

outpatient treatment at TND or RH. Participants complete a one-time online survey comprising a demographics questionnaire, Rotter Interpersonal Trust Scale, Wake Forest Trust in Physician Scale, Revised Health Care System Distrust Scale, 5-item RAND Social Desirability Scale, and Adverse Childhood Events Survey. Participants then individually participate in a modified protocol of the "Trust Game." Predictor variables for multivariate analysis collected include age, race/ethnicity, gender identification, number of days in current treatment, number of prior substance abuse treatment programs, and number of adverse childhood events. RESULTS/ANTICIPATED RESULTS: Each individual scale will be assessed for item analysis, factor analysis, construct validity, content validity, and reliability and compared with general population sample values published in the literature. We will use multivariate analysis to determine the impact of potential predictor variables on specific types of interpersonal or healthcare-related trust. We anticipate having preliminary results to present in April. DISCUSSION/SIGNIFICANCE OF IMPACT: Women who seek substance abuse treatment in the community face unique challenges compared to their male counterparts, including higher rates of prior interpersonal trauma, co-occurring psychiatric diagnoses, and more serious physical health problems. Characteristics such as these highlight the need for regular healthcare engagement in the setting of an increased risk of decreased interpersonal or healthcare-related trust. Prior qualitative research demonstrates that trust building is seen as an essential component of care in ongoing substance abuse treatment for women in this population. Validation of psychometric healthcare-related trust scales in a population of women seeking substance abuse treatment in a community based setting will provide a framework for future quantitative inquiry into the impact of healthcare-related trust on health outcomes, healthcare engagement, and treatment retention for this target population. Similarly, it will also facilitate inquiry into the effectiveness of specific treatment programs or interventions on improving therapeutic trust building.

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### Views of African American parent-child dyads on the immunization neighborhood to improve HPV vaccination rates

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OBJECTIVES/SPECIFIC AIMS: To better understand African American (AA) parents and their adolescents perceptions towards the immunization neighborhood to improve HPV vaccination rates. METHODS/STUDY POPULATION: We conducted qualitative interviews among a purposive sample of 30 AA parent-child dyads. We engaged the community (community advisory boards, community organizations) in the design and implementation of this study. Before each interview, we provided participants a brief survey to assess acceptability of various vaccination settings (i.e., pharmacies, health departments, and schools). An inductive, qualitative content analysis approach was used to analyze the data, and a constant comparison method was used to compare codes for theme development. Descriptives (i.e., frequencies) were used to analyze survey data with the SPSS version 23 software. RESULTS/ANTICIPATED RESULTS: Findings demonstrate that many parents were willing to get their adolescents vaccinated at the health department ( $n = 19$ ) followed by the pharmacy ( $n = 17$ ). However, majority of parents were less willing to get their adolescent vaccinated at school ( $n = 21$ ). Mixed results were found for children with many having positive attitudes towards alternative settings (health department = 21; pharmacy = 14; school = 16). Parents viewed the health department as being stigmatized and unclean for adolescent immunizations in general, while children were unsure of the difference between the health department and the medical home for the vaccine. Both parents and adolescents viewed the pharmacy as "too open" but would use it if a nurse administered the shot and had a good tracking system. Both also expressed strong feelings against school vaccinations, especially HPV vaccine shots. However, would consider for convenience or if administration was done by a nurse. DISCUSSION/SIGNIFICANCE OF IMPACT: Findings from this study provide intervention targets to improve access to HPV vaccination in alternative settings. It further demonstrates the importance of community engagement for the success of translational research, in which we will use it to disseminate this study's findings. Ultimately, this study could play a role in shifting the traditional model of the HPV vaccine being provided solely in the medical home to improve HPV vaccination rates.

## SCIENCE AND HEALTH POLICY/ETHICS/ HEALTH IMPACTS/OUTCOMES RESEARCH

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### (In)Adequacy of prophylactic central lymph node dissection for papillary thyroid cancer in the United States: An analysis of 18,755 patients

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OBJECTIVES/SPECIFIC AIMS: The incidence of papillary thyroid cancer (PTC) has sharply increased in recent decades. Though thyroid resection is the best treatment modality, there is significant variation in practice involving use of prophylactic central lymph node dissection (PCLND) at time of thyroidectomy. Recently, a threshold number for lymph node (LN) yield was determined to assure adequacy of lymphadenectomy in evaluating occult nodal disease via PCLND for pathologic T3, clinical N0, M0 PTC patients, for whom guidelines recommend PCLND. This study assesses the prevalence of adequate prophylactic LN dissection (APLND) and determines its association with patient, and disease characteristics. METHODS/STUDY POPULATION: Adult patients receiving surgery for pT3 cN0 M0 PTC > 1 cm were identified from the National Cancer Data Base, 2004–2015. APLND for pT3 stage was defined as removing 8 or more LNs, based on recent literature. Univariate and multivariate logistic regression models were employed to determine factors associated with APLND and inadequate prophylactic LN dissection (IPLND). RESULTS/ANTICIPATED RESULTS: In total, 18,755 patients were included: 2905 (10.1%) had APLND; 15,849 (89.9%) had IPLND. Rate of APLND increased from 4.9% to 17.9% over the decade. Patients receiving APLND were younger than those receiving IPLND (47 vs. 52 years, respectively,  $p < 0.001$ ). The proportion of cases found to be LN positive in the APLND group was 64.5%, while that in the IPLND group was 18.2% ( $p < 0.001$ ). After adjustment, Whites were more likely than Blacks to receive APLND [OR 1.86 (95% CI 1.51–2.30),  $p < 0.001$ ]. The adjusted OR of receiving APLND was higher at academic centers [1.76 (1.29–2.41),  $p < 0.001$ ] and at integrated centers [1.77 (1.25–2.51),  $p < 0.001$ ], compared with community facilities. After adjustment, patients with multifocal tumors were more likely to receive APLND than those with unifocal tumors [1.28 (1.17–1.41),  $p < 0.001$ ]. Unplanned 30-day readmission rate was higher in the APLND group (2.4%) compared to the IPLND group (1.7%,  $p < 0.001$ ); this remained significant after adjustment [OR for APLND 1.80 (1.31–2.47),  $p < 0.001$ ]. There was no significant difference in the likelihood of receiving radioactive iodine between patients who underwent APLND versus IPLND [1.00 (0.90–1.00),  $p = 0.6$ ]. DISCUSSION/SIGNIFICANCE OF IMPACT: APLND is associated with a higher likelihood of finding metastatic LNs, and an increased risk of unplanned short-term readmissions. The rate of APLND has increased over time, but still only a minority of thyroid cancer patients undergo adequate prophylactic surgery. Disparities exist based on patient, facility, and disease characteristics. Further work is needed to study the association between adequacy of dissection and disease recurrence.

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### A community-academic translational research and learning collaborative to evaluate the associations among biological, social, and nutritional status for adolescent women and their babies using electronic health records (EHR) data

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**OBJECTIVES/SPECIFIC AIMS:** To build a multisite de-identified database of female adolescents, aged 12–21 years (January 2011–December 2012), and their subsequent offspring through 24 months of age from electronic health records (EHRs) provided by participating Community Health. **METHODS/STUDY POPULATION:** We created a community-academic partnership that included New York City Community Health Centers ( $n=4$ ) and Hospitals ( $n=4$ ), The Rockefeller University, The Sackler Institute for Nutrition Science and Clinical Directors Network (CDN). We used the Community-Engaged Research Navigation model to establish a multisite de-identified database extracted from EHRs of female adolescents aged 12–21 years (January 2011–December 2012) and their offspring through 24 months of age. These patients received their primary care between 2011 and 2015. Clinical data were used to explore possible associations among specific measures. We focused on the preconception, prenatal, postnatal periods, including pediatric visits up to 24 months of age. **RESULTS/ANTICIPATED RESULTS:** The analysis included all female adolescents ( $n=122,556$ ) and a subset of pregnant adolescents with offspring data available ( $n=2917$ ). Patients were mostly from the Bronx; 43% of all adolescent females were overweight (22%) or obese (21%) and showed higher systolic and diastolic blood pressure, blood glucose levels, hemoglobin A1c, total cholesterol, and triglycerides levels compared with normal-weight adolescent females ( $p < 0.05$ ). This analysis was also performed looking at the nonpregnant females and the pregnant females separately. Overall, the pregnant females were older (mean age = 18.3) compared with the nonpregnant females (mean age = 16.5), there was a higher percentage of Hispanics among the pregnant females (58%) compared with the nonpregnant females (43.9%). There was a statistically significant association between the BMI status of mothers and infants' birth weight, with underweight/normal-weight mothers having more low birth weight (LBW) babies and overweight/obese mothers having more large babies. The odds of having a LBW baby was 0.61 (95% CI: 0.41, 0.89) lower in obese compared with normal-weight adolescent mothers. The risk of having a preterm birth before 37 weeks was found to be neutral in obese compared with normal-weight adolescent mothers (OR = 0.81, 95% CI: 0.53, 1.25). Preliminary associations are similar to those reported in the published literature. **DISCUSSION/SIGNIFICANCE OF IMPACT:** This EHR database uses available measures from routine clinical care as a "rapid assay" to explore potential associations, and may be more useful to detect the presence and direction of associations than the magnitude of effects. This partnership has engaged community clinicians, laboratory, and clinical investigators, and funders in study design and analysis, as demonstrated by the collaborative development and testing of hypotheses relevant to service delivery. Furthermore, this research and learning collaborative is examining strategies to enhance clinical workflow and data quality as well as underlying biological mechanisms. The feasibility of scaling-up these methods facilitates studying similar populations in different Health Systems, advancing point-of-care studies of natural history and comparative effectiveness research to identify service gaps, evaluate effective interventions, and enhance clinical and data quality improvement.

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### A mixed-methods evaluation to improve sustainability of community health coalition partnerships, activities, and impact on county-level health

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**OBJECTIVES/SPECIFIC AIMS:** Community health coalitions (CHC) aim to improve local cultures of health, health behaviors, and health outcomes. However, challenges sustaining partnerships and activities limit CHC impact. Traditional CHC evaluations survey members about perceived effectiveness, failing to capture underlying network structures and community health outcomes. Thus, we applied a mixed-methods evaluation in eight rural Indiana CHC, triangulating social network analysis [(SNA), conducted in 2017], functioning effectiveness [Coalition Self-Assessment Survey (CSAS), also 2017], and latest county health statistics (2015–2016) to assess existing CHC building efforts, inform best practices, and facilitate the adoption of evidence-based programming. **METHODS/STUDY POPULATION:** Across the eight rural Indiana CHC, relationships between the three evaluation components were analyzed using Pearson's correlations. We are now collaborating with Purdue's Nutrition Education Program Community Wellness Coordinators to scale up evaluation efforts throughout Indiana. **RESULTS/ANTICIPATED RESULTS:** CHC effectiveness was positively correlated with the average number of connections CHC members held in the network (mean indegree) and negatively correlated with the presence of a network broker (eigenvector centrality). However, effective leadership was positively correlated with opioid

deaths and treatment, food insecurity, smoking during pregnancy, lack of healthcare coverage, and fair/poor health status, and negatively correlated with prenatal care. Effective operating norms was positively correlated with smoking during pregnancy and preterm births, and negatively correlated with prenatal care. Effective action outcomes was positively correlated with opioid deaths and treatments, smoking during pregnancy, preterm births, and fair/poor health status, and negatively correlated with respondents reporting they had no personal doctor. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Interestingly, CHC effectiveness was positively correlated with poor county health outcomes related to infant well-being. Thus, CHC may develop in counties with a high unmet need for effective pregnancy and infant services. Alternatively, the prevalent CHC focus on obesity prevention may eclipse programmatic efforts to improve infant well-being. Longitudinal evaluations and scaling up evaluation efforts across Indiana are being pursued to clarify trajectories and inform best practices, which in turn should provide recommendations for network structures to improve CHC effectiveness and county health.

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### A multi-stakeholder analysis on preparing future pediatricians to improve the mental health of children

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**OBJECTIVES/SPECIFIC AIMS:** (1) Develop a concept map of ideas from diverse stakeholders on how to best improve training programs. (2) Assess the degree of consensus amongst stakeholders regarding importance and feasibility. (3) Identify which ideas are both important and feasible to inform policy and curricular interventions. **METHODS/STUDY POPULATION:** Concept mapping is a 4 step approach to data gathering and analysis. (1) Stakeholders [pediatricians (peds), MH professionals (MHPs), trainees, parents] were recruited to brainstorm ideas in response to this prompt: "To prepare future pediatricians for their role in caring for children and adolescents with mental and behavioral health conditions, residency training needs to...". (2) Content analysis was used to edit and synthesize ideas. (3) A subgroup of stakeholders sorted ideas into groups and rated for importance and feasibility. (4) A large group of anonymous participants rated ideas for importance and feasibility. Multidimensional scaling and hierarchical cluster analysis grouped ideas into clusters. Average importance and feasibility were calculated for each cluster and were compared statistically in each cluster and between subgroups. Bivariate plots were created to show the relative importance and feasibility of each idea. The "Go-Zone" is where statements are feasible and important and can drive action planning. **RESULTS/ANTICIPATED RESULTS:** Content analysis was applied to 497 ideas resulting in 99 that were sorted by 40 stakeholders and resulted in 7 clusters: Modalities, Prioritization of MH, Systems-Based, Self-Awareness/Relationship Building, Clinical Assessment, Treatment, and Diagnosis Specific Skills. In total, 216 participants rated statements for importance, 209 for feasibility: 17% MHPs, 82% peds, 55% trainees. There was little correlation between importance and feasibility for each cluster. Compared with peds, MHPs rated Modalities, and Prioritization of MH higher in importance and Prioritization of MH as more feasible, but Treatment less feasible. Trainees rated 5 of 7 clusters higher in importance and all clusters more feasible than established practitioners. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Statements deemed feasible and important should drive policy changes and curricular development. Innovation is needed to make important ideas more feasible. Differences between importance and feasibility in each cluster and between stakeholders need to be addressed to help training programs evolve.

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### An application of the payback framework to evaluate the outcomes of pilot projects supported by the Georgia Clinical and Translational Science Alliance from 2007 to 2014

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**OBJECTIVES/SPECIFIC AIMS:** We will use a structured evaluation framework, the payback framework, to document the outcomes of 15 case studies of pilot projects supported by Georgia CTSA from 2007 to 2014. **METHODS/STUDY POPULATION:** We will use a case study approach including bibliometric analyses of publications associated with the selected projects, document review (e.g., investigator curriculum vitae, biannual project reports) and investigator interviews. **RESULTS/ANTICIPATED RESULTS:** We will document outcomes in 5 "payback categories": (1) knowledge, (2) research targeting, capacity