school shooting incidences per 10 million population increased from 1.45 to 3.12 in Everytown data and from 1.04 to 2.96 in K12 data. The zip code areas with higher poverty rate (Incidence ratio, IRR=1.37 [95% CI, 1.09–1.73], larger black population [IRR=1.24, 95% CI 1.13–1.37], higher homicide rate [IRR=1.08, 95% CI 1.04–1.12] and larger population size [IRR=2.34, 95% CI 2.00–2.75] had an increased incidence of school shooting. Increasing public interest or Google trends for school-shooting was independently associated only with the death of victims.

Conclusion/Significance Although school shootings are more likely in large neighborhoods with high homicide and a larger proportion of the black population, public interest in school shootings depended only on whether the death occurred during school-shooting.

Social determinants of health and injury

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A COMPARATIVE CASE STUDY OF CHANGES IN CRIME SURROUNDING A HOME RENOVATION/REBUILD PROGRAM OF THE NATIONWIDE CHILDREN'S HOSPITAL IN COLUMBUS, OH

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Neighborhood environments are a known social determinant of health. Vacant and abandoned buildings and lots, poor or hazardous housing conditions, combined with crime and violence can affect residents' health and well-being. Nationwide Children's Hospital launched its Healthy Neighborhoods Healthy Families initiative in 2008 which sought to improve residents' health by rejuvenating vacant and abandoned properties and increasing homeownership in the South Side neighborhood of Columbus, Ohio. Between 2008 and 2019 the program funded 309 repairs or renovations in this neighborhood. We conducted a ZIP code-level comparative case study of HNHF program housing interventions using a synthetic control methodology to evaluate changes in crime in the program area compared to those in a synthetic control area. We found evidence of relative reduction in total crimes in the HNHF program area, relative to its synthetic control, after the intervention. This decrease can largely be accounted for by a decline in thefts. Some evidence of additional decline in drug possession is seen. This program to repair, rebuild, and increase ownership of housing has shown social benefit for neighbors of the Nationwide Children's Hospital.

Domestic and sexual violence

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THE IMPACT OF INTIMATE PARTNER VIOLENCE ON BREAST AND CERVICAL CANCER TREATMENT AMONG PATIENTS IN AN INTEGRATED, SAFETY-NET SETTING

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Statement of Purpose Examine the impact of intimate partner violence (IPV) on receipt of cancer treatment and surveillance.

Methods Longitudinal data were collected for breast and cervical cancer survivors from 2009–2017 at Parkland Health and Hospital System. Data were extracted and merged from two sources. First, electronic health records were used to assess survivors' cancer treatment modalities (i.e. surgery, chemotherapy, radiation, hormone replacement therapy) and concordance with National Comprehensive Cancer Network (NCCN) surveillance guidelines. Second, survivors were invited to participate in a phone survey that included 9-item validated screened for IPV. Regression models were used to evaluate the impact of IPV history on cancer treatment and NCCN guidelines.

Results/Findings 54% of survivors were a victim of IPV in their lifetime and 10% of victims experienced victimization during active cancer treatment. IPV victims were more likely to get a single agent chemotherapy compared to non-victims ($x^2=6.68$, $p\text{-value}<0.02$) and less likely get hormone replacement therapy ($x^2=12.55$; $p\text{-value}<0.001$). There was no significant relationship between IPV history and concordance with NCCN guidelines. After adjusting for key confounders, the odds of hormone replacement therapy was 0.34 times less likely among patients with a history of IPV compared to patients without a history of victimization (OR=0.34; 95% CI: 0.19, 0.60).

Conclusion Largely, cancer treatment and surveillance do not differ for women with a history of IPV. This suggests that, for this limited time of active treatment, access to the healthcare system is not restricted by abusive partners. Healthcare systems can leverage this valuable window to help the victim access social services.

Significance IPV screening is recommended as standard practice in healthcare because it improves patient health and safety. New evidence suggests screening is especially important in oncology clinics, where victims are more likely to be diagnosed with cancer and less likely to survive from cancer.

Firearm violence

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INTERSTATE FIREARM TRANSFERS AND STATE FIREARM LAWS: A STUDY OF GEOGRAPHIC NETWORKS

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Statement of Purpose Firearms ended the lives of almost 40,000 people in the United States in 2017, including over 14,000 by homicide. Stronger state firearm laws are associated with fewer firearm homicides and are an essential element of a comprehensive approach to preventing firearm homicide. However, flow of firearm across state lines can undermine prevention efforts in states with strong firearm laws. The purpose of this study was to assess the flow of firearms across US states relative to state firearm laws.

Methods The Bureau of Alcohol, Tobacco, Firearms and Explosives provided data for all firearms that were used in crimes for 2015–2017 and could be traced to a retail purchase location. We created a 48x48 matrix of the contiguous US states for counts of firearm transfers for origin states (where firearms were first purchased) and destination states (where crimes were committed). We linked these data to 2015 firearm laws for origin and destination states, and assessed