

data regarding these biomarkers in relation to dietary patterns from the Southern Cone of Latin America. Therefore, the objective of this study is to analyze these biomarkers in relation to our traditional dietary patterns.

**Structure/Method/Design:** CESCAS I study is an observational prospective cohort study with a multistage probabilistic sample of 7600 participants from general population of four sites in Argentina, Chile and Uruguay. We conducted a cross-sectional analysis in a randomly selected subsample of 988 subjects. Subjects with previous cardiovascular events or under lipid-lowering agents were excluded. Diet was assessed using a previously validated 126-item food frequency questionnaire. We used a factor analysis to derive the major dietary patterns by gender. Linear regression models were used to examine the associations among Apo AI, Apo B, CRP, and other lipids (dependent variables) and quartiles (Q) of dietary pattern scores (independent variables). Linear trends tests were conducted to assess the associations with multiple regression analysis.

**Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract):** The population sample included 418 men and 570 women. The “prudent pattern” (PP) was characterized by intake of fruits, vegetables, low-fat dairy products, whole cereal, fish, and seafood. In men, higher scores of PP (Q4) showed a significant reduction in mean adjusted values of Apo B (−9.29 mg/dL), total cholesterol (TC) (−22.4 mg/dL), low-density lipoprotein (LDL) (−19.0 mg/dL), high-density lipoprotein (HDL) (−3.3 mg/dL) compared to the lowest scores (Q1). In normal-weight subjects, higher scores of PP also reduced CRP levels (−3.12 g/L). In women, higher scores of PP showed significant reduction in Apo B (−6.51 mg/dL), TC (−14.4 mg/dL) and LDL (−11.3 mg/dL). The “Western-like pattern” (WLP) was characterized by intake of meat, processed foods, pizza, empanadas, sweets and desserts, refined grains, vegetable oils, and other fats. In men, higher scores of WLP showed a trend to increase LDL (+27.1 mg/dL) while in women they showed a trend to increase values of triglycerides (+27.1 mg/dL,  $P = 0.08$ ), LDL (+7.4 mg/dL), and TC (+9.2 mg/dL). Apo AI level was not associated with any dietary pattern.

**Summary/Conclusion:** Prudent dietary pattern was associated with a healthier lipid profile in both genders and better inflammatory profile in normal weight men, while the WLP showed a trend to increase plasma lipids, especially in women.

### Developing a breast cancer knowledge assessment tool for health care workers in Ibadan, Nigeria

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**Background:** Breast cancer is the most common cancer affecting women, and in the developing world, late-stage diagnosis contributes to significant morbidity and mortality. Previous research in Ibadan, Nigeria on social factors contributing to late-stage diagnosis revealed that many patients received inappropriate medical treatment at the community level. Our research sought to assess the level of knowledge about breast cancer among a range of medical practitioners.

**Structure/Method/Design:** Many of the established knowledge assessment instruments from the United States focused on mammography screening, which was not applicable in this setting, so we conducted focus groups, as we developed our own tool. Our

questionnaire was designed to assess knowledge of symptoms, risk factors, treatments, and local cultural beliefs about breast cancer. Focus groups were conducted with health care workers from multiple tiers of the health care system to ensure that the topics covered in the questionnaire were comprehensive. The focus groups were audio-recorded and facilitated by experienced public health researchers. They were analyzed thematically.

**Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract):** Seven focus groups were conducted each consisting of three to eight participants from a single professional group. Participant groups were tertiary hospital physicians, general hospital physicians, primary health care center nurses, general hospital nurses, traditional birth attendants, community pharmacists, and traditional herbalists. The discussions revealed baseline knowledge of breast cancer symptoms across multiple tiers of the health care system, as well as a general awareness of the types of treatment available. Variation in knowledge level was seen most strongly in discussion of risk factors and etiology for breast cancer. All participants regardless of training were aware of the trend of late-stage diagnosis and had many insightful comments as to the causes for it including specific cultural beliefs. New topics raised in focus group discussions were added to the questionnaire.

**Summary/Conclusion:** Many existing breast cancer awareness tools have been developed for an American context with a focus on mammographic screening, and this cannot be applied to a low- or middle-income context where such screening is not widespread. Additionally, cultural beliefs may act as significant barriers to care and are location specific. Now that we have developed a relevant questionnaire we will begin recruiting 500 health care workers to complete it. Once we have captured the current level of knowledge we can design educational programs that fit the specific needs of each professional level. Greater knowledge among community health care workers has the potential to reduce time to referral and effective care at a tertiary medical center for Nigerian breast cancer patients.

### Association of alcohol consumption and breast cancer risk among women in three sub-Saharan African countries

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**Background:** Alcohol drinking is linked to a risk of women’s breast cancer. However, there is little knowledge about alcohol consumption and its relationship to breast cancer among African women.

**Structure/Method/Design:** We conducted a case–control study among 2139 women with invasive breast cancer and 2590 controls in Cameroon, Nigeria, and Uganda from 1998 to 2013. A structured questionnaire was used to collect detailed information on alcohol drinking. Alcohol consumption was defined as having ever consumed alcoholic beverages at least once a week for a continuous 6 months or more. Alcohol contents in different types of drinks were quantified and converted to amount of pure ethanol. Multivariate logistic regression analysis was used to estimate adjusted odds ratio (aOR) and 95% confidence interval (CI).

**Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract):** The prevalence of alcohol consumption among women in Cameroon, Nigeria, and Uganda were 42.6%, 6.6%, and 46.1%, respectively. Women with breast cancer were more likely than

controls to have ever consumed alcohol (aOR, 1.64; 95% CI, 1.29–2.07). Both past drinking (aOR, 1.70; 95% CI, 1.24–2.35) or current drinking (aOR, 1.51; 95% CI, 1.10–2.07) were associated with breast cancer risk. A dose–response relationship was observed for years of drinking ( $P$  trend < 0.001), with each additional year contributing to a 2% increase in risk. Among women with family history of breast cancer (aOR, 2.81; 95% CI, 1.09–7.24), the relationship between alcohol drinking and breast cancer was stronger than that among women without the history (aOR, 1.55; 95% CI, 1.21–1.99).

**Summary/Conclusion:** We found a positive relationship between alcohol consumption and breast cancer risk among African women, although it was heterogeneous across three countries. Alcohol drinking may be becoming increasingly common among African women, and this modifiable risk factor should be addressed in breast cancer prevention programs in Africa.

### The effect of geography and demography on outcomes of emergency department patients in rural Uganda

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**Background:** In Sub-Saharan Africa (SSA) geography represents a significant challenge to accessing health services. Patients' ability to negotiate these challenges is strongly influenced by many demographic factors including poverty, urban versus rural household location (urbanicity). Emergency care is a young and developing field in SSA, and geographic determinants of emergency patient outcomes in SSA are poorly understood. This study aims to quantify the effect of geographic determinants on the outcomes of patients with acute health conditions in SSA, controlling for demographics.

**Structure/Method/Design:** This is a retrospective cohort study of patients presenting to an emergency department (ED) of a rural Uganda district hospital. The ED care was managed by non-physician clinicians with specialized training in emergency care. Logistic regression modeling was utilized to determine if patients' distance to hospital is associated with mortality within 3 days of presenting to the ED, controlling for urbanicity, poverty prevalence, patient age, and pediatric malnutrition cases. Distance categories were <5 km, 5 to <10 km, and 10 km+. At the larger subcounty level, urbanicity was dichotomized into urban and poverty prevalence was categorized as low, moderate, and high. Age categories were <1 year, 1 to 4 years, 5 to 14 years, 15 to 49 years, and 50 years+. The 3-day mortality outcome was determined by follow-up in the hospital or by phone call to family or friends.

**Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract):** 3767 Rukungiri residents treated in the ED from November 2010 to November 2011 were included, with an observed 3-day mortality of 2%. Distance to hospital was positively associated to 3-day mortality after controlling for poverty, urbanicity, age, and malnutrition. Compared to patients living <5 km from the hospital, patients living 5 to <10 km from the hospital had 1.7 times the odds of 3-day death (95% CI, 0.8-3.7;  $P = 0.155$ ), and patients living 10 km+ from the hospital had 2.2 times the odds of 3-day death (95% CI, 1.0-5.0;  $P = 0.048$ ). Urbanicity and poverty were significantly associated to 3-day mortality on univariate analysis, but not in multivariate analysis.

**Summary/Conclusion:** Distance to hospital is an independent risk factor for 3-day mortality of ED patients after controlling for demographic factors. This may have implications for future resource allocation toward emergency care development in Uganda and SSA.

### Unintentional home poisoning among children in rural Ghana: A community survey of knowledge, attitudes, and practices

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**Background:** Unintentional poisonings are a common cause of emergency department visits. In 2004, an estimated 346,000 deaths occurred worldwide from unintentional poisonings, 91% of which occurred in developing countries. Due to lack of data collection mechanisms and resources, unintentional poisoning studies have not been conducted in most developing countries.

Recently, Ghana loosened regulations for the sale and distribution of pesticides and herbicides. Pediatricians in Kumasi, Ghana reported an increase in the number of admissions for unintentional childhood poisonings.

**Structure/Method/Design:** A cross-sectional, semi-structured questionnaire consisting of open- and close-ended questions was developed to assess knowledge, attitudes, and current practices regarding unintentional household childhood poisonings in rural, agrarian Ashanti, Ghana. Team members native to the region completed translation of the questionnaire, which was then pilot tested and modified based on feedback from trial field interviews. Five rural and semi-rural areas were sampled to encompass a range of population characteristics. Cooperation was high with 94% of households with children age 0 to 15 years participating ( $N = 114$ ). We calculated descriptive characteristics using Stata 12.0. Open-ended questions were coded and analyzed in NVivo 9.

**Results (Scientific Abstract)/Collaborative Partners (Programmatic Abstract):** Respondents were mostly primary caregivers (84%) and female (74%). Mean age for primary caregivers was 41 years. Half of the respondents (53%) had completed junior secondary school or higher. Nearly all respondents defined a poison as a substance that was harmful to health, and could list at least one poisonous substance, namely pesticides, kerosene, rat poison, and chlorine/bleach. The most common causes reported for poisonings were improper storage of poisons (42%) and ignorance of the child (54%). Interviewees cited proper storage as a means to prevent poisonings, yet poisonous substances were often stored in locations that were accessible to children. Less than 5% of respondents (4/114) indicated that teaching children about potentially poisonous substances would help reduce poisoning incidents. Furthermore, some respondents did not believe that medications could be poisonous.

**Summary/Conclusion:** Despite the worldwide burden of unintentional childhood poisonings, few in-depth analyses of unintentional poisonings have been conducted. While most participants in our study acknowledged that a poison was a harmful substance, and could identify at least one poison in their home, few knew that teaching their children about harmful substances could help reduce unintentional poisonings. School education programs and local health clinics may be an effective and sustainable avenue for an intervention to teach children about poisonous substances, and prepare caregivers to educate children about the danger of poisonous substances. We suggest including hair products