translational methods to solve population health problems in both health systems and in public health.

Development and implementation of a faith-based community Health Advocate training programme for type-2 diabetes remission: A model for community-based non-communicable disease control

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OBJECTIVES/SPECIFIC AIMS: The aim of this study is two-fold (1) to include a participatory action research design in the development of a community-based health advocate (HA) training programme which empowers community members to support the Barbados diabetes remission study 2 protocol – a low-calorie intervention for T2DM remission (2) to study the implementation of this programme with in select faith-based organisations (FBOs) which will act as community hubs. METHODS/STUDY POPULATION: Translation was informed using the RE-AIM framework. The target population were members of select FBOs. We assessed the readiness of FBOs to become community hubs in relation to human resources (the HA team must include someone with a clinical degree), infrastructure capacity (a private room for interviews) and the perspective (knowledge and attitude) of the FBO leadership to both the training and diabetes remission programmes. An open recruitment for HAs was made to the FBO membership and all who responded were accepted to the programme; which consisted of 8 weeks of face to face sessions inclusive of lectures and practical demonstrations and exercises specific to NCDs e.g. assessment of basic clinical parameters, ethics and nutrition. This was followed by a simulation exercise and a formal objective structured clinical examination (OSCE). HAs will participate in focus groups aimed at exploring the barriers and facilitators to the use of social media as a support system; this will be followed by participatory design workshops where the HAs will design support systems, inclusive of social media support, to assist participants in the diabetes remission intervention. RESULTS/ANTICIPATED RESULTS: All three FBOs that were approached responded favourably and the programme was described as 'necessary' and 'timely' by the leadership. The FBOs were assessed and found to be ready. Thirty-eight persons signed up for the programme (more than the 21 we anticipated); 31 (82%) attended at least 1 session and 29 completed the training; this indicates that implementation in the community is feasible. All who completed the programme attained an overall passing grade indicating the effectiveness of, and fidelity to the training. Initial feedback on the programme from HAs and volunteers indicates that it was acceptable. DISCUSSION/SIGNIFICANCE OF IMPACT: This community-based training programme was successful in terms of reach, as both the FBO and the individual HA responded favourably; and effectiveness as measured by the expanded skill set of the HA. Initial feedback suggests that implementation of the programme is feasible in the community and acceptable to the HAs. Although this model focusses on diabetes remission utilising FBOs as hubs, it can be easily adapted to other NCDs e.g. hypertension and mental health; other disciplines e.g. surveillance; and other communities e.g. workplaces, homeless shelters.

Engagement in Out-Patient Services among Pregnant and Postpartum Women with Opioid Addiction: A Qualitative Study

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OBJECTIVES/SPECIFIC AIMS: This study aims to understand the factors influencing engagement with out-patient services from pregnancy to 1 year postpartum among women in recovery from opioid use disorders (OUD). METHODS/STUDY POPULATION: We conducted semi-structured qualitative interviews and a brief survey with 20 mothers in OUD recovery recruited from health care and community organizations in Western MA. Transcripts were coded by two independent coders and analyzed using a qualitative descriptive approach. RESULTS/ANTICIPATED RESULTS: The average duration of any addiction treatment among the 20 participants was 5.6 years with 80% receiving medication-assisted treatment during a pregnancy. Approximately two-thirds experienced relapse during pregnancy or the first year postpartum. We identified 3 themes elucidating women's experiences around service engagement: "How I see myself" (personal development), "How services see me" (service delivery quality), and "Are you with me?" Personal development included response to past trauma, coping strategies and self-advocacy, and adjusting to parenthood. Service delivery quality was influenced by service design, efficacy of individual providers, and cultural norms (organizational and societal). In the final theme, intersection of individual and service-level factors influenced the degree and quality of the women's experience engaging with services. DISCUSSION/SIGNIFICANCE OF IMPACT: Women describe successful engagement when they experience service providers as being emotionally supportive, delivering relevant services, and advocating on their behalf. To best support and engage families affected by OUD, relevant and timely services should be linked with compassionate delivery.

Evaluation of novel biomarkers of hepatocellular carcinoma development and recurrence in liver transplant patients

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OBJECTIVES/SPECIFIC AIMS: Given the poor prognosis of HCC and its increasing incidence worldwide, identifying biomarkers of HCC has been an active area of research. While biomarkers are being identified at a rapid pace, many are still in early phases of clinical study and very few have proven clinical utility. The objective of this study is to identify novel biomarkers of HCC and evaluate their clinical utility as predictors of disease development and prognosis with specific emphasis on disease recurrence after liver transplantation. Biomarkers will be identified through GWAS, as well as through analysis of qualitative and quantitative liver traits by magnetic resonance imaging (MRI). These novel biomarkers will then by implemented into risk prediction models aimed to assess an individual's risk for development of HCC and stratify their level of risk according

to predicted disease prognosis. METHODS/STUDY POPULATION: This will be a case-control study, analyzing data from previously created biorepositories from four cohorts of recipients across multiple centers which have undergone liver transplant. First, a GWAS will be performed to identify genetic variant(s). Second, pre-transplant MRI's will be evaluated using CAVASS software to assess liver quantitative and qualitative traits, including visceral adiposity. Lastly, these findings will be implemented into risk stratification models to assess each individual's level of risk for development of HCC and for recurrence of HCC after transplant. RESULTS/ANTICIPATED RESULTS: We hypothesize that genetic variant(s) are associated with positive HCV status and the development of HCC. Additionally, we hypothesize that increased visceral adiposity measured by MRI will have an association with recurrence of HCC after transplant. Lastly, we hypothesize that possession of these aforementioned features will be associated with an increased risk of HCC development and recurrence after transplant. DISCUSSION/SIGNIFICANCE OF IMPACT: As more is learned about the nature and reliability of these biomarkers, their potential clinical applications will be revealed. Ideally these proposed risk score models will ultimately be used by clinicians to provide personalized disease management while optimizing the allocation of health care resources. For instance, this may lead to changes in the MRI screening frequency of patients considered to be at high risk for HCC. The ability to diagnose patients early and provide personalized therapies may ultimately result in fewer disease related mortalities in the future.

3031

Facilitators and Barriers in Screening Sexually Active Female Adolescents for Chlamydia Infection in the Suburban Practice Setting

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OBJECTIVES/SPECIFIC AIMS: 1) Describe strategies pediatric providers perceive improve chlamydia screening of sexually active female adolescents (SA), and 2) describe barriers to regular screening of SA for chlamydia METHODS/STUDY POPULATION: Using qualitative methods, 14 general pediatric providers across 7 clinical sites in Vermont were interviewed to ascertain best practices and remaining challenges. Semi-structured interviews lasting 30-45 minutes were audiotaped and transcribed. Chlamydia screening rates provided by BCBS-VT were used to categorize participant responses across three performance tiers, data were coded, and themes identified within these tiers. RESULTS/ANTICIPATED RESULTS: Facilitators: When asked to describe facilitators of chlamydia screening, providers in the top tier of chlamydia screening emphasized the importance of adequate insurance to cover the cost of testing. Providers in the middle performance tier cited use of pre-visit questionnaires, and those in the bottom performance tier identified no best practices. Other strategies included improving physician confidence and awareness, establishing practice- and individual-level routines, and providing strong leadership and communication of local screening rates. Barriers: Across the 3 performance tiers, the most common challenges to consistent chlamydia screening were threats to patient confidentiality, cost of the screening test, and requirement for patient disclosure of sexual activity. Less commonly, providers were concerned that adolescent patients were not reliable to obtain screens off-site, or fill treatment

prescriptions without the help of a parent. DISCUSSION/SIGNIFICANCE OF IMPACT: The need for systematic, confidential, and inexpensive means for screening SA for chlamydia was highlighted in both the best practices and challenges described by providers of pediatric care in the suburban practice setting. Policy and practice interventions may target these needs to improve the reproductive health of female adolescents.

3485

Frailty Associated with Increased Rates of Acute Cellular Rejection Within 3 Months After Liver Transplantation

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OBJECTIVES/SPECIFIC AIMS: There is currently a gap in the literature regarding the relationship between acute cellular rejection and frailty in LT patients. We aimed to evaluate the association between frailty and acute cellular rejection in LT patients. METHODS/STUDY POPULATION: Included were LT recipients from 2014-16 at a single center who had a frailty assessment prior to LT using the Liver Frailty index consisting of grip strength, chair stands, and balance. Frailty was defined by a Liver Frailty Index > 4.5. Data on acute cellular rejection at 3 months (primary outcome) and immunosuppression regimens were collected from medical chart review. Univariable and multivariable logistic regression assessed the associations between frailty and acute cellular rejection. RESULTS/ANTICIPATED RESULTS: A total of 241 LT recipients were included. Of these, 37% were female, 55% had Hepatitis C, and the median (IQR) age was 60 (54-65); 46 (19%) were classified as frail. 98% of patients were on a combination of mycophenolate, corticosteroids and tacrolimus on discharge compared to 80% by 3 months. Within the first 3 months post-LT, 7 (15%) of frail patients versus 10 (5%) (p = 0.02) of non-frail patients experienced acute cellular rejection. In univariable logistic regression, frailty was associated with a 3.3 times higher odds of acute cellular rejection at 3 months (95%CI 1.19, 9.26, p = 0.02); age (OR 0.91), Black race (OR 3.2), autoimmune disease (OR 2.3), and diabetes (OR 0.3) were also associated with acute cellular rejection at 3 months with a p-value<0.20. In a multivariate analysis, after adjusting for age, frailty remained significantly associated with rejection (OR 3.06, 95%CI 1.04, 9.01, p = 0.043). There were no significant differences in immunosuppression regimens or rates of mycophenolate dose reduction in the first 3 months between frail and non-frail patients. DISCUSSION/SIGNIFICANCE OF IMPACT: Frailty is associated with an increased rate of acute cellular rejection within 3 months post-LT, despite similar immunosuppression regimens and doses. Future studies should evaluate whether frailty should be considered in the management of immunosuppression in the early post-transplant period.

3345

Group Concept Mapping of Stakeholder's Ideas to Increase the Quantity and Quality of Clinical and Translational Research in Rhode Island

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OBJECTIVES/SPECIFIC AIMS: We sought to solicit and synthesize stakeholders' ideas for how the Advance-CTR program can best