variable statistically significant. Children living in families receiving SNAP benefits are more likely to be overweight/obese by a factor of 1.23. A set of potential confounders to the analysis and tests for interaction effects between SNAP participation and SNAP generosity (Model 3). Controlling for a variety of demographic and socio-economic factors, the positive effect of SNAP participation on overweight/obesity is rendered negative. The nonsignificant effect of SNAP generosity remains. In Model 3, the interaction effect for SNAP participation and generosity is positive and marginally significant. This suggests that the generosity of benefits changes the basic relationship between SNAP participation and overweight/obesity among children in families receiving benefits. To help convey the meaning of this coefficient, we generated marginal effects of SNAP participation based on SNAP generosity, setting all covariates equal to their means. This figure shows a small negative effect of SNAP participation at the lowest levels of generosity (a score of around 4, the sample minimum). This negative effect crosses 0 at a score of around 12, then becomes positive. The magnitude of the positive effect grows up to the sample max (index = 28), although with widening confidence intervals. DISCUSSION/SIGNIFICANCE OF IMPACT: The focal interest of this study lies in the potential interaction effect between SNAP generosity and SNAP participation on overweight/obesity. Although the effects were only marginally significant, we find that SNAP generosity does interact with SNAP participation. More specifically, the effects of SNAP participation appear negative at lower levels of generosity, becoming positive as generosity scores exceed the sample mean (index = 10). In other words, state-level SNAP generosity appears to exacerbate the adverse effects of SNAP participation on overweight/obesity. Although we submit that our current findings contribute to the literature on the SNAP-health link, we intend to strengthen our analysis in several ways. First, we will fit models that exploit the strengths of the PSID and the welfare generosity index in terms of causal inference. We will use fixed effects models to control not only for potential unobserved confounders related to the child but also observable baseline characteristics. Leveraging the fact that PSID samples up to 2 children from each family, we will further refine our estimates towards a causal interpretation with the use of sibling fixed effects, in which we additional account for unmeasured time-invariant family-level variables that encapsulate a variety of factors including learned behaviors, cultural influences, genetic predispositions that contribute to child health outcomes. Second, research has clearly shown that compared with higher-SES individuals, lower-SES individuals have higher BMI regardless of welfare program participation. These selection effects are addressed somewhat by the PSID's intentional over-representation of low-income individuals. But we can much more convincingly address these potential problems with endogeneity by refining our analyses to compare SNAP participants to SNAP-eligible nonparticipants, thereby isolating the effect of the SNAP "treatment." Lastly, we intend to include a wide array of state-level covariates that may be related to our independent and dependent variables of interest, such as poverty rate, unemployment rate, and racial/ethnic composition.

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Johns Hopkins School of Medicine ClinicalTrials.gov Program challenges and successes
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OBJECTIVES/SPECIFIC AIMS: Educate the general public, investigators, and institutional leadership on the importance of clinical trial registration and results reporting. Share success as a means to develop national best practices. METHODS/STUDY POPULATION: Developed a Project Charter; Spoke to several peer institutions; Update institutional policy. RESULTS/ANTICIPATED RESULTS: Since launching the Program in June 2016, the number of records submitted to ClinicalTrials.gov has increased 14% (852–971). At the same time, compliance with late results has increased by over 92% (111–9). DISCUSSION/SIGNIFICANCE OF IMPACT: Clinical Trial registration and results reporting is sub-par at many institutions. We have established a successful program that others can emulate. Institutions can increase transparency of clinical trials as well as prevent civil monetary penalties ($11,569/d/study) and loss of grant funding.

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Long-acting reversible contraceptive uptake in female sex workers and single mothers in Rwanda and Zambia
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OBJECTIVES/SPECIFIC AIMS: Long-acting reversible contraception (LARC) has been well established as the most cost-effective form of contraception, but LARC usage in developing countries remains low. As part of a multi-center parent study on HIV incidence, we implemented an integrated family planning program to increase LARC uptake in single women in Rwanda and Zambia. We aim to evaluate rates of LARC uptake, LARC discontinuation and incident pregnancy following family planning counseling. METHODS/STUDY POPULATION: We enrolled 3 cohorts of single sexually active HIV-negative women between the ages of 18–45 years: single mothers (SM) in Zambia, female sex workers (FSW) in Zambia and FSW in Rwanda. Participants were followed every 3 months for up to 5 years. At each visit, we discussed fertility goals and counseled participants on HIV risk reduction and contraceptive options. Eligible participants (not pregnant, already using a LARC method, or using a permanent contraceptive method) were offered a LARC method, specifically the copper IUD or Jadelle implant. Data was collected on demographic factors, sexual behavior, sexual and reproductive history, and gynecological exams and laboratory tests were performed if necessary. RESULTS/ANTICIPATED RESULTS: In total, 458 Rwandan FSW, 555 Zambian FSW, and 521 Zambian SM were enrolled, with a median follow-up time of 6 months, 12 months, and 9 months, respectively. Accounting for any LARC uptake during longitudinal follow-up, our preliminary results show an increase in LARC usage from 21% at screening to 51% at the end of follow-up among Rwandan FSW, an increase from 12% to 42% in Zambian FSW and an increase from 18% to 44% in Zambian SM. We hypothesize that demographic factors (e.g., younger age, higher education level) and sexual history (e.g., greater number of sexual partners, any STIs or reproductive health disturbances) will be associated with increased rates of LARC uptake. We also hypothesize that LARC users will have significantly lower proportions of contraceptive method discontinuation and incident pregnancy compared to non-LARC users. DISCUSSION/SIGNIFICANCE OF IMPACT: FSW and SM are disproportionately affected by high rates of unintended pregnancy, which can lead to obstetric complications and poor psychosocial outcomes. It is imperative that family planning interventions in developing countries target these populations to overcome obstacles in reproductive health and promote gender equality. Our study will provide necessary insights to an integrated family planning program, which will guide future efforts to design, implement and evaluate family planning initiatives for high-risk populations.

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Nutritional outcomes in pediatric oncology patients less than 3 years of age
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OBJECTIVES/SPECIFIC AIMS: Brain tumors are the most common solid tumor diagnosed in children and their location predisposes patients to oromotor dysfunction leading to feeding difficulties. Brain tumor patients experience feeding difficulties more frequently than other pediatric malignancies, largely due to central nervous system directed chemotherapy, radiation, and surgery. Treatment increases the risk of malnutrition and increases risk for infection, ICU admissions, and death. Infants and children (less than 3 years of age) are at higher risk for malnutrition due to rapidly changing nutritional requirements and the underdevelopment of motor skills. Incidence and prevalence of malnutrition in pediatric cancer patients is not well known. METHODS/STUDY POPULATION: This is an observational, retrospective study of our center's pediatric cancer patients. Patients are classified by diagnosis, treatment intensity (ITR-2), vital status, and heights and weights (with standardized Z-scores) will be recorded with through 2 years after diagnosis. Adaptation of Intensity of Treatment Rating ITR-2. Nutrition consultation, ICU admissions, and use of parenteral or enteral nutrition will be recorded. Weight loss greater than a 5-percentile point change or Z-score decrease greater than 0.5 will be treated as a binary outcome and considered significant weight loss. RESULTS/ANTICIPATED RESULTS: Preliminary analysis has identified 465 eligible subjects as described above: brain tumor (n = 45) and nonbrain tumor patients (n = 420). Patient Schema. This study is still in progress and aims to better identify incidence of malnutrition during pediatric cancer therapy. It is expected that a greater number of nonbrain tumor patients compared with brain tumor patients will be malnourished as defined by decrease in Z-score greater than 0.5 at any point in therapy or falling below the 5th percentile of weight for age. Weight loss will be associated with higher number of ICU admissions and higher treatment intensity score. Finally, we expect to find that patients with a larger decrease in Z-score for age will be more likely to die during therapy. DISCUSSION/SIGNIFICANCE OF IMPACT: In addition to this study being valuable in better defining incidence of malnutrition, this data will serve as preliminary data in defining target populations for focused nutritional intervention during cancer therapy. Using this established and published intensity rating scale, we may be able to identify better methods of identifying and preventing malnutrition during cancer therapy.