans Frontières, Medical Department (Operational research) Operational Centre Brussels, Belgium

Objectives
Encouraging women to deliver at health facilities has been proposed as a strategy to decrease maternal and perinatal mortality, as well as to reduce vertical HIV-transmission. This report describes the results of a programme, designed by MSF and the Thyolo District Health Office, which intends to encourage women to come for facility delivery.

Methods
Study period: September 2007 – June 2009. Setting: Thyolo District, Malawi. In March 2008, incentives in the form of a post-delivery pack, a piece of soap, a baby blanket and a traditional chitenje started being given to mothers who delivered at the district hospital or in primary care centres in the district.

Results
There was a 79% increase of institution-based deliveries with the number of deliveries increasing from 854 per month in the first quarter to 1525 per month in the last quarter of the study period. The combined number for the smaller peripheral clinics increased from 546 to 1153 per month (111% increase), the number in the district hospital rose from 308 to 373 per month (21% increase).

Conclusions
Non-governmental organizations and governments can successfully combine efforts to enhance health facility delivery. This holds promise as a strategy to fight maternal and perinatal mortality, and to reduce maternal-to-child transmission of HIV.

Recommendations
Incentives for women to deliver at health facilities need to be considered as tools for health policy makers.

THE EFFECT OF A NON-MONETARY TEAM BASED INCENTIVE SYSTEM ON STAFF PERFORMANCE IN A HIGH HIV PREVALENCE, MALAWI

N. S. Tayub[1], A.C. Banda[1], B. Mwagomba[2,3] K. Hermann[3], M. Phillips[4] ,M. Bemelmans[1]

1 Médecines sans Frontières Operational Centre Brussels, Malawi Mission, Blantyre, Malawi
2 Thyolo District health Office, Blantyre, Malawi
3 Institute of Tropical Medicine, Antwerp, Belgium
4 Médecines sans Frontières Operational Centre Brussels, Brussels, Belgium

Objectives
A quarterly non-financial incentive system STAR Awards (Striving for Team Achievement and Recognition) was

developed to improve staff performance and motivation.

Setting

In a high HIV prevalence setting (12%) Malawi's health system suffers from very low levels of skilled Human Resources for Health (HRH). In Thyolo district, doctor/ nurse population ratios are 1.53/ 24 per 100 000 population respectively. Low staff motivation is a contributory factor in these shortages. Performance appraisal and incentives for rural and hard to reach areas remain neglected.

Method

Staff are divided into four teams: Hospital, Health Centres, Community and Management Supervision teams with Hospital and Health centres having further sub-teams. Over 50 performance indicators were developed to assess quality and quantity of essential services and data was collected by jurors and analyzed using an excel tool to compute and score winning teams. Prizes to the value of approximately $7 per team member, a trophy and certificate were awarded to the winning teams at an official ceremony.

Results

Results from three consecutive rounds of the Award show a positive effect on worker motivation, however, evidence is inconclusive on increased performance and quality of care. The level of motivation is directly proportional to the value of the non-monetary reward. Most winning and losing teams do strive to win and retain the trophy. Concerns regarding fairness of the indicators assessed not constituting the core of the work of a team have been expressed.

Conclusions and Recommendations

Sufficient salaries and working conditions remain paramount in the retention and motivation of health workers in low resource settings. Thorough supervision, comprehensive feedback and support can increase teambuilding, motivation and consequently, performance. The STAR system will undergo an evaluation to assess on further findings as well as ensuring simplified use.

ELECTRONIC MONITORING AND EVALUATION OF NON-COMMUNICABLE DISEASES- APPLICATION OF MODELS DEVELOPED FOR ART MANAGEMENT

T.J. Allain[1], J.J. vanOosterhout[1], E. Kachale[2], E. Kumwenda[2], G. P, Douglas[2,3], A.D. Harries[4]

1 Department of Medicine, College of Medicine, Blantyre, Malawi
2 Baobab Health Trust, Lilongwe, Malawi
3 Department of Biomedical Informatics, University of Pittsburgh, Pittsburgh, USA
4 International Union against Tuberculosis and Lung Disease, Paris, France

Non-communicable diseases such as diabetes and hypertension are predicted to become a major cause of morbidity and mortality in developing countries over the next 10 years, further increasing the burden on limited health resources. Complete, accurate and timely data are critical for providing high quality patient care, programmatic monitoring, continuity of care, and rational drug forecasting. Currently such data are sparsely collected in Malawi.

Standardised tools for data collection for antiretroviral therapy (ART) have been implemented successfully in all ART sites in Malawi. In many high-burden sites this takes the form of an electronic medical record (EMR). The systematic approach to data collection and the ease of doing this electronically led us to hypothesise that a similar system could be used for management of chronic, non-communicable diseases.

The first site to utilize this approach is the diabetes clinic at Queen Elizabeth Central Hospital, Blantyre. A touch screen-based point-of-care EMR system has been developed from which outcome data are used to create quarterly cohort reports. The software was developed locally through a process of intensive collaboration between clinicians and information technology specialists. The software displays graphs of variables such as weight and blood glucose, facilitating monitoring of treatment adherence. Reminders facilitate systematic screening for complications, and electronic prescribing increases accuracy, saves time and allows drug utilisation forecasting.

The implementation of the system has been challenging but the benefits to patients and staff are already evident. The next phase of the project is to expand the EMR to other diseases and more sites.

MEASURING THE RESPONSE TO THE THYOLO MEASLES OUTBREAK, MALAWI

G.Malata[1], L.Trivino Duran[1], E.Diggle[1], M.Miller2, A.Akesson[2], I.Porter[2], S.Kholola[3], A.Likaka[1]

1 Médecins Sans Frontières Belgium (MSF-B), Thyolo, Malawi
2 Médecins Sans Frontières Belgium, Blantyre, Malawi
3 Ministry of Health, Thyolo, Malawi

Background

Despite vaccination coverage >80%, by epidemiological week 14, two-thirds of Malawi experienced a measles epidemic. The Ministry of Health (MoH) ran limited emergency vaccination campaigns (VC) in 3 districts. Thyolo was one of several districts especially hard hit.

Objectives

To describe the campaign

Methods

A standard infectious disease intervention approach was implemented: assessment, case management, surveillance, vaccination, and follow-up reporting.

Results

In collaboration with the MoH, MSF-B assessed the district two-weeks after outbreak confirmation. Active surveillance began the subsequent week. Following this, isolation wards were sited for case management, for which MSF supplied drugs. A four-week VC began week 23 targeting all children between 6 months and 15 years, a total of 281 457 children. Traditional leaders were mobilized with health education prior to the campaign by health promoters.

By clustering villages, VC covered 376 health vaccination points. 322 health care workers were utilized, including 45 Health Surveillance Assistants to support environmental health officers and nurses with supervision. 25 vehicles were used for transportation. 14 freezers, 5 fridges, 30 cold-boxes and 60 vaccine-carriers were needed to maintain a cold chain. Overall coverage was 117%; but was lower for ≤5's, at 93%. Case management teams collected line-lists for active

surveillance. To week 28, there have been 5210 cases, 70% were ≤15, 39% ≤ 5, 54% were female, 8.9% were inpatients. Global Attack rate was 709/100,000, in ≤5's was 1570/100,000. The highest attack rate was in the central urban district with 2530/100,000. Active surveillance has continued through week 28 when just 13 cases were identified, a drop from 941 in week 20.

Conclusions

Overall, a successful campaign. Within 4 weeks of starting the VC, the epidemic curve dropped by 30% and continues to fall.

RAISED CHOLESTEROL LEVELS IN DIABETIC PATIENTS AT QUEEN ELIZABETH CENTRAL HOSPITAL

T. J . Allain[1], E-J. Smulders[2], A. Moes[2], Z. Yusuf[3], M. Nur[3], C. Boyd[4]

1 Department of Medicine, College of Medicine, Blantyre, Malawi
2 Erasmus Medical Centre, Rotterdam, Nederlands
3 Sheffield Medical School, Sheffield, UK
4 School of Medical Sciences, Newcastle University, Newcastle, UK

Objectives

To measure total blood cholesterol levels in patients attending the diabetes clinic at Queen Elizabeth Central Hospital (QECH), Blantyre.

Setting

The diabetes clinic, QECH

Methods

288 consecutive patients attending the diabetes clinic for routine review had total cholesterol measurement carried out using the Accutrend point of care test system (Roche Diagnostics GmbH, Mannheim, Germany). Where possible tests were carried out fasting. Information on age, gender, BMI, serum creatinine and blood pressure were extracted from the electronic medical record for each patient and related to cholesterol levels.

Results

The desirable value for total cholesterol is <190mg/dl (5.0 mmol/l). Fifty seven patients (19.8%) had total cholesterol ≥190mg/dl, 8 of these were non-fasting samples. Hypercholesterolaemia (≥190mg/dl)was more common in women; 44/183 (24.0%) vs 13/105 (12.4%), Chi2=5.7, p=0.017. Those with hypercholesterolaemia had higher systolic blood pressure; 148.1 vs 137.1mmHg, p=0.006. There was no association of cholesterol levels with age, BMI or renal function.

Conclusions and Recommendations

Modern diabetes care focuses on vascular risk management. We found a high proportion of patients with unrecognised hypercholesterolaemia in the diabetes clinic. These same individuals had substantially higher blood pressure, suggesting that there is a subgroup of patients, maybe as many as 20% of the clinic population, with very high vascular risk. This was not related to increased BMI or age. These findings suggest the need for further studies with vascular end points and the urgent need of studies to assess whether treatment of hyperlipidaemia modifies vascular risk in this group.

DIABETIC RETINOPATHY IN THE DIABETIC CLINIC AT QUEEN ELIZABETH CENTRAL HOSPITAL

S.J. Glover[1], T.J. Allain[2], D.B. Cohen[2,3].

1, Department of Anatomy, University of Malawi, College of Medicine, Blantyre, Malawi. 2, Department of Medicine, University of Malawi, College of Medicine, Blantyre, Malawi. 3, Department of Medicine, Hallamshire hospital, Sheffield, UK.

Introduction

Diabetes is increasing in prevalence in resource poor countries where it is under diagnosed and under treated. Present healthcare systems struggle to cope with this chronic serious disease. Diabetic retinopathy is a microvascular complication that can severely affect the vision of diabetic patients, often during the peak years of their professional lives. Early diagnosis and treatment of diabetic retinopathy improves visual outcome.

Objectives

To record the prevalence and severity of retinopathy in a diabetic population in an urban diabetes clinic in Malawi.

Methods

We recruited 279 consecutive patients from the diabetes clinic in Queen Elizabeth Central Hospital, Blantyre, Malawi who had not previously undergone retinal assessment. All patients were examined by an ophthalmologist, using a slit lamp, after pupil dilation.

Results

26.9% had at least mild pre proliferative retinopathy, maculopathy or both. 21.1 % had sight threatening eye disease (STED). 12.9% had STED affecting the macula. 11.8% had STED affecting the retina. 2.5% had active proliferative retinopathy. 3.6% had fibrovascular proliferation, of whom 5 had tractional retinal detachment, 3 with active proliferation. 9% had background diabetic retinopathy only. 64.1% had no diabetic retinopathy.

Conclusions

We found a significant level of treatable diabetic retinopathy in a previously unscreened population. Many patients would have benefitted from laser treatment, which is now available in Malawi.

Recommendations

Further work is needed in Malawi to establish the most efficient and cost effective way to screen patients with diabetes for retinopathy in order to detect those who need treatment to preserve their vision.

THE BURDEN OF CHRONIC NON-COMMUNICABLE DISEASES AND THEIR RISK FACTORS IN MALAWI

K. Msyamboza[1], B. Ngwira[2], C. Mvula[3], T. Dzowela[3], G. Chithope-Mwale[3]

1World Health Organisation, Malawi Country Office, Lilongwe, Malawi
2Department of Community Health, University of Malawi, College of Medicine, Blantyre, Malawi
3Department of Clinical Services, Ministry of Health, Lilongwe, Malawi

Background

Recent WHO estimates suggest that by 2020 non-communicable diseases (NCDs) will be the leading cause of morbidity and mortality in developing countries, accounting for 70% of all deaths. However data on the burden of NCDs and their risk factors is scarce in most sub-Saharan countries including Malawi.

Objectives

To determine the magnitude of hypertension, diabetes and raised cholesterol and their risk factors.

Methods

A multi-stage cluster sampling design was used to produce a national representative sample. Participants were people aged 25-64 years. Data was collected in steps. Socio-demographic and behavioural information was collected in Step 1. Physical measurements such as height, weight, blood pressure, waist and hip circumference were collected in Step 2. Biochemical measurements to assess total cholesterol levels and fasting blood glucose were collected in Step 3. This population-based survey was conducted from July to September 2009.

Results

A total of 5,206 participants were enrolled of which 67.5% were females. Overall (both sexes), the national community-based prevalence estimates of the selected NCDs their risk factors were as follows: hypertension 32.9%, diabetes 5.6%, raised total cholesterol 8.7%, tobacco smoking 14.1%, alcohol consumption 16.9%, overweight 21.9%, physical inactivity 9.2% and 3 or more risk factors 16.5%. Majority (94.9%) of people with raised blood pressure were not aware that they had a medical problem. By gender; hypertension, diabetes, tobacco smoking and alcohol consumption were significantly ($p<0.05$) more common in males than females (37.2% vs 29.2%, 6.5% vs 4.7%, 25.9% vs 2.9%, 30.1% vs 4.2% respectively). Overweight, raised total cholesterol and physical inactivity were significantly more common in females than males (28.1% vs 16.1%, 11.0% vs 6.3%, 12.6 vs 6.3% respectively). Overweight and physical inactivity were common in urban than rural areas (38.6% vs 21.9%, 24.1 vs 8.7%, $p<0.05$ respectively) whereas tobacco smoking was more common in rural than in urban areas (10.9% vs 6.6%, $p<0.05$)

Conclusion and Recommendations

NCDs are major public health problems in Malawi. Establishing NCD Control Programme, developing multi-sectoral Action Plan and Policy and strengthening the existing efforts may be helpful in the prevention and control of NCDs in Malawi.

PROGNOSIS OF STROKE IN MALAWI, A COUNTRY WITH HIGH PREVALENCE OF HIV

T.J. Heikinheimo-Connell[1], D Chimbayo[1], J.J. Kumwenda[1], S. Kampondeni[2], T.J. Allain[1],

1. Department of Medicine, University of Malawi, College of Medicine, Blantyre, Malawi
2. Department of Radiology, Queen Elizabeth Central Hospital (QECH), Blantyre, Malawi

Background

Cerebrovascular diseases are the sixth commonest cause of mortality in Malawi.

Objectives

Describe outcome of first ever stroke in patients admitted in QECH.

Setting

Medical wards (wards 2A, 3A, 3B, 4A and 4B) in QECH, Blantyre, Malawi

Materials and Methods

A prospective cohort study of 150 adult stroke patients with first ever stroke recruited in QECH. Patients were followed up for one year. Modified Rankin scale (mRs) for functional outcome and modified National Institute of Health Stroke Scale (mNIHSS) for stroke severity were used.

Results

72 (48%) patients were women. The mean age was 53 years. 73 were young (≤ 55 years). 92 (62%) had ischemic, 32 (21%) had hemorrhagic stroke. Two were found subsequently not to have had strokes, 21 (14%) were not imaged. 50 (33%) were HIV seropositive, 43 of them were young. 62 (41%) patients died (mRs=6) during the follow up, 33 (53%) of them died during the first 30 days from stroke. 37 (60 %) were old and 26 young. Stroke severity ($p< 0.0001$) was a risk factor for mortality. Mortality was higher in women (71% $p< 0.05$). HIV did not affect mortality. 50 (33%) recovered well (mRs ≤ 2 after one year). 28 (56%) of them were young, 13 (59 %) of the young had HIV-infection. 9 (6%) were bed ridden after one year (mRs = 4 -5). 11 (7%) were known to have another nonfatal stroke during the year. 2 patients developed epilepsy. 15 (10 %) patients were lost to follow up.

Conclusions and Recommendations

A third recovered well from their first ever acute stroke. Mortality for stroke in Malawi is 41% during first year; most patients die during the acute phase. Women have higher risk of dying even if stroke severity does not differ from men. Severity is a risk factor for poor outcome. HIV does not affect the mortality. More effort is needed for primary and secondary prevention of stroke to prevent the attack, improve the outcome and reduce the risk of another stroke.

COMPARISON OF QUANTIFERON®-TB GOLD TEST AND TUBERCULIN SKIN TESTING FOR THE EVALUATION OF MALNOURISHED AND IMMUNOCOMPROMISED CHILDREN AT RISK OF TUBERCULOSIS IN MALAWI

A. Chunga[1], J. Dube[1], A. Mwale[1], A. Joabe[1], C. Banwell[2], T. Heikens[3],R.S. Heyderman1, S.T. Anderson[1,3]

1 Malawi-Liverpool-Wellcome Trust Clinical Research Programme
2 Brighton and Sussex Medical School, Sussex, UK
3 Dept of Paediatrics, Queen Elizabeth Central Hospital, Blantyre

Objectives

To evaluate the Quantiferon®-TB Gold test (QFG-IT) - a commercial interferon gamma release assay (IGRA) - in children with suspected TB in comparison to the tuberculin skin test (TST). The effect of HIV status and malnutrition on both assays was also evaluated.

Study Methods

Children with symptoms suggestive of TB presenting to QECH were investigated with clinical examination, TST, chest-xray, and sputum culture. Blood was collected for IGRA. The strength of diagnosis was determined using a clinical algorithm. A cohort of children investigated for other infections (OIs) were also evaluated.

Results

A total of 205 paired results were available. 127 children were diagnosed and treated for TB (median age 67 months) and 78 had an OI (median age 69 months). Median WAZ scores were significantly lower in the TB cohort compared to those with OIs (-2.4 v -1.9; p=0.001). The HIV positive rate was 47% in both cohorts. A higher proportion of HIV infected children with definite or probable TB had a positive IGRA compared to TST (86% v 55% respectively; p= 0.09) and also if malnourished (59% v 37%). Eight children (10%) with an OI had either a positive TST or QFG-IT result suggesting latent TB infection.

Conclusions and Recommendations

There are low background rates of TB infection in children presenting to QECH with OIs increasing the utility of immunoassays in screening for TB. QFG-IT appears to be more sensitive that TST in this population but cannot be used to exclude a diagnosis of TB.

FEASIBILITY, ACCURACY AND ACCEPTABILITY OF USING ORAL HIV KITS FOR SELF-TESTING IN RESOURCE-POOR HIGH HIV PREVALENCE SETTINGS: INTRODUCING SUPERVISED COMMUNITY-LEVEL SELF-TESTING TO BLANTYRE, MALAWI

A.T. Choko[1], N Desmond[1,4], K Chavula[1], S Napierala Mavedzenge[2], T Chunda1, A Mdolo[1], S.B Squire4, N. French[2], V. Mwapasa[5], E Webb[6], E.L. Corbett[1,3]

1 Malawi-Liverpool Wellcome Trust Clinical Research Programme, P.O Box 30096, Blantyre, Malawi
2 Department of Epidemiology and Population Health, London School of Hygiene and Tropical Medicine, London, UK
3 Department of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, London, UK
4 Liverpool School of Tropical Medicine, Liverpool, UK
5 Department of Community Health, College of Medicine, Blantyre, Malawi
6 Infectious Disease Epidemiology Unit, London School of Hygiene and Tropical Medicine, London, UK

Background

HIV testing and counseling (HTC) acceptability has increased dramatically, with high acceptability for services directly offering HTC. However, expansion of home-based HTC is required for maximum uptake. We investigated oral HIV self-testing from this perspective.

Methods

Four community health worker catchment areas were randomly selected from urban Blantyre, Malawi, using population-weighted methods. Consenting adults of 60 randomly-selected households were offered self-testing plus confirmatory HTC; standard HTC; or no testing. Participants for 6 focus group discussions were selected in separate randomization from peer-groups (church, sports, finance) identified during community-mapping.

Results

283 (95.6%) of 298 selected adults participated. 136 (48.0%) were men; 175 (61.8%) had tested for HIV before, and 48 (18.5%) were HIV-positive, with no major differences between selection groups. Of 260 (91.9%) who self-tested, self-read accuracy was 99.2% after brief demonstration and illustrated instructions. Although 98.5% rated the test "not hard at all to do", 10.0% made minor errors, and 10.0% required extra help. Results were highly credible to participants, and 100% would recommend oral self-testing to friends and family; 98.8% would "very likely" self-test in future; and 56.4% would prefer their next test to be a self-test. Local distribution of self-test kits was considered more acceptable than HTC offered by a neighbour (94.5% versus 46.8%, p = 0.001).

Conclusions

Oral supervised self-testing was highly acceptable, accurate and credible. This new option has potential for high uptake at local community-level if it can be successfully and safely linked to counseling and care. Novel self-testing strategies should be investigated further.

SAYING "NO" TO HTC: REFUSALS OF HIV TESTING AND COUNSELING IN THE TSOGOLO LA THANZI STUDY

J.Trinitapoli[1] & A. Chilungo[2]
1. Department of Demography, Penn State University, USA
2.Tsogolo La Thanzi Research Centre, Balaka, Malawi

Objectives

To explore the patterns in refusals of HIV Testing and Counseling (HTC) when offered freely and immediately by certified counselors as part of an ongoing research project.

Setting

Tsogolo La Thanzi Research Centre is located in Balaka. A random sample of respondents was drawn from enumeration areas (EAs) located within a seven kilometers radius from the Boma.

Materials and Methods

Tsogolo La Thanzi is a longitudinal social science study. Data was collected from 2509 respondents (1018 men and 1491 women) using a structured questionnaire. An experimental design was used to offer HTC to one third of the respondents who completed the baseline questionnaire. Data was entered in Microsoft Access 2007 database and analyzed using Stata/SE 10.1.

Results

Out of the 820 respondents who were offered HTC, a total of 147 (18%) refused the HIV test. Refusing HTC is strongly gendered: 21% of males refused this service, while only 16% females did the same. A vast majority of the refusals came from sexually active individuals (about 70%), which means that the source of refusals is not founded in an objective lack of exposure. About 17% of those who refused HTC had ever been tested before, which is identical to the proportion of those who accepted testing. Based on two different subjective measures of HIV risk, we find that people who refuse HTC are less worried about HIV than those who accept HTC.

Conclusions and Recommendations

HTC is an important component of national prevention strategies. In addition to understanding the demand for HTC, we need to know more about those who refuse this service – even when it is provided without any additional economic or opportunity costs. Our findings show that participation in HTC is strongly motivated by perceived risk, but that men are an important group to target to increase uptake.

HIV PREVENTION IN UNMARRIED ADOLESCENTS IN CULTURALLY SENSITIVE SOCIETIES: EVIDENCE FROM RURAL MALAWI

Dixon Jimmy-Gama, Margaret Leppard, Deborah Ritchie, and Agnes Chimbiri

Background

Despite the recognition of the influence of cultural norms on adolescent sexuality and HIV prevention in most societies, less attention has been paid to the link between social norms and the effectiveness of HIV prevention programmes among adolescents.

Objective

To examine the capacity of facility-based youth-friendly reproductive health services to promote HIV prevention among unmarried adolescents of rural Malawi where culture influences adolescent sexual behaviours.

Methodology

Qualitative and quantitative methods were used to collect data from unmarried adolescents, community members and health workers in Mangochi District. The results were generated by triangulating the qualitative and quantitative data.

Results

The study illuminates how norms related to social identities influence risky adolescent sexual behaviours and HIV prevention efforts in culturally sensitive societies. It also reveals a major disjuncture between an ideal norm – 'no premarital sex' - and a modeled norm where unmarried adolescents are expected to engage in unsafe sex. It shows the conflicts between the cultural and scientific models of HIV prevention in unmarried adolescents. The health providers manage diverse roles both as 'moral guardians' and as 'health promoters' in a way that limits their effectiveness as health promoters. Structural gender asymmetry that emphasizes subservience in females and hegemonic masculinity reduces adolescents' agency in HIV prevention.

Conclusion

The way facility-based YFRHS is implemented has limited impact on HIV prevention among unmarried adolescents of rural Malawi.

Recommendation

Appropriate health promotion interventions based on conscientization-oriented empowerment theories should be used in HIV prevention programmes in societies where culture influences adolescent sexual behaviours.

IMPACT OF HAART ON HIV-MTCT SEEMS NOT TO BE RELATED TO BASELINE CD4 COUNT

G. Liotta[12], H. Jere[2], J.B. Sagno[2], D. Thole[2], M. Maulidi[2], C. Sekani[2], L. Palombi1[2]

1 Community of Sant'Egidio, DREAM Program - Malawi
2 Department of Public Health, University of Tor Vergata – Rome, Italy

Objective

To report the 18-months outcomes of the DREAM HIV-PMTCT program in Malawi in order to contribute to the research of the best model in Limited Resource Settings

Methodology

HAART is administered to all pregnant women from pregnancy to the newborns' gradual weaning after six month of exclusively breastfeeding. Mothers who met criteria for long-life treatment at the pre-HAART assessment do not stop HAART.

Setting
DREAM centers, in Blantyre, Balaka, Dowa district

Results
At 31.12 2008, 1,114 pregnant women gave 1,198 live births. Little percentage of this mothers (28, 2.5%) accessed the program after the birth so that they received HAART just to protect the newborn during the breastfeeding. The overall incidence of HIV infection at 18 months of age in newborns born to mothers who got at least on pill of HAART before delivery was 2.8% (34/1,198). One-year HIV-free survival was 92%. Parameters associated to the incidence of HIV infection were the length of pre-delivery HAART and the baseline viral load higher than 100,000 c/ml with RR of 0.56 (CI95%: 0.41-0.77) and 2.86 (CL 95%: 1.37-6.00) respectively. Baseline CD4 count higher or lower than 350 was not associated to the incidence of vertical transmission. No viral resistant strain have been detected after HAART interruption in a sub-sample of women.

Conclusion and Recommendations
Administration of HAART represents the most effective tool to prevent HIV vertical transmission irrespective the pregnant women CD4 count. The positive impact of HAART can be detected even if it is administered for few days before delivery.

ART PERCEPTIONS AND INFLUENCES ON SEXUAL BEHAVIOUR AMONG MARRIED COUPLES IN KARONGA

M.J. Nkhata[1], M. Francis-Chizororo[1,2], A. Crampin[1,2], N. French[1,2], J. Glynn[2]

1Karonga Prevention Study, Chilumba, Malawi
2London School of Hygiene and Tropical Medicine. London, United Kingdom,

Objectives
This paper is based on a qualitative study aimed at exploring whether knowledge of HIV and access to ART are associated with sexual behaviour change among married couples.

Study methods
We conducted 6 focus group discussions, 4 participatory activities and individual interviews with 12 discordant couples, 19 positive concordant and 15 negative concordant couples in southern Karonga District. Researchers sought individual consent and couples were included if both partners consented. Interviews were conducted individually. Data were analysed manually.

Results
All participants thought that ARVs are effective but understood that they do not cure for AIDS. There is a process of normalisation of HIV/AIDS as people are now looking and feeling better and it is becoming difficult to distinguish the 'sick' from the 'normal'. Some women on ARVs believed they could now sustain pregnancy and planned to have children in future. Some participants believed that ART 'freezes' HIV, making it impossible to transmit. For positive concordant couples, it was difficult to comprehend the importance of practising safer sex.

Conclusions/Recommendations
There is a need to address misconceptions about ART to prevent transmission among couples. Education programmes need to address issues of childbearing for those that are on ART. Discordant couples also need to be encouraged to practice safer sex whether on ART or not.

STAVUDINE TOXICITIES IN ADULTS WHO COMPLETED ONE YEAR OF FIRST-LINE ART IN QUEEN ELIZABETH CENTRAL HOSPITAL

J Mallewa[1,2] , Y Njalale[1], S Kaunda[2], S White[2], R Heyderman[2], J van Oosterhout[1]

1.Department of Medicine, College of Medicine, Blantyre, Malawi
2.Malawi-Liverpool Wellcome Trust, College of Medicine, Blantyre, Malawi

Background
Malawi has successfully started more than 250,000 patients on free-of-charge first-line ART with stavudine-lamivudine-nevirapine since 2004. Stavudine is hardly used anymore in affluent settings due to toxicity concerns. However few data exist on stavudine toxicity from sub-Saharan Africa, and Malawi in particular.

Methods
We conducted a prospective cohort study of patients who were on a stavudine containing first-line regimen 1 year after starting ART in Queen Elizabeth Central Hospital and followed patients during the second year on ART to described stavudine-associated toxicity. We used a validated questionnaire to diagnose lipodystrophy (LD), did routine lactate monitoring, evaluated new abdominal pain episodes with serum amylase and ultrasound scanning, diagnosed peripheral neuropathy (PN) if there were characteristic symptoms for >1 month (not present before ART) and diagnosed hypertension (HT) and diabetes mellitus (DM) according to WHO criteria.

Results
253 patients were enrolled (mean age 37.6 years; 62.5% female; 42% WHO clinical stages III and IV; mean CD4= 147 cells/μL). After one year on ART, the prevalence rates of toxicities were: PN 14.6%, LD 4.0%; DM 0.4%; HT 2.4%. 5.1% had moderate to severe renal insufficiency (glomerular filtration rate <60ml/min). Six months later rates were: PN 25.3%, LD 11.5%; DM 0.4%; HT 12.3%. Three patients had changed ART due to symptomatic hyperlactataemia; there were no pancreatitis diagnoses or new DM cases.

Conclusions
PN and LD, but not pancreatitis and DM, are very common toxicities in Malawian adults during the second year on stavudine containing ART. HT prevalence was surprisingly high. These initial data support plans to replace stavudine as first-line drug in the national ART programme. Further observations and analyses from this cohort are forthcoming, including lipid levels and associations with renal insufficiency.

LOW RISK OF RESISTANCE IN WOMEN RECEIVING HAART FOR THE PREVENTION OF BREASTFEEDING-ASSOCIATED TRANSMISSION AND DISCONTINUING DRUGS SIX MONTHS AFTER DELIVERY

L. Palombi[1,3], R. Luhanga[2], M. Giuliano[4], W Takomana[2], M. Andreotti4, S. Ceffa[3], H. Jere[2], M Maulidi[2], G. Liotta[1],

1University of Tor Vergata, Rome, Italy,
2 DREAM Program, Community of S. Egidio, Malawi,
3 DREAM Program, Community of S. Egidio, Rome, Italy. 4 Istituto Superiore di Sanità, Rome, Italy

Background

To assess the potential risks of viral resistance associated with maternal HAART prophylaxis to avoid MTCT in women who do not meet the criteria for treatment.

Methods

We studied 51 antiretroviral-naïve women (with CD4+ count > 350/mm3) enrolled in Malawi in a study aimed to evaluate safety of the maternal prophylaxis approach and receiving HAART from the 25° week of gestation until 6 months after delivery. At drug interruption, a three-week tail of zidovudine and lamivudine was administered to women receiving a nevirapine-based regimen. Viral resistance was assessed after drug discontinuation by the use of theTruGene assay.

Results

A total of 44 women had received zidovudine, lamivudine and nevirapine and 7 zidovudine, lamivudine and lopinavir/r. Viral sequences were obtained at a median time of 60 days (range 28-135 days) after drug interruption. Four women among the nevirapine-treated patients, had NNRTI mutations (1 K103N, 1 Y188C, 1 G190A and 1 V108I mutation, respectively). However, the first 3 women had detectable viral load during treatment and had already developed resistance mutations before drug interruption. Viremia was controlled during treatment in the fourth woman but the V108I mutation was archived in baseline HIV-DNA. No mutation was observed in the lopinavir-treated women after drug interruption.

Conclusions

The risk of developing resistance mutations in compliant women who receive HAART prophylaxis and interrupt drugs 6 months after delivery seems to be low. The risk seems to be higher when drugs are interrupted in the presence of detectable viral load.

NATURALLY ACQUIRED PNEUMOCOCCAL-SPECIFIC CD4 T CELL MEMORY IS IMPAIRED IN MALAWIAN ADULTS WITH ASYMPTOMATIC HIV INFECTION

S. Glennie[1], E. Sepako1, D. Mzinza[1], V. Harawa[1], DJC Miles[2], NA Williams[3], RS. Heyderman[1]

1 Malawi Liverpool Wellcome Trust Clinical Research Programme, College of Medicine, Malawi
2 Institute of Infectious Disease and Molecular Medicine, University of Cape Town, SA
3 Dept of Cellular and Molecular Medicine, University of Bristol, UK

Background and objectives

Streptococcus pneumoniae is a significant HIV-related pathogen even early on in the course of the disease. We hypothesise that in HIV, pneumococcal specific memory T cell dysfunction precedes the marked depletion of CD4 T cells that characterises AIDS. We aim to investigate CD4 memory T cell responses to the pneumococcus in the context of asymptomatic HIV infection.

Methods

Peripheral blood central memory (CM) and effector memory (EM) CD4 T cells were quantified by differential CCR7 and CD45RO expression in a cross-sectional study of 100 asymptomatic HIV-infected (WHO stage 1) and 40 uninfected Malawian adults (median age 33 years (range, 24-41)). Pneumococcal specific CM and EM responses were assessed using CFSE proliferation and IFN-γ ELISPOT respectively. Cross-talk between dendritic cells and CD4 T cells was evaluated by the upregulation of a critical T cell co-stimulation molecule CD40 ligand.

Results

In HIV-infected adults, circulating CM cells were reduced (median HIV-64.1% (59-68) vs HIV+ 49.4% (40-58); p= 0.003) whilst EM were over represented (HIV-8.1 (7-14) vs HIV+14.4% (9-22); p= 0.03). Although T cells were capable of mounting proliferative and IFN-γ responses to polyclonal stimuli, pneumococcal specific proliferation was markedly reduced (HIV-3.4% (1-6) vs HIV+ 0.8% (0-2) p=0.004)) whilst IFN-γ production was unaffected (HIV-20 (10-42) vs HIV+18 (4-63) spots/106 PBMC p=0.6). CD40 ligand was ineffectively upregulated on CD4 T cells following antigen stimulation.

Conclusions and recommendations

These data show immune dysregulation even in asymptomatic HIV infection. It is important to determine whether ART and/or pneumococcal vaccination restore immune competence in this population.

MUCOSAL COLONISATION INDUCES LONG-TERM CD4+ T-CELL IMMUNE MEMORY AND INCREASED UPREGULATION OF CD154 (CD40-LIGAND) TO PNEUMOCOCCAL PROTEINS IN HUMANS

E. Sepako[1], S. Glennie[1], O. Unuigbe[1], K. Jambo[2],D. Mzinza1, V. Harawa1, NA Williams[3], S. Gordon2, RS. Heyderman[1]

1 Malawi Liverpool Wellcome Trust Clinical Research Programme, College of Medicine, Malawi

2 Respiratory Infection Group, Liverpool School of Tropical Medicine, UK

3 Department of Cellular and Molecular Medicine, University of Bristol

Objectives

To compare the characteristics of CD4+ T-cell immune memory and CD154 upregulation in response to natural exposure to S. pneumoniae, with systemic vaccination with diphtheria toxoid (DT) in Malawian adults. In the absence of pneumococcal protein vaccines, DT was used as a model vaccine antigen.

Settings

Malawi-Liverpool Wellcome Trust Clinical Research Programme and Queen Elizabeth Central Hospital, Blantyre, Malawi.

Materials and Methods

CD4 T-cell responses to pneumococcal proteins and CRM157DT (6 months post-vaccination) were compared in healthy Malawian adults. CD154 expression, IFN-γ and IL-2 production was evaluated within the effector and central memory pool identified by differential expression of CD45RA and CCR7 by flow cytometry. DT-specific IFN-γ-producing cells were enumerated in vaccinated Malawian adults by ELISpot analysis.

Results

CD154 was upregulated on 1-2% of CD4+ T-cells in response to pneumococcal proteins. Of the CD4+CD154+ T cells 25% produced IFN-γ and 2% IL-2. These cells were mostly contained within the CD45RA-CCR7+CD4+ central-memory pool. In contrast, 6 months post-vaccination CD4 T-cells did not upregulate CD154 and mainly produced IL-2 (80%) in response to DT. Effector-memory IFN-γ-production was detected by ELISpot.

Concluisions and Recommendations

CD4 T-cells generated naturally through mucosal colonisation are polyfunctional and can offer CD154 mediated help, which differs from vaccine (DT)-induced responses. These results need further investigation with a pneumococcal protein-based vaccine but suggest heterogeneity in the way protein antigens elicit T-cell help when encountered mucosally and systemically

MASS GENOME SEQUENCING OF MALAWIAN PNEUMOCOCCI TO UNDERSTAND THE MOLECULAR BASIS OF ANTIMICROBIAL RESISTANCE

JE Cornick[1,2], SB Bentley[3], SJ Harris[3], R Heyderman[1], DB Everett[1,2]

1Malawi-Liverpool-Wellcome Clinical Research Programme, Blantyre, Malawi.

2School of Infection and Host Defence, The University of Liverpool, Liverpool, United Kingdom.

3Sanger Institute, Cambridge, United Kingdom.

Objectives

The last two decades have seen an increase in pneumococci resistant to multiple antibiotics worldwide. In Malawi, a resource poor-country, antibiotics are a precious commodity. Understanding the evolution of antimicrobial resistance is therefore essential in informing treatment policy.

Methods

High throughput sequencing was used to sequence 130 pneumococcal genomes from the Malawi-Liverpool-Wellcome Trust strain collection. In silico techniques were used to identify alterations associated with resistance.

Results and Conclusions

Ceftriaxone was introduced in 2004 and its use has not been well regulated since 2007. No isolate displayed phenotypic resistance; however a proportion possessed five amino acid alterations in the transpeptidase region of PBP2B, previously reported as associated with resistance. The isolates displayed raised MICs. This could be developed into an early warning screen for the emergence of resistance.

Moxifloxacin is commonly used in Europe to treat pneumococcal disease and will soon be introduced in Malawi. The extensive use of ciprofloxacin currently in Malawi may predispose to cross-resistance to moxifloxacin. Promisingly, the primary target of moxifloxacin, gyrA, appears to be highly conserved. This suggests there is no underlying moxifloxacin resistance and it is suitable for the treatment of pneumococcal disease in Malawi.

Chloramphenicol remains an important antibiotic in developing countries such as Malawi. 51 of the study isolates are phenotypically chloramphenicol resistance, however 37 of these do not encode the chloramphenicol acetyltransferase gene. Malawian isolates may be employing a novel mechanism of chloramphenicol resistance.

EARLY INTERFERON GAMMA PRODUCTION IN HUMAN LYMPHOCYTES SUBSETS IN RESPONSE TO NON-TYPHOIDAL SALMONELLA DEMOSTRATES INHERENT CAPACITY IN INNATE CELLS

T.S. Nyirenda[1,2], A.E. Seeley[1], W.L. Mandala[2,3], M.T. Drayson[1], C.A. MacLennan[1]

1 Medical Research Council Centre for Immune Regulation and Clinical Immunology Service, University of Birmingham, Birmingham, United Kingdom
2 Malawi-Liverpool-Wellcome Trust Clinical Research Programme, College of Medicine, University of Malawi, Blantyre, Malawi
3 Department of Biochemistry, College of Medicine, University of Malawi, Blantyre, Malawi
4 Division of Medical Microbiology, University of Liverpool, Liverpool, United Kingdom

Objectives

Nontyphoidal Salmonellae frequently cause life-threatening bacteremia in sub-Saharan Africa. Young children and HIV-infected adults are particularly susceptible. High case-fatality rates and increasing antibiotic resistance require new approaches to the management of this disease. Defects in the T helper 1 pathway cause impaired intracellular disease that can be countered by IFN-γ administration. This report identifies the lymphocyte subsets that produce IFN-γ early in Salmonella infection.

Methods and Materials

Intracellular cytokine staining was used to identify IFN-γ production in blood lymphocyte subsets of ten healthy adults with antibodies to Salmonella as evidence of immunity to Salmonella, in response to stimulation with live and heat-killed preparations of the D23580 invasive African isolate of Salmonella Typhimurium. The absolute number of IFN-γ-producing cells in innate, innate-like and adaptive lymphocyte subpopulations was determined.

Results

Early IFN-γ production was found in the innate/innate-like lymphocyte subsets: γδ-T cells, NK cells and NK-like T cells. Significantly higher percentages of such cells produced IFN-γ compared to adaptive αβ T cells (Student's t test, $P < 0.001$ and ≤ 0.02 for each innate subset compared respectively with CD4+ and CD8+-T cells). The absolute numbers of IFN-γ-producing cells showed similar differences. The proportion of IFN-γ-producing γδ-T cells, but not other lymphocytes, was significantly higher when stimulated with live compared with heat-killed bacteria ($P<0.0001$).

Conclusions and Recommendations

Our findings indicate an inherent capacity of innate/innate-like lymphocyte subsets to produce IFN-γ early in the response to Salmonella infection. This may serve to control intracellular infection and reduce the threat of extracellular spread of disease with bacteremia which becomes life-threatening in the absence of protective antibody. These innate cells may also help mitigate against the effect on IFN-γ production of depletion of Salmonella-specific CD4+-T lymphocytes in HIV infection.

WOUND INFECTION AFTER IMPLANT SURGERY IN THE TREATMENT OF TRAUMA AND ITS SEQUELAE IN HIV POSITIVE PATIENTS

J Bates, J Harrison, N Mkandawire, E Ngoma, P Chidothi

1.Department of Surgery, QECH and Beit CURE International Hospital

A study of the incidence wound infection after implant surgery for trauma in HIV positive patients was carried out in 2000 and continued between February 2004 and May 2008. All patients requiring implant surgery in the study period were tested for HIV, and a CD4 count was done in HIV+ve patients. The HIV-ve patients formed a control group. Preoperatively patients were assigned a risk category depending on the condition of the soft tissues. Risk category 0 implied intact soft tissues, whereas risk category 1 included patients with open fractures or other associated wounds in the injured limb. Wounds were assessed by a single observer, who was blind to the HIV status, at 2 weeks and 6 weeks using the ASEPSIS score.

The overall infection rate was 8.6% in HIV+ve patients compared with 7.4% in the HIV-ve control group. In HIV+ve patients with intact soft tissues the infection rate was 5%, rising to 30% in risk category 1. In HIV-ve patients the rates were 6% and 15%. HIV+ve patients with wound infections were more likely to require surgical intervention for the infection and more likely to have a persistent, chronic infection. The majority of infections in both groups were caused by staphylococcus aureus. We conclude that implant surgery in HIV+ve patients with a clean surgical site is safe.

In HIV+ve patients with preoperative contamination in the injured limb and a higher risk of infection, implant surgery is probably still indicated although there is a significant chance of developing a chronic infection.

ARE THE RISK FACTORS FOR HYPERTENSION AND TYPE II DIABETES ASSOCIATED WITH AFFLUENCE AND URBANIZATION?

M. Alufandika, J. Msolola, C. Chiweza
Year IV MBBS students, College of Medicine

Introduction

Diseases of affluence are those thought to result from increasing wealth and ease of life. Hypertension and type II diabetes are regarded as such. However with the rise in the prevalence of hypertension and type II diabetes in developing countries, the 'diseases of affluence' paradigm was questioned. This only pointed out that economic-epidemiologic patterns are more complex than the 'diseases of affluence' paradigm would suggest.

Methods

A cross-sectional study was done in Blantyre and Mulanje, in three hospitals with a total sample size of 153, to assess the prevalence of risk factors for hypertension and type II diabetes and to find out if they are associated with urbanisation and affluence. This included inquiry about lifestyle risk factors and conducting measurements of blood pressure, total blood cholesterol, random blood glucose and height and weight (for Body Mass Index).

Results
The results showed that most of the risk factors that were assessed were associated with neither urbanisation, increase in income nor affluence. Increased BMI and low levels of physical activity were the only risk factors associated with urbanisation and increasing socio-economic status.

Conclusion
Not only affluence that affects the distribution of hypertension and diabetes and their risk factors these disease should therefore not be considered as merely 'diseases of affluence'.

FACTORS AND COMORBIDITIES AFFECTING OUTCOME IN PATIENTS WITH NEPHROBLASTOMA (WILMS TUMOUR) AT QECH

C. Dziko, E. Mwabutwa
Year IV MBBS students, College of Medicine

Introduction
Wilms tumour is one of the common renal childhood malignancies. Studies have shown a dismal outcome of patients treated for Wilms tumour in Malawi and other developing countries in comparison with developed countries despite the implementation of the SIOP management protocols. This study retrospectively described the factors and outcomes affecting patients admitted with Wilms tumour from the period of January 2007 to May2010.

Methods
Case files for all patients admitted with Wilms tumour in the study period were analysed for demographic details and presenting features; investigational findings(full blood count, ultrasound, chest radiography, anthropometry, urine and stool microscopy, fine needle aspiration and histology results); infectious co-morbidities and chemotherapy and surgical management details.

Results
A total of 63 patient's case files were reviewed. There was a correlation between longer duration of history before presentation and older age group which also had lower tumour volumes. On nutritional status 46% were stunted, 23% were underweight and 8% were wasted. Anaemia was found in 92% of the population. Poor nutrition status and anaemia were contributory factors to preoperative morbidity. A majority had large tumour volumes, large tumour weights and advanced stage of disease (Stage II and III). Recurrence rate was 17% in this period, of which most had a poor outcome. Malaria and pneumonia were the most common infectious co-morbidities and these were associated with poor outcome (death).There were 14 deaths in total.
The poor outcome in this group of patients could be due to interplay between late presentation, advanced stage of disease, anaemia and poor nutritional status, recurrences and infectious co-morbidities.

RESILIENCE, COPING STRATEGIES AND SENSE OF COHERENCE OF VULNERABLE CHILDREN IN SALIMA

Q. Mwakhwawa, Nomsa Kafumba
Year IV MBBS students, College of Medicine

Introduction
This study assessed resilience, coping strategies and sense of coherence of vulnerable children in Salima.

Methods
The vulnerable children in this context were orphans and children whose parents were suffering from HIV/AIDS or cancer within the age range of 13-18years. It was both a qualitative and quantitative study. 100 Participants were selected using convenience sampling method in three Traditional Authorities in Salima. One to one interviews were conducted using questionnaires which had both close and open ended questions and grading scales.

Results and Conclusions
The results showed that the vulnerable children lacked basic needs but these problems were more or less the same as those faced by those children who were not vulnerable because extended families helped them and played the role of their parents. Most of the children had healthy coping strategies which helped reduce their problems. The majority of the children were resilient and had a good sense of coherence. However, the types of problems faced, level of resilience and coping strategies used were different between children living in rural and urban areas. Finally, sex, level of education, category of vulnerability, sense of coherence and resilience did not influence the problems one faced, the coping strategy used and the outcomes that followed.

A CLINICAL PRACTICE AUDIT OF KAPOSI'S SARCOMA CARE AT ZOMBA CENTRAL HOSPITAL AND OPPORTUNITIES FOR QUALITY IMPROVEMENT

P. Nyasulu, P.A. Gross, E. Mwinjiwa, K. Bezanson, B. Assefa, M. van Lettow, A. Chan.

Objectives
To evaluate the clinical care provided at the Kaposi's Sarcoma (KS) clinic at Zomba Central Hospital and identify opportunities for quality improvement initiatives that would meet national guidelines, improve monitoring, conserve resources and ensure the long-term sustainability of the clinic.

Study Methods
160 patients were prospectively followed from March till July 2010. Data were collected for all clinical indications, types of treatment received (i.e. vincristine and/or bleomycin), and major clinical outcomes. Observation of clinic flow, space, data management and staffing was also recorded.

Results
During the 5 months of assessment, a mean of 45 patients (95% CI; 35.2, 56.2) were followed up weekly. An increase in number of patients who received chemotherapy met national

guidelines from 65 % to 79% when emphasis was applied. 5% of patients did not meet the indications throughout the period. The most frequent indication was severe edema, which made up 64% of all indications for chemotherapy. 7% (3/45) were restarted on vincristine weekly, 2 months after stopping treatment following partial resolution of lesions. Data management and clinic flow could be improved.

Conclusions

National guidelines are met for the majority of patients. However, some patients are treated without appropriate indication. Combination therapy could be ideal to reduce recurrence rate but it is not feasible due to cost constraints and regular stock outs. New forms were created to record patient monitoring data for KS treatment and systems were implemented to enhance patient flow, clinic efficiency

Recommendations

The study recommends ongoing data monitoring through regular practice audits, integration with current HIV online databases and creation of a national registry for KS care and outcomes. There should be enhanced coordination with palliative care services and improvement of planning and contingency for drug stock-outs.

INTRODUCTION OF PATIENT IDENTIFICATION GUIDELINES AND IDENTITY WRISTBANDS IN QUEEN ELIZABETH HOSPITAL.

Tom Latham, Olive Malomboza, Loveness Nyirenda, Paul Ashford, Jean Emmanuel, Bridon M'baya, John Chisi, Imelda Bates

Dept of Haematology, CoM

Introduction

Misidentification of patients is an important and preventable cause of morbidity world wide. In Malawi, systems to ensure correct patient identification are limited or non-existent; there is little information about acceptibility or feasibility.

Initial Assesment

34% of hospital staff recalled a misidentification event in the preceding year. <10% of staff described use of patient identifiers other than name when taking blood samples and <2% of laboratory requests included identifiers.

Intervertion

Hospital identification guidelines based on WHO guidelines, introducing identification wristbands, encouraging routine use of an identifier other than name on laboratory requests and bedside identification procedures. Guidelines were introduced by educational materials, workshops and distribution of written materials with regular monitoring over 5 months.

Evaluation

At completion, over 80% of in-patients had wristbands; 55% of crossmatch forms used a second identifer. However only 10% of non-crossmatch forms had a second identifier; use of recommended bedside identification procedures was rarely observed. Lack of time, staffing and unimportance of procedures were quoted reasons for non-compliance. Guidelines were welcomed by both staff and patients; identification wristbands were found useful in difficult identification situations.

Conclusion and Recommendations

Patient identification procedures can be rapidly introduced in a developing world context in a manner acceptable to patients and staff. Tangible tools such as wristbands appeared easier to implement than changing staff practice by education. Increased engagement of patients, use of rejection criteria for inadequate labelling, and generation of further evidence about the prevalence, type and consequences of patient misidentification events are recommended for wider implementation.

WORLD HEALTH ORGANIZATION (WHO) MODELS MEET MALAWIAN REALITIES: APPLICATION OF THE WHO PUBLIC HEALTH MODEL FOR PALLIATIVE CARE TO LOCAL SITUATIONAL ASSESSMENT AND IMPLEMENTATION IN ZOMBA, MALAWI

K.D. Bezanson[1], S. Kabambe[2], M. Machika[2], E. Mwinjiwa[3], P. Nyasulu3, M.J. Zulujere[4], M. Joshua[2], W. Chirambo[4] I. Kambiya[5], L. Thambo[6], J. Bates[7], P. Gross[8]

1. Temmy Latner Centre for Palliative Care, Department of Family and Community Medicine, Division of Palliative Care, University of Toronto, Toronto, Canada
2. Zomba Central Hospital, Zomba, Malawi
3. Dignitas International, Zomba, Malawi
4. Zomba District Health Office, Zomba, Malawi
5. Malawi Ministry of Health and Population, Lilongwe, Malawi
6. Palliative Care Association of Malawi, Lilongwe, Malawi
7. Tiyanjane Clinic, Queen Elizabeth Central Hospital, Blantyre Malawi
8. University of British Columbia, Vancouver, Canada

Objective

The WHO public health model provides a theoretical framework for developing palliative care in resource limited settings. We explore application of the model to assessment, planning, and service delivery in Zomba.

Methods

In May 2009 a situational assessment of palliative care in Zomba District was completed in collaboration with the Palliative Care Association of Malawi, Zomba Central Hospital (ZCH) and District Health Office (DHO). Tools for assessment developed using the WHO model as a framework of inquiry were used to perform audits and interviews. Following on a report, a meeting was held in January 2010 of international, national, and local stakeholders to plan implementation.

Results

While the WHO model's domains accurately highlight key elements for developing new local service delivery, it risks overemphasis on establishing parallel health structures. In a public sector grappling with severe human resource and material constraints we addressed this by focusing on integrating palliative care into two key areas: Kaposi's Sarcoma Management and Discharge Planning / Follow-up. Services in both areas have been established, but struggle with resource limitations at all levels.

Conclusions and Recommendations

1.The WHO Model is a useful framework for local assessment and implementation in resource limited settings.
2.Local initiatives depend on national progress in training, drug supply, implementation, and policy.
3.Integrating palliative care into existing health services, and with community based organizations, are strategies to help address resource constraints. Still, supplementary human and material resources are required to develop new palliative care services in public sector facilities.

RESPONSES OF CAREGIVERS TO CHILDREN UNDER THE AGE OF FIVE WITH FEVER AND LIVING IN AREAS WHERE MALARIA IS ENDEMIC: A SYSTEMATIC REVIEW OF QUALITATIVE STUDIES

J.Chinkhumba[1],A.IChibwana[2],D.P. Mathanga[1]

1 College of Medicine, Malaria Alert Centre, Blantyre
2 Joanna Briggs Institute Evidence Synthesis Group: Malaria Alert Centre.

Objectives

To provide a concise description of caregivers' responses to fever in children under the age of five and identify important factors that influence those responses.

Methods

The review considered English language qualitative studies published between 1997 and 2007 which examined responses of caregivers to fever in children under the age of five and living in malaria endemic countries. The search used various electronic Databases such as Pub Med, Social Sciences Citation Index, Academic search premier, Biomedical central, Direct Open Access Journals, Helsinki, Plos one, Scielo, Astmh, Blackwell Synergy, Elsevier, Oxford journals and popline using the following keywords or terms: "malarial fever", "under five children", responses, "prompt treatment", parents," parental response", "treatment response", fever, malarial, "children under five", caregivers, guardians, "guardian response", parents, factors, malaria, and endemic. This process was complemented by searching Google Scholar and following up expert referrals.

Results

A total of 62 articles relevant to the study were retrieved and 22 papers were included in the study. The rest were excluded because of lack of congruity between philosophical perspective and research methodology; appropriateness between methodology and research question; an agreement between methodology and data analysis; connection between research methodology and interpretation of results among others. The review found that most cases of fevers are managed outside the formal health sector. Responses of caregivers to fever in children under the age of five years are multiple and broadly categorized into two groups: early treatment seekers and late treatment seekers. Within each group, specific actions taken are variable and dynamic and do not lead to prompt and effective antimalarial treatment. In addition, numerous social, cultural and economic factors interact in complex ways and influence caregivers' responses. These ranged from perceptions about disease severity, duration of illness, presence of danger signs and symptoms; transportation; distance to the health facility; facility-based characteristics ; limited access to health services, fear of darkness, absence of family figure head, lack of decision making; strong beliefs in the efficacy of traditional medicine and financial constraints.

Conclusions and Recommendations

The review shows a superfluity of actions and factors influencing health seeking patterns and choices of treatment. Therefore, it is essential to design appropriate, acceptable and effective behavior change communication strategies to promote early and effective treatment of malaria fevers in children under the age of five years.

THE BANJA LA MTSOGOLO COMMUNITY OUTREACH CLINIC INITIATIVE: A CLIENT PROFILE AND SATISFACTION ASSESSMENT

T. Chimenya[1], A. Chipeta-Khonje[2], A. Dasgupta[3]

1 Department of Operations Research, Banja La Mtsogolo, Blantyre, Malawi
2 Department of Operations Research, Banja La Mtsogolo, Blantyre, Malawi
3 Research and Metrics Team, Marie Stopes International, London, UK

Objectives

To assess whether Banja La Mtsogolo (BLM)'s innovative Community Outreach Clinic Initiative (COCI) is working to provide high-quality sexual and reproductive health (SRH) services to poor, underserved and hard-to-reach Malawian communities.

Methods

Trained interviewers administered "exit" questionnaires on 106 clients from 6 randomly selected COCI sites across the country. The questionnaire addressed client profile, service use, client satisfaction and client motivation. Data were analyzed in SPSS 15.0

Results

76.2% of clients were earning below or equal to the average national household income while 93.4% had no formal or just primary education, demonstrating COCI is reaching the poor. 92.0% of clients indicated they were satisfied with COCI services and 97.3% would recommend BLM to a friend. More married women (30.9%) were recommended to BLM by satisfied clients than were single women (12.5%). The majority of clients attended BLM services because facilities were nearby (42%), services/medicines were available (31%) and because of BLM's good reputation (13%).

Conclusion and Recommendation

The study shows the effectiveness of SRH service delivery through COCI as a way of broadening access to modern and high-quality health services among poor and hard-to-reach communities. The client-to-potential client marketing channel has proved effective for outreach services.

GOVERNANCE, ACCESS, EQUITY AND HUMAN RESOURCES FOR HEALTH IN MALAWI HEALTH SECTOR AND ATTAINMENT OF MILLENNIUM DEVELOPMENT GOALS 4, 5 AND 6

Maureen L. Chirwa,and Dixon Jimmy-Gama,

Introduction

Good governance, improved access and equity, adequate and appropriate human resources for health are essential elements of a functioning health system. While the aforementioned are important to effectively tackle alarming infant and maternal morbidity and mortality rates as well as combating HIV and AIDS, their roles in the attainment of MDGs 4, 5 and 6 have not been explored in Malawi. The aim of the study was to identify knowledge and research gaps related to governance, access and equity, and human resources in health system and how they affect the attainment of health-related MDGs in Malawi.

Methods

Using literature review, the study conducted a SWOT analysis of governance, human resources for health, access and equity in Malawi health system. Strengths, weaknesses, opportunities and threats were identified and how these impact on the achievement of MDGs 4, 5 and 6 in Malawi. Stakeholder validation meeting confirmed the findings.

Results

The results revealed several research and knowledge gaps in capacity to participate effectively in the health governance by various stakeholders; ensuring effective measures to promote access and equity of health services; and the production of adequate and appropriate human resources for health.

Conclusion

The review concludes that unless research into understanding these gaps is done, the attainment of MDG 4, 5 and 6 will still remain a challenge in Malawi. The study hence recommends that operational research should be done to explore effective strategies in addressing the gaps. It also recommends that measures to strengthen the health system in the aforementioned themes should be explored.

COMPARATIVE FIELD PERFORMANCE OF FOUR MALARIA RAPID DIAGNOSTIC TESTS AMONG FEBRILE PATIENTS GREATER THAN 5 YEARS OLD IN BLANTYRE.

Jobiba Chinkhumba[1], Jacek Skarbinski[2], Ben Chilima[3], Carl Campbell[2], Victoria Ewing [4], Miguel San Joaquin4, John Sande [5], Doreen Ali[5], Don Mathanga[1,6]

1 Malaria Alert Centre, College of Medicine, Blantyre, Malawi
2 Malaria Branch, Centers for Disease Control and Prevention, Atlanta, GA, USA
3 Community Health Sciences Unit, Ministry of Health, Lilongwe, Malawi
4 Malawi-Liverpool-Wellcome Trust, Blantyre, Malawi
5 National Malaria Control Programme, Ministry of Health, Lilongwe, Malawi
6 Department of Community Health, College of Medicine, Blantyre, Malawi
Key words: Malaria, diagnosis, rapid diagnostic test, health worker performance

Background:

Malaria rapid diagnostics tests (RDTs) can increase availability of laboratory-based diagnosis and improve the overall management of febrile patients in malaria endemic areas. In preparation to scale-up RDTs in health facilities in Malawi, we conducted an evaluation of four RDTs to help guide national-level decision making.

Methods

We conducted a cross sectional study of four histidine rich-protein-type-2- (HRP2) based RDTs at four health centers in Blantyre, Malawi to assess the sensitivity and specificity of RDTs as well as explore operational issues regarding RDT implementation. Light microscopy in a reference laboratory was used as the gold standard.

Results

We included 2,576 patients in our analysis. All of the RDTs tested had relatively high sensitivity for detecting any parasitemia [Bioline SD (97%), First response malaria (92%), Paracheck (91%), ICT diagnostics (90%)], but low specificity [Bioline SD (39%), First response malaria (42%), Paracheck (68%), ICT diagnostics (54%)]. Specificity was significantly lower in patients who self treated with an antimalarial in the previous 2 weeks (odds ratio (OR) 0.5; p-value <0.001), older children 5-15 years old versus adults >15 years old (OR 0.4, p-value <0.001) and when the RDT was performed by a community health worker versus a laboratorian (OR 0.4; p-value <0.001). Health workers correctly prescribed antimalarials for patients with positive RDT results, but disregard negative RDT results with over 50% of patients with a negative RDT result treated with an antimalarial.

Conclusions

RDTs might have high sensitivity buy low specificity under field settings. The results of RDTs are affected by the cadre of health workers performing them. Health workers tend to ignore RDT negative results. A robust quality assurance system and close monitoring of RDT scale-up will be needed to ensure that RDTs effectively improve malaria case management. Results of this evaluation, combined with

other published data, will be used to select RDTs for national scale-up.

AN EXPLORATION OF THE INVOLVEMENT OF PERSONS WITH DISABILITIES IN POVERTY REDUCTION STRATEGIES IN MALAWI

B.O Massah

Centre for Rehabilitation Studies, University of Stellenbosch, Cape Town, South Africa

Objectives
To investigate the extent to which people with disability participate in poverty reduction strategies. To identify factors that facilitate or inhibit the involvement of people with disability in poverty reduction strategy initiatives.
To examine the nature of inclusion of disability in the context of development initiatives in Malawi.

Setting
The study was conducted in the three main cities of Malawi namely; Blantyre, Lilongwe and Mzuzu.

Materials and Methods
Qualitative research methods were used employing a case study design. Data were collected using 3 data collection methods and these are; analysis of documents on disability related issues and government policies, key informant interviews and focus group discussions. A purposive sample of 15 people was selected that participated in key informant interviews. Using these key informants, a snowballing technique was used to identify 30 respondents that participated in 3 focus group discussions, each comprising 10 participants. Interviews were conducted until no new information was elicited. Interviews were tape-recorded and transcribed verbatim. A thematic content analysis was conducted following a systematic process of coding the data and grouping codes into categories and emerging themes.

Results
People with disabilities are excluded in the MGDS consultation process. Disabled people organizations lack human, financial and resource capacity. There is limited knowledge about disability mainstreaming at both policy and grassroots level.

Conclusions and Recommendations
This study has shown that there is need for disability ACT that will be enforceable by law to protect people with disabilities. Although there is a Handicap ACT, Disability Policy and a Special Needs Education Policy there is limited action and implementation plans to improve access to basic services. There is minimal participation of people with disabilities in MGDS consultation meetings during the formation process. Overall, the findings demonstrated that people with disabilities would effectively influence policy if they are educated, organized and knowledgeable about development programs. The process and status of mainstreaming disability is very slow because of society stereotypes and attitudes towards disability issues.

EVALUATION OF USER PERCEPTION ON THE EFFECTIVENESS,EFFICIENCY, SATISFACTION,CHALLENGES AND TRAINING OF ELECTRONIC MEDICAL RECORD SYSTEM IN ART SITES IN MALAWI

M Msukwa [1, 3], M Chirwa[1], B Kumwenda[1], G Douglas[2], S Joukes[2]

1 College of Medicine, University Of Malawi
2 Baobab Health Trust
3 Clinton Health Access Initiative, Malawi

Objectives
To evaluate user perception on the effectiveness, efficiency, satisfaction, challenges and training of electronic medical record system in Malawi.

Methods
This evaluation study used both quantitative and qualitative methods. Data was collected from three districts using EMR in the central region. Quantitative data was analyzed using SPSS while qualitative data analysis was interpretive and iterative.

Results
94% indicated that the EMR was faster and easy to use compared to paper based records and that patient waiting has greatly reduced due to the introduction of EMR. Quality of care is the extent to which users felt they were able to adequately look after and provide for all the needs of their clients. The findings indicated that 71% (n=22) of participants thought that the quality of care has improved significantly since the introduction of EMR while 26% (n=8) indicated that the quality of care has improved a little, only 3% (n=1) indicated that there was no change in the quality of care.

Conclusions and Recommendations
Users are satisfied and prefer using the EMR. Users feel that quality of care has significantly improved with the introduction of the EMR system and that patient waiting time at the clinic has greatly reduced. A simple and effective electronic medical system can be established and adopted in a developing country.

In the context of competing needs for health resources, the extent to which benefits of EMR system can be maximized and documented from results in these pilot districts might as well be a key factor in attracting further investment in the system.

GENOME-WIDE VARIATION AND A MAP OF DIVERSITY IN PLASMODIUM FALCIPARUM

Harold Ocholla [1, 2, 3] Anja Jensen [3], Mwapatsa Mipando [2], Arantxa Roca-Feltrer [1], Anja Terlouw [5], Dominic Kwiatkowski [4], Jacqui Montgomery [1, 5]

1. Malawi-Liverpool-Wellcome Trust Clinical Research Programme, Blantyre Malawi.
2. College of Medicine, Malawi.
3. University of Copenhagen, Denmark.
4. Wellcome Trust Sanger Institute, WTSI, UK.
5. University of Liverpool, UK

Genetic variation allows P. falciparum to overcome chemotherapeutic agents, vaccines and vector control strategies and remains a leading cause of global morbidity and mortality. To this end, knowledge of the host and P. falciparum biology is crucial in understanding the parasite's extraordinary ability to cause disease. Using whole genome longitudinal analyses of genetic variation, leveraging cutting edge genome technologies (Solexa/Illumina), we aim to search the P.falciparum genome for alleles that could potentially affect disease progression in the malaria-endemic Chikwawa district of Malawi. Our goal is to use natural genetic diversity to discover molecular mechanisms of such phenotypes as virulence and drug resistance during and after strong selective pressures such as drugs (after a roll out of Artemisinin Combination Therapy), host immunity, and bed-net usage in this district. We are enrolling children between 6-12 months and following them up for a period of three years, with longitudinal sampling every time they present with clinical malaria. Sequencing will be done at WTSI, UK. These insights will be critical for the control of antimalarial drug resistance, the development of new drugs, and ideally, an effective vaccine against this disease.

USING THEATRE FOR EFFECTIVE HIV/AIDS PREVENTION AND BEHAVIOUR CHANGE: NANZIKAMBE'S COMMUNITY ACTIVATOR PROGRAMME

F. Mmaka[2], E. Robson[1], M. Eveleigh1, M. Kamanga[2], W. LeCordeur1, G. Mbene[2], E. Makepeace[1], M. Mjumira[1], M. Mzumara[1]

1 Nanzikambe Theatre Arts for Development, Blantyre.
2 Formerly with Nanzikambe.

Background
Despite rigorous efforts to diminish the spread of HIV, high transmission continues in Malawi, particularly among young people (15-24 years). Knowledge of prevention and testing procedures is high, but is not being consistently translated into positive behavioural change.

Objectives and Scope
Funded by Malawi BRIDGE (USAID), Nanzikambe (theatre development NGO) set out to equip community-based 'Activators' with skills in interactive theatre-based activities to heighten risk perceptions around HIV/AIDS.

Setting
Communities in 8 districts of Malawi.

Study Methods
The two year initial programme (2007 – 2009) trained, mentored and supported community activators to use community research to engage with lived experience and identify positive change moments then develop accurate and interactive drama engaging large audiences at Community Forum Theatre Festivals.

Results
Forty-eight community-based activators trained with skills facilitated 24 community-based social action drama groups (total membership 360) who developed and produced 624 carefully targeted interactive role-play workshops reaching a total of 156,000 community members.

Conclusions
Trained community activators can address gaps between knowledge and behaviour change by provoking deeper understandings of power structures, habits, attitudes, beliefs and behaviours which hinder and prevent people from transforming knowledge into decisions and actions to reduce spreading HIV.

Recommendations
Community-based activators are effective behavioural change agents to enable communities to 'feel' their way into change via drama on HIV/AIDS. Theatre-based interventions should be incorporated in District Implementation Plans oriented towards the HIV/AIDS prevention agenda by District Assemblies, District Health Management Teams, CBOs, FBOs, Village Health Committees and the like.

IMPACT OF CARE AND SUPPORT RENDERED BY FAMILIES ON SCHIZOPHRENIC PATIENTS FOLLOWING DISCHARGE

A.P. Sefasi, A. Kapinga
Catholic University of Malawi

We recruited patient with schizophrenia four weeks post-discharge from Zomba mental hospital and followed them for six months to find out if care and support had an impact on their staying well and avoid relapse in their local communities.

Objectives
To establish skills and knowledge family members hold to take care of their schizophrenic relative. To identify challenges faced by schizophrenic patients following discharge. To outline the challenges family members face in taking care of schizophrenic relatives at home. To establish possible recommendations for post-discharge care for schizophrenic patients.

Study methods and results
This study was carried out in Zomba city and areas surrounding Zomba mental hospital. We used both quantitative and qualitative approach to research; simple random sampling was used to get a sample of 70 participants in this study. In-depth interviews were used to collect data from discharged schizophrenic patients while focus group discussion was used to get views of family members and

nurses who take part in provision of care and support. Our hypothesis was that support and care would be positively associated with good recovery and reduced relapse rate among schizophrenic patients.

Conclusions

Our findings indicate that where patients following discharge face good support and care from family members the rate of relapse becomes low and patients also live a more productive life in the society. However, 31% of family members felt they had no knowledge as how to handle their sick relative at home hence they were still unsure on what to do to help. Stigma came out clearly as dependent factor on whether the patient will be welcomed or not at home. Long distance to Zomba mental hospital and lack of community mental health programmes donot help matters as well.

Recommendations.

We recommend full-fledged study to be carried out and also a need to intensify community mental health programmes in order to equip guardians with necessary knowledge which will in the long run reduce re-admissions and hence congestion at Zomba mental hospital.

A POPULATION BASED COHORT STUDY OF MORTALITY, MORBIDITY AND DEVELOPMENTAL OUTCOMES FOR PREMATURE INFANTS BORN IN RURAL MALAWI.

M. Gladstone[1], S. White[2,3], G.Kafulafula[4]†, J. Neilson[5], N.R van den Broek[6]

1 Department of Paediatrics, College of Medicine, Blantyre, Malawi.
2 Malawi-Liverpool-Wellcome Trust Clinical Research Programme, College of Medicine, University of Malawi, Malawi
3 Department of Public Health, College of Medicine, University of Malawi, Blantyre, Malawi
4 Department of Obstetrics & Gynaecology, College of Medicine, University of Malawi, Blantyre, Malawi.
5 School of Reproductive and Developmental Medicine, University of Liverpool, Liverpool, UK
6 Liverpool School of Tropical Medicine, Pembroke Place, Liverpool, UK

Objectives

To compare survival, morbidity, growth and development of premature (post- neonatal infants born prematurely) with infants born at term.

Study Methods

A population based cohort study of post neonatal infants. Gestational age was based on ultrasound measurement in early pregnancy. 247 infants born before 37 weeks and 594 term infants were assessed at 12, 18 or 24 months. Outcomes assessed included survival, morbidity (reported by carer, admission or out-patient attendance and reasons for this), growth (weight and height measurements) and development (Ten Question Questionnaire and Malawi Developmental Assessment Tool).

Results

Premature infants were at significantly greater risk of death (Hazard ratio 1.79 (1.09-2.95)) than term infants. Visits to health centres for care (93%), immunisations (98.5%) and weighing (84.7%), and admissions to hospital (22% overall) did not differ significantly for premature and term infants. Surviving premature infants had significantly lower weight for corrected age Z scores ($p<0.05$) at each age compared with term-born infants. Preterm infants were significantly more likely to score positively on the Ten Question Questionnaire ($p=0.002$) as well as failing on the MDAT at 18 months ($p=0.011$).

Conclusions and Recommendations

Current international focus has been on interventions to address the high burden of neonatal mortality in the immediate newborn period. A renewed interest in the post-neonatal period is needed, particularly with children born prematurely who have reduced chances of survival and who demonstrate delays in growth and development.

EFFECTIVENESS OF A CHOLERA INTERVENTION IN LAKE CHILWA

A.Khonje[1], E.Diggle[1], T.Corbet[2], A.Akesson[2], L.Trivino-Duran[1], M.Mulodzowa[3], L.Ngwira[2], S.Labana[1], P.Kambilinya[2]

1 Médecins Sans Frontières Belgium (MSF-B), Thyolo, Malawi
2 Médecins Sans Frontières Belgium, Blantyre, Malawi
3 Ministry of Health, Machinga

Background

From the start of the dry season to January 2010, 637 cholera cases were recorded in Machinga district. The majority were fisherman from Lake Chilwa. Further cases were recorded from December 2009 in Zomba, Phalombe and Mozambique side of the lake. Effective health-intervention measures were needed, to prevent increased mortality and morbidity.

Objectives

Describing lessons learned during the January to March 2010 cholera intervention.

Methods

Ministry of Health (MoH) and MSF-B conducted a rapid assessment of behavioural practices of the floating households distinctive to the lake. Lack of access to clean water due to infrastructure, logistics and lack of health education was key to the outbreak. With the assistance of MoH, volunteers and traditional leaders, MSF chose to address the water issue. Additionally MSF supplied drugs and medical equipment, supported case management, and improved health structures.

Results

MSF distributed jerry-cans, buckets and filter-cloths to ensure access to safe water for at least 2 months to 4000 fishermen, as well as Oral Rehydration Sachets and soap. PUR water purification sachets together with explanatory posters were dispersed, as PUR is more effective than chlorine solution. After the intervention there was a dramatic reduction in the number of cholera cases in all areas surrounding the lake.

Conclusions

Enabling access to clean water reduces cholera transmission: unfortunately there are erratic treatment and supply mechanisms in and around the lake. Due to the complexities of the adverse living conditions, as well as inadequate educational materials, there are minimal health promotional

activities. Additionally case management is problematic due to distance to mainland health structures.

Recommendations

Further research into the epidemiology of cholera in Lake Chilwa. Improved communication, materials, strategies and preparation for cholera. Additional investigation into effective treatment for the water. Finally, there is an urgent need to increase teamwork amongst districts and stakeholders.

CAN PEER MOTHERS REDUCE POOR ADHERENCE IN PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV (PMTCT) PROGRAMS?

A.Mateyu[1], D.Nkulaze[2], S.Scheffer[1], K.Hermann[3], E.Diggle[1], A.Akesson[4], A. Likaka[2]

1 Médecins Sans Frontières Belgium (MSF-B), Thyolo, Malawi
2 Ministry of Health, Thyolo District Hospital, Malawi
3 Institute for Tropical Medicine, Antwerp, Belgium
4 Médecins Sans Frontières Belgium, Blantyre, Malawi

Objectives

Using peer-support to increase PMTCT adherence in low resource settings.

Study Methods

In 2009, the Ministry of Health (MoH) and MSF-B decided to implement a peer-support program in the existing PMTCT program. Twenty former PMTCT women with strong communication skills were recruited on a full time salaried basis, after having two weeks of training. They are now being supported with weekly supervision and monthly meetings by MoH and MSF supervisors. The peer-mothers counsel pregnant and lactating mothers after HIV-Testing and Counseling. HIV-negative mothers are counseled in re-testing, breastfeeding and family planning, HIV-positive mothers receive ongoing individual and/or couple guidance, and are invited to attend support groups. The mother is supported until the baby is at least 12 months old, including home visits if necessary.

Results

We estimate we need minimum 1 peer-mother per 40 HIV-positive women per year. During the first 8 months of this program, the 20 peer-support-mothers working in 5 sites, have peer-supported 753 HIV-negative women and 542 HIV-positive mothers. Of these, 432 mothers have joined support groups.

Conclusions

To date, the implementation of the program has run smoothly. One year after starting we will evaluate the program outcomes e.g. effects on adherence to PMTCT, then we will look at the possibility of district-wide scale-up with MSF support. The final step will be to consider if there is potential for a national program.

Recommendations

There is an urgent need to invest more in peer-based-intervention and operational research to develop alternative models for PMTCT, since the "classic" (nurse/facility based) intervention shows poor adherence to a long and complicated program.

HOSPITAL BASED PALLIATIVE CARE AT QUEEN ELIZABETH CENTRAL HOSPITAL; A SIX MONTH REVIEW OF IN-PATIENTS

J.Tapsfield[1], M.J. Bates[1]

1.Tiyanjane Clinic, Department of Medicine, Queen Elizabeth Central Hospital, Blantyre, Malawi

Background and objectives

The World Health Organisation recognises the importance of palliative care in an African setting1. Despite this services are often patchy and inconsistent2. Tiyanjane clinic has been providing hospital and community palliative care to patients from Blantyre and surrounding areas since 2003, caring for patients with cancer, HIV and non-cancer palliative diagnoses. This study aims to provide insight into this palliative population.

Methods

A retrospective review of case notes for in-patients seen by Tiyanjane over a six month period (April – Sept 2009) was undertaken. A total of 177 patients were seen, case notes were available for 137 (77%).

Results

58% of patients were male, 42% female. The average age of patients was 40.9 years (range 15-92 years). 54% of patients were HIV positive, with 42% on ARV drugs at the time of care. 42% of patients had HIV related diagnoses, including HIV related cancers, 48% had non HIV related cancers and 10% had other palliative diagnoses. The average age of patients with HIV related diagnoses was 33.5 years, compared with 48 years in cancer patients. Pain was the most commonly reported symptom (74%), with 56% of patients requiring oral morphine. The average daily dose of morphine was 30mg/day (range 9-100mg). 65% of patients were discharged home, 26% of patients died during admission.

Conclusions and Recommendations

Palliative care is an essential part of the package of care for people with advanced incurable diagnoses in low resource settings. HIV and cancer are the main diagnostic groups. Pain is the most commonly reported symptom; health workers require access to and knowledge of oral morphine medication.

NEEDS ASSESSMENT FOR THE INTRODUCTION OF INTERCALATED DEGREES IN THE COLLEGE OF MEDICINE OF THE UNIVERSITY OF MALAWI.

N. Mkandawire[1], C. Kollias[2], M. Mipando[1]

1 University of Malawi, College of Medicine, Blantyre, Malawi.
2 University of Calgary, Calgary, Alberta, Canada

Objectives

Malawi has a critical shortage of medical graduates, researchers and academics. The College Of Medicine, together with affiliated research units which include Malawi-Liverpool-Wellcome Trust; Johns Hopkins Project, Malaria Alert Centre and Blantyre Malaria Project has potential to

offer intercalated Bachelor of Science Honours degrees by adding an extra year during the undergraduate medical programme. Such degrees might encourage careers in health sciences education and research. The main objectives were to assess medical students' interest in undertaking intercalated degrees and the capacity of the College of Medicine and affiliated research units to offer the degrees.

Setting

University of Malawi College of Medicine and affiliated research units: Malawi-Liverpool-Wellcome Trust; Johns Hopkins Project, Malaria Alert Centre and Blantyre Malaria Project

Materials and Methods

An electronic survey evaluating student and faculty views was distributed to all undergraduate medical students and faculty of the College of Medicine and affiliated research units. The survey was anonymous and constructed de novo by a stringent process including Item Generation, Item reduction, Survey composition, Pre-testing, Assessment of Validity by a recognized survey expert, Pilot testing in online format by several Malawian medical students, and then formal survey testing.

Results

77 out of 250 students (31%) and 46 out of 100 faculty (46%) responded. Proportions of students in relation to year of study for years 1 to 5 were 25%, 22%, 16%, 29% and 8% respectively. Among the student respondents 85% were in favour of introducing intercalated degrees believing this would encourage pursuit of careers in medical academics and research; 67% would consider doing a degree with 34% (26 students) very strongly in agreement. The choice study areas were histopathology (33%), anatomy (21%), physiology (14%) and microbiology (14%). Of the faculty respondents, 85% agreed that College of Medicine should introduce the degrees believing this would build research and human resource capacity. 30% and 50% felt the college had adequate non-human and human resources, respectively, to offer degrees. 24 intercalated degrees places could be offered annually in various areas. 26 students were very keenly interested in doing an intercalated degree, matching well with the 24 slots that can potentially be offered annually.

Conclusions and Recommendations

There is strong enthusiasm among students and faculty for intercalated degrees. Although limited human and non human resources are a major challenge, faculty are keen to start the programmes and plans are underway to develop curricula.