increase the quality and quality of clinical and translational research in Rhode Island, and to apply these findings to address barriers and strengthen research capabilities across our partner institutions. METHODS/STUDY POPULATION: We utilized a Group Concept Mapping approach, involving university and Institution-based researchers and administrators. The process was conducted using the web-based concept mapping application CS Global Max (Concept Systems, Inc). Respondents were asked to provide their best ideas for promoting clinical and translational research in RI. These ideas were then organized by our project team into a set of unique items for consideration by attendees of an Advance-CTR retreat. Participants were tasked with sorting these ideas by theme (cluster), and were also asked to rate each idea according its importance and feasibility. Using the online software, these clusters and ratings were analyzed to identify key themes and to explore differences among sub-groups. RESULTS/ANTICIPATED RESULTS: The Group Concept Mapping exercise yielded 150 statements that were edited down to 78 unique ideas, and clustered into nine themes (e.g., institutional collaboration, training). Fifty-seven retreat participants completed the sorting and rating tasks of the concept mapping exercise. Overall, ideas rated as highly important and highly feasible included "providing seed grants to encourage new collaborations across basic science," and "connecting researchers with common interests." Top rated items varied across institutions and according to respondent demographics, allowing us to consider the unique issues relevant to particular groups. Relative rankings of clusters across groups revealed notable differences, such as higher importance placed on community engagement among administrators as compared with researchers, and differences in needs for internal support for research between universities. DISCUSSION/SIGNIFICANCE OF IMPACT: Group Concept Mapping was an effective and insightful participatory approach to engage our program's stakeholders in developing ideas and identifying challenges to enhancing clinical and translational research in Rhode Island. Our results have implications for project decision-making and initiatives to facilitate translational research in RI. Thus, results have been presented to the Advance-CTR community via webinar, as well as Advance-CTR project leadership and advisory committees.

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Hepatitis C Virus Linked To Increased Mortality in Inmates Who Are Hospitalized

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OBJECTIVES/SPECIFIC AIMS: Hepatitis C virus (HCV) has a high prevalence among individuals in jail and prisons. Access to HCV treatment has been restricted in jails and prisons. We hypothesized that HCV infection in inmates would be associated with increased mortality in people who were hospitalized while incarcerated. METHODS/STUDY POPULATION: We created and then linked a database of people who were incarcerated and admitted at Lemuel Shattuck Hospital (2004, 2008, 2011) to the Massachusetts Vital Statistic Registry (updated through end of 2015). Death was classified using the Automatic Classification of Medical Entry Death Code. The primary outcome of interest was mortality within 1 year of hospitalization, and the secondary outcome was mortality at any time. The primary indicator of interest was HCV, defined as the presence of the ICD-9 code for HCV on discharge. Covariates included in univariate and multivariate modeling included age, year

of admission, and race/ethnicity classified as: White, Black, Hispanic or Other (i.e., Asian, Native American, Multi-Racial, or No answer). RESULTS/ANTICIPATED RESULTS: Of the 1,541 hospital admissions, 21% had HCV, and 57% were white, 22% black, 8% Hispanic and 12% other. Of the 273 total deaths (18% of cohort), 82 deaths occurred within 1 year of hospitalization (5.3% of the entire cohort, 30% of all deaths). The primary cause of death was vascular (21%), followed by chronic liver disease (18%), cancer (17%), overdose/suicide/trauma (19%), pulmonary (7%) and infection (6%). People with HCV were more likely to die of chronic liver disease (40% vs 7%, p<0.001). In the multivariable adjusted model, people with HCV were more likely to die within 1 year of hospitalization (HR 1.59, 95% CI 1.02, 2.49) and more likely to die at any time (HR 1.38, 95% CI 1.06, 1.79). Age, race and gender were not associated with risk of death. Compared to 2004, people admitted in 2008 (HR 2.05, 95% CI, 1.50-2.80) and 2011 (HR 4.02, 95% CI 2.77, 5.83) were more likely to die within 1 year. DISCUSSION/SIGNIFICANCE OF IMPACT: Despite advances in HCV treatment in the community, HCV in inmates is associated with increased mortality.

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HIGH INTENSITY BINGE DRINKING AND STIMULATING EFFECTS IN HUMAN LABORATORY STUDIES OF ALCOHOL SELF-ADMINISTRATION

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OBJECTIVES/SPECIFIC AIMS: Alcohol use disorder (AUD) has previously been studied using Timeline Followback (TLFB) interview measures and administration of alcohol within laboratory sessions. However, most of those studies supplied alcohol orally and analyzed drinking across a range of drinking intensity and frequency measures. High intensity binge drinking, i.e., drinking alcohol at multiple levels of the binge threshold (5+ drinks for males, 4+ drinks for females) has been identified as a significant risk factor for developing AUD. In the present study, we examined the relationship between high intensity binge drinking with the behavioral and subjective response to intravenous alcohol in a lab study. METHODS/STUDY POPULATION: Two hundred participants completed a 90-Day TLFB interview, wherein the maximum number of drinks in a day established the participant's binge level status as a Non-Binger (N = 37), Binge Level 1 (N = 96), Binge Level 2 (N = 44), or Binge Level 3 (N = 22). Binge Level 1 corresponds with at least one binge (4-7 drinks for women, 5-9 drinks for men); Binge Level 2 requires at least twice the binge level (8-11 drinks for women, 10-14 drinks for men); and Level 3 necessitates a participant to drink at least three times the binge level (12+ drinks for women, 15+ drinks for men) on one day. Non-Bingers had no binge level drinking in the 90-day interview. Participants also underwent a 150-minute intravenous-alcohol self-infusion, where participants would press a button to receive an infusion of an ethanol solution. During this, participants also completed subjective questionnaires including the Alcohol Urge Questionnaire (AUQ), Biphasic Alcohol Effects Scale (BAES), and Drug Effects Questionnaire (DEQ). Kruskal-Wallis and chi-square tests were used to examine the effect of group on alcohol infusion and subjective response measures. RESULTS/ANTICIPATED RESULTS: A chi-square test for association showed significant statistical differences by groups in reaching binge level status (0.08% breath alcohol content) during the alcohol infusion session in the lab, X2 (3) = 23.321, p < 0.001. However, mean difference

was not significantly different between Binge Level 2 and Binge Level 3 ($0 < 1 < 2 = 3$). Binge level groups showed significant differences in the number of button presses during the lab session ($H(3) = 36.955$, $p < 0.001$), peak breath alcohol concentration in the lab session ($H(3) = 19.870$, $p < 0.001$), and total binges in the TLFB ($H(3) = 90.296$, $p < 0.001$). Increased self-administration measures were proportional to the binge intensity level across groups, with no differences between Binge Level 2 and Binge Level 3 ($0 < 1 < 2 = 3$). For subjective measures, a Kruskal-Wallis H median test showed statistically significant differences between groups in the AUQ score following the priming infusion, $H(3) = 11.489$, $p = 0.009$, with bingers at all levels reporting higher scores compared to non-bingers ($0 < 1 = 2 = 3$). There was also a statistically significant difference between groups in the BAES Stimulation score following the priming infusion, $H(3) = 9.023$, $p = 0.029$, with differences seen between non-bingers and level 2 and level 3 bingers ($0 = 1 < 2 = 3$). DISCUSSION/SIGNIFICANCE OF IMPACT: This study demonstrated that high intensity binge drinkers were more likely to reach binge level and overall greater alcohol consumption during a human lab alcohol administration study. Binge intensity level was also associated with higher stimulation and urge for alcohol following priming exposures, which may in turn drive the consumption of greater amounts of alcohol, which we know to be associated with greater risk for AUD.

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How much activity do preschoolers accumulate in an outdoor education program?

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OBJECTIVES/SPECIFIC AIMS: The primary aim of this study is to conduct a within-child comparison of in-school PA while attending nature-based and traditional preschool programs. The secondary aim is to observe the types of activities performed at each preschool location to determine which activities lead to greater and lesser amounts of school-based PA. METHODS/STUDY POPULATION: This will be a within-subjects repeated measures study in which participants will be recruited from a single preschool program where they spend two days per week (Monday/Wednesday) at a nature-based site, and two days per week (Tuesday/Thursday) at a traditional preschool location. All participants will be outfitted with a waist-worn Actigraph GT3X accelerometer, which they will wear from the moment they arrive to their preschool location until the moment they leave. Measurements will be conducted for four consecutive school days across two separate measurement periods, once in the winter and once in the spring. Additionally, a trained researcher will be present for the entirety of each measured day to document the types of activities participants engage in throughout the day, when these activities occur, and for how long. Accelerometer data will be analyzed using total counts, a reflection of total PA across all intensities, to determine school-based PA. Total activity counts will also be reduced to counts per minute and cross referenced with direct observation data to determine which activities contribute to higher and lower periods of PA throughout the day. Within child comparisons using two-tailed t-tests be made at both measurement periods between both preschool sites to determine whether significant differences in PA levels exist in children while attending either a nature-based or traditional preschool program. Logistic regression will also be applied to assess variables contributing to children's PA

including, preschool location, weather, and time spent outside. RESULTS/ANTICIPATED RESULTS:. It is hypothesized that preschool children will engage in significantly more PA while attending a nature-based preschool program compared to a traditional preschool classroom setting. Opportunities for free and unstructured play will be greater in a nature-based setting compared to a traditional preschool location. Time spent outdoors will be the determining difference between preschool children's PA behaviors at a nature-based versus traditional preschool program. Variations in PA levels as a result of seasonal weather differences will be minimized on days in which children attend a nature-based preschool program. DISCUSSION/SIGNIFICANCE OF IMPACT: To our knowledge, this will be one of the first studies conducting a within child comparison of preschool-aged children's PA levels between a nature-based and traditional classroom setting. If, as hypothesized children engage in significantly more PA while attending their nature-based preschool program, the comparison to their traditional preschool site will provide insight into the magnitude of differences and where these differences in PA behaviors may occur throughout the school day. This information may then be used to inform future intervention's focusing on better aligning children's PA levels in a traditional school setting with what might be achieved through a nature-based educational program.

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Impact of aortic arch anatomy on technical performance and clinical outcomes in acute ischemic stroke patients

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OBJECTIVES/SPECIFIC AIMS: This study aims to examine the relative impact of aortic arch and carotid artery anatomy on the procedural times and clinical outcomes in patients who have suffered acute ischemic strokes (AIS). Mechanical thrombectomy remains the gold-standard of care for large vessel ischemic stroke. Given that short procedural times are necessary for good clinical outcomes, arterial access is an important technical consideration. It has been recently demonstrated that abnormal carotid artery anatomy can increase endovascular procedure times in this patient population. However, there are no studies examining the impact of aortic arch anatomy on operative times. Additionally, no studies have looked at the impact of aortic arch and carotid artery tortuosity on clinical outcomes in AIS. Thus, we sought to exam the influence of various aortic arch and carotid artery anatomic variables on interventional procedure times and clinical outcomes. METHODS/STUDY POPULATION: We included 56 patients who underwent embolectomy with successful revascularization for acute ischemic stroke in the anterior circulation from a period of 01/2016-05/2018. The average age was 71 ($+/- 17$ years) with 39% being male. We calculated anatomic variables on the affected side from CT angiograms immediately prior to embolectomy including the medial-to-lateral span, as well as the anterior-to-posterior span, of both the aortic arch and carotid arteries. In addition, the take-off angle of the respective vessel (left common carotid or right brachiocephalic) was calculated. Charts were reviewed for procedural times and epidemiologic information (HTN, HLD, DM, CAD and Afib). Modified Rankin Scale (mRS) was calculated from PT/OT and outpatient neurology notes. Partial correlation coefficients were performed between anatomic variables, temporal variables and outcome variables