electroencephalogram and computer tomography suggestive of encephalitis, over one year. In these patients, VE was if CSF cell count was <1000 cells/mm³ (lymphocyte predominance) and absence of non-viral pathogens in the CSF or blood. BM was CSF cell count >1000 cells/mm³ (polymorph predominance) and CSF protein >0.45 g/L and CSF/plasma glucose $<40\%$, and/or positive Gram stain and/or bacterial culture. JE was VE with ≥ 40 units of anti JE-IgM in the CSF and/or serum. All CNS infections were defined as, suspected cases by treating clinician with or without fever with LP showing CSF cells $>4/\text{mm}^3$.

Results Out of 38, bacterial meningitis was found in 47%, JE 21% and other causes in 32%. Although WHO definition of AES was not significantly associated with all CNS infections (p-value = 0.069), it was significantly associated with VE (p-value ≤ 0.001 , sensitivity 74%, specificity 93%, PPV 94%, NPV 70%) and BM (p-value ≤ 0.001 , sensitivity 30%, specificity 7%, PPV 33%, NPV 6%). Likewise, CSF criteria (cytology and biochemistry) for diagnosing JE was significantly associated with confirmed diagnosis of JE (p-value = 0.001).

Conclusion We validate WHO AES definition of BM and VE and CSF cytology and biochemistry analysis for the diagnosis of JE, as a significantly useful screening tool for children with these diseases specially in resource poor settings, endemic areas and confirmatory tests were not easily available.

G441(P) ABSTRACT WITHDRAWN

G443(P) TO EXPLORE THE POTENTIAL OF GEOGRAPHIC INFORMATION SYSTEM SOFTWARE (GIS) IN IDENTIFYING CHILDREN AT RISK OF MALNUTRITION AND EARLY NON-COMMUNICABLE DISEASES IN A DEPRIVED AREA OF MALAYSIA

¹ZAMH Zabidi-Hussin, ²SU Merni, ³CY Faris Irfan, ⁴MH Mohd Nazri, ⁵J Hazirah. ¹School of Medicine, International Medical University, Kuala Lumpur, Malaysia; ²Malaysia Space Agency, Kuala Lumpur, Malaysia; ³School of Medical Sciences, Universiti Sains Malaysia, George Town, Malaysia; ⁴School of Health Sciences, Universiti Sains Malaysia, George Town, Malaysia; ⁵International Islamic University, Selayang, Malaysia

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Methods The Geographic Information System software (GIS) is a software that is capable of analysing various geographic data and link them to environmental, socio economic, malnutrition and other health factors which could predict future non-communicable diseases (NCD) in adulthood. To reduce the future burden of NCD, we need to identify these children at risk in the hope that early prevention and intervention strategies would decrease its prevalence.

In 2013, a pilot study involving an interagency research group was formed, to map the location of malnourished children in one of the most deprived districts in Malaysia. A Growth Monitor software was created to capture anthropometric data for children below the age of 5 years, seen in all the health clinics in the districts. The data was used to map the location of the children and entered into the Geoinformation Software (GIS) where factors such as soil fertility, land use changes; soil moisture and flood prone areas were

combined with remote sensing data to produce a malnutrition risk map for the region.

Results A risk-map pictorial image ironically indicated that most of the malnourished and children at-risk resided in the most fertile areas of the districts, but the land was minimally used for agriculture. The research also discovered that even though these children had access to protein-rich fish, these were exported to nearby country in exchange for cash which were used for entertainment purposes.

The use of GIS has been shown to provide a very clear overall view of risks of malnutrition in children and has the capability to track these children at risk with time, enabling earlier intervention to prevent future risks of NCDs.

G444(P) ABSTRACT WITHDRAWN

G445(P) EXPERIENCES OF ACCESSING HEALTH CARE FOR LOW BIRTH WEIGHT INFANTS AMONG CARE GIVERS AND HEALTH CARE PROVIDERS IN HOMA BAY COUNTY OF WESTERN KENYA

^{1,2}SE Unsworth, ³F Were, ^{1,3}HC Barsosio, ³D Juma, ^{1,3}HM Nabwera. ¹International Public Health, Liverpool School of Tropical Medicine, Liverpool, UK; ²Medical School, University of Liverpool, Liverpool, UK; ³Centre for Global Health Research, Kenya Medical Research Institute, Kisumu, Kenya

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Aims To explore the experiences of accessing care for low birth weight (LBW) infants in rural Kenya, in order to identify the barriers and facilitators to support the development of interventions to improve outcomes of these infants in rural Kenya and other similar settings.

Methods Qualitative research using in-depth interviews. Purposive sampling was used to identify participants with experience of caring for a LBW infant in Homa Bay County, Kenya. These included primary caregivers of LBW infants who had recently been discharged from the New-born Unit at Homa Bay County referral hospital and health care providers in both primary and secondary level health facilities within the County. The interviews were held at the Homa Bay County hospital, conducted in either English, Dholuo or Swahili by an experience research assistant and were audio recorded. They were transcribed verbatim and the non-English transcripts were translated to English. A thematic approach was used to analyse the data.

Results Overall, carers and health care provider experiences focussed more on the barriers to accessing care for LBW infants in this setting. The key barriers were household deprivation, inadequate support networks for mothers of LBW infants, maternal psychological stress associated with having a LBW infant in the community, lack of knowledge about danger signs in LBW infants amongst caregivers, community and health care workers beliefs and attitudes about the poor outcomes of LBW infants and inadequate resources to provide care for LBW infants in the health system. The main facilitators were the information shared by health care providers in some of the antenatal clinics that empowered mothers to access care for their infants earlier and the support of

community health workers with accessing care through referrals and transport provision.

Conclusion Accessing care for LBW infants in this community is a challenge. This will have a negative impact on the post-discharge outcomes of these vulnerable infants. There is an urgent need to develop strategies to address these barriers starting with the empowerment of women and their communities to accept and prioritise the care and survival of these infants in a context where their survival is often poor.

G446(P) A SYSTEMATIC REVIEW EVALUATING THE METHODOLOGICAL QUALITY OF INFANT FORMULA TRIALS

M Kunc, F Dewji, J Jobson, B Helfer, R Boyle. *Paediatrics, Imperial College, London, UK*

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Background Infant formula trials are carried out to assess safety and efficacy of infant formula, however an assessment of the risk of bias within these trials is lacking. Furthermore, it is currently unclear whether in these trials breastmilk feeding is appropriately supported.

Aims To assess the risk of bias in infant formula trials and establish whether it varies according to the human development index (HDI). The risk of undermining breastmilk feeding within the trial in relation to the human development index will also be examined.

Methods This systematic review carried out an investigation into controlled trials published from 1/1/16 to 17/2/19, using the Cochrane Risk of Bias 2.0 tool, as well as analysing the risk of undermining breastmilk feeding using signalling questions derived from a previous Delphi consensus. Included trials had a population under 3 years old, where one infant formula was compared against another infant formula with modified ingredients.

Results This study considered 44 main trial publications, where 61% had a high overall risk of bias. In individual domains, highest risk of bias was identified in deviation from intended intervention (36%) and selective outcome reporting (18%). There was no significant association between HDI and risk of bias in any domain ($p > 0.05$). A high risk of undermining lactation tended to be present in lower HDI countries (OR 0.29, 95% CI 0.80 to 1.08, $p = 0.06$). 70% of the trials overall and 63% of those with high risk of undermining lactation were funded by BMS industry.

Conclusion These findings suggest a possible relationship between risk of undermining lactation and HDI, which needs to be explored further. No relationship between risk of bias and HDI was found. Further breastfeeding protection and promotion worldwide is needed.

G447(P) IAP IMMUNIZE INDIA: SMS TEXT BASED VACCINATION REMINDER SERVICE PROGRAM – AN INNOVATION

RR Pejaver. *Neonatology, People tree @ Meenakshi Hospitals, Bangalore, India*

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Objectives To Improve vaccine uptake and compliance in Childhood vaccine program by sending text alerts on phone.

Methods A soft ware program was created with a national sort code. Any person in India can register their child by sending an SMS with the child's name and date of birth to 566778 from their mobile phone. For example: 'Immunize >name<date of birth'. The same phone will then receive vaccination reminders for 12 years, whenever the child is due for a shot. Three reminders, two before the due date in that week and one after the due date. It is across all mobile networks anywhere in India. It is free of cost to the client.

Immunize India Charities then partnered with Indian Academy of Pediatrics (IAP) to endorse the program. Indian academy of Pediatrics professional organization, with over 30000 members. IAP is the disseminator and motivator. Immunize India Charities are continuing to do the back end work of the program. There is an option of joining the program for children who are already into their vaccination schedule. There is an option for a family to opt out of the program.

Results Pilot program tested before the launch. Impact value is 11% increase in uptake. The program currently has more than 1.7 million registrations.

Conclusions Very effective. Can be done in any language or multiple languages.

Utilizes the most popular cell phone and text modality.

Software based program and hence limited human resource required to implement. Soft ware is very strong. All messages are automatically generated and proof of sending the message can be had.

Can be scaled up with ease. Now the program also has an app.

The program was sought by University of Kentucky, USA. Implemented it as a pilot program in the city of Kentucky. Immunize India translated it into Spanish. The impact of the program showed improvement in the compliance and uptake of immunization. 18% increase in compliance in the 6 month cohort in the subgroup of under privileged part of the society.

Immunize India is ready to offer the program to any interested government or non profit organization, provide guidance to implement.

G448(P) QUALITY OF CARE DATA COLLECTION IN SIERRA LEONE – IMPORTANCE OF NARRATIVE AND CONTEXT

S Blakey. *Global Team, Royal College of Paediatrics and Child Health, London, UK*

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Background Emergency Triage, Assessment and Treatment plus (ETAT+) was adapted as a quality improvement intervention and rolled out to regional and district hospitals in Sierra Leone in 2017 and 2018. UK mentors partnering with ETAT +trained Sierra Leonean nurse-mentors were placed in participating facilities for 6 months to provide a 3-month teaching programme with 3 months' follow-up clinical support. Data were collected on Quality of Care (QOC) including management of severe respiratory distress (SRD) and prescription of key medications and blood transfusions, selected as core aspects of ETAT+. Aggregate data showed improvements in QOC over the two intervention periods. ETAT+ is now part of Sierra Leone's national health strengthening strategy. In 2019, a 3-year ETAT+ programme was initiated in all government hospitals.