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Kenya Obstetrical & Gynaecological Society 2017 Annual Scientific Conference Abstracts

Contents

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Editorial: The value of publishing KOGS Annual Scientific Conference proceedings.

Welcome to the inaugural Kenya Obstetrical and Gynaecological Society (KOGS) Annual Scientific Conference supplement issue. For over fifty years, significant international effort has been exerted to ensure that previous conference proceedings spanning over the last three centuries three centuries can be immortalized and freely accessed[1]. Despite a current long-standing international debate about the validity of publishing the proceedings of a conference[2], the KOGS editorial board is in agreement with the current majority perspective that the publication of an abstract as part of conference proceedings does not preclude the later written dissemination of a full manuscript[2]. This decision to utilize this avenue was arrived at because: the content presented during the conferences is already peer-reviewed; documente conference proceedings provide evidence of potential innovations[3]; and anecdotal observation reveals that over half of the content presented orally fails to attain written dissemination. The significance of this is avenue of dissemination is further underscored by the fact that the relative contribution of conference proceedings to citations across various fields varies widely, but can reach up to twenty percent[4]. The ultimate consequence of this local trend is loss of the opportunity for innovative ground-breaking research to have the opportunity to translate into policy impacting practice. Our editorial team has the collective intent of ensuring open access to this content both locally and internationally in the hope of reversing this adverse trend. The thematic categorization of the abstracts is intended to enhance the ease and objectivity of open access, and full manuscripts from the same are invited for written dissemination in later issues.

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FETOMATERNAL MEDICINE

ESTABLISHING FETAL MEDICINE SERVICES IN A LOW RESOURCE COUNTRY: LESSONS LEARNT IN 2 YEARS

Wanyonyi S

Introduction: Fetal medicine services includes screening and diagnosis of chromosomal and structural abnormalities, fetal therapies, decisions on delivery options and postnatal care within a multidisciplinary framework. Structured fetal medicine services exist in few select hospitals in Kenya.

Methodology: In 2015, fetal medicine services were introduced at the Aga Khan University Hospital (AKUH) as part of the wider obstetrics services. This includes having a focal lead to oversee high risk pregnancies and advise on prenatal interventions; both diagnostic and therapeutic.

Results: To date over 1800 women have been attended to within this framework. A total of 48 amniocenteses, 10 chorionic villus sampling, 3 thoracocenteses and 2 intrauterine transfusions were performed. A total of 1200 advanced obstetric scan have been performed, the main indication being fetal growth abnormalities (60%), confirmation of fetal anomalies (25%), monochorionic diamniotic twin gestation (5%), Others (10%). Challenges faced include; insufficient numbers of trained personnel, lack of structured referral systems, late patient bookings, strong cultural and religious influence and lack of supportive laboratory and genetic services.

Conclusion: There is need for professional recognition on the existence of the fetal medicine services and other subspecialist services and establishment of proper referral channels to improve patient care. There is plenty of opportunity locally for up scaling of fetal medicine services.

SAFETY OF A CONDOM UTERINE BALLOON TAMPONADE (ESM-UBT) DEVICE FOR USE IN UNCONTROLLED POSTPARTUM HEMORRHAGE

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Introduction: Post-Partum Hemorrhage (PPH) is the top direct cause of maternal mortality globally. There is a dire need for development and introduction of low-cost, high-impact technologies that can reduce the risk of PPH-related mortality.

Objective: To evaluate the safety of an ultra-low-cost uterine balloon tamponade package (ESM-UBT) for facility-based management of uncontrolled postpartum hemorrhage (PPH) in Kenya and Sierra Leone.

Methods: Data were collected on complications/adverse events in all women who had an ESMUBT device placed among 482 facilities in Sierra Leone and Kenya, between September 2012 and December 2015, as part of a multi-country study. Three maternal health investigators analyzed each complication/adverse event for a potential causal relationship associated with use of the ESM-UBT device, including death, hysterectomy, uterine rupture, perineal or cervical injury, infections and latex allergy.

Results: Of the 201 women treated with an ESM-UBT device in Kenya and Sierra Leone, 189 (94.0%) survived. Six-week or longer follow-up was obtained in 156 of the 189 (82.5%). A causal relationship between the use of an ESM-UBT device could not be conclusively excluded with one death, three perineal injuries and one case of mild endometritis.

Conclusion: The ESM-UBT device appears safe for use in women with uncontrolled PPH.

TRANSLATING RESEARCH INTO ACTION: THE UTERINE BALLOON TAMPONADE (UBT) JOURNEY IN KENYA

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Introduction: Uterine Balloon Tamponade (UBT) is recommended in the World Health Organization (WHO) guidelines for treatment of post-partum hemorrhage (PPH). However few studies document effectiveness of UBT in resource-limited settings. In 2013, KMET in partnership with the Ministry of Health and Massachusetts General Hospital (MGH) introduced a simple, effective and low-cost UBT package called Every Second Matters

for Mothers and Babies – UBT (ESM-UBTTM) with the aim of documenting the safety and efficacy in resource limited settings.

Objective: This paper documents KMET's journey towards introducing ESM-UBTTM in Kenya and the effort in using local evidence to influence clinical practice on PPH management.

Methodology: During the study period (2013-2015), following stakeholder engagement, obtaining relevant local government support and ethical approval, county health management teams were sensitized and pilot facilities were identified. After training trainers and providers, the ESM-UBT was piloted. Data were collected and analyzed.

Results: Awareness of availability of ESM-UBTTM as a complementary method to PPH treatment options in Kenya was created, with increased commitment among key stakeholders to generate evidence for guideline and policy development to influencing practice in the pilot counties.

Conclusion and Recommendations: Continuous stakeholder engagement; rigorous data collection and feedback; advocacy; and regular reviews are key for translating evidence into practice. Successful translation will be achieved with the integration of ESM-UBTTM into national training, procurement and data collection policies.

CONTRIBUTION BY OBSTETRIC HEMORRHAGE TO KENYA'S MATERNAL MORTALITY IN 2014

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Introduction: Obstetric hemorrhage remains the top cause of maternal mortality globally, despite being the most preventable.

Objective: The demographic characteristics, regional distribution, types of obstetric hemorrhage, period of death and optimality of care of women who died of obstetric hemorrhage in Kenya in the year 2014.

Materials and methods: Confidential inquiry into maternal mortality in Kenya was initiated in 2015. Medical charts were anonymized, with blameless assessment of all maternal mortalities in 2014 in Kenya.

Results: There were 486 maternal mortalities in 2014,194 (39.9%) attributed to obstetric hemorrhage, half of whom, 95 (49%), had postpartum hemorrhage. Most, 104 (53.6%), were referred from Level 3 and 4 hospitals. Highest risk was on weekdays after hours (53.6%) and during weekends (24.7%). The Coast (20.1%) and Rift Valley (17.5%) regions had greatest risk of death while central region (7.7%) had the lowest. Nine of 10 women who died, had received sub-standard care.

Conclusion: Obstetric hemorrhage remains the leading cause of maternal death in Kenya due to sub-optimal care. Improved care will prevent obstetric hemorrhage deaths.

ARE IMMUNE AND COAGULATION MECHANISMS ALTERED IN PRETERM BIRTH OF HIV POSITIVE PATIENTS? OBSERVATIONS FROM STRUCTURE OF PRETERM PLACENTA

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Introduction: Recent data suggest that HIV infection and use of antiretroviral therapy (ART) increase the risk of PTB. However, the potential mechanisms by which HIV and ART may increase the risk of PTB remain unexplored. Thus, we conducted this study to determine if HIV and ART were associated with placental changes that could aggravate an increased risk of PTB.

Objective: To compare the gross and histological features of the placenta amongst HIV infected and uninfected women in Kenya who recently had a PTB.

Methodology: Placentas from 38 HIV-infected and 43 HIV-uninfected women who delivered preterm and 10 term placentas were collected from Kenyatta National Hospital and Pumwani Maternity Hospital. Each placenta was examined grossly and microscopically. Clinical data included maternal and gestational age, recent CD4 count, and status of antiretroviral therapy (ART). These data were correlated with the placental findings and analyzed using SPSS.

Results: HIV infection was significantly associated with thrombosis ($p<0.001$), infarction ($p=0.04$), unusual color of the membranes ($p=0.043$) and reduced placental thickness ($p=0.010$). Preterm placentas were generally associated with immature villi, syncytial knotting, villitis and deciduitis. Findings associated with preterm HIV infected compared to uninfected preterm placentas included massive fibrinoid deposition with villi degeneration, syncytiotrophoblast delamination, increased red cell adhesion to the terminal villi, increased neoangiogenesis, diminished villi surface area and perimeter ($p<0.05$ and $p<0.005$ respectively) and increased terminal villi capillary density.

Conclusion: These results imply that HIV is associated with salient morphological changes in preterm placenta that could potentially exacerbate preterm birth. The unique architectural changes signify altered immunological and or coagulation changes in placentas related to HIV infected and/or ART use putting the pregnancy at greater risk of PTB. Further research to explore these potential mechanisms will help elucidate these pathways, and could lead to interventions to decrease the risk of PTB.

THE PATTERN OF SEVERE MATERNAL AND NEONATAL OUTCOMES AT KENYATTA NATIONAL HOSPITAL, BEFORE AND AFTER THE INTRODUCTION OF FREE MATERNITY SERVICES. A QUASI-EXPERIMENTAL STUDY.

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Introduction: The introduction of free maternity services (FMS) in Kenya at all government facilities, aimed at improving maternal and neonatal health outcomes by increasing access to skilled providers. Utilization of the World Health Organization's near miss concept facilitates assessment of the effect of introduction of FMS on maternal outcomes.

Objective: To compare the difference in the pattern of severe maternal and neonatal outcomes among women managed in Kenyatta National Hospital (KNH), before and after introduction of FMS, on 1st June 2013.

Methodology: A quasi experimental study comparing women admitted from 28 weeks gestation to 6 weeks postpartum was carried out. The difference in incidence of severe maternal and neonatal outcomes before and after FMS was determined using difference of proportions. Association between socio-demographic and clinical factors, as well as severe maternal and neonatal outcomes was determined using the relative risk. A p value of < 0.05 was statistically significant.

Results: A total of 2,541 women were included; 1,264 before FMS, and 1,277 after. 1,202 births 39 were observed prior to FMS and 1,204 after. Maternal mortalities decreased from 22 (1.7 %) to 11 (0.9%) ($p=0.05$). The maternal mortality ratio decreased from 1982 to 962 per 100,000 live births. Maternal near-misses decreased from 57 (4.5 %) to 48 (3.8%), ($p=0.342$). After introduction of FMS, stillbirths born to mothers who died reduced from 6 (27.3%) to 2 (20%), while admissions to the New Born Unit (NBU) increased from 36% to 63.6% ($p= <0.001$). Amongst mothers who experienced a near-miss, stillbirths reduced from 23 (41.1%) to 15 (32.6%) and NBU admissions increased from 12 (21.1%) to 19 (39.6%), ($p=<0.0001$).

Conclusion & Recommendations: Introduction of FMS has resulted in reduction of severe maternal outcomes (SMOs) and stillbirths. Continued prioritization in the management of maternal complications that lead to SMOs is recommended.

TIMING CONSIDERATIONS IN DECISION TO INCISION IN EMERGENCY CESAREAN SECTION

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Introduction: As one of the most commonly performed surgical procedures in SSA and a procedure with proven significant impact to maternal and neonatal health, cesarean section is an important operation to study due to its massive global impact. Current standards call for a 30-minute decision to incision time for emergency cesarean sections (CS). However, there is currently insufficient published data available in the patient and facility based context for decision to incision and impact of any delays to establish a meaningful and clear understanding of whether this is an area where resources should be placed.

Objective: To collect data on the decision to incision time for emergency CS in two high-volume county referral hospitals in Kiambu County, Kenya.

Methodology: This was a cross sectional observational study of 609 women who had emergency CS at the two hospitals from September to December 2015.

Results: Patients at the two hospitals showed very similar pre-operative characteristics. The median age was 26±6 (18, 43) and 26±5 (18, 44) at Hospital A & B respectively, median parity was 1±1 at Hospitals A & B, respectively with a comparable number of antenatal care visits (median=4±1 at both hospitals). There was delayed decision to incision as manifested in the expanded interquartile ranges.

Conclusions and recommendation: The data show that competition for OR facilities may cause delay in the performance of true emergency CS. A larger survey would be required to identify potential impact and harm stemming from these delays for both the mother and the baby.

RISK FACTORS FOR ANEMIA AMONG WOMEN ENROLLING FOR ANTENATAL CARE AT JUBA TEACHING HOSPITAL, SOUTH SUDAN

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Introduction: Anemia during pregnancy is a major contributor to maternal morbidity and mortality, preterm deliveries, low birth weight, fetal growth restriction and infant mortality. In South Sudan, the burden of anemia is presumed to be high, but there is no supportive data. There is therefore a great need for understanding factors that predispose to anemia in pregnancy in order to lay strategies of reduction of disease burden.

Objective: To determine the risk factors for anemia among pregnant women enrolling for antenatal care at Juba.

Methodology: An unmatched case control study of women enrolling for antenatal care at the antenatal clinic at Juba Teaching hospital, South Sudan.

Results: The risk of anemia was reduced in those aged above 24 years (OR 0.28, 95% CI 0.1- 0.75, P value 0.005) and those with Higher level of education was associated with decreased risk of anemia (OR 0.28, 95% CI 0.10-0.78, P value 0.015 for college education). Gestational age more than 13 weeks (OR 2.42, 95% CI 1.10-5.32, P value 0.028) and grand multi-parity (OR 6.84, 95% CI, 2.35-19.89, P value < 0.001) were significantly associated with increased risk of anemia. With regards to diet, 3 or more meals per day (OR 0.17, 95% CI 0.06-0.47, P value 0.001), diet containing liver (OR 0.15, 95% CI 0.08-0.28, P value <0.001) and diet rich in fruits (OR 0.24, 95%CI 0.13-0.43, P value<0.001) significantly reduced risk of anemia. Malaria and hookworm infections significantly increased risk of anemia (OR 7.17, 95% CI 2.66-19.33, P value<0.001 and OR 10.9, 95% CI 2.49-47.7, P value 0.002 respectively).

Conclusion: Age below 24 years, low education, grand multiparity, late enrollment for antenatal care, malaria, hookworm infections, and low socioeconomic status were significantly associated with increased risk of anemia. Adequate, good quality feeding are significantly associated with low risk of anemia.

NEW WHO RECOMMENDATIONS ON ANTENATAL CARE FOR A POSITIVE PREGNANCY EXPERIENCE

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Introduction: At the start of the Sustainable Development Goals (SDGs) era, pregnancy-related preventable morbidity and mortality remains unacceptably high. Antenatal care (ANC) provides a platform for important healthcare functions, including health promotion, screening, diagnosis and disease prevention. By implementing timely and appropriate evidence-based practices, ANC can save lives. ANC also provides the opportunity to communicate with and support women, families and communities at a critical time. In November 2016, WHO released new comprehensive recommendations for routine antenatal care for pregnant women and girls. They highlight that women's positive experiences during ANC and childbirth can create the foundations for healthy motherhood, and complement existing WHO recommendations on management of specific pregnancy-related complications. These recommendations can inform development of health-care policies and clinical protocols.

Objectives: We present the new WHO recommendations on antenatal care, and their implications for provision and quality of antenatal care services in Kenya.

Methodology: The guideline was informed by a systematic review of women's views, which showed that women want a positive pregnancy experience from ANC, and was developed according to WHO standards. Qualitative and quantitative systematic reviews, and the DECIDE evidence-to-action framework, guided development of recommendations by an international group of experts.

Results: The guideline includes 49 recommendations across ANC, including nutrition, maternal and fetal assessment, preventive measures, common physiologic symptoms of pregnancy and health system interventions. WHO now recommends a minimum of eight contacts in the antenatal period, as well as routine use of early ultrasound.

Conclusions: The new WHO ANC recommendations emphasize the importance of good quality care in the antenatal period. National and facility guidelines should be reviewed in light of these, in order to improve the health and well-being of women and their babies and promote a positive pregnancy experience. We acknowledge the WHO Antenatal Care Guideline Development Group.

HEPATIC PATHOLOGY DUE TO FATAL PRE-ECLAMPSIA: AN AUTOPSY CASE SERIES EXPLORING LIKELY CONTRIBUTING FEATURES

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Introduction: In Kenya, approximately 20% of maternal mortalities are due to pre-eclampsia. Among cases of pre-eclampsia, there is a 10-25% mortality rate. In Kenya, the causes of death due to pre-eclampsia are unclear. Hepatic co-morbidities are likely significantly contributors to mortality, particularly those related to HELLP syndrome. Autopsy series are essential in evaluating factors associated with hepatic co-morbidities and the development of strategies for prevention and management.

Materials and Methods: This is an autopsy based series of two cases of pre-eclampsia associated mortality, performed in 2010 and 2015. In these cases, complete diagnostic autopsies were performed, which included detailed histological analysis of organs representing all systems.

Results: The ages of the deceased persons were 26 years and 33 years with pre-delivery diagnoses of pre-eclampsia. Both were delivered via emergency caesarean section under general anaesthesia. Among this, one was delivered at 26 weeks' gestational age, while the other was delivered at 37 weeks' gestational age respectively. Both children had Apgar scores. All cases had good postoperative blood pressure control. Clinical deterioration was observed in the 2nd and 4th post-operative day respectively. Both had deteriorating levels of consciousness and died within a 72-hour duration. At autopsy, the major findings were in the liver, where both cases had massive hepatocyte necrosis. In the first case, there was a diffuse pattern of acute kidney injury. Both cases had cerebral oedema. In both cases, their uteri were well contracted and had no signs of adverse surgical pathology. In both cases, the diagnoses were not identified on clinical assessment.

Conclusion: Fulminant hepatic failure is a life-threatening complication pre-eclampsia. High index of suspicion is required for the diagnosis as routine liver function testing may not be diagnostic. While the causes of this is unclear, general anaesthesia may be a significant risk factor. Further observations and targeted autopsy series are required to establish these risk factors.

SERUM LEVELS OF SELECT MICRONUTRIENTS IN PRIMIGRAVIDA WITH PREECLAMPSIA VERSUS THEIR NORMOTENSIVE COUNTERPARTS: A MATCHED CASE-CONTROL STUDY AT THE KENYATTA NATIONAL HOSPITAL

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Introduction: Preeclampsia is one of the leading causes of maternal morbidity and mortality locally and globally. The status of serum levels micronutrients have been implicated in the pathogenesis of preeclampsia. Currently, only calcium supplementation is recommended for its prevention in low-income settings.

Objective: To investigate the serum levels of select micronutrients (Vitamin D, calcium, zinc, and selenium) in preeclamptic and normotensive primigravidae.

Methodology: A case-control study at the Kenyatta National Hospital of 108 primigravidae with (54) and without (54) preeclampsia, with matching for maternal and gestational age. Following ethical review, administrative approval and informed consent, participants' demographic, obstetric and dietary characteristics were obtained, along with blood samples for micronutrient assessment. Data were analyzed using SPSS Version 20 and relevant tests of statistical significance were applied.

Results: Seventy-two percent of participants were between 20-30 years. 90% had attained at least secondary education. The average gestational age was 35.2±4.4 weeks for cases and 35.4±4.4 weeks for controls. 38.9% of cases had preeclampsia without features of severity. The average systolic and diastolic blood pressure among the cases was 155.7±17.4 and 105 ±10.2 mmHg respectively. Vitamin D deficiency was detected in 31% of the entire study population. Half of the cases were Vitamin D deficient compared to 27% of controls ($p<0.001$). The mean serum vitamin D level amongst cases and controls was 20.8±10.2 ng/ml and 28.6±7.9 ng/ml respectively ($p<0.001$). Serum calcium levels were 2.2±0.3mmol/l for the cases and 2.3±0.09mmol/l for the controls ($p=0.024$). There were no significant associations between Selenium and Zinc with preeclampsia. Most of the controls consumed diets rich in calcium.

Conclusion: Pre-eclamptic women had lower serum levels of calcium and vitamin D, and are less likely to consume specific foods rich in these micronutrients. There was no association between serum levels of selenium and zinc and preeclampsia.

Recommendations: Calcium and vitamin D supplementation are recommended in pregnancy. Nutritional advice should also be offered to encourage deliberate consumption of locally available foods rich in these micronutrients such as milk, natural yoghurt, green vegetables, fish and eggs.

MORPHOLOGIC PATTERN OF PLACENTAE IN HYPERTENSIVE AND NORMOTENSIVE PREGNANT WOMEN DELIVERED IN KENYATTA NATIONAL HOSPITAL

Ogutu F, Oyieke JB, Kosgei RJ, Rogena E

Introduction: Hypertensive disease in pregnancy (HDP) is a known cause of maternal and foetal complications. The global and local burden of HDP is 5-7% of pregnancies. The 2014 confidential inquiry into maternal death in Kenya revealed that 3 out of 20 women die from HDP. There have been no local studies correlating the histological changes in the placenta with HDP.

Objective: To assess the morphological differences in placental pathology between pregnant women with hypertension and their normotensive counterparts who delivered in KNH labor ward in December 2015-April 2016.

Methodology: This was a matched case-control study of 188 patients, 94 with HDP (cases) and 94 normotensive women (controls) at Kenyatta National Hospital labor ward and University of Nairobi Histopathology Research laboratory. Data were collected using a structured questionnaire, anonymized and analyzed using STATA version 12. Relevant tests of significance were applied.

Results: Previous history of hypertension was a significant factor in developing hypertension in the current pregnancy ($p<0.001$). 51.6% of participants with HDP had preeclampsia. The mothers with HDP were more likely to have preterm birth (38.9±2.5g/ 36.5±3.6g). Significantly more cases required Caesarian Section than controls ($p<0.002$). The fetal weight of the cases was lower (2518g±842) relative to controls (3116±590gms). The cases were more likely to require admission to the newborn unit ($p<0.001$). The morphological placental characteristics revealed cases had shorter cords than controls (34.3±11.9cm and 38.9±10.9cm respectively) and significantly lighter placentas (400.6±129g and 487±94.6g respectively). Significant findings in the histological patterns of the placentas of cases were: presence of placental infarctions; subchorionic fibrin; calcifications and presence of hyalinized spots. Clinically, significant associations were noted with a previous history of HDP (OR 26, 95% CI 3.41-201.36), with a higher chance of stillbirth (OR 5.37, 95% CI 0.61-47.01). Neonates of cases had higher newborn unit admissions (OR 5.04, 95% CI 1.95-12.99). With adjusted ORs, the significant histological findings were hyaline deposits (OR 5.85, 95% CI 1.18-28.89) and Sub-chorionic fibrin (OR 3.17, 95% CI 1.29-7.78).

Conclusion: HDP is associated with low placental weight, short umbilical cord, placental infarctions, calcifications and hyalinized spots. There is a need for further studies to correlate these placental changes to fetal outcomes.

A COMPARATIVE STUDY OF TRANSVAGINAL ULTRASOUND SCAN AND DIGITAL VAGINAL EXAMINATION IN PREDICTION OF PRETERM DELIVERY AT 32 TO 36 WEEKS IN KITUI DISTRICT HOSPITAL

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Introduction: Annually, 15million preterm births occur and over 1 million neonates die from prematurity. Preterm births account for 75% of perinatal mortality. Worldwide estimates of preterm births range from 5 to 18%. Early detection of preterm labor may enable the institution of interventions to avert preterm delivery and its associated morbidities.

Objective: To compare trans-vaginal ultrasound scan (TVS) and digital vaginal examination (DVE) in prediction of preterm delivery among women presenting with preterm labour between 32-36 weeks of gestation.

Methodology: This was a prospective comparative study, conducted at the Kitui District Hospital. Study participants were women between 32-36 weeks of gestation presenting with preterm labor. Evaluation was done using DVE and TVS to determine cervical length and dilatation. Participants were followed up until delivery or 37 completed weeks of gestation. The primary outcome was delivery before 37 weeks of gestation.

Results: The positive predictive value (PPV) of a short cervix to predict preterm delivery by TVS was 90.5% while that of DVE was 77.8%. The PPV of a dilated cervix to predict preterm delivery by TVS was 63.3% as compared to that of DVE 77.4%. Prevalence of cervical shortening on DVE was 27/102 26.5% ± 4.3 (95% CI 17.8-35.2). Prevalence of cervical shortening on TVS was 21/102 20.6% ± 4 (95% CI 12.6-28.6). 54.9% had preterm delivery. Both methods had comparable sensitivity in prediction of preterm birth (PTB).

Conclusion: A TVS is a better predictor of preterm birth but DVE is also fairly accurate and quite useful in limited resource settings.

PATTERN OF ACUTE KIDNEY INJURY SECONDARY TO AN OBSTETRIC CAUSE IN THE RENAL UNIT, KENYATTA NATIONAL HOSPITAL: A 5 YEAR RETROSPECTIVE STUDY

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Introduction: Renal disorders secondary to an obstetric cause are on the decline globally due to improvements in treatment of sepsis, shock and hypertensive diseases of pregnancy. However, patients still incur the risk of developing long term sequelae of primary disease, i.e. CKD. Data on proportion of specific causes of AKI in pregnancy and the puerperium have not been adequately analyzed and the picture in terms of prevalence is largely unknown in our set up.

Objective: To retrospectively stratify the causes of AKI secondary to an obstetric cause seen in the renal unit KNH over a retrospective 5 year period.

Methods: This will be a 5 year retrospective cross sectional study. Patients who presented to the renal unit or ICU for dialysis due to an obstetric cause will be analyzed over a time frame of Jan 2010 to Dec 2014. The cause will be tabulated based on diagnosis upon entry to the renal unit. Comparisons will be made between pre-post free maternity care and duration of treatment and cost per patient will be calculated and tabulated. Data collection will be done through a pre designed data collection tool.

EFFECT OF PREOPERATIVE VAGINAL CLEANSING WITH POVIDONE IODINE ON POST-CAESAREAN MATERNAL INFECTIONS AT KENYATTA NATIONAL HOSPITAL; A RANDOMIZED CONTROLLED TRIAL

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Introduction: Sepsis accounts for 11% of maternal mortality. Caesarean section is the single most important factor for postpartum maternal infection. Post-caesarean maternal infection increases costs of treatment, length of hospital stay and maternal morbidity and mortality. Preoperative vaginal cleansing with povidone iodine (PI) before caesarean section may reduce post-caesarean maternal infection.

Objective: To evaluate if preoperative vaginal cleansing with iodine can reduce post-caesarean maternal infection.

Methodology: This was a randomized controlled trial that enrolled 397 pregnant women who underwent caesarean delivery. 201 participants were randomized to the preoperative vaginal cleansing (intervention) arm, while 196 in to the non-preoperative vaginal cleansing arm. All women received postoperative vaginal cleansing with iodine as part of the standard of care. Participants were followed for 2 weeks post-partum for development of endometritis, fever, surgical site infection and overall maternal infection. Relevant tests of significance were applied.

Results: There was a significant difference in the incidence of overall maternal infection among women in the intervention arm, compared to the control arm [7.77% vs. 15.81% respectively, p=0.015]. Sub-group analysis showed a non-significant reduction in post-caesarean endometritis in the intervention arm relative to the control arm [0.97% vs. 3.57%, p=0.089]. Similarly there was no significant difference in post-caesarean fever [p=0.171] and surgical site infection [p=0.186] between the two arms. There was also no statistically significant reduction in post-caesarean endometritis among women in established labor [p=0.446], with ruptured membranes [p=0.108] and emergency caesarean delivery [p=0.093] between the two arms.

Conclusion and recommendations: Preoperative vaginal cleansing with PI reduces the overall maternal infection but not post-caesarean endometritis, fever or surgical site infection. Consistent with the WHO recommendations, preoperative vaginal cleansing with PI should be considered as an intervention for reducing post-caesarean maternal infection in women even if they undergo post-caesarean vaginal toilet with iodine.

LISTERIOSIS IN PREGNANCY: A CASE REPORT

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Introduction: Listeriosis is a rare yet severe bacterial infection caused by *Listeria monocytogenes*, a gram positive, facultative, intracellular rod. It is a foodborne disease that is spread through ready-to-eat foods, meat and dairy products. It causes significant morbidity in the high risk population including pregnant women, neonates, the immunocompromised and geriatrics, with a case fatality rate of 20-30%. In pregnancy, listeriosis can result in miscarriage, stillbirth, preterm birth, maternal and neonatal sepsis, gastroenteritis and invasive disease e.g meningitis. The incidence of listeriosis is highest in the third trimester, however, the disease has poorer prognosis in the first trimester. A high index of suspicion and cultures are required to make accurate diagnosis and offer appropriate treatment to curb the devastating consequences of the disease.

Case Report: A primigravida presented with an acute febrile illness and inevitable miscarriage of a dichorionic diamniotic twin gestation at 20 weeks. Blood culture grew *Listeria monocytogenes*. Though appropriately managed, the pregnancy was lost. After follow-up, she is currently a healthy gravida 2 at 35 weeks gestation.

Conclusion: Listeriosis is a severe infectious illness with devastating consequences in pregnancy. There are no pathognomonic symptoms and signs, hence high index of suspicion and cultures are essential for appropriate care to avert morbidities and mortalities.

ADOLESCENT HEALTH AND SEXUALITY

SIGNIFICANCE OF OPTIMAL CLINICAL HIV/AIDS PREVENTION WITH POSITIVES (PWP) STI SCREENING AND COUNSELLING AMONG ADOLESCENTS AND YOUTHS AGED 16-25YEARS: PATIENT SELF-INITIATIVE SUSTAINABILITY APPROACH

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Introduction: Clinical HIV/AIDS PWP can provide adolescents and youths living with HIV better SRH choices enhancing STI screening coverage every clinical visit. Endemic transmission of STIs and HIV persists despite increasing reliance on biomedical intervention for control. Level of risk of acquisition and transmission remains extremely heterogeneous across and within different sub populations and remains driven by risk environments and the distribution of risk behaviors, as well as by the effectiveness of biomedical interventions.

Objective: To examine the significance and predictors of clinical HIV/AIDS PWP STI screening and counselling on SRH in adolescents and youths.

Methodology: Retrospective chart reviews were conducted in 11 supported sites. STI screening was performed every clinic day and information entered in CPAD. The core interventions included: sexual and reproductive health information sharing during health talks and psychosocial groups, STI screening and management, provision of dual contraceptive methods to sexually active or emancipated minors, adolescent and youth friendly counselling. A sample of 215 adolescents/ youths aged between 1 6-25 years were included in the study. These are adolescent initiated on HAART between January 2012 to August 2016 and were enrolled Psychosocial support Groups. 5 mentally challenged adolescents were excluded from the study.

Results: Among 215 adolescent clients on antiretroviral therapy, 7 females had an STI (4.3%; 164) during one of their clinical visits as compared to 3 male patients (5.8%; 51). STI was witnessed in slightly older adolescents (female mean 19.3 years versus male mean 24.2 years, $p<0.001$). 14 sexually active accepted dual contraceptive methods, 8.5% (14) female adolescents. STI incidence rate among adolescents supported on ART was 4.6% for five years (2012-2016).

Conclusion & Recommendations: Provision of STI screening in HIV clinical setting is feasible. Offering adolescent STI friendly services in HIV primary care settings increases screening coverage and the likelihood of detecting STI among adolescents. The acceptability of this screening approach in HIV primary care settings was very high with a coverage of 98%. Based on these findings, health talks, psychosocial groups impacted on seamlessly high coverage.

ETHICS IN PEDIATRIC GYNECOLOGY

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Introduction: Gynecological Pediatric ethics is increasingly becoming an area of concern particularly in low income countries where cultural practices of early sexual debut and marriages; teenage pregnancies; illiteracy; child labor; GBV and malignancies are occurring. Pediatric Ethics includes virtues such as beneficence, non-maleficence, autonomy, confidentiality, justice, dignity, truthfulness, honesty and what are their rights and who makes their decisions.

Objective: To perform a desk review of ethics in pediatric gynecology

Methodology: In reviewing the Kenyan IVF Bill elements and in management of oncological cases in pediatric aspects related to ethics emerged. Search in the various evidence based libraries such as PubMed, Medline and Cochrane; review of various global constitutions, published and grey literature were reviewed.

Results: Ethical considerations were found around informed consent, parental permission or assent; confidentiality/ privacy; quality of life versus euthanasia, their participation in decision making and disclosure. Sociocultural ills such as FGM/C, child labor, trafficking, forced sex trading. Immunization practices; fertility control; initiation and content sharing in sex education also raised ethical issues. In ART, ethical issues revolved

around, embryo transfers and cryopreservation, genetic manipulation testing and therapy; stem cell harvesting, trade in gametes; Genomics and proteomics in human reproduction; gamete storage prior to cancer therapy, human cloning; photography of pediatric condition like intersexes and congenital anomalies; when and who should conduct surgical procedures and techniques and the role of the parent, pediatrician versus the gynecologist.

Conclusion: There is need for communication with legislative, ethical sensitivity by clinicians and regulatory bodies. Patient engagement for decision making must be empathetically interwoven for quality pediatric gynecological care.

CERVICAL–VAGINAL AGENESIS WITH A UNICORNUATE UTERUS: A CASE REPORT AND LITERATURE OVERVIEW.

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Introduction: Mullerian agenesis is a rare condition affecting 1 in 4000 women. Its results from defects in organogenesis and morphogenesis of the internal female organs from the mullerian ducts. This complex condition offers a management dilemma to many clinicians and hence we document a case of MRKH syndrome and undertake a literature review of this rare condition.

Case presentation: A 12 year old African girl presented with cyclical lower abdominal pain not having attained menarche. She had a pelvic scan revealing hematocolpus. She underwent a laparascopy revealing cervical and upper vaginal agenesis with hematosalpinx. She underwent vaginoplasty and subsequent follow up.

Conclusion: Mayer-Rokitansky-Kuster-Hauser syndrome is a rare complex condition that has sporadic occurrence which has no associated genetic defects. Its age at presentation depends on whether the associated malformation is obstructive or not, with most obstructive lesions presenting at childhood and non-obstructive ones presenting incidentally at workup for recurrent miscarriages or delayed conception. Clinical diagnosis may suffice for obstructive lesions but imaging may be required at other times with MRI being the gold standard for imaging. Its management is usually multidisciplinary with psychological counselling being required for most of the patients. Surgery forms the bulk of its treatment and varies from simple procedures to complex and staged surgeries. Good outcomes including term pregnancies have been documented from patients who have undergone surgery.

CONNECTIVE TISSUE DISORDERS AND REPRODUCTIVE HEALTH: A CASE STUDY OF MARFAN'S SYNDROME

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Introduction: Marfan's syndrome (MS), is not directly linked as a causative factor for reproductive health disorders but it is a high-risk obstetric condition with elevated morbidity and mortality. Thus knowledge of the specific reproductive health requirements for a patient with MS is imperative. The patient presented late in life and the diagnosis of MS was incidental and advanced thus only symptomatic treatment could be offered.

Case Presentation: A 32 year old nulliparous, single lady presented to MTRH with symptomatic anemia. She complained of menorrhagia and polymenorrhea since menarche at 18 years. She had associated chest pains and progressively worsening eyesight and speech difficulties all affecting her quality of life. On examination, she was extremely pale with Marfanoid features. Echo revealed an inoperable aortic aneurysm. No structural gynecological pathology was noted. She was reviewed by a multidisciplinary team and received several transfusions, progesterones and cataract repair.

Discussion: MS is a genetic disorder of connective tissue named after Antoine Marfan, a French pediatrician who first described the condition in 1896. It is a single gene defect/ mutation (Autosomal dominant) following the Mendelian pattern of inheritance. The prevalence is 1 in 10000. Preconceptual counseling includes advice on achieving desired family size by a young age. Intrapartum care will include cardiovascular imaging with echocardiography every two to three months to monitor aortic root size and growth. Assisted second stage is preferable. All methods of contraception, except COCs, are permissible.

Conclusion & Recommendation: Awareness of its existence will enable early diagnosis and aid these patients to live to their full potential.

COMMUNITY OBSTACLES TO ADOLESCENT HEALTH SEEKING BEHAVIOUR IN MIGORI SUB-COUNTY

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Introduction: Approximately 13,000 adolescents in Kenya drop out of school every year as a result of unplanned pregnancies. The Jhpiego-led G-Amini project seeks to increase access to sexual reproductive health services by youth in Migori by empowering young men and women with knowledge of health care services and needs, and motivating them to seek sexual reproductive health (SRH) services to ensure a healthier future for themselves.

Objectives: To: identify current perceptions and obstacles to youth seeking SRH services in facilities in Migori Sub-County; understand community perceptions towards youth seeking these SRH services.

Methods: 16 Key Informant Interviews were conducted with community, educational and youth leaders, and facility staff. Five focus group discussions were conducted with the following groups: Unmarried males; Unmarried females 15-24 years; Married males; Married females; Emancipated Females 10-14 years.

Results: There is a functional disconnect between youth and service providers, as confidentiality is often breached because providers are from the same communities, causing youth to avoid seeking SRH services. Mothers sometimes take their daughters to obtain a contraceptive method when they discover the girls are sexually active - often without the fathers' knowledge. Since the local community expects only married women to seek contraceptive services, young unmarried women seeking the same are considered immoral. This contributes to early marriages, deaths from illegal abortion, and suicides due to pregnancy. Youth lack mentors who can provide guidance on life planning.

Recommendations: The following are recommended: Establish communication between youth and healthcare providers; demystify contraceptive use among young people and Identify appropriate mentors to assist youth make the right choices.

REMOVAL OF FOREIGN BODY (IRON NAILS) FROM VAGINA: CASE REPORT AND LITERATURE REVIEW

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Introduction: Foreign objects in vagina are encountered in all age groups. They may have been placed accidentally or intentionally. History and clinical examination are central to diagnosis although imaging may be required. Proper management prevents complications.

Case presentation: A 26 year old para 2+0 presented with a two day history of severe genital pain and bleeding. She denied any history of foreign body insertion, believing that somebody had bewitched her. On insertion of a vaginal speculum, four three-inch-long nails were visualized and retrieved from the vagina. Subsequent pelvic ultrasound was normal, and there was complete and rapid resolution of symptoms with complete recovery.

Discussion: Foreign bodies removed from the vagina could justly fill a museum of curios. They are often self-inserted for various reasons, including desire for contraception, correction of prolapse, masturbation, by mentally deficient persons or as a punitive action. Common complications encountered include trauma, fistula formation, scarring, infection, bowel obstruction and hydronephrosis. Imaging techniques may help establish the diagnosis. The ideal management is removal. Sharp and potentially hazardous objects often require removal under anaesthesia.

Conclusion: Any cases of acute genital pain and bleeding should arouse a strong suspicion of foreign body insertion. Early diagnosis and treatment averts complications.

FAMILY PLANNING AND CONTRACEPTION

INCREASING USE OF THE POSTPARTUM INTRAUTERINE DEVICE IN KENYA: A DESCRIPTIVE ANALYSIS OF DATA FROM DECEMBER 2015 TO NOVEMBER 2016

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Introduction: In June 2013, the Government of Kenya introduced free maternity care in public hospitals which led in an increase of facility based delivery from 44% to 61%. In tandem with this, there was a resurgence of interest in the immediate post-partum family planning methods including intrauterine device (IUD) as an effective long-acting reversible method that could be administered before the women were discharged from hospital. The Kenya Obstetrical and Gynecological Society (KOGS), The International Federation of Gynecology and Obstetrics (FIGO) and Kenya Ministry of Health have participated in the introduction of postpartum IUD (PPIUD) services into postpartum family planning (PPFP) program starting with 6 teaching institutions.

Methodology: Data were collected on the synchronized commcare platform by data collection officers in the field, which enabled the monitoring of all facilities involved in the project. In the last one year, the initiative provided competency-based training in counselling and insertion to a total of 972 health care workers in 6 teaching hospitals with no prior PPIUD capacity. Periodic monitoring and evaluation visits were conducted to support the trained providers.

Results: From December 2015 to November 2016, a total of 50,944 deliveries were conducted in the participating institutions out of which 38,483 (75.5%) women were counseled on available FP methods including PPIUD. A total of 1,243 (3.2%) women gave consent and received the PPIUD whereby 866 insertions were performed in the immediate post-partum/post-delivery period and 387 were inserted at Caesarean section. The expulsion rate was 1% with a total of 11 expulsions after which 4 were reinserted. 36 % of women who received PPIUD were followed up.

Conclusions: PPIUD is an acceptable method and can be promoted by competency based training for counselling and insertion. Continued success of this initiative relies on supportive supervision, and reliable collection of service outcome data. Challenges to scale-up include lack of formal channels for reporting PPIUD service delivery outcomes and inconsistent coordination of services.

CLINICAL MENTORSHIP IN LONG ACTING REVERSIBLE CONTRACEPTION AND POST ABORTION CARE: LESSONS LEARNT FROM CLOSING-THE-GAP PROJECT IN FIVE COUNTIES IN SOUTH WEST KENYA.

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Introduction: Clinical mentorship is a system of practical training and consultation that fosters ongoing professional development of mentees to deliver sustainable high–quality clinical care. Professional development required to create competent care providers is driven by the learning needs of mentees which occurs in face-to-face consultation, as well as through ongoing phone and e-mail consultations.

Methodology: "Closing the Gap: Sexual and Reproductive Health Service Delivery and Advocacy in Southwest Kenya" was a project implemented by Planned Parenthood Global, the international division of Planned Parenthood Federation of America through their engagement of 7 local NGOs within Siaya, Kisumu, Homabay, Kisii and Migori Counties. Implementing partners presented all service providers from their facilities. 12 partners, 120 facilities, 257 Mentees and 60 mentors participated. They underwent several didactic and clinical trainings and a support structure was formed.

Mentors performed on-site mentorship. Following induction, the tools required were discussed and distributed. At least one contact was required per month to address gaps in contraception and abortion care. Mentors summarized monthly reports on activities undertaken which were then verified. Facility assessment, support supervision and review meetings were undertaken.

Discussion: To attain the required competencies, the trainees were expected to perform a number of supervised IUCD insertions and Comprehensive abortion care procedures. This was not achievable during the five days training. Therefore, to "Close the Gap", clinical mentorship was looped in to help service providers achieve the required technical skills. It was a critical to enabling service providers to practice new skills in clinical settings under supervision via on-job training. This enhanced the mentees' capacity for consultation, problem solving, diagnostic and decision-making skills. There was also an

ongoing two-way relationship between the mentor and mentee. This improved service delivery in the counties where it was applied.

Conclusions: Clinical mentorship has high potential to improve care; coordination of clinical mentorship requires third party involvement and close supervision; Involvement of county governments created an enabling environment and clinical mentorship requires involvement of all stakeholders.

POST- PARTUM HUMAN IMMUNODEFICIENCY VIRUS TESTING SERVICES AS AN ENTRY POINT TO POST-PARTUM FAMILY PLANNING: LESSONS FROM MERU TEACHING AND REFERRAL HOSPITAL

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Introduction: The revised HIV Testing and Services (HTS) refers to the full range of services that clients are offered together with HIV testing. HTS targets reaching all post-partum women with HIV testing. PPFP can easily be integrated to post-partum HTS to reduce missed opportunities. Provision of FP following pregnancy is a potentially life-saving intervention. Current estimates show that 63% of Kenyan women in their first year postpartum have an unmet need for FP. Only 19% of postpartum women begin using a FP during the first 6 months postpartum and 36% between 6-12 months postpartum. Meru teaching and referral hospital (MTRH) has rolled out revised guidelines to this life-saving intervention. The approach has been used as an entry point to PPFP.

Methodology: MTRH stationed a trained HTS counsellor at Maternity to counsel all postpartum women. The counselor obtains a list of all parturients delivered in the last 24 hours and offers them HTS. Every client delivering at the facility must be cleared by the counselor prior to discharge. After HTS, the counsellor introduces PPFP to all the Post-Partum women and escorts interested clients to service provider for the services. HTS and PPFP data is aggregated with other facility data.

Results: Out of 1285 women delivered from July to September 2016, 1157 were counseled and tested for HIV. This represents a 90% HIV Testing among post-partum women. Out of these, 150 women received PPIUCD between July and September 2016.

Conclusion: Post-partum HTS presents a great opportunity to introduce PPFP. High Post-Partum HTS can be achieved through appropriate linkages. Sensitizing HTS counselors on PPFP is key to averting missing opportunities for PPFP. Counseling is a key driver in uptake of Postpartum HTS and Family planning services.

THE IMPACT EQUATION: POSTPARTUM FAMILY PLANNING, THE SUPERHIGHWAY TO ACHIEVING KENYA'S VISION 2030

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Introduction: The end of the Millennium Development Goal (MDG) era in 2015 provided the world with valuable and lasting lessons about what needs to be done differently and what can have a major impact in improving child and maternal health in Kenya. Kenya did not meet MDG's 4 and 5. Kenya's Demographic Health Survey 2014-15, report that contraceptive prevalence rate has risen from 46% to 58% in five years while maternal deaths have dropped to 360 from 448 per 100,000 live births during the same period. This means many more women in Kenya have an opportunity to delay a future pregnancy and, with proper counseling, to adopt a family planning method immediately after childbirth, her ability to raise healthy children while taking a healthy break to focus on her economic status boosted. With thousands of women's economic status improved, the national economics equally improves in tandem with Kenya's Vision 2030.

Objective: To discuss the potential benefits of fast, effective and efficient postpartum family planning (PPFP) in eradicating poverty in Kenya.

Discussion: The specific Kenya policy and implementation gains and bottlenecks yet to be covered will be discussed, with the aim of building consensus on the optimization of service delivery to avoid missed opportunities.

IMPROVING ACCESS TO LONG-ACTING REVERSIBLE CONTRACEPTION TO OPTIMIZE MNH OUTCOMES IN KISUMU AND MIGORI COUNTIES IN KENYA

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Introduction: Family planning has been shown to improve health and socioeconomic outcomes. It has the potential to avert at least 40% of maternal deaths and 10% of neonatal deaths. The modern contraceptive prevalence rate in Kenya has risen from 39% in 2008-09 to 53% in 2014. To maintain this momentum, MOH has been coordinating activities by state and non-state actors, to accelerate implementation of high impact FP intervention towards the country's new mCPR goal of 66% by 2030 and achievement of SDGs. Due to their high effectiveness and cost effectiveness, long-acting reversible contraceptive methods are a best buy for the country.

Objective: To identify approaches that best leverage on devolution to improve access to quality LARC services.

Methodology: Over a period of 24 months and under the leadership of the CHMTs in Kisumu and Migori, interventions for demand creation through community mobilization by CHVs and capacity building through mentorship for knowledge and skill transfer; availing equipment and supplies; and supporting interventions for commodity security accompanied by ongoing supportive supervision to improve access to quality FP/LAPM services.

Results: Between October 2013 and October 2016, the proportion of women using LAPM methods increased from 13% to 22% Kisumu and from 8% to 22% in Migori. This was accompanied by a large increase in the combined number of new users of LAPM, from 24,236 in 2013 to 79,769 in the two counties.

Conclusion and Recommendations: Innovative multipronged approaches are bearing fruit in expanding access to quality LARC services under the coordination of county MOH leadership. To propel the country to its 2030 national FP goals, interventions that work need to be scaled up to other counties.

WILL LEVONORGESTEROL-INTRAUTERINE SYSTEM INTRODUCTION IN THE PUBLIC SECTOR IN KENYA BE THE GAME CHANGER IN INCREASING UPTAKE OF INTRAUTERINE DEVICES?

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Introduction: There has been a substantial increase in the modern contraceptive prevalence rate in Kenya among married women – from 32% in 2003 to 53% in 2014. Yet 17.5% of currently married women still have an unmet need for FP (KDHS). Use of IUDs in Kenya is quite low; only 3.4% of married women used IUDs in 2014. Levonorgestrel Intrauterine System (LNG-IUS) is currently only available in the private sector. Maternal and Child Survival Program is supporting the MOH to introduce LNG-IUS in a few public-sector facilities in Kisumu and Migori Counties. LNG-IUS has been procured though donation from the ICA Foundation and is given to clients at no cost. It is provided as an interval and postpartum method.

Objective: To document the introduction of LNG-IUS as a FP method option within a broader strategy to strengthen LARC services at public facilities in Kenya.

Methodology: 18 facilities in Kisumu and 24 facilities in Migori were selected. MCSP is already working in these counties to strengthen FP services. Additional training on LNG-IUS as well as strengthening participating facilities to establish a system whereby LNG-IUS commodities are provided, stocked, managed, tracked, and reordered was done. Clients choosing LNG-IUS after a balanced counselling strategy would receive the method. Close monitoring of the introduction, acceptance and discontinuation rates, and client satisfaction would be conducted.

Results: In October 2016, the LNG-IUS learning resource package was developed. 51 master trainers were developed during a 5-day training followed by 2 weeks of practicum to gain competency. At the 6 practicum sites, 77 women have already received LNG-IUS. This represents 20% of all the IUDs inserted in the Oct-Nov 2016 period.

Conclusion & Recommendations: Preliminary results indicate popularity of the method. No significant

challenges were experienced. Through the mentorship approach, nurses can gain proficiency. Subsequent future steps will include generating evidence on the profile of the adopters, documenting costs associated with the introduction and documenting implementation lessons learned, opportunities and challenges to inform the national scale-up.

TRENDS IN CONTRACEPTIVE IMPLANT UPTAKE AMONG ADOLESCENT GIRLS AND YOUNG WOMEN ATTENDING TUNZA SOCIAL FRANCHISE CLINICS IN KENYA

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Introduction: Whilst the world's population continues to grow, sub-Saharan Africa's continues grow even faster, impacting negatively on socio-economic development and health outcomes. Finding a lasting solution to birth control is therefore urgent, particularly amongst young women. Kenya is one of the countries within the region experiencing uncontrolled growth rates, with both unmet need for contraception and discontinuation among young women significantly contributing to this growth. Offering long-term reversible contraceptive methods may thus be one of the options to increasing contraceptive adherence compared to the short term methods. PS Kenya has recently sought to assess contraceptive uptake among this demography when both long-term and short-term methods of contraception are provided as options.

Objective: To assess trends in contraceptive implant uptake among adolescent girls in and young women attending Tunza Clinics.

Methodology: Data were collected from January to October 2016 through the youth friendly service provision in PS Kenya's Tunza Social Franchise, using a designed tool providing age-disaggregated data on contraceptive uptake.

Results: Whereas consumers (women aged 15-24 years) accessed most of the methods offered, there was a significant increase in the uptake of implants as a method of contraception, from 13% to 26%. The increase was higher in this age category compared to older women and the Kenya Demographic Health Survey's national average.

POST-ABORTION CARE USING MISOPROSTOL BY MIDWIVES OR PHYSICIANS: A FACILITY-BASED STUDY IN KISUMU, KENYA

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Introduction: Although misoprostol is a cost-effective intervention to treat incomplete abortion, services and trained providers are not available in many parts of Africa. We aimed to assess the effectiveness and safety of misoprostol to treat incomplete abortion when administered by midwives compared with physicians, and to investigate the women's acceptability of treatment and contraceptive uptake.

Methodology: This was a multi-center randomized controlled equivalence trial in a low-resource setting in Kenya. From 1 June 2013 to 30 August 2016, women with incomplete abortion in the first trimester were screened for eligibility. Eligible women were randomly allocated for clinical assessment, treatment with misoprostol, and contraceptive counselling by a physician or midwife. The primary outcome was complete abortion not needing surgical intervention within 7–10 days. Secondary outcomes included safety, acceptability, and contraceptive uptake. The primary outcome was analyzed on the per-protocol population with a generalized estimating equation model. The trial was registered at ClinicalTrials.gov, NCT01865136.

Results: Eligible participants were randomly assigned to receive treatment from midwives and physicians. Of these, 409 and 401 women in the midwife and physician groups, respectively, were included in the per-protocol analysis.

The proportion of complete abortion was 94.8% (768/810), 390 (95.4%) in the midwife-group, and 378 (94.3%) in the physician-group. Incomplete abortion was 5.2% (42/810), similarly distributed between midwives and physicians. The model-based risk difference for midwives versus physicians was 1.0% (–4.1 to 2.0). Most women felt safe (97%; 779/799), 93% (748/801) perceived the treatment as expected/easier as expected and uptake of a contraceptive method occurred in 76% (613/810). No serious adverse events were recorded.

Conclusion: Treatment of incomplete abortion with misoprostol when provided by midwives is as effective, safe, and acceptable as when administered by physicians in a low-resource setting. Systematically provided contraceptive counselling in abortion-care is effective to mitigate unmet need for contraception.

TETANUS TOXOID-LINKED FERTILITY REGULATING VACCINES: HISTORY AND CURRENT DEVELOPMENTS

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Introduction: This paper reviews literature regarding the history and latest development of fertility regulating vaccines produced through linking tetanus toxoid with human chorionic gonadotropin, a hormone produced by the fertilized human ovum.

Objective(s): To determine if efficacious tetanus toxoid linked fertility regulating vaccines are available and the potential benefits and concerns.

Methodology: Literature review.

Results: Tremendous progress has been made in the development of tetanus linked fertility regulating vaccines starting with animals studies published as far back as 1976 and 1980 demonstrating production of antibodies sufficient to cause contraception and or abortion in marmoset, baboons and rats. Literature further reveals human trials that by 1997 could induce bio-effective monoclonal antibodies against both Luteinizing hormone releasing hormone and human chorionic gonadogrophin (HCG) that could be 'humanized' and produced cost-effectively in bacteria and plants, thus paving the way for passive use of such antibodies for immunotherapy of cancers and fertility control. By 2011, a novel recombinant anti-hCG vaccine was demonstrated where beta hCG was genetically fused at C-terminal to the beta-subunit of E. coli heat-labile enterotoxin which demonstrates improved immunogenicity. This evoked a very high anti-hCG immune response in 100% of immunized BALB/c mice. This recombinant vaccine would reduce cost as well as facilitate production of a molecularly consistent conjugate on a large scale. However, being provider-controlled, tetanus toxoid-linked fertility regulating vaccines have a high abuse potential and risk of being use in coercive population policies.

Conclusion & Recommendations: Whereas tremendous progress has been made in development of fertility regulating vaccines linked to tetanus toxoid, there exists a risk of abuse during mass immunizations and continued vigilance remains necessary.

GYNAECOLOGY ONCOLOGY

PERIOPERATIVE OUTCOMES OF LOOP ELECTROSURGICAL EXCISION PROCEDURE (LEEP) FOR THE TREATMENT OF PREMALIGNANT CERVICAL LESIONS IN WESTERN KENYA

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Introduction: Loop Electrosurgical Excision Procedure (LEEP) is a surgical procedure used to treat premalignant lesions on the cervix. Its use had increased in the recent past with increased training and availability of equipment. Women in western Kenya typically do not get post-procedure medications and are given a return date of 6 months. There is paucity of local data to support this practice as most of the guidelines are borrowed from western countries.

Objectives: To determine the incidence of Intraoperative and early postoperative complications of LEEP amongst women with premalignant cervical lesions in western Kenya.

Methodology: This was a prospective cohort study of women undergoing LEEP at Academic model for prevention and treatment (AMPATH) treatment clinics. 60 women were recruited. They had a baseline interview before, a self-administered questionnaire to the surgeon after the procedure and follow-up phone call interviews to the woman 3, 14 and 30 days after the procedure. Duration of bleeding and pain were assessed.

Results: During the 11 month period of the study, 61 clients with a mean age 39.94 years, and mean parity of 3.5 were recruited with a 3.2 % loss to follow up. 20 clients were HIV positive (33%). Gynecologists and gynecologic oncologists performed 59.6% of the procedures. Hemostasis was difficult to achieve in 14.7% and requiring either prolonged use of cautery, packing of the vagina or suturing. The mean duration of hemorrhage was 8.55 days. The incidence of post-operative pain was 76.5% (moderate-to-severe 17.7%) with a mean duration of 4 days. 25.5% of the participants had significant pain causing social, physical or emotional effects. Only one client had hemorrhage severe enough to require transfusion.

Conclusion: LEEP is a generally safe procedure with low risk of postoperative complications. Clients should routinely be given analgesics after LEEP and advised that bleeding or spotting may last between a week and a month. There should be further longitudinal studies on the long-term effects of LEEP, especially on sex and fertility outcomes.

POST-LEEP SURVEILLANCE IN HIV-POSITIVE AND HIV-NEGATIVE WOMEN IN WESTERN KENYA

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Introduction: Several studies have suggested that HIV-infected women undergoing excisional treatment for CIN have higher failure rates. Most of these studies were done outside of Africa, were retrospective, and several were prior to the era of highly active antiretroviral therapy (HAART) leaving much to be identified for resource-limited settings with high prevalence.

Objective: To compare outcomes after LEEP for cervical neoplasia and modes of surveillance in HIV-positive and HIV-negative women in Eldoret, Kenya.

Methodology: HIV-positive (n=69) and HIV-negative (n=72) women >18 years presenting post-LEEP for biopsy-confirmed CIN2 or greater were recruited from the cervical cancer screening and treatment clinic at Moi Teaching and Referral Hospital (MTRH). Relevant socio-demographic and medical history was collected. Subjects underwent VIA, Pap smear with subsequent colposcopy/biopsy for ASC-HG or higher.

Results: 17.4% and 13.9 % of HIV-positive and HIV-negative patients developed recurrence of neoplasia (ASCUS-H or higher, CIN1 or higher) after 6 months post-LEEP. For patients with recurrence who underwent colposcopy/biopsy, VIA demonstrated a sensitivity of 37.5% and 20% in HIV-positive and HIV-negative patients respectively, while Pap smear demonstrated 100% and 80%.

Conclusions: In regions lacking consistent cervical cancer screening, HIV-positive women receiving HAART

with good CD4 counts demonstrate comparable risk of treatment failure as HIV-negative women, emphasizing a need for sensitive surveillance in both groups. Despite wider availability and better cost effectiveness, the risks outweigh the benefits for VIA as a post- LEEP treatment surveillance tool for women with high grade lesions. These findings suggest that Pap smears are superior to VIA for post-LEEP follow up in resource limited settings.

AN INTERIM REPORT ON THE AMPATH-ONCOLOGY INSTITUTE: LONGITUDINAL ANALYSIS OF HPV AND CERVICAL CANCER IN KENYAN WOMEN WITH HIV/AIDS

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Introduction: Cervical cancer is the most common malignancy among Kenyan women. Two cohorts of young women were recruited to: define modifiable factors predicting incidence and persistence of HPV and cervical dysplasia in HIV-infected/uninfected women with normal VIA (Project 1); and evaluate the impact of VIA screen and treatment with either cryotherapy or LEEP in HIV-infected/uninfected women with abnormal VIA suggesting cervical dysplasia (Project 2).

Methodology: Women ages 18 to 45 years old were enrolled in a cervical cancer screening clinic in Eldoret, Kenya. Those with normal VIA at enrollment were placed in Project 1. Those with abnormal VIA at baseline or on follow up VIA examinations were placed in Project 2 and were randomized to be treated with either cryotherapy or LEEP. Participants were sampled/ questioned every three months for HPV (Roche Linear Array), other pathogens including GC/CT, and for certain behaviors. VIA is performed annually.

Results: 267 women have been enrolled to date; 27.3% have VIAs indicative of dysplasia. 51.5% and 30.1% of women are HIV-infected in Projects 1 and 2, respectively. Forty-seven LEEPs have been performed and 26 women have been treated by cryotherapy. STI and HPV testing results are pending.

Conclusions: The outcome of these studies will be a better understanding of the natural history of HPV incidence/ prevalence in Kenyan women with and without HIV infection. Potentially modifiable risk factors for cervical cancer will be determined. In addition, knowledge will be gained on the optimal treatment for cervical dysplasia in Kenyan women who are HIV-infected.

NEOADJUVANT CHEMOTHERAPY FOR OPERABLE EARLY CERVICAL CANCER: OUTCOMES AND CHALLENGES SEEN AT THE MOI TEACHING AND REFERRAL HOSPITAL

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Introduction: Cervical cancer is the second most common cancer-affecting women and the leading cause of cancer death in women. Most women present with advanced stages 3 and 4 that are managed by chemo-radiation and palliative measures. Early Cervical cancer is surgically managed but bulky operable cancer present an intraoperative challenge. Neoadjuvant chemotherapy has been used to downstage and downsize stage 2A and 1B2 to ease surgery and achieve cure. Since the initiation of the Moi Gynecologic Oncology Program (MGOP) in 2009, data on cases of cervical cancer management have been prospectively collected and kept in a database and is the subject of this review.

Objective: To describe the use of neoadjuvant single agent cisplatin for bulky operable early cervical cancer, the intraoperative clinical pathological findings/outcomes and need for adjuvant treatment of patients with cervical cancer seen at MTRH.

Methodology: Data was anonymized from MGOP database and patients' clinical charts using structured data collection form. We obtained patients' demographics, clinical presentations, preoperative use of neoadjuvant cisplatin, operability, clinical pathological outcomes and need for adjuvant treatment.

Results: A total of 207 patients with cervical cancer were reviewed out of which 81 were HIV positive. The mean age at diagnosis was 48 years. Neoadjuvant

chemotherapy was given to 153 patients of the stage 1/2A group (207patients) with intent of chemotherapy then surgery. Benefits of cisplatin use included reduction in the vaginal bleeding (128, 83%), vaginal discharge reduction (141, 92%), pain reduction 36/153 (23%) and down-sized tumours (92, 60%). 106(69%) patients underwent surgery, with 81(53%) patients having successful radical hysterectomy and nodal dissection. The radical surgery had a negative margin in 26 (32%) of patients, with nodal positivity of 39 (48%), while 16 (20%) were not stated. 52 (64%) of these patients needed adjuvant treatment.

Conclusions: Neoadjuvant chemotherapy is feasible in our setting and improves the operability of bulky stage 1 or 2A.

EPITHELIAL OVARIAN CANCER AT MTRH: AN INSTITUTIONAL EXPERIENCE - DESCRIPTIVE ANALYSIS OF DATA FROM 2010-2016

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Introduction: Epithelial carcinomas are the most common ovarian cancers and the most lethal gynecological malignancies. In Kenya, information concerning the frequency, pattern and management of ovarian cancer is scant. In the last 6 years since inception, the Gynecologic Oncology program (GOP) at MTRH has provided care to ovarian cancer patients in Western Kenya who in the past were referred to Nairobi and those who couldn't encountered slow and painful deaths at home.

Objective: To describe the patient characteristics, stage at diagnosis, distribution of the histo-pathological types of epithelial ovarian cancers (EOC) and treatment at MTRH

Methodology: The data base on EOC cases and files of those treated over the 6 year period since the inception of GOP were reviewed. Patient demographics, FIGO stage at diagnosis, histopathological types and management data were obtained.

Results: A total of 73 patient records were reviewed out of which 8(11%) were HIV positive. The mean age at diagnosis was 53.6 years with a mode parity of 5 and a mean hemoglobin level of 11.9g/dl. Majority of the patients (71%) were from outside Uasin Gishu County. Fifty two (71%) of the patients had Serous EOC, followed by mucinous EOC (14%), endometrioid EOC (5%), Undifferentiated EOC (3%), and others (5%).Only 23 patients were staged, with stage III comprising 49% of the cases, followed by stage I (26%), Stage 4 (17%) and stage 2 (8%). 59 patients (81%) received adjuvant chemotherapy, with over half (63%) receiving Cisplatin/ cyclophosphamide, 19(32%) receiving paclitaxel/ carboplatin and 3(5%) receiving Cisplatin/Paclitaxel. Fourteen (19%) did not receive treatment with one patient declining and 13 failing to turn up for the scheduled chemotherapy.

Conclusions: Serous EOC was the commonest, most being unstaged referrals. Older age, grand-multiparity and advanced FIGO stage characterized the patients seen at MTRH. HIV status was not significant. Cisplatin/ cyclophosphamide was the commonly used regime.

ANALYSIS OF THE PREVALENCE OF HTLV-1 PROVIRAL DNA IN CERVICAL SMEARS AND CARCINOMAS FROM HIV POSITIVE AND NEGATIVE KENYAN WOMEN

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Introduction: The oncogenic retrovirus human T-cell lymphotropic virus type 1 (HTLV-1) is endemic in some countries although its prevalence and relationship with other sexually transmitted infections in Sub-Saharan Africa is largely unknown.

Methodology: A novel endpoint PCR method was used to analyse the prevalence of HTLV-1 proviral DNA in genomic DNA extracted from liquid based cytology (LBC) cervical smears and invasive cervical carcinomas (ICCs) obtained from human immunodeficiency virus-positive (HIV+ve) and HIV-negative (HIV−ve) Kenyan women. Patient sociodemographic details were recorded by structured questionnaire and these data analysed with respect to HIV status, human papillomavirus (HPV) type (Papilocheck®) and cytology.

Results: 22 (19.5%) of LBC's from HIV+ve patients were positive for HTLV-1 compared to 4(3.6%) of those from HIV−ve women ($p = 0.0002$; odds ratio (OR) = 6.42 (2.07–26.56)). Only 1/37 (2.7%) of HIV+ve and none of the 44 HIV−ve ICC samples were positive for HTLV-1. There was also a significant correlation between HTLV-1 infection, numbers of sexual partners ($p < 0.05$) and smoking ($p < 0.01$).

Conclusion: These data suggest an unexpectedly high prevalence of HTLV-1 DNA in HIV+ve women in Kenya. However, the low level of HTLV-1 detected in HIV+ve ICC samples was unexpected and the reasons for this are unclear.

ADVANCED CANCER OF THE VULVA

Ojwang' SBO

Introduction: The incidence of vulval cancer in Kenya is not known. FIGO in 2006 estimated that this disease accounted for 4 percent of all gynaecological cancers worldwide. In spite of the fact that the vulva is a relatively exposed area of the body, many patients continue to present with advanced disease, which are a challenge to management.

Objective: to highlight the problems associated with the management of patients with advanced cancer of the vulva.

Methodology: Literature and case reviews.

Results: The etiology of this disease is mostly related to vulval dystrophies like lichen sclerosis. Human Papilloma Viruses (HPV), are known to be associated with squamous cell carcinomas of the vulva. The majority of patients with these lesions are over 60 years. Early cases, can present with vulval pruritus, mass, ulcer and bleeding. Advanced cases are due to patients not seeking treatment or delay in diagnosis because of poor health services. Advanced cases often present as large vulval ulcers or fungating lesions, and sometimes with obvious metastasis to the rectum, vagina and inguinal lymph nodes. The management of these cases is a challenge, and requires individualization of treatment and multidisciplinary approach.

UTERINE SARCOMA: CASE SERIES FROM MOI TEACHING AND REFERRAL HOSPITAL

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Introduction: Uterine sarcoma is a rare malignancy, with variable clinical and histo-pathological features. It accounts for approximately 10% of female genital tract malignancy and 3-7% of uterine cancers. There is no consensus on predictors of poor outcome nor optimal treatment largely due to this histopathological diversity and the rarity of the disease. Since the initiation of the Moi Gynecologic Oncology Program (MGOP) in 2009, data on cases of uterine sarcomas been prospectively collected for review.

Objective: We describe the demographic characteristics, clinical presentations, challenges of preoperative diagnosis, histopathological patterns, treatment and outcomes of patients with uterine sarcomas at Moi Teaching and Referral Hospital (MTRH)

Methodology: This was a series of 11 cases uterine sarcoma treated over a 6-year period at MTRH. Data was abstracted from MGOP database and patients' clinical charts using structured data collection form. We obtained patients' demographics, clinical presentations, preoperative diagnoses and treatment outcomes.

Results: The 11 cases of uterine sarcoma accounted for 0.7% of all the 1577 cases of gynecologic malignancies managed over the same period. The mean age was 54.1 years (Range 39 - 78). The three most common clinical presentations were largely non-specific and included abnormal uterine bleeding (54.5 %), pelvic mass (63.6 %) and pelvic pain (36.4 %). Prolapsing cervical mass and vaginal discharge was seen in 4 cases. Almost half (45.5 %) of the patients were suspected to have uterine fibroids preoperatively and only 9.1 % was correctly diagnosed preoperatively. Over 63% of the patients had 2009 FIGO disease stage IIIb or above at diagnosis. Nine of the eleven patients (81.8%) had leiomyosarcoma and the remaining two had carcinosarcoma and botryoid rhabdomyosarcoma. All patients underwent total abdominal hysterectomy and bilateral salpingoophorectomy. Adjuvant therapy was given to 5 of the 11 cases (1 received pelvic radiotherapy and 4 received chemotherapy). Gemcitabine and

docetaxel were used for the leiomyosarcoma. Vincristine, actinomycin D and cyclophosphamide (VAC) was used for the Botryoid rhabdomyosarcoma. Disease-specific mortality rate was 63.6% with a median survival of 5 months.

Conclusion: Uterine sarcoma is a rare disease with uniformly poor prognosis. Leiomyosarcoma is the commonest subtype.

BREAST CAMPS FOR AWARENESS AND EARLY DIAGNOSIS OF BREAST CANCER IN COUNTRIES WITH LIMITED RESOURCES: A MULTIDISCIPLINARY MODEL FROM KENYA

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Introduction: Breast cancer is the most common cancer affecting women in Kenya. There are no national breast cancer early diagnosis programs in Kenya.

Objective: To conduct a pilot breast cancer awareness and diagnosis program at three different types of health facilities in Kenya.

Methods: This program was conducted at a not-for-profit private hospital, a faith-based public hospital, and a government public referral hospital. Women aged 15 years and older were invited. Demographics, risk factors, knowledge, attitudes, and screening practice data were collected. Breast health information was delivered, and clinical breast examinations (CBEs) were performed. When appropriate, ultrasound imaging, fine-needle aspirate (FNA) diagnoses, core biopsies, and referrals were provided.

Results: A total of 1,094 women were enrolled in the three breast camps. Of those, 56% knew the symptoms and signs of breast cancer, 44% knew how breast cancer was diagnosed, 37% performed regular breast self-exams, and 7% had had a mammogram or breast ultrasound in the past year. Of the 1,094 women enrolled, 246 (23%) had previously noticed a lump in their breast. A total of 157 participants (14%) had abnormal CBEs, of whom 111 had ultrasound exams, 65 had FNAs, and 18 had core biopsies. A total of 14 invasive breast cancers and 1 malignant phyllodes tumor were diagnosed.

Conclusion: Conducting a multidisciplinary breast camp awareness and early diagnosis program is feasible in different types of health facilities within a low- and middle-income country setting. This can be a model for breast cancer awareness and point-of-care diagnosis in countries with limited resources.

COMBINED SURGICAL EXCISION AND RADIATION THERAPY TREATMENT OF A RECURRENT KELOID: A CASE REPORT

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Introduction: Keloids are dermal fibrotic lesions that are a variation of the normal wound healing process and occur in 5-15% of wounds. Various methods for the treatment of keloids have been attempted, including intra-lesional steroids, interferon and fluorouracil injections, laser therapy, cryotherapy, silicone gel sheet applications and surgical excision. Many authors have reported that the surgical excision of keloids is followed by a recurrence in 50%-80% cases. Therefore, adjuvant treatment such as radiation therapy has also been considered as a means of improving therapeutic outcomes after surgery. Various radiation techniques can be used and postoperative superficial radiotherapy is a highly effective therapeutic method. This case report is aimed to evaluate the results of postoperative electron beam radiotherapy.

Case Report: A 48 year old Para 4+1 presented with several recurrences of anterior abdominal wall keloid lesions. She had 3 previous abdominal surgeries and was scheduled for a subtotal hysterectomy for symptomatic multiple uterine fibroids. Following the hysterectomy and excision of the keloid, post-operative electron beam radiotherapy was administered within 72 hours after the excision. Since then, the keloids have not recurred.

Conclusion: Postoperative electron beam radiotherapy can be regarded as an effective treatment method for the prevention of keloid recurrence without serious adverse events. However, radiation therapy should be initiated within 72 hours after surgical excision to prevent recurrence.

CERVICAL CANCER SCREENING USING PAPANICOLAU SMEAR TEST IN MUKURU SLUMS, NAIROBI

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Introduction: Globally, cervical cancer is one of the common cancers affecting women. In Kenya, it is the second most common cancer causing deaths. According to WHO, only 3.2% of Kenyan women are screened for cervical cancer compared to 70% in developed countries, with 39% of women estimated to harbor a cervical Human Papilloma Virus (HPV) infection at any given time. Cervical cancer can be detected early using Papanicolaul (Pap) smear test, and early treatment can save lives.

Objectives: To carry out Pap smear test for cervical screening in women from Mukuru slums; and to raise awareness about cervical cancer its risk factors and prevention.

Methodology: Following several awareness campaigns, Mukuru promotion center conducted cervical screening health camps at Mary Immaculate clinic with the assistance from Australian Aid Program from November 2015 to March 2016. Random sampling using Pap test was taken from 280 women aged 21 to 65 years. Various awareness campaigns were conducted in the slums of Mukuru, prior to collecting the samples. The Pap smear samples were then evaluated.

Results: Out of 280 women participated in the cervical screening camp only 11 women had precancerous lesions or cervical dysplasia .CIN I (LSIL) was seen in 2 women, CINII (HSIL) was seen in 4 women, cGIN in 1 and ASCUS in 4 women. 72 women had unspecified cervicitis, 54 had bacterial vaginosis and 143 women had normal Pap smear test. 248 women were having cervical cancer screening for the first time. Amongst them were 9 Human Immunodeficiency Virus (HIV)–positive cases, 6 of whom had cervicitis.

Conclusion and Recommendation: Pap smear test is a reliable method to detect pre-cancerous cervical lesions, thereby preventing untimely malignancy-related mortality. Women in slums are at increased risk of suffering from both cervical infections and HIV. Routine gynecological consultation and increased awareness about women's health would confer high value in this vulnerable population.

FERTILITY AND ENDOCRINOLOGY

PREDICTIVE MODEL OF OVARIAN RESERVE DEPLETION BY REPEATED OVARIAN STIMULATION FOR ASSISTED REPRODUCTIVE TREATMENT

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Introduction: In clinical practice, the live birth rate (LBR) is the principal outcome following all in vitro fertilization (IVF) treatments; and the number of eggs retrieved following ovarian stimulation is often used as a positive indicator of LBR.

Objectives: This was a retrospective cohort study with the main objective of exploring the relationship between repeated ovarian stimulation following IVF treatment and the number of fresh eggs collected that would help optimize the IVF treatment outcome.

Methodology: The Human Fertilization and Embryology Authority (HFEA) anonymized data obtained from Infertility clinics all over the United Kingdom (UK) was used, with a total of 342,019 IVF treatment cycles following ovarian stimulation and resulting in egg collection between 2001 and 2010 was analyzed. The other variables also evaluated included female age, various types and causes of infertility, the number of previous IVF cycles and the live birth rate (LBR).

Results: The overall average LBR was 22.9% per fresh IVF cycle. The median number of eggs retrieved per cycle following ovarian stimulation was 9 [inter-quartile range (IQR) 7-13]. There was strong association between the number of eggs retrieved and LBR, and this was observed to increase until about 14 eggs, then there was a plateau from 15 to 19 eggs after which a steady decline was observed beyond 20 eggs. The LBR also decreased with advancing age. However an overall steady increase of LBR per egg retrieved over time was observed. The number of fresh oocytes retrieved was observed to be <10% overall after the third IVF cycle irrespective of age. When stratified into groups based on number of oocytes collected: Low ≤ 3 oocytes, Normal 4-15 oocytes and High > 15 oocytes, there was significant difference on number of oocytes retrieved between IVF cycles among all age groups (*p-value* < 0.001), except for 45-50 years age category (*p-value*=0.144).

Conclusion: There is a strong association between the number of fresh oocytes retrieved and IVF treatment cycles.

LIVE BIRTH RATE IN IN-VITRO FERTILISATION (IVF) CYCLES IN WOMEN WITH ENDOMETRIOSIS COMPARED TO THOSE WITH UNEXPLAINED INFERTILITY

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Introduction: Endometriosis affects up to 10% of reproductive age women and nearly 50% of those seeking fertility evaluation and treatment. The effect of endometriosis on in-vitro fertilisation (IVF) treatment outcomes continues to be debated.

Objective: To determine the association between endometriosis and live birth rate compared with unexplained subfertility in women undergoing IVF treatment.

Methodology: Retrospective review of electronic records of women undergoing IVF treatment at Oxford Fertility Unit between 2000 and 2014. Multivariate logistic regression analysis was done and odds ratios calculated. Data were presented as mean (95% confidence interval) and comparisons between groups done using Chi square test. P <0.05 was considered statistically significant.

Results: 1269 couples were compared. There was no statistically significant difference in baseline characteristics of women with endometriosis and those with unexplained subfertility. Women with endometriosis had a significantly reduced likelihood of achieving a live birth compared to those with unexplained subfertility, 24.1% vs. 29.4% (P= 0.035). The risk increased further with severity of endometriosis. Women with endometriosis had a statistically significantly lower blastocyst formation compared to those with unexplained subfertility, risk ratio 0.35 (P<0.0001).

Conclusion: These findings confirm that endometriosis affects the chance of live birth following IVF treatment. The effects seem to be mediated through mechanisms related to oocyte quality and embryo developmental and

implantation potential. It is unclear whether surgical treatment of severe endometriosis prior to referral for IVF treatment could correct these abnormalities. Further studies prospectively designed are desired to answer this question.

CURRENT MANAGEMENT OF ENDOMETRIOSIS: STATE OF THE ART IN SEVERE OR DEEP INFILTRATING DISEASE AND INFERTILITY

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Introduction: Endometriosis is presence of endometrial-like tissue outside the endometrial cavity. It affects approximately 10% of reproductive age women and up to 50% of those seeking fertility treatment or with chronic pelvic pain. Severe endometriosis with deep infiltrating disease has a prevalence of about 15%. Women with endometriosis often undergo multiple high risk operations with unremitting pain symptoms and impaired quality of life. The best approach to those seeking fertility treatment is yet to be agreed. There is now consensus that women with endometriosis are best managed in Centres of Excellence incorporating a multidisciplinary team.

Objective: To show the impact of well trained and highly skilled multidisciplinary team approach has on treatment outcomes in women with severe endometriosis and/or infertility and adherence to the Endometriosis Phenome and Bio-banking Harmonisation Protocol.

Methods/ Results: Systematic review of the literature published in PUBMED/MEDLINE and the Cochrane library. Using the British Society of Gynaecological Endoscopy (BSGE) database from approved endometriosis treatment centres (defined as where resection of the para-rectal space is done). In a dedicated multidisciplinary team set-up, laparoscopic treatment is achieved in >95% of cases with complication rates that are under 10%. Short term follow-up shows very high symptom improvement rates. Assessment of effects of treatment on fertility is ongoing.

Conclusion: In women with severe endometriosis requiring surgery, adequate treatment should be achieved at the first operation in a dedicated endometriosis treatment centre. Laparoscopic treatment is associated with best treatment outcomes both for pain related symptoms and infertility. All centres and individuals treating endometriosis cases should adhere to the World Endometriosis Research Foundation Phenome and Bio-banking Harmonisation Project protocol.Treatment centres should report their treatment success and complication rates in order to compare to make a comparison with peers and improve patient care.

IS DIAGNOSTIC HYSTEROSCOPY PRIOR TO IVF TREATMENT NECESSARY IN "LOW INCOME SETTINGS"? A PRELIMINARY REPORT

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Introduction: Infertility is a worldwide problem. In developed countries it affects about 8% of the population, whereas in developing ones, up to 30% of the population may be affected.

Multiple causes of infertility are known. A friendly intra uterine environment is extremely important for implantation and development of the fetus. Diagnostic hysteroscopy prior to IVF treatment may increase the chances of success as well as possibly reducing the number of treatment cycles per couple.

Objective: To analyze the findings of diagnostic hysteroscopy on 21 IVF patients.

Methodology: This was a retrospective study of 21 IVF patients who underwent diagnostic hysteroscopy prior to IVF treatment between January and November 2016 in the private sector

Results: Patient age ranged from 27 – 46 years. 10 patients (48%) had uterine anomalies distributed as follows: 1 patient (4.8%) had a partial uterine septum measuring about 3 cm. 4 patients had uterine synechiae. 1 patient had a past history of uterine tuberculosis with patchy scarring of the endometrial lining. Sub-mucosal fibroids were found in 2 patients.1 patient with a history of chemotherapy in childhood had an atrophic endometrial lining. One patient had undergone 12 cycles of treatment, 1 had had 10 cycles and 1 had had five cycles. All of them had been unsuccessful. 2 of the patients had 3 cycles, 1 had had 2 cycles, 1 had been treated once and 3 had not

been previously treated for infertility. 2 patients had had two and one had 3 hysteroscopic procedures, whereas the rest had it for the first time.

Conclusion: Diagnostic hysteroscopy should be recommended and be readily available in "low income settings" to all patients intending to have IVF treatment. This procedure identifies uterine anomalies which can be rectified and increase the chances of success and also reduce the number of treatment cycles.

FRESH VERSUS FROZEN EMBRYO TRANSFER

Gichuhi JW

Introduction: Fresh frozen embryo transfer is the standard practice in Assisted Reproductive Technology (ART). However, there are concerns on the effect of Controlled Ovarian stimulation (COS) on the endometrium and the uterine environment. COS may contribute to poor endometrial receptivity by modulating the genes expressed during the window of endometrial receptivity. Multiple genes which are regulated by the hormones are associated with endometrial receptivity and COS may alter the gene expression of these genes. Supra-physiological levels of estradiol and progesterone during COS may lead to morphological and biochemical modification of the endometrium which impair endometrial receptivity. In Frozen embryo, the endometrium receptivity is not interfered with, leading to higher pregnancy rates. Moreover, endometrial growth can precisely be well controlled during its priming in FET. There is also no risk of ovarian hyper-stimulation syndrome in embryo frozen transfer.

Objective: To evaluate the current evidence in the literature comparing fresh embryo transfer (ET) and frozen embryo transfer (FET).

Methodology: Review studies and literature on ET and FET.

Conclusion: The FET group has better implantation rates, pregnancy rates, obstetric and perinatal outcome than ET. Is it time for freeze all embryo policy?

BECKWITH-WIEDEMANN SYNDROME IN ASSISTED REPRODUCTIVE TECHNIQUES: CASE REPORT AND REVIEW

Gichuhi JW, Achinga AM, Ndegwa S

Introduction: Assisted Reproductive Techniques (ART) is a crucial treatment for infertile couples and is frequently common. ART entails manipulation of oocyte and sperm in a Laboratory: in vitro fertilization (IVF) and intra-cytoplasmic sperm injection (ICSI). The key objective of ART is to yield superior quality embryos that are competent for implantation with good perinatal outcome. In spite of widespread acceptability of ART, concerns have been raised on the long-term safety of removal and manipulation of the gametes and embryos. High incidence of imprinting disorders like Beckwith-Wiedemann syndrome (BWS) have been noted in babies conceived after ART.

Objective: To discusses BWS encountered after conception with ART and a review of other imprinting disorders associated with ART. Evaluation of evidence of these imprinting disorders and their linkage to ART is discussed.

Methodology: Case report and literature review.

Conclusion: ART has been associated with occurrence of congenital malformation, low birth weight babies and imprint disorders. Beckwith-Wieldemann Syndrome, Angelman Syndrome, Russel-Silver Syndrome and maternal hypomethylation syndrome have been implicated in imprinting disorders found in ART babies. In ART, the developing epigenome is exposed to external stimuli that may interfere with appropriate establishment and maintenance of genomic imprint. Methylation patterns may be statistically different between ART and non-ART cohorts. However, absolute risk of bearing a child with imprinting disorder after ART remains low. Manipulation of the gametes & embryos and extension of embryo culture should be minimized to avoid negative epigenetic effects.

PREVALENCE OF PAIN SYMPTOMS SUGGESTIVE OF ENDOMETRIOSIS AMONG ADOLESCENTS IN KENYA

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Objective: To determine the prevalence of pain symptoms suggestive of Endometriosis among adolescent Kenyans and their impact on quality of life.

Methodology: A dual centered analytical cross- sectional study at Githunguri Girls High School (Rural) and Moi Girls High School Nairobi (Urban). Three hundred and thirteen adolescents were interviewed with even distribution between rural (50.8%) and urban (49.2%) schools.The primary outcome measure was the prevalence of pain symptoms suggestive of endometriosis.

Results: Dysmenorrhea was the most prevalent symptom at 72%, with severe dysmenorrhea reported at 29%. Regular absenteeism was reported at 4% in those with dysmenorrhea, 1% was due to acyclic pelvic pain and 1% reported intermenstrual pain limiting their daily activities. Among the students' interviewed, 94% had not heard of endometriosis, of whom 70% were interested to know more about it. The dysmenorrhea and pelvic pain that interfered with ordinary chores was most likely due to endometriosis.

Conclusion: Majority of adolescent girls with chronic pelvic pain, not responding to conventional therapy are likely to have endometriosis. Endometriosis appearing in adolescence is more likely to progress and if not treated, may progress beyond pain to infertility. Endometriosi in adolescence is a hidden progressive and severe disease that deserves attention, not just compassion.

CHILDBEARING AT VERY ADVANCED MATERNAL AGE: AT WHAT COST?

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Introduction: The desire for childbearing at very advanced maternal age (≥45years at the time of delivery) is becoming increasingly common. Some of the reasons for delaying childbearing include better access to safe, effective and reversible contraception, longer education, higher career goals, later marriages, desire for financial stability and advances in reproductive technology. The increased maternal age is associated with a non-linear decline in fecundity increasing the need for reproductive assistance. Moreover, the older gravidas are at a greater risk of having medical conditions such as obesity, hypertension and diabetes mellitus which could potentially complicate their pregnancies. In addition, they are at increased risk of adverse pregnancy outcomes.

Case presentations: Two cases of very advanced maternal age pregnancies (54 and 49 years old) are presented. Both conceived through assisted reproductive technology, and were successfully managed through their pregnancy complications and subsequent outcomes. A literature review was done to assess the challenges and outcomes of pregnancies at advanced maternal age.

Conclusion: Childbearing at very advanced maternal age is challenging from conception to delivery. Most of these women are sub-fertile requiring ART and are more likely to have adverse pregnancy outcomes principally resulting from preterm births with a greater maternal and perinatal mortality and morbidity. The society therefore needs to equip itself for the increased demand for ART and the need for sophisticated prenatal, perinatal and postpartum care associated with the rising trend towards delayed child-bearing.

SEVERE OVARIAN HYPERSTIMULATION SYNDROME: A CASE REPORT

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Introduction: Ovarian hyperstimulation syndrome (OHSS) is an iatrogenic ovarian hyper-response that may occur during controlled ovarian stimulation (COS). Both exogenous and endogenous human chorionic gonadotrophin are crucial in the progression to full blown clinical manifestation. Preparedness for severe OHSS as an adverse outcome of COS should be a mandatory necessity if severe morbidity and mortality are to be averted.

Objective: To highlight the need for early recognition of OHSS and the value of multiple specialty teamwork approach in an institution that has the requisite capacity to provide the desired investigative and management back-up in order to optimize clinical outcome.

Clinical presentation: Moderate ovarian hyper-response and ovum harvest in a controlled ovarian stimulation (COS) cycle without abdominal pain, vomiting, ascites, or any other symptoms and signs that often herald OHSS. Onset of symptoms was within 24 hours post-embryo transfer. Progression to severe and critical OHSS was very rapid and necessitated medical multi-specialty involvement in provision of appropriate objective care, including intensive care unit (ICU) admission.

Discussion: The key objective was to restore and sustain tissue perfusion and oxygenation through correction of plasma oncotic pressure, maintenance of circulatory volume, and prevention of intravascular thrombosis. In order to prevent cardio-pulmonary compromise, fluid in the potential spaces was drained repeatedly. After prolonged severe pathophysiologic manifestations, counteracted through judicious corrective and supportive therapies, recovery was rapid and complete.

Conclusion/recommendation: Conscientiousness, understanding of the pathophysiologic processes, and early objective team approach are key to prevention of severe morbidity and mortality in OHSS.

SUCCESSFUL PREGNANCY FOLLOWING STRASSMAN METROPLASTY FOR BICORNUATE UTERUS: A CASE REPORT

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Introduction: Müllerian duct anomalies represent a group of congenital malformations that result from failure to complete bilateral duct elongation, fusion, canalization, or septal resorption. The mean incidence of bicornuate uterus in Müllerian duct anomalies is approximately 25% and it is associated with recurrent first and second trimester miscarriages and higher rates of preterm delivery. Surgical treatment is usually indicated in cases of recurrent pregnancy losses. Paul Strassman in 1907 reported the first surgical correction for the double uterus by performing an anterior colpotomy in a patient with 8 pregnancy losses.

Case presentation: A 36 year old Para 1 + 6 with history of recurrent first and second trimester pregnancy losses. She was diagnosed with bicornuate uterus and underwent Strassman's metroplasty in May 2014. She conceived spontaneously in February 2016 which resulted in a live birth through caesarean section.

Conclusion: There is a paucity of data demonstrating reproductive success after metroplasty in Sub-Saharan Africa. Surgical intervention through Strassman metroplasty provides an important decrease in the percentage of fetal loss (8-12%) compared to patients without surgical treatment (70-96%). In Kenya, there is a paucity on such data. There is a need for increased awareness of Mullerian duct abnormalities in cases of recurrent miscarriages, to highlight the diagnostic strategies and to demonstrate management options in low resource settings.

HYSTEROSCOPIC MYOMECTOMY: A CASE REPORT

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Introduction: Uterine fibroids are benign monoclonal myometrial tumors. They occur in up to 25% of women of reproductive age. They account for 3-5% of gynecologic consultations. The International Federation of Gynecology and Obstetrics has classified uterine fibroids into type 0 to type 8 depending on the site within the uterus. This has an implication when it comes to treatment especially of the submucous fibroids (types 0-2), which are amenable to hysteroscopic treatment. Type 0 fibroids are 100% intra-cavitary, while types 1 and 2 are >50% and ≤50% intra-cavitary respectively. This case report aims to describe hysteroscopic myomectomy using resectoscopic excision by slicing with bipolar electrosurgery.

Case presentation: A 40 year old para 0+4 with a history of metrorrhagia and recurrent first trimester miscarriages of unknown cause managed by suction evacuation. She underwent hysteroscopy and resection of submucous fibroids. The abnormal uterine bleeding subsided, and she is awaiting conception.

Conclusion: Hysteroscopic myomectomy is an effective minimal access intervention for management of submucous fibroids. Its effectiveness in alleviating symptoms of abnormal uterine bleeding has been demonstrated well. However, more studies are needed to evaluate its impact on the reproductive effects caused by submucous fibroids.

ASSOCIATION OF SOCIOCULTURAL FACTORS WITH DELAYED DECISION-MAKING ON DEFINITIVE MANAGEMENT OF TUBAL INFERTILITY

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Introduction: Infertility affects 10% of couples and is often characterized by delay in initializing seeking of treatment, which culminates in delay in appropriate decision-making on definitive management. This creates a need for understanding of determinants of delay in order to develop corrective interventions.

Objective: To determine the association of sociocultural factors with delayed decision-making on definitive management of tubal infertility

Methodology: An unmatched case-control study of Patients of reproductive age with tubal infertility among who decisions have been made on definitive treatment, with cases being those with delay (≥ 4 years) attending the Kenyatta National Hospital Infertility clinic.

Results: Among cases, 44.2% sought advice from their parents, compared to 18.6% of controls (p=0.011). Similarly, more cases (32.6%) sought advice from their own extended family than controls (11.6%) (p=0.019), while 51.2% of cases were advised by their in-laws to seek alternative treatment compared to only 11.6% of controls (p <0.001). Up to 55.8% of cases were advised to seek alternative treatment compared to only 23.3% of controls (p=0.002). There were 72.1% of cases who admitted to having ever used alternative treatments compared to only 25.6% of controls. Among the users, 61.3% of cases had used alternative treatments for >2 years, while 72.7% of controls had used them for <12 months. On the type of treatment used, 87.1% of cases used African Traditional Medications compared to 36.4% of controls (p=0.001). Traditions influenced acceptability of semen analysis among 32.6% of cases compared to 11.6% of controls (p=0.019). Traditions also influenced acceptability of gamete donation among 37.2% and 16.3% of cases and controls respectively (p=0.028).

Conclusion: Sociocultural factors are significantly associated with delayed decision-making on definitive management of tubal infertility. Adequate premarital education towards preparedness for infertility as a possible outcome among couples is recommended, as is education on available medical options to discourage subscription to alternative treatments.

HEALTH POLICY AND IMPLEMENTATION SCIENCE

MEDICAL EDUCATION BEYOND THE 21ST CENTURY: TOWARDS DRAMATICALLY CHANGING RMNCH INDICATORS: FORMATION OF THE EAST, CENTRAL AND SOUTH AFRCIA COLLEGE OF OBSTETRICS AND GYNAECOLOGY (ECSACOG)

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Introduction: Quality specialization in health care commences with provision of quality medical education. Sub–Saharan Africa is plagued by inequitable access to professionals, lack of harmonized curricula, failure to access evidence best practices, donor driven programs and poorly supported research. Despite increasing demand for specialist training, inadequate infrastructure and high teacher/student ratios culminate in compromised quality of education and substandard patient management, which is further aggravated by clinician brain drain. Globally, concerted efforts to catalyze potential recourse such as regional capacity building; decentralized training; skills imparting using cadaveric and humanistic models and various virtual platforms need exploitation.

Methodology: Regionally surgeons have successfully implemented COSECSA and to date they have graduated 158 specialist surgeons since first exam in 2003 from 10 member countries. There are also over 800 Members and Fellows of the college. ECSA Ministerial regional Conference approved the formation of a regional collaborative College of Obstetrics and Gynecology. Through ECSAOGS, Obstetric and Gynecological Societies further committed to the formation of ECSACOG. A team of ECSAOGS leaders attended the COSECSA Annual General Meeting; and witnessed a graduation ceremony solidifying this process as feasible and complementing in–countries efforts towards quality specialization.

Results: Meetings to generate the constitution and curricula with the engagement of 6 countries operationalizing ECSACOG. Potential value addition includes improved standard of patient care with more equitable access; enrolment of more students in a recognized and visible program; growth potential of individuals, trainers and institutions; multi- country symbiosis and opportunities for networking within the global frontier.

Conclusion: Innovative medical education will favorably impact patient outcomes.

PROGRESS AND LESSONS LEARNED FROM IMPLEMENTING GROUP ANTENATAL CARE IN KENYA

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Introduction: Compelling evidence on Group Antenatal Care (ANC) has demonstrated positive impact on preterm birth, adherence to ANC, initiation of breastfeeding, and postpartum family planning (PPFP) uptake. Jacaranda Health (JH) was the first site in Kenya to offer Group ANC as a regular part of its high-quality, low-cost maternity services in Nairobi.

Objectives: To review Jacaranda's model of group ANC care and present initial findings from the program, including: effects on number of ANC visits; conversion to delivery at JH; initiation of breastfeeding and PPFP uptake.

Methodology: At JH, pregnant women are recruited for Group ANC at 20-24 weeks. The program consists of three group visits in the antenatal period and one group visit in the postnatal period. The group discusses topics such as common myths, pregnancy danger signs, PPFP, and newborn care. The visits are led by nurse-midwives who have been trained in group facilitation at JH. Data from chart reviews and postnatal surveys is analyzed to assess outcomes.

Results: Among clients who completed the program by September 2016 (n=12), group participants attended on average 2.3 more ANC visits than traditional ANC clients (4.8 vs 2.5 visits), had a 39% higher chance of delivering at our facility (83% vs 44%), had 52% higher postpartum family planning uptake (92% vs 40%) at 3 months postpartum, and 100% breastfeeding initiation. As of December 2016, 27 clients have received their ANC care through the Group ANC program.

Conclusion & Recommendations: Group ANC is a promising intervention for increased social support and information sharing during pregnancy. It is both cost and

time effective—providers spend more contact time with patients but do so more efficiently due to the group setting. We recommend providers explore options for integrating Group ANC into their service offerings.

UPDATING OF A CLINICAL PROTOCOL FOR THE PREVENTION AND MANAGEMENT OF POSTPARTUM HAEMORRHAGE AT KENYATTA NATIONAL HOSPITAL

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Introduction: Postpartum haemorrhage (PPH) is the leading cause of maternal mortality in the world, with a prevalence rate of approximately 6%, accounting for almost 30% of maternal deaths. The use of evidence-based clinical protocols by health facilities for the prevention and treatment of PPH is recommended by WHO in order to address this burden of PPH and to reduce PPH-associated morbidity and mortality. Clinical protocols should be evidence-based, clear, regularly updated widely available and routinely adhered to by staff. When adhered to, protocols help reduce inconsistencies in quality of care and improve maternal health outcomes. We aimed to update the existing KNH clinical protocol on PPH prevention and treatment, as well as develop derivative products and conducted dissemination activities to promote protocol adherence and optimize PPH prevention and management at the Kenyatta National Hospital.

Objective: To update the current KNH clinical protocol on prevention and management of PPH

Methodology: Using the ADAPTE process, a literature search was conducted to identify relevant current national and international guidelines. All recovered guidelines were assessed using the AGREE-II tool for quality. A matrix was then created for comparison of recommendations across different guidelines. Recommendations were selected based on guideline quality, year of publication, and contextual factors in our setting. The KNH PPH protocol was developed, as well as a clinical algorithm and PPH management checklist. The protocol was reviewed, discussed and accepted as best practice by obstetric healthcare providers at KNH.

Results: Six guidelines were used to create the matrix from which the guideline was derived: WHO, FIGO, RCOG, ACOG, FOGSI, and the Kenya National Guidelines for Quality Obstetrics and Perinatal care. The revised KNH clinical protocol now covers prevention of PPH, management of primary and secondary PPH, as well as institutional strategies to ensure adherence to the protocol and promotion of team based care.

Conclusion: Implementation and adherence to the PPH protocol will standardize prevention and treatment of PPH at this institution, and improve maternal outcomes.

IMPACT OF FREE MATERNITY HEALTH SERVICES ON QUALITY OF CARE TO WOMEN PRESENTING WITH LATE OBSTETRIC HAEMORRHAGE AT THE KENYATTA NATIONAL HOSPITAL.

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Introduction: Obstetric hemorrhage is the leading cause of pregnancy – related mortality and yet the most preventable. Skilled care averts majority of the morbidities/ mortalities. Free maternity care was aimed at increasing SBA utilization, however, the burden on facility resources increases without adequate increases in compensation and/or staffing which threatens quality of care.

Objective: To compare the quality of care offered to women presenting with late obstetric hemorrhage at KNH one year after and one year before the free maternity care policy in Kenya.

Methodology: This was a Pre-post design quasi-experimental study of 348 women presenting with late obstetric hemorrhage at KNH labor ward unit during the periods form June 1st 2011 to May 31st 2012 and June 1st 2014 to May 31st 2015. Data were collected using structured mainly pre-coded questionnaires and were analyzed using SPSS version 18 in accordance to the pre- and post- intervention measures for structure, process and outcomes. Appropriate tests of significance were applied

(Chi-square), and a p value of <0.05 was considered statistically significant. Logistical regression analysis was used to determine the relative significance of the factors identified.

Results: There were no major changes in resource/staff. There was a significant change in the admission status of patients, documenting patient severity, EDD, ANC decision on mode of delivery, vital signs measurements and physical examination findings. The prevalence of uterine rupture and PPH increased significantly. Uterotonic use increased as did uterine repair. The CS rate and post CS complications increased. The median duration between decision to conduct CS and delivery increased. Documentation of outcome of care improved, with declines in documenting NBU outcomes. No major change in outcomes were noted.

Conclusion: Quality of care generally declined.

Recommendation: There is a need to: increase resources commensurate to patient numbers; establish quality assurance programs; develop a standard admission care continuity form for late obstetric hemorrhage; and to display protocols for shock and APH in the KNH labor ward as a reminder for good practice.

THE IMPACT OF INTEGRATED RMNCAH OUTREACH SERVICES ON ANTENATAL CARE COVERAGE IN A HARD-TO-REACH POPULATION: A CASE STUDY OF EAST POKOT

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Introduction: Hard-to-reach and underserved populations have traditionally maintained a low coverage of RMNCAH indicators due to poor access to quality health services. In the year 2014, East Pokot Sub-County had only 34 functional health facilities, constituting 17.7% of the 192 health facilities in that county. This contributed to low antenatal care (ANC) 1 coverage (35.6%) and a corresponding low ANC 4 coverage (5.9%). This called for introduction of innovative approaches to bridge the gap in access to healthcare.

Objective: To determine the contribution of outreach services in reaching pregnant mothers with a package of RMNCAH services.

Methods: The hardest-to-reach areas were mapped and analysis of population proportions made to identify monthly targets for various RMNCAH services. Community mobilization was done through community health volunteers (CHVs) and local leadership. Routine monthly community outreach services were initiated from January through December 2015 in 10 out of the 20 sites identified through mapping. The number of functional health facilities remained the same over this period.

Results: There was an increase in the ANC 1 coverage from 35.6% in 2014 to 47.9% in 2015 with a corresponding increase of ANC 4 coverage from 5.9% (360) to 13.6% (844), respectively. Out of the 6,596 pregnant women who had their first ANC visit, 1,102 were reached through outreach clinics.

Conclusion and Recommendations: Targeted integrated outreaches present an effective means of reaching underserved populations with RMNCAH services and there is need to scale up this approach in similar populations in order to bridge the gap in access to health care services to improve obstetric outcomes.

COUNTY MORTALITY FORUMS AS A KEY STEP TO STRENGTHENING MATERNAL AND PERINATAL DEATH SURVEILLANCE AND RESPONSE (MPDSR) AT COUNTY LEVEL: KEY LESSONS FROM KAKAMEGA COUNTY.

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Introduction: UNICEF is supporting five Counties in Kenya (including Kakamega) to institutionalize MPDSR, confidentially auditing and reporting all maternal and perinatal deaths.

Objectives: To generate evidence on maternal and perinatal deaths so as to generate actions to stop them.

Methodology: The forum had four sessions: First, a 'pre-conference' entailed health managers and health workers at Sub-County level reviewing DHIS2 data. Second was an open-dialogue participatory forum with key stakeholders using a mix of quantitative and qualitative methods (reflexive discussions). Third, participants developed key advocacy messages used to lobby county leaders (county

executive and county assembly) to address identified leading systems causes of maternal and perinatal deaths in the fourth session, using memos. Leaders then gave a focused, actionable commitments.

Results: Leading contributors to maternal deaths in Kakamega were: inadequate human resources, unhealthy household & community practices causing home deliveries, sub-optimal referral pathways, and insufficient blood and theatre facilities. Based on these, the stakeholders' memo to the Governor focused on hiring more health workers, strengthening demand, establishing a blood transfusion center, and adequate ambulances. Progress has been noted, with hiring of 700 additional staff, allocating more money to health facility infrastructure, and purchasing equipment for a blood transfusion center. Reporting maternal deaths on DHIS2 also improved from 60% to 100% within one year.

Conclusion & Recommendations: The participatory county mortality forum is a promising strategy to institutionalize MPDSR at county level. Such fora empower health workers to demand action on persistent health concerns.

THE GEM IS DOCUMENTATION: MONITORING AND EVALUATION IN INSTITUTIONALIZATION OF POST-PARTUM INTRAUTERINE DEVICE IN SIX COUNTIES IN KENYA

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Introduction: Monitoring (M) is the systematic collection and analysis of information to track the progress of program implementation against pre-set targets and objectives. It provides records of activities and results, and signals problems. Evaluation (E) provides critique of the results obtained; a lesson learnt, explores possible causes and effect and offers strategic direction for improvement. The M and E in the program cycle gearing towards outcomes and impact amongst clients and society.

Objective: Evaluate the uptake and trends of PPIUD project in the six counties

Methodology: Institutionalization of PPIUD services has been on-going in six counties for the past one year. M&E was first conducted six months into project at the and subsequently done quarterly. During the three M and E activities, the national team, hospital administrators, implementers and data collection clerks were involved. Valuable input was gained with assessment of the health system; project processes; presentation and critique of facility based data; facility SWOT analysis and program gap analysis for training, coordination, monitoring, evaluation and advocacy.

Results: Recognition of the gem of proper and accurate documentation of program processes and outcomes their analysis, synthesis, management and dissemination. A significant increase in service delivery following M and E was noted at the six counties. The team was able to identify and address specific challenges to inform homegrown solutions such as: team formation; improving of services using facility champions; leveraging on other partners to improve the health system and using newsletter to increase awareness. Generation of research questions facilitated engagement in operational research to informing the work plan. However, there was a dramatic health system collapse with the strike by doctors and nurses.

Conclusion: Supportive health system and quality documentation facilitates M&E. This improves quality, performance, accountability and empowers the beneficiaries towards sustainable scaling up of PPIUD program.

WORKFORCE IN REPRODUCTIVE HEALTH: AN EVALUATION OF THE UTILIZATION OF CLINICAL OFFICERS REPRODUCTIVE HEALTH (CORH) IN KENYA

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Introduction: 104 CORH have graduated since reproductive health became a specialization option for clinical officers in 2002. The curriculum specifies their competencies, including providing Comprehensive Emergency Obstetric Care (CEmOC) and long term family planning. This study used quantitative methods to evaluate the utilization of specific clinical competencies of CORH to establish the contribution of CORH in expanding access to CEmOC in Kenya.

Methodology: The study was carried out retrospectively and information was triangulated by obtaining data from both structured telephone interviews with CORH and medical records from public facilities where CORH work.

Results: 49 (47%) of all 104 CORH were interviewed and twelve facilities in eight counties were visited for data collection. All CORH (100%) held positions that were related to their specialty. 48 of the 49 (98%) interviewed CORH were in clinical practice after completion of the CORH training. 37 (75%) of the CORH applied at least 22 of the 28 investigated RH competencies. 41 (84%) interviewed CORH had performed Caesarean Sections (CS). The records showed CORH doing on average six CS per month. CORH frequently engaged in other procedures like cervical cancer staging, laparotomy for ectopic pregnancy, and BTL. Several senior CORH had increased their scope of practice with additional procedures. Levels of recognition varied from those who had to fight for recognition, to those who served as mentors and supervisors, of clinical officers and CORH, but also of medical interns and young medical officers. Many CORH cited lack of recognition and monetary reward as strong demotivators.

Conclusion: Roles and responsibilities given to CORH in clinical practice cover all areas of obstetric and gynecological care, including minor and major RH surgery. Many of them had experienced barriers in applying surgical skills, like doubts about their competence and unfamiliarity with their scope of practice as a new cadre.

THE EFFICACY OF INTEGRATING FAMILY PLANNING SERVICES WITH CERVICAL CANCER SCREENING

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Introduction: Integration of health services is a concept whose full impact is yet to be fully comprehended. Many health programs globally and in Sub-Saharan Africa have in one way or another attempted a degree of integration. In most cases the interventions are very short lived because of the complexities of successfully integrating health systems and interventions for greater health impact. To fully appreciate the impact of integration, sufficient and sustained efforts over time are crucial, however with increasing changes in the donor-funding landscape and reduction in the funding for various health programs, the shelf-life of projects has significantly reduced.

Methodology: The period of analysis was January to October 2016, with an integration focus of July to October 2016. The focus areas were Family planning and cervical cancer screening and treatment. HIV testing and counselling services (HTC) as well as Hypertension screening services were also offered. Prospective clients who attended cervical cancer screening outreaches were at a minimum offered information and services on family planning, whereas women seeking family planning services were offered cervical cancer screening services.

Conclusion: Through this approach, enhanced customer service experience became integral to service delivery and a two-fold increase in the uptake of family planning services was seen – an opportunity that would have otherwise been missed.

INCREASING ACCESS TO REPRODUCTIVE HEALTH INFORMATION AND SERVICES THROUGH PHARMACIES IN KENYA

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Introduction: Following funding from SAAF, ANMA-Kenya has been offering trainings to pharmacists and pharmaceutical technologists. The training is meant to empower pharmacy workers to contribute to reducing reproductive morbidity and mortality. The rationales for this are that: many women and youth tend to consult pharmacies first for their health needs; pharmacies are very widely distributed in the country; and they are perceived to be more affordable than clinics.

Objectives: To improve access through pharmacists to Reproductive health information and services for 6000 women; to improve the knowledge and attitudes of 150 pharmacy workers to enhance access to sexual and Reproductive Health among women in Kenya.

Methodology: Pharmacists and Pharmaceutical technologists were trained in six regions in Kenya: Meru, Bungoma, Kilifi, Nyeri, Kisii and Machakos. Each county had 25 workers trained on a seven-themed curriculum: antenatal care and delivery; infertility; HIV/AIDS; cancer management; sexual health (including erectile dysfunction); abortion and family planning and gender/ human rights issues. They were also trained on simple

diagnostic procedures. On the last day of each training, 5 Reproductive Health Network service providers joined the training in order to enhance referral of clients who seek services from the pharmacies. The referrals will be done by using a referral card to the health provider. Participants also used a data collection booklet to enter details of clients seeking abortion services.

Results: 150 pharmacy workers were trained from the 6 counties during a 2½ year period. 4,585 women received Sexual and Reproductive Health (SRH) information and services between 1st April 2014 and 30th September 2016. Before this women went to pharmacies to seek for treatment for their reproductive Health problems. The pharmacy workers appreciated having been considered for the training the opportunity to partner to reduce reproductive morbidity and mortality. They were eager to learn more on SRH. The trained pharmacy workers have also taken upon themselves the responsibility to train their colleagues through continuous medical education talks.

Conclusion: Training pharmacy workers and networking with reproductive health care providers increased access to safe abortion care.

THE INFLUENCE OF PRENATAL HEALTH EDUCATION ON INFANT NUTRITIONAL STATUS AT MBAGATHI DISTRICT HOSPITAL, NAIROBI.

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Introduction: Prenatal Health Education is expected to improve maternal, neonatal and child health (MNCH) outcomes. Hence, effective prenatal health education should culminate in reduction of malnutrition during infancy.

Objective: To determine whether prenatal health education influences infant nutritional status.

Methodology: A retrospective unmatched case-control study of mothers of infants aged 6 to 12 months with and without malnutrition as cases and controls respectively.

Results: There were 58.3% of cases and 51% of controls who reported receiving health education during each prenatal visit (p = 0.72), with 53% and 64% receiving information on infant nutrition respectively (p=0.22). Infant nutrition was taught in 60% of cases and 70% of controls (, OR 0.64, 95%CI 0.30–1.37, p = 0.25) and breastfeeding was taught in 58.3% and 60% respectively (OR 0.93, 95%CI 0.45 – 1.93, p =0.85). Carbohydrates were discussed in 60.0% of cases and 51.7% of controls (OR 1.4, CI 0.68–2.89, p=0.35,) and fats in 18.3% vs. 8.3% respectively (OR 2.47, CI 0.80 – 7.61, p=0.11). Whereas 81.7% of cases and 87% of controls (p= 0.82) were taught on breast feeding on demand, 20% and 18.3% respectively were not taught on frequency of breastfeeding. Although 91.7% of cases and 86.7% of controls were informed on exclusive breastfeeding (p = 0.38), and positioning of the baby taught in 83.3% and 80.0% respectively (OR 1.23, 95%CI 0.49 –3.16, p= 0.64) taught on positioning of the baby, the details of the techniques were taught least, with expressing of breast milk being reported by 1.7% of both cases and controls (p =1.00). Prenatal information on weaning was given and compliance was high. There were 90% of cases and 93.3% of controls who reported prenatal education on immunization.

Conclusion and Recommendation: Health education as currently provided does not confer benefit on reduction of infant malnutrition. This depicts a need for more structured, objective, and effective approach to health education. Further studies are needed in this neglected and very important area.

INTEGRATING SPIRITUALITY INTO MATERNITY CARE AT RILEY MOTHER AND BABY HOSPITAL, ELDORET KENYA

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Introduction: The World Health Organization defines comprehensive health as psycho/bio/social wellbeing. However, emotional /spiritual needs of the mother and her family and caregivers are often ignored in maternity in Kenya.

Objective: To describe the socio-demographic characteristics and spiritual needs of mothers in the Mothers' Hostels with babies in the Newborn Intensive Care Unit (NBU) at the Moi Teaching and Referral Hospital before and after introducing spirituality.

Methodology: Following ethical approval, a Clinical Pastoral Education (CPE) program was initiated by Moi University at the Riley Mother Baby Hospital (RMBH) in September 2015 to train Chaplains to give spiritual care in clinical settings. Three chaplains were trained and deployed to the maternity unit. 250 mothers were interviewed using pre-tested validated tools. Data were analyzed and relevant tests of significance were applied.

Results: About 250 mothers were interviewed. Most were young with primary school education, Christian, had low income and significant emotional and spiritual needs. They were successfully addressed in 30% of cases by spiritual care.

Conclusions and Recommendations: Spirituality has been integrated into Maternity Care at RMBH. The study highlights the need for spiritual care services in maternity care in Kenya.

IMPLEMENTATION OF STANDARDS-BASED MANAGEMENT AND REWARD SYSTEM TO IMPROVE INFECTION PREVENTION AND CONTROL IN DIRECTLY OBSERVED THERAPY CORNERS

Barasa B

Introduction: Malaria in pregnancy is associated with poor pregnancy outcomes. The World Health Organization recommends use of Intermittent Preventive Therapy in pregnancy (IPTp) to reduce these effects of malaria in pregnancy. Kenyan guidelines recommend 3 doses of IPTp given as directly observed therapy (DOT) at facility level. Lack of clean cups and water may adversely influence antenatal clinic attendance. The DOT corner set-up involves provision of clean water, clean cups and disinfection of the cups after use. However, there are challenges in setting up and maintaining a functional DOT corner at facility level.

Objective: The main objective of the program was to increase number of facilities with operational DOT corners by increasing the knowledge and skills of health care workers on Infection Prevention and Control (IPC) practices and setting up ideal DOT corners.

Methodology: Clinical mentors trained health care workers (HCWs) on IPC standards in all facilities providing antenatal care services. HCWs were trained on how to calculate and prepare the correct chlorine solution from stock solutions and how to set up DOT corners. 1st assessment on status of DOT corners was done after the training in all facilities. Mentorship and a second assessment was done 3 months after training and scores compared.

Results: A total of 122 clinical mentors were developed in 10 sub-counties in Homa Bay and Kisumu). The clinical mentors trained a total of 3,127 HCWs in 280 facilities on IPC standards. 1st and 2nd assessments on operational DOT corners showed an overall improvement in facility performance: from 24% to 47% for reconstitution of correct chlorine solutions; from 32 % to 62% for correct decontamination apparatus and procedure; and from 52 % to 82% for availability of clean water.

Conclusion: IPC is one of the standards in improving facility performance in provision of services and contributed to increase in operational DOT corners.

STRENGTHENING DOCUMENTATION, REPORTING AND USE OF REPRODUCTIVE, MATERNAL AND NEONATAL HEALTH DATA IN KISUMU AND MIGORI COUNTIES

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Introduction: Documentation and reporting play a pivotal role in improving quality of care, as accurate and timely data enable evidence-based decision making leading to increased effectiveness of health services. Data allows for financial planning and resource allocation. Indicators that reflect key health outcomes, such as antenatal care, skilled birth deliveries, family planning uptake, and reproductive, maternal and neonatal health (RMNH) commodities should be regularly monitored and interpreted all levels.

Objectives: To improve documentation and reporting of RMNH data and strengthening use of data for decision making in Kisumu and Migori County.

Methodology: The Maternal Child Survival Project has been strengthening documentation and reporting of

RMNH data in Kisumu and Migori since the inception of the project in 2014 through mentorship, monthly data validation of facility data, quarterly data quality audits, performance review meetings using the RMNCAH score card at the county and sub-county level and use of talking walls at facility levels.

Results: There has been a significant improvement in the RMNH data quality and reporting rates. The Facility Contraceptive Commodity Reporting Rate has improved in Kisumu County from 59.5% in June 2014 to 92% in June 2016. In Migori County, Integrated RH reporting rate improved to 96% in June 2016 from 80% in June 2014. Through strengthening of documentation and reporting rates, commodity management has greatly improved as it allows redistribution of RMNH commodities within facilities and has enabled accurate forecasting. Further, complete data is available for cost-accounted implementation of plans. Quarterly review of performances is based on complete and accurate data hence providing a true picture of the progress being achieved while highlighting existing gaps.

Conclusions and Recommendation: Concerted efforts are required to safeguard gains made while simultaneously working towards tackling the root causes of poor documentation and reporting which range from shortage of health care workers who are already overburdened, parallel reporting systems and lack of reporting tools.

AN OUTCOME EVALUATION OF BEYOND ZERO CLINICS INITIATIVE IN KIBERA SLUM, KENYA WITH A SPECIFIC FOCUS ON MATERNAL AND CHILD HEALTH.

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Introduction: The Public health club (PHC), registered under the University of Nairobi School of Public Health and School of Medicine, sought to evaluate the outcomes of Beyond Zero Clinics in Kibera slum. Outcome evaluations assess the effectiveness of a program in producing change in its target population. Kenya has one of the highest maternal mortalities globally, the main reason being lack of access to quality maternal health services such as antenatal and post-natal services. The Beyond Zero Campaign was started by the First Lady of Kenya to improve HIV control and promote Maternal and Child Health by reducing this high maternal mortality rate by enhancing access to health care. This included setting up free mobile clinics in all counties in Kenya.

Objectives: To evaluate the outcomes of Beyond Zero Clinics in Kibera slum over the last one year (May 2015 to April 2016).

Methodology: This was a descriptive cross-sectional study at Kibera slum's Beyond Zero Clinics seeking to evaluate the progress in the attainment of the desired objectives in relation to: nutrition outcomes; prevention of infection; disease outcomes; and level of access to health services.

Results: It was found that nutrition advice is given combined with Vitamin A supplementation and deworming. They provide services to all age groups, with 61 percent being female. Limited human resource and lack of infrastructure were sighted as the largest barriers to access of services. Preventive services such as immunization and antenatal care are also provided. Despite the challenges, there is progress towards achieving the targets of the initiative.

Conclusion: Beyond Zero Clinics is a valiant effort by The First Lady, the County Council, and all stakeholders, in improving the health outcomes of mothers and children. However, infrastructural and human resource challenges presently impede the progress of this campaign in attaining its objectives.

ON-SITE CLINICAL MENTORSHIP: LESSONS LEARNED FROM KISUMU COUNTY.

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Introduction: On-site clinical mentorship is a sustainable learning process through which a trained and experienced healthcare provider guides another healthcare provider (mentee) in a specific skill. Learning is tailored to the mentee's needs and convenience. Lack of technical skills and confidence to manage obstetric emergencies has been a barrier to accessing Skilled Birth Attendance (SBA) in Kisumu County. To increase the proportion of pregnant women accessing SBA, Maternal and Child Survival

Program (MCSP) improved the skills and competency of Nurses/Midwives in managing obstetric emergencies effectively through training so as to reduce preventable child and maternal deaths in Kisumu County.

Methodology: MCSP selected Nurses/Midwives from the health facilities and Sub-Counties based on midwifery qualifications and trained them on Basic Emergency Obstetric and Neonatal Care (BEmONC) mentorship skills. 5 Nurses were selected from each High-Volume Facility to undergo mentorship on BEmONC from each Facility. Scheduling of mentorship sessions was through local arrangement between the Mentees and the Mentors taking into account Facility workload, availability of Mentors and Client load.

Results: 50 Nurse/Midwives in 10 facilities were mentored on BEmONC skills and Respectable Maternity Care over a period of 3months. SBA increased from 2852 from 2013 to 4931 in 2014 in the 10 Facilities. The shift from home to facility delivery significantly increased by 73%. Maternal and neonatal mortalities reduced by 55% and 36% respectively.

Conclusions: Increasing the competence of health care workers through on-site mentorship increases the pool of service providers who are capable of providing quality BEmONC services. The integrated model of facility-based mentorship can increase utilization of SBA and access to quality intra-partum services, which would improve pregnancy outcomes.

FEASIBILITY OF MAINSTREAMING NEAR-MISS TOOL IN FACILITIES TO EVALUATE MATERNAL AND NEONATAL OUTCOMES

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Introduction: The 2014 KDHS reported that the maternal mortality for the seven year period in Kenya before the survey (2007-2014) was 362 deaths per 100,000 live births. There are regional variations and facility differences as regards to maternal mortality and morbidity. Implementation of a near miss tool in facilities as a routine activity is essential for improvement of quality of care. The improvement of service provider skills in EmONC is critical to avert maternal and neonatal adverse outcomes. PRONTO has specifically developed a simulation and team training program for low-resource settings to address the major barriers to provision of sustainable quality EmONC.

Objective: To determine the feasibility of embedding a near miss tool in the facilities as a routine element to evaluate Quality of care.

Methodology: A standardized near-miss tool was used to routinely capture maternal and newborn outcome at baseline and after intervention (PRONTO training). Participating health facilities were randomized into two arms: PRONTO training and standard of care.

Results: Between 1st July 2014 and 31st August 2016 a total of 13,324 deliveries (6121 in non-intervention sites in comparison to 7203 in intervention sites) were recorded in 16 health facilities in Kisii County. The facilities studied included level 2, 3 and 4 that comprised of 5,8 and 3 in number respectively. The maternal complications documented included post-partum hemorrhage, pre-eclampsia, eclampsia, sepsis, ruptured uterus, hypovolemic shock, oliguria, Jaundice, unconsciousness, convulsions, cervical or vaginal tears and respiratory distress. In the entire duration, there were 4 maternal deaths. There were no additional staff recruited to enter the near miss tool. Validation of the case files was routinely done by the research team.

Conclusion: Mainstreaming of near-miss tool for routine evaluation of quality of health care of parturients is feasible at rural facilities.

NON-CAESAREAN DELIVERY PATTERNS IN KITUI COUNTY IN EMONC AND NON EMONC SITES: THE EXPERIENCE IN KITUI COUNTY

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Introduction: Kitui County, has a skilled birth attendance (SBA) rate of 66% despite free maternity care. One reason for this low figure may be the lack of EmONC services, making clients opt for home delivery. Kitui County has traditionally had high maternal and perinatal mortality, and was earmarked for acceleration of activities to reduce it, including implementation of Emergency Obstetric and new-born care (EmONC) strategy.

Objective: To evaluate non-Caesarean delivery patterns in EmONC and non-EmONC sites in Kitui County.

Methodology: 46 sites with capacity to offer 24 hour delivery services were identified and designated for strengthening EmONC. Over 80 other facilities were selected that offer delivery services without EmONC.

Results: At the start of implementation of EmONC strategy, in 2012; there were 9780 deliveries in Kitui County of which 13% were Caesarean deliveries. Of the non-caesarean deliveries, 53% occurred in 46 EmONC designate facilities. By the end of scaling EmONC in 2015, this increased to 67%. The overall Caesarean delivery rate remained the same (13. 4%). However, within the EmONC sites, the rate increased to 25% as a result of more referrals.

Conclusion: Improving the quality of care through improved capacity to offer basic and comprehensive emergency care resulted in increased utilization of EmONC sites for SBA

USE OF APPRECIATIVE INQUIRY TO DEVELOP A WOMAN-CENTRED MIDWIFE-LED MODEL OF CARE FOR UASIN GISHU COUNTY HOSPITAL, KENYA

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Introduction: Development of models has become increasingly important in provision of quality health care. Midwife-led models of care are used to ensure continuity of care, choice and control by the woman.

Objectives: To explore the views of women and midwives on current midwifery care; to describe desired midwifery care; and to develop a woman-centred midwife-led model of care.

Methodology: This was a qualitative study carried out at Uasin Gishu County Hospital following ethical and administrative approval. 32 midwives participated in seven focus group discussions, while 84 women seeking maternity and newborn services participated in another seven group discussions. Seven health facility and county managers participated in the study. Data was collected through interviews and focus group discussions between May 2015 and April 2016. Field notes were taken and a reflexive journal was kept. Data were analyzed using thematic networks analysis using NVIVO 11 software.

Results: The participatory nature of the study culminated into seven themes with a Swahili acronym – UPENDO. The main themes developed were: utilization of evidence based care; package for women; development of a dedicated work force; networking in care; ensuring an enabling environment for care; organization of care; and supportive leadership. The word UPENDO is a Swahili word for love.

Conclusions: The findings indicate that it is possible to identify the key concerns in maternity care and develop a model to optimize care provided.

INFORMATION TECHNOLOGY IN HEALTH

DATA TO DRIVE DECISION-MAKING AT JACARANDA HEALTH

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Introduction: Jacaranda Health is building a replicable model-providing affordable, high quality, patient centered maternal and child health services in Nairobi. The organization has adopted and customized a platform to track and report on clinical, human resource, marketing and outreach data. Through the tracking system, Jacaranda has been able to quickly identify and respond to changes in key indicators to improve the quality of care in its health facility.

Objective: To review the system by which Jacaranda has been able to effectively identify an increase in suspected neonatal sepsis cases, the timely interventions implemented as a response to data, and the positive lessons that were gained throughout the process.

Methods: A cloud-based relational database was customized iteratively over a 2-year period by mapping all critical data touch points. Components of our clinical documentation were replicated into the database to develop the electronic medical record module and clinical dashboard. Through this system, Jacaranda identified and responded to an increase in suspected neonatal sepsis cases by implementing chlorhexidine cord care, group pre-discharge counseling, and hand-washing campaigns.

Results: After implementing group pre-discharge counseling and chlorhexidine cord care, there was a 34% reduction in total self-reported newborn complications (p=0.0002). Additionally, Jacaranda implemented protocols around outside clothes and visitors, began using individualized buckets to bathe newborns, and initiated a hand-washing campaign which lead to an overall reduction in suspected sepsis cases by 50% within the facility.

Conclusion & Recommendations: Jacaranda's customized platform for tracking, reporting, and responding with agility to key indicators has cultivated a culture of accountability and esponsibility where data is used to drive decision making and facilitate quality of care at all levels of the organization. Other organizations should consider creating and utilizing evidence-based data platforms to respond to clinical challenges.

COMPARISON OF USE OF THE ELECTRONIC PARTOGRAM AND WHO- MODIFIED PAPER PARTOGRAPH ON LABOR MANAGEMENT AND MATERNAL/NEWBORN OUTCOMES IN TWO COUNTIES IN KENYA

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Introduction: Most of the maternal and newborn deaths occur during labor, birth and a day after delivery. Despite being a global standard for the management of labor, use of the paper partograph in developing countries is low and inconsistent. Several interventions have been put in place to help reduce the above mortalities, but the pace is too slow and in some countries stagnant at high levels. Jhpiego, in collaboration with D-tree International, has developed an electronic, tablet-based tool which aims to be easier to use and provides the decision-support missing from the paper version, through reminders and alarms.

Objectives: To compare the use of the electronic partograph (eP) and paper partograph (PP) to:

1. Assess compliance with globally-recommended labor monitoring practices and recording

2. Assess decision-making to maintain normal labor

3. Assess detection and management of labor complications

4. Assess rates of fresh stillbirth and newborn death <24 hours

Methodology: This quasi-experimental trial was done in twelve facilities with basic or comprehensive emergency obstetric and newborn care capacity in two districts. All SBAs conducting deliveries in each facility were updated on evidence-based management of normal labor and common complications. Half of the facilities used an eP, loaded into android tablets, and half used PP. Labor management and outcome data from approximately 2000 partographs were extracted. In-depth interviews were done with a subset of SBAs to determine barriers and facilitators to use of eP and PP.

Results: The trial began in October 2016 and is still ongoing.

BE WELL INITIATIVE: INTEGRATING MEDICAL TECHNOLOGIES TO STRENGTHEN RISK ASSESSMENT, DIAGNOSIS AND MANAGEMENT OF NON-COMMUNICABLE DISEASES IN COMMUNITIES, NAIROBI COUNTY

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Introduction: Early diagnosis and management leads to better patient outcomes. Non-communicable diseases (NCD) are often diagnosed late, resulting in severe morbidity and preventable mortality. In SSA, NCDs are at epidemic proportions, with up to 15% dying. Genetics, poor lifestyle, environmental factors, poor health seeking behavior and lack of access have aggravated patient condition. Be Well Initiative is being undertaken in Nairobi County to: strengthen health promotion; screen and detect using affordable point-of-care diagnostics; linkage to care and treatment; and long term comprehensive follow up care in the general population for preexistent NCD or those who develop NCD during pregnancy .

Objectives: To: determine the epidemiology of NCD; provide effective interventions for risk factors; raise awareness of the social, economic and environmental conditions; manage NCD with evidence-based approaches; and support the government to implement quality sustainable NCD policies and programs.

Methodology: Clinical officers were recruited and trained on NCD and use of medical technologies. Health education and counseling was provided to all clients followed by screening using risk assessment scoring with Rollbase app, giving an aggregated risk score classified into low- or high-risk. High-risk clients were subjected to Aina-point of care diagnostics for HbA1C, random blood sugar, creatinine, lipid profile and Hemoglobin evaluation. Further supportive information, education and counseling for behavior change towards modification of lifestyle were offered. Additionally, the risk score and laboratory tests dichotomized patients' management as outpatient or referral for immediate care within health facilities. Selected health facilities are Abraaj-supported, offering subsidized treatment and follow up care modeled with standardized clinical protocols, specialist care, collaborative partners and insurance platforms.

Results: Clinical protocols for the Be Well Initiative were developed, clinical officers co-opted and Abraaj Health facilities identified with successful engagement of collaborative partners.

Conclusion: Clinical and business modeling can be used to increase access and management with concretized referral networks.

TAPPING INTO THE POWER OF THE MOBILE PHONE TO IMPROVE RESPECTFUL MATERNITY CARE IN KENYA

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Introduction: Until recently, skilled birth attendance in Kenya has been below 50%. Free maternity services, demand creation and improvement in the quality of care have contributed to its increase from 44% in 2008-09 to 62% in 2014. Respectful maternity care has the potential to increase this even further. Due to courtesy bias, exit surveys may not provide accurate reports of the kind of respect women receive at health care facilities. To improve accuracy, more innovative approaches are needed.

Objective: To determine the feasibility of using SMS survey to provide client feedback on respectful care during labor and childbirth after discharge from health care facilities Kenya.

Methodology: This was a cross-sectional quantitative survey administered via mobile phone SMS platform to assess client experiences of respectful maternity care, as well as satisfaction with facility-based childbirth in six counties in Kenya. Women were asked 10 questions by SMS four days after discharge from maternity wards of the study health care facilities.

Results: Of the 514 women who were enrolled, 321 (62%) completed the SMS survey. More than half of them (56%) reported that care was respectful. There was no statistically significant difference by geographic location. Almost two thirds (66%) of women who reported having received excellent kindness indicated that they were very likely to return to the same health care facility for future childbirth.

Conclusion and Recommendations: With a high mobile phone penetration in Kenya, use of the SMS platform is a feasible approach to obtain feedback from clients of their experience during labor and childbirth. Efforts to improve respectful and dignified care must accompany other interventions to improve institutional delivery.