

and rilpivirine. The study also revealed higher frequency of vaccine escape gene variants (sT125S, sA128V, sQ129H/R, sT131I, sC137S, sT143M, sD144D/E, sG145R, sT148P) with the majority of them were more prevalent in HBV-HIV co-infected individuals.

Interpretation: The current HIV-1 therapy without considering HBV diagnosis and treatment in Ethiopia is leading to rather emergence of unintended HBV drug resistance and mutant variants which can evade HBV vaccine-induced immunity. We recommend HBV testing and co-management as part of routine HIV care programs for a better ART selection. Relatively high level of HIV-1 non NRTIs resistance profiles were observed and highlight further investigation during HBV co-infection.

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Abstract #: LAN.009

Serum Folate Concentrations, Asthma, Atopy, and Asthma Control in Peruvian Children and Adolescents

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Background: Asthma has become increasingly prevalent in low- and middle-income countries (LMICs). Folate may increase asthma risk through epigenetic mechanisms. Recent research has examined the relationship between folate status and asthma-related outcomes; however, this relationship has not been examined in LMIC settings.

Methods: We analyzed serum folate concentrations in 412 children with asthma and 342 children without asthma from two geographically adjacent communities in Lima, Peru. We assessed atopy, total IgE, pulmonary function, FeNO, and asthma control using the Asthma Control Test (ACT). We defined controlled asthma as ACT score > 19. We conducted longitudinal monthly follow-up of children with asthma (n=412) for 6–9 months and recorded healthcare utilization for asthma. We examined associations between folate and asthma, atopy, pulmonary function, FeNO, total IgE, and odds of one or more emergency visits for asthma during follow-up using multivariable logistic and linear regression.

Findings: Mean serum folate concentration levels were 20.1 ng/mL (SD 4.98) and 21.1 ng/mL (SD 4.93) in children with and without asthma, respectively. Multivariable analysis showed a 10 ng/mL decrease in serum folate was associated with 45% increased odds of having asthma (OR=1.45, 95% CI 1.05–2.02; p=0.03). Atopy was an effect modifier in the folate–asthma relationship; a 10 ng/mL decrease in serum folate was associated with a 2.38-fold increase in odds of asthma among children without atopy (OR=2.38, 95% CI 1.20–4.72; p = 0.01) and 23% increased odds of having asthma in children with atopy (OR=1.23, 95% CI 0.85–1.80; p=0.28). Among children with asthma, a 10 ng/mL decrease in serum folate was associated with 40% decreased odds of controlled asthma (OR=0.60, 95% CI 0.38–0.95; p = 0.03) and 73% increased odds of one or more emergency visits for asthma

during follow-up (OR=1.73, 95% CI 1.05–2.85; p = 0.03). Serum folate levels were not statistically significantly associated with atopy, pulmonary function, FeNO, or total IgE.

Interpretation: Serum folate concentrations were inversely associated with asthma, but this effect was stronger in children without atopy. Among children with asthma, higher serum folate concentrations were positively associated with asthma control. Future studies are needed to better understand possible mechanisms for folate–asthma relationships.

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Evaluation of Self-medication with Antibiotics among Adults in Kosovo

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Background: The practice of using antibiotics without a prescription and antibiotic resistance are related public health problems in developing Eastern European countries. Self-medication with antibiotics is also an important factor driving antibiotic resistance. The aim of the present study was to estimate the prevalence of purchase of antibiotics without prescription and evaluate the knowledge regarding antibiotics among Kosovo adults.

Methods: A questionnaire was developed with validated questions from previous studies to assess level of purchase and use of antibiotics without prescription. The questionnaire was translated into the Albanian Language and then translated back to English to control for possible errors. A group of experts from the WHO office in Kosovo reviewed the questionnaire and it was determined to have face validity. Surveys were self-administered through a web link and were distributed and advertised through social media. Six hundred and sixty three (n= 663) respondents from Kosovo accessed the online link, between June 2016 to July 2016. The study includes data from 425 respondents (253 women/ 172 men, 55.53% were between 25–45 years of age, 34.59% were between 18–25 years, 8.94% were between 45–60 years, and 0.94% were >60 years).

Findings: Out of 425 participants, 249 (59%) self-medicated with antibiotics. The most common reasons for self-administration of antibiotics were sore throat 186(45.70%), cough 30 (7.37%), and pain 29 (7.13%). The antibiotics most frequently used for self-medication were Amoxicillin (41.78%), Amoxicillin/Clavulanic Acid (23.45%), Ampicillin (13.21%), and Ciprofloxacin (5.93%). The major source of self-medication was the pharmacy, where they purchased antibiotics without a prescription (91.56%). 39.23% of them have changed the type of antibiotic during the same treatment, 36.36% of them have changed the dose of the antibiotic when self-treated and 32.91% of them answered to have used the same antibiotic with different brand name at the same time.

Interpretation: The current prevalence of self-medication among adults in Kosovo, the lack of awareness about the risks and the

failure of the institutions to address this issue. Interventions aimed at preventing this situation from escalating should include a multi-level and integrated approach such as public education with the aim of increasing awareness and knowledge regarding antibiotic misuse, enforcing regulations regarding antibiotic sale and dispensing and pharmaceutical advertising.

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Abstract #: LAN.011

Impact of Integrating FOMENT within a Community-Based Gestational Diabetes Mellitus Health Program in Bangladesh

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Program/Project Purpose: *Background:* Evidence shows that community based GDM (Gestational diabetes mellitus) programs are effective in reducing morbidity in low resource settings. Diabetes mellitus, particularly type 2 diabetes, is now recognized as a major chronic public health problem in Bangladesh. Low socio-economic conditions, lack of knowledge related to nutrition and proper pregnancy planning and care are the possible barriers to effective pregnancy outcomes for women with diabetes. We describe an innovative intervention strategy for Bangladesh, and demonstrate how promotion of knowledge about GDM can be effectively integrated into a community based GDM program. Overall findings of the projects which were implemented for GDM in Bangladesh suggest that the agencies desired more culturally specific resources.

Objectives: 1) Identify potential programming opportunities to link GDM services within a community based health program. 2) Describe a model of an integrated GDM program in low resource settings. 3) Describe new approaches for supporting organizations for effective and efficient dissemination of knowledge.

Structure/Method/Design: *Interventions:* Intervention priorities include health policy, community based GDM services, and a FOMENT approach in the northern part of rural Bangladesh. The major interventions are: 1) Pre-pregnancy counseling about the risks associated with unplanned pregnancies and poor metabolic control, 2) Screening for diabetes before and during pregnancy which certainly initiate early steps in management, 3) Ensuring access to essential medications, self-management education and information for pregnant women with GDM, 4) Training of health care professionals in the identification, treatment, management and follow up of GDM, and 5) Life style management through BCC.

Outcome & Evaluation: *Expected results:* The results of the intervention would identify its effectiveness. The intervention has the potential to substantially reduce maternal morbidity and ultimately prevent maternal mortality throughout the country. Thus, the outcomes of the study would be highly relevant for policy changes regarding GDM prevention, in Bangladesh specifically as well as in other similar settings.

Going Forward: *Conclusions:* This innovative model can be effectively replicated in low resource settings in South Asia and Africa where there is a need for community-based GDM services.

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Dietary Exposure of Pregnant Women in Suriname to Pesticides in Produce

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Background: National pesticide policies in Suriname are lacking and minimally enforced. In 2015, 1.8 million kg. of pesticides were imported. Data from the Netherlands on imported Surinamese produce (2010–2015) showed some samples exceeded maximum residue limits (MRLs) of the European Union (EU). Pesticide exposure has been associated with neurological- and neurobehavioral disorders. Pregnant women and children are especially vulnerable. The Caribbean Consortium for Research in Environmental and Occupational Health will assess exposure to select pesticides in 1000 mother/child dyads. This study represents the dietary assessment of a participants' subset.

Methods: Phase I of the study entails a pilot pesticide residue analysis in 9 types of produce. In addition, a comparative analysis was conducted using EU 2014–2015 screening data of similar produce from Suriname. In Phase II, an interviewer-assisted dietary assessment is conducted to examine demographic factors and intake rates of produce. Data analysis will include ascertaining the extent to which these factors and other social determinants of health, e.g. education and income influence produce consumption. The dietary assessment tool is based on NHANES dietary assessments and has been tailored to Suriname. Specifically, in addition to available data on contaminated Surinamese produce, the content was pilot tested to ensure the questionnaire focused on the most frequently consumed items and complied with the literacy levels of the target population.

Findings: Residues in Phase I exceeding EU MRLs in some produce samples included lambda-cyhalothrin (1.08µg/g) in Chinese cabbage (EU MRL 1.00µg/g), endosulfan (0.07µg/g) in Tannia (EU MRL 0.05µg/g) and lindane (0.03µg/g) in Tannia (EU MRL 0.01µg/g). Comparatively, EU samples from Suriname exceeding EU MRLs included carbendazim, chlorothalonil and profenofos in peppers. Endosulfan and lindane are listed under the Stockholm Convention to eliminate/control their use and are banned in Suriname for use on produce. Dietary assessment results will also be presented.

Interpretation: There is an urgency to address environmental policy gaps and the implications of those gaps for food safety and produce export. Dietary assessment findings will inform public health policy and guide advisories to protect pregnant women and children.

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