score greedy nearest neighbor one-to-one matching algorithm. We matched children with (treatment) and without (comparison) an allergy specialist visit in 2018. The propensity score model included 26 covariates (demographic, clinical, and social determinants of health). Multivariable adjusted logistic regression was used to estimate adverse asthma events (AAE: emergency department visit or inpatient hospitalization with a primary or secondary diagnosis of asthma in 2019). RESULTS/ANTICIPATED RESULTS: We identified 3,031 children with an allergy specialist visit in 2018, and successfully propensity-score matched 2,910 of the treatment group with a non-allergy specialist visit comparison group. The rate of AAEs in 2019 was 9.5% for individuals with an allergy specialist visit versus 10.1% among those without a specialist visit (p=0.450). The adjusted regression analysis showed 20.3% lower rates of AAEs (aOR: 0.797; 95% Confidence Interval: 0.650, 0.977; p=0.029) in 2019 for children with an allergy specialist visit in 2018 compared to those that did not. DISCUSSION/SIGNIFICANCE: Utilizing allergy specialist care was associated with better asthma outcomes in our statewide study of Arkansas Medicaid-enrolled children with asthma. Asthma quality metrics based on guideline-based recommendations for allergy specialist care should be considered in population health management programs.

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### Scaffolding Learning through Digital Play: Translating Theory to Practice

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OBJECTIVES/GOALS: Scaffolding aids learning by gradually removing assistance to encourage independence (Bickhard, 2013; Gross, 2015). Mightier is a commercially available biofeedback game that fosters emotion regulation (ER) skill practice through play. This study aims to evaluate the ability of Mightier to scaffold the learning of ER and reduce irritability. METHODS/STUDY POPULATION: Data were collected via online caregiver report. Inclusion criteria were age of child (<= 18 years) and study enrollment prior to the child engaging with Mightier. Children wear a heart rate (HR) monitor while playing games in the Mightier app library. As their HR increases, play becomes more difficult. Children can pause the game to use a scaffolded ER activity or regulate independently to return the game to normal difficulty levels. Caregivers were instructed to use the game ad libitum. Participants included caregivers of 195 children (Mage = 7.84 years old; range = 4-18 years old; 24.28% female; 74.57% male); the sample was predominantly White (56%). Caregivers completed the Affective Reactivity Index, a measure of their child's irritability, before and after playing Mightier for 8-12 weeks. RESULTS/ANTICIPATED RESULTS: A first Wilcoxon Signed Rank Test revealed a significant reduction in the ratio of scaffolded cooldowns (using a guided activity to regulate) to total cooldowns on the first play day (Md =.50) versus the last play day (Md = .22), z = −6.51, p < .001. A second test revealed a statistically significant increase in the ratio of independent cooldowns (regulating on their own) to total cooldowns on the first play day (Md = .50) versus the last day of play (Md = .80), z = 6.34, p < .001. Given the significant, inverse relationships between scaffolded and independent ER on the first play day versus the last play day, further analyses will examine potential mediation and moderation effects of game engagement (play minutes, total cooldowns, scaffolded cooldowns, and independent cooldowns) on changes in irritability.

DISCUSSION/SIGNIFICANCE: ER is vital for healthy development and protects against mental health challenges (LeBlanc et al., 2017). Across domains, scaffolded practice promotes learning (Vygotsky, 1978). Results reveal that scaffolded practice leads to independent ER during play. Future research should explore whether this pathway leads to independent ER outside of play.

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### Temporal Trends in Young Adult Cannabis and Tobacco Use in Relationship to Cannabis Policy

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OBJECTIVES/GOALS: Cannabis laws may impact cannabis and tobacco use, given high prevalence of co-use of these products among young adults (YAs). The objective of this study was to examine trends in YA any cannabis, blunt, cigarette, and cigar use from 2002-2018 in states that passed adult and medical use (AMU) or medical use only (MUO) cannabis laws during that time (N=16). METHODS/STUDY POPULATION: Using data from the National Survey on Drug Use and Health, we conducted a segmented regression analysis to calculate absolute percent change (APC) in past 30-day cannabis and tobacco use between time points. The National Cancer Institute's Joinpoint software was used to also estimate points of inflection (Joinpoints) when the slope of a trend significantly (p<0.05) changes. Separate models were estimated for each state, with time as the independent variable measured in years. Up to three Joinpoints per model were allowed. The model with optimal Joinpoints was determined using a model selection criterion via a permutation test. Joinpoints and APCs were compared with key legalization dates to describe patterns within and across states with varying cannabis policies. RESULTS/ANTICIPATED RESULTS: Generally, the 16 states showed a steady decline in YA cigarette smoking over time, a slight decline in cigar smoking, and increases in cannabis and blunt use. AMU states had lower average 2018 prevalence of cigarette smoking than MUO states (18.3% vs. 21.5%) and higher cannabis use (32.3% vs. 21.3%). Cannabis use consistently increased following opening of MUO retail outlets. Generally, there appears to be a slight delay in cannabis use increases following AMU laws, and in some states temporary declines. For example, Washington experienced an initial decrease (-20.3%) following AMU passage (2012) then increase (+16.3%) after retail dispensaries opened in 2014. In AMU states, blunt use has surpassed cigar smoking, while in MUO states, the prevalence of blunt and cigar use is similar. DISCUSSION/SIGNIFICANCE: Introduction of cannabis laws are correlated with increases in YA cannabis and blunt use, with higher cannabis use in AMU states. Trends may also correlate other state political, economic, or social factors. Joinpoint regression can assess changes in a policy's target behavior with no a priori assumptions regarding timing of policy effects.

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### Roles and Expectations for Evaluators within a Learning Health System

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OBJECTIVES/GOALS: Our objective is to explore the evolving role of evaluators within Learning Health Systems (LHSs) and the