

**Methods:** Similar to Jagai et al (2010), looking at cryptosporidiosis and cattle density, we utilized hospitalization claims data and county-level swine inventory data to examine health impacts of concentrated swine production. The International Classification of Diseases (ICD 9CM) codes were used to Abstract symptoms and outcomes of interest within hospitalization claims data from the Illinois Hospital Association Inpatient and Outpatient Database for 1999-2011. Livestock density is derived from county inventory data from United States Department of Agriculture Survey and Census and supplemented with North American Industry Classification System database. Associations will be assessed using General Additive Models, Poisson regression analyses, as well as bivariate spatial autocorrelation (Moran's I). Additionally, climatic and environmental fecal contamination measurements will be examined to address confounding and fate and transport of potential exposures.

**Findings:** Preliminary analysis of bacterial pneumonia and *Clostridium difficile* Associated Disease (CDAD) rates from a comparable database revealed complex non-linear relationships between human infection, swine density and human population density, which requires further inclusion of spatial land use and climatic indicators, as well as alternative anthropogenic pathogen source contribution. Analyses examining other biologically plausible health outcomes (bronchitis, asthma, gastrointestinal disease, and antibiotic-resistant pathogens [MRSA]) are being evaluated.

**Interpretation:** This study builds on prior knowledge of health outcomes related to CAFO exposure using spatially informed approaches to determine potential health impacts and risks to communities and ecosystems around CAFOs. Disclaimer: The views expressed in this Abstract are those of the authors and do not necessarily reflect the views or policies of the U.S. EPA.

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**Abstract #:** 01CD005

### Knowledge of and barriers to bednet use among pregnant women in Northern Ghana

Abstract opted out of publication.

**Abstract #:** 01CD006

### Underutilization of isoniazid drug therapy to prevent TB disease progression in Swaziland

B. Cronin<sup>1</sup>, M. Calnan, S. Haumba, L.V. Adams<sup>2</sup>; <sup>1</sup>Dartmouth College, Hanover, NH/US, <sup>2</sup>Geisel School of Medicine at Dartmouth, Hanover, NH/US

**Background:** An estimated 80% of the Swaziland population unknowingly contract tuberculosis (TB) as children and harbor inactive TB bacteria in their bodies — a condition called latent TB infection (LTBI). The TB infection can reactivate to cause TB disease in these individuals during their lifetime, especially if they are immunosuppressed by HIV (in Swaziland 75-80% of HIV patients also have latent TB infection). Swaziland has the highest TB incidence rate of any country in the world and TB causes an estimated 50% of the nation's HIV patient deaths. Administration of Isoniazid Preventive Therapy (IPT) for six months has been shown to prevent progression of latent TB infection to TB disease. In 2011 the Swaziland government mandated IPT for all HIV patients at all national health facilities. We sought to determine if this policy was being implemented.

**Methods:** We reviewed the 2012 and 2013 annual TB/HIV reports for the number of HIV-infected patients screened for TB to determine those eligible for and initiated on IPT at four health facilities in Swaziland. A

retrospective review of patients initiated on IPT was performed at the facilities to assess patient IPT adherence. Data on IPT/ART prescription refills, dates of IPT therapy and IPT outcomes were extracted from 400 individual patient records at facility data rooms and pharmacies.

**Findings:** During 2012-2013, 68,884 HIV patients were screened for TB at the four facilities. 67,870 (98.5%) of all documented HIV patients had TB disease ruled out by symptom screen and were considered eligible for IPT. However, only 532 (<1%) of eligible patients were initiated on IPT. Less than half (47%, 189/400) of patients examined in the individual record review had documentation of completing IPT. 40% (159/400) of reviewed patients were prescribed at least one month of IPT and returned for consistent anti-retroviral therapy (ART) refills despite discontinuing IPT. These patients adhered to their HIV therapy for an average of 18 months after stopping IPT. Of the patients who had traceable discontinuation dates, 29% (42/144) stopped IPT after one month and 91% (131/144) stopped within 4 months. Completeness of IPT data varied by site and ranged from 75% to less than 50%.

**Interpretation:** Our study suggests significant underutilization (greater than 98%) of IPT among eligible HIV-infected patients and low treatment completion rates among those initiating IPT in Swaziland. Given the large proportion of IPT-noncompleters who remained adherent to ART, poor IPT adherence may be due to lack of documentation and/or increased pill burden. Further efforts to increase IPT uptake and adherence among this high-risk population are necessary to decrease the burden of future TB disease in Swaziland.

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### Acute energy undernutrition and intestinal parasitic infections in under five years children in low socio-economic communities, Sri Lanka

L. Sandaruwan Galgamuwa<sup>1</sup>, D. Iddawela<sup>1</sup>, S.D. Dharmaratne<sup>2</sup>; <sup>1</sup>University of Peradeniya, Sri Lanka, Peradeniya, LK, <sup>2</sup>Department of Community Medicine, Faculty of Medicine, University of Peradeniya, Sri Lanka and Institute for Health Metrics and Evaluation, University of Washington, USA, Peradeniya, LK

**Background:** Acute energy under nutrition remains a major public health problem in Sri Lanka and it is one of the most common causes of childhood morbidity and mortality worldwide. Measurement of Mid-Upper Arm Circumference (MUAC) is used as an indicator of mortality risk associated with acute under nutrition. The aim of the study was to identify the association between acute energy under nutrition and intestinal parasitic infections among children aged one to five years in low socio-economic communities in the Central province of Sri Lanka.

**Methods:** This cross-sectional study was conducted from January to April 2013. Circumference of each child's left mid-upper arm was measured for MUAC using standard procedures. MUAC < 115 mm were classified as severe acute under nutrition (SAU), MUAC ≥ 115 mm and < 125 mm were classified as moderate acute under nutrition (MAU). Stool samples were subjected to wet preparation and formaldehyde-ether sedimentation technique for parasites identification. Data were analyzed with SPSS version 17 statistical software.

**Findings:** 206 children between 1 to 5 years with a mean age of 2.9 (SD±1.0) years participated and the mean MUAC of them was 14.7 (SD±1.1) cm. The prevalence of acute energy under nutrition was 6.3% (13/206). All of them had MAU and no cases of SAU were