Additional factors included party pre-planning, past experiences with law enforcement, and easy access to alternative transportation or post-party housing. Participants described avoiding RWI by observing severe driver intoxication: "They were falling down trying to get in the truck — that was a telltale sign". They also described the need for "better options", which more often included rides from sober friends than rides from family or ride-share. Bystander interventions were a common technique to avoid RWI (and prevent DWI) during high school. For example, when asked how they avoided RWI, one participant reported "I've stopped several of my friends that have been drinking and I told them they weren't going nowhere".

**Conclusions:** As youth return to pre-pandemic levels of social activity, DWI/RWI prevention initiatives should bolster protective and prevention strategies that youth are already using, such as peer-to-peer bystander interventions and proactive planning for multiple transportation or housing options among peers. Youth may benefit from prevention and education efforts that enhance awareness of the cognitive impacts of alcohol and drug use on driving. Future research should identify optimal strategies for DWI/RWI prevention intervention delivery, both during and after high school.

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## YOUR HEALTH YOUR VOICE: IDENTIFYING DISENFRANCHISED YOUTH AND OPPORTUNITIES FOR CIVIC ENGAGEMENT

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**Purpose:** Studies have shown adolescent and young adult (AYA) participation in voting and other forms of civic engagement is associated with future optimism, increased life satisfaction and decreased health-related risk behaviors. Yet, AYA aged 18-24 are the least represented demographic at voting polls across the US. Recognizing voting and civic engagement may be an important health intervention for this population, we sought to determine factors associated with future voting intention (planning to vote in the next election) among AYA attending an urban adolescent clinic during the COVID-19 pandemic.

**Methods:** We added four voting-related questions (Do you plan to vote in the next election? Did you vote in the last election? Are you registered to vote? Do you want to know how to register to vote?) to our pre-visit questionnaire distributed to all adolescent clinic patients ages 13-26 years. Both before and after the November 2020 election (i.e., July 2020 to March 2021), we collected 634 patient questionnaires; 77% (N=487) were from patients who were age eligible to vote on November 3, 2020. We limited the current analysis to questionnaires from age eligible patients with complete responses of yes or no to all four voting questions (N=258). Using bivariate and multivariable logistic regression we examined associations between voting intention and the following factors: age, gender, race, registration status, voting in last election, and weeks to/from November 2020 election. Age was dichotomized to 17-21 vs. 22-26 years based on Locally Weighted Scatterplot Smoothing and race to Black vs. non-Black. This project was approved by the Johns Hopkins IRB.

**Results:** Mean age was 20.7 years (SD=2.1); 63.2% were 17-21 years. Sixty-five percent were female, 88% were Black, 73% were registered to vote, 48% voted in last election, and 76% had future voting intention. Mean weeks to/from November election was -1.26 (SD=10.2). In the adjusted model, older patients were nearly 70% less likely to declare future voting intention than younger patients (aOR=0.32, 95% CI=0.14-0.76); males were half as likely as females (aOR=0.45, 95% CI=0.21-0.96). Voting in the last election (aOR=18.63, 95% CI=5.51-62.97) and being registered to vote (aOR=6.12, 95% CI=2.82-13.27) predicted future voting intention. Future voting intention was not associated with race or weeks to/from November election in either the unadjusted or adjusted models.

**Conclusions:** Our findings from a clinic sample of urban AYA point to a subgroup of youth who may be more vulnerable to disenfranchisement. The COVID-19 pandemic introduced new challenges for AYA voting and this study highlighted how providers might harness the health care visit to promote AYA voting. Registration status, one of the variables most strongly associated with future voting intention, is modifiable and easily evaluated during a healthcare visit. Future qualitative investigation will explore the differences in future voting intention by age and gender to identify other factors that may also be modifiable or addressed by adolescent providers in clinical settings.

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## DECLINES IN PREGNANCIES AMONG US ADOLESCENTS FROM 2007 TO 2017: BEHAVIORAL CONTRIBUTORS TO THE TREND

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**Purpose:** Pregnancies and births among adolescents in the United States have dramatically declined in recent decades. We aimed to estimate the contribution of three different proximal changes in behaviors to these declines among 14-18-year-olds over the period 2007-2017: delays in age at first sexual intercourse, declines in the frequency of sexual activity, and changes in contraceptive use, particularly the uptake of long-acting reversible contraception (LARC).

**Methods:** We adopted an existing mathematical model that predicts number of sex acts per year per adolescent female by age, and the proportion of these that entail use of various types of contraception. We parameterized the model using predicted values from regressions based on six waves of the CDC's Youth Risk Behavior Survey. We determined mean contraceptive failure rates from the literature. We calibrated our model to reported births using data from the National Vital Statistics System and the Guttmacher Institute. Pregnancy-related costs were calculated using both medical costs for all outcomes and costs to society for adolescent childbearing.

**Results:** Changes in the three behaviors (delays in age at first sexual intercourse, declines in subsequent frequency of sexual activity, and changes in contraceptive use) consistent with levels seen in our data resulted in reductions of 496,000, 78,000, and 56,000 pregnancies over the decade, respectively, with total medical and societal cost savings of $9.7 billion, $1.5 billion, and $1.1 billion. LARC adoption, particularly among 18-year-olds, explained much of the improvements from contraception use. The three measures together accounted for 38% of the observed decline in teen births over the

decade. We conducted a sensitivity analysis on a fourth behavior—number of coital acts per partner—and found that a 50% reduction predicted births that closely matched observed data.
**Conclusions:** Reported changes in sexual behavior among adolescents prevented an estimated 630,000 pregnancies and resulted in $12 billion cost savings over the decade. The LARC contribution was mainly seen among 18-year-olds. Comprehensive sex education should continue to build on existing strengths in terms of delaying age at first sexual intercourse, while further enhancing knowledge and access to contraception for all, and especially for those under 18.
**Sources of Support:** This study was funded by the U.S. Centers for Disease Control and Prevention's National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention [cooperative agreement U38-PS004646]. Additional support was provided by a research infrastructure grant f.

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## IS IT REALLY GETTING BETTER? CHANGING DISPARITIES IN SEXUAL MINORITY ADOLESCENTS' SPORT PARTICIPATION

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**Purpose:** Physical activity during adolescence is linked to improved physical health, mental health, BMI, academic performance, and motor skill development. Despite such benefits, there is a global decline in sports participation among adolescents. Sexual minority adolescents are particularly vulnerable to disengaging from physical activity, and particularly from organized (coached) sports, likely because they experience a sense of exclusion and lack of safety within high school sports culture. Disparities in regular sports participation have previously been identified between heterosexual and sexual minority adolescents (aged 12-19) in British Columbia, Canada. The current study examined if these disparities persisted following widespread curriculum and policy changes that were designed to create a more inclusive environment for the province's sexual and gender minority students, including specifically within sports. Sexual minority adolescents' participation in organized sports as well as informal sports (such as hiking, skateboarding and cycling) were considered.
**Methods:** Using five waves of the population-level British Columbia Adolescent Health Survey (N = 143,393), the current study examined if disparities in at least weekly participation in extracurricular organized and informal sports which were present between 1998 and 2013 were still evident in 2018, and if so, whether there had been any narrowing of those disparities. The study compared heterosexual boys and girls to their same-gender mostly heterosexual, bisexual and gay/lesbian peers. Gap trends analysis technique was used: age-adjusted logistical regressions over time for trends, between group for disparities (gap), and with interaction terms to test trends in gap.
**Results:** Despite continued declines in heterosexual adolescents' sports participation, heterosexual boys and girls were more likely than their same-gender sexual minority peers to participate in organized and informal sports. For example, heterosexual girls' participation in informal sports declined to 46.2% (from 63.2% in 2003, $p<.001$). However, bisexual girls' participation rate decreased to 38.8% (from 53.6% in 2003, $p<.001$), which was below the participation rate of heterosexual girls in 2018 (AOR=.66, 95% CI=.57–.76, $p<.001$). In 2018, there were also disparities in informal sports participation between heterosexual boys and mostly heterosexual ($p<.001$), bisexual ($p<.001$), and gay ($p<.001$) boys; and between heterosexual and mostly heterosexual ($p=.005$) girls. Changes to education policy and curriculum were introduced in 2016. Between 2013 and 2018, there was no narrowing of the gap in informal sports participation rates between sexual minority and heterosexual adolescents, or between heterosexual and sexual minority boys in organized sports participation. However, although all sexual minority groups participated in organized sports at lower rates than heterosexual adolescents in 2018, there was a closing of the disparity in participation in organized sports between heterosexual girls and mostly heterosexual (AOR=1.96; 95% CI=1.15-3.34; $p=.014$) and bisexual (AOR=2.07, 95% CI=1.17-3.36, $p=.012$) girls.
**Conclusions:** The findings speak to an urgent need to develop LGBTQ+ sports and exercise promotion and inclusion strategies, and to ensure young people of all sexual orientations and gender identities experience safe, welcoming and positive physical activity environments.
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## TRIGGERS FOR EATING DISORDERS IN ADOLESCENTS AND YOUNG ADULTS

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**Purpose:** Eating disorders (EDs) are associated with thoughts and emotions leading to disturbances of eating behaviors which can be severe, persistent, and distressing, resulting in psychological and medical complications. We sought to identify common, self-reported triggers for anorexia nervosa (AN) development in adolescents and young adults who are hospitalized for medical stabilization. We also examined socio-demographic and weight-related factors associated with increased risk of certain triggers on this population.
**Methods:** We conducted a retrospective, cross-sectional electronic chart review of youth admitted to Boston Children's Hospital for treatment of the medical complications of AN or Atypical AN. A total of 150 patients, ages 9-19 years were identified between January 2015-February 2020 using ICD-10 billing codes for ED diagnoses or patients who were admitted multiple times during this time period, only their first admission was used for analysis. We reviewed admission notes from medical and psychology clinicians for patient-reported events or triggers for changing their diet/exercise behaviors and/or onset of their eating disorder. Data were coded by two independent reviewers and coding was examined for reliability. We used qualitative thematic analysis to create binary codes for quantitative analyses. We then used binary logistic regression to compare risk factors for triggers.
**Results:** Among 150 patients, 129 (86%) were female, 120 (80%) White, and 138 (92%) non-Hispanic/Latinx. 140 (93%) patients reported at least one trigger. The average age was 14.1 years (SD=2.27). Seven main triggers were identified: 30% of patients reported experiencing environmental changes (e.g., transitioning schools, divorce, or a terminal medical diagnosis in family members); 29% reported others making comments on the way they looked or ate; 29% stated their own internal perception about their weight and body shape; 19% identified weight-related teasing; 17% reported experiencing changes in their physical activity related to sports; 14% said they received health education