HRSA

Primary Care Training & Enhancement:

Training Primary Care Champions

Toolkit

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Purpose

The purpose of this toolkit is to provide context to the Arkansas Primary Care Training Enhancement (PCTE) Arkansas Good Medicine (AGM) Fellowship grant program; to describe the academic-community partnerships it created; to describe the curriculum utilized during the AGM Fellowship; and to provide a resource list of research, briefs, and publications from government agencies and nonprofits that shaped the foundations of the Fellowship and the projects executed during its tenure.

PCTE AGM Goals

The Arkansas Foundation for Medical Care joined by the Arkansas College of Osteopathic Medicine (ARCOM) and ARcare have created the AGM Fellowship program, a 12-month program to provide at least 20 community-based practicing primary care physicians with information and skills to champion health care transformation and implement trauma-informed care (TIC) practices in community-based settings. The project began in September 2019 and will end August 2023.

The first and second cohort have completed all requirements for the AGM program and graduated in August 2020 and February 2021, respectively. The AGM program began its third cohort in March 2021 consisting of four fellows chosen from clinics across Arkansas. Cohort 3 completed the curriculum phase in May 2021, then began their planning and project phases in June 2021, finishing in February 2022 with written reports on their project findings and a presentation to AGM stakeholders and the members of cohort 4.

Recruitment for cohort 4 is underway and includes social media coverage, advertisements in medical association newsletters, face-to-face contact with Arkansas health care providers with the help of the AFMC Provider Relations team, outreach through conference attendance by AFMC PCTE staff, and the concentrated efforts of ARcare and ARCOM within their spheres of influence.

As recommended by the Plan-Do-Study-Act (PDSA) cycle, we are implementing periodic evaluations throughout the program. At the conclusion of the curriculum development phase, fellows evaluate the curriculum and provide feedback on what would have made it more impactful to their studies. Updates are routinely completed based on feedback from recent curriculum evaluations. Fellows also evaluate the entire program at the conclusion of their transformational project presentations. This includes their project lessons learned and recommendations to improve the program to increase effectiveness in the development and support of transformational projects. Additionally, annual satisfaction surveys are conducted for the Academic-Community Partners, ARCOM and ARcare, to document lessons learned over the cohort and make recommendations on how to improve the overall effectiveness of the partnership communication and operations.

Academic-Community Partnership

The Arkansas Foundation for Medical Care (AFMC), a regional health care quality improvement and health care provider/beneficiary relations non-profit, recognizes that TIC is good medicine. AFMC is collaborating with the Arkansas College of Osteopathic Medicine (ARCOM) and ARcare to establish an academic community-partnership that fills the gap in training MDs, DOs, and PAs to champion and implement TIC approaches. Specifically, the academic-community partnership has developed and implemented the AGM Program: Training Primary Care Champions in TIC, a fellowship program for MDs, DOs, and PAs.

Academic-Community Partners

Arkansas Foundation for Medical Care (AFMC)

Established in 1972, AFMC is a non-profit 501(c)(3) corporation headquartered in Little Rock, AR, with additional offices in Fort Smith, AR. Our mission is to promote excellence in health and health care through education and evaluation. AFMC employs approximately 260 talented people who are currently engaged in project operations across the company and include project management professionals, health care related survey analysts and statisticians, health information technologists, health care professionals, communications specialists, beneficiary relations specialists (customer service representatives), corporate compliance personnel, accounting professionals, human resources staff, and administrative support staff. AFMC products include: 1) education and outreach, 2) data analysis, 3) health information technologies, 4) quality improvement activities, 5) medical utilization review, 6) strategies for health improvement, 7) health care surveys and other specialized research, 8) complaint resolution, 9) expedited appeal reviews for government insurance beneficiaries, 10) in-house communications and marketing services, 11) a Medicaid call service center, and 12) government relations and public policy.

AFMC's present and past experience over the last 45 years with numerous federal, state, and private entities involves hospitals, health systems and health care professionals, Medicare and Medicaid beneficiaries, and policy leaders with goals to:

- Improve the quality of health care service delivery while lowering cost
- Align provider goals with state and national quality and payment initiatives
- Develop targeted communication efforts for provider and patient education
- Promote peer-to-peer learning and spreading best practices
- Identify emerging health care trends and recommending policy changes

ARcare

ARcare is an established safety-net provider with service areas in Arkansas, Kentucky, and Mississippi that have received continuous Section 330(e) funding since 1986. ARcare is a 501(c)3 FQHC and the largest FQHC and community health center in Arkansas. ARcare was created as a provider of both mental and physical health services through a facility in Augusta, AR. In 1986, a separate non-profit, White River Rural Health Center, Inc., was created to separate out the physical health component and create a comprehensive medical center. In 2010, White River Rural Health Center changed its name to ARcare. In 2011, ARcare continued its expansion into Kentucky with clinics under the name of KentuckyCare, followed by expansion to Mississippi in 2017. ARcare's mission is "Health for all." As a Section 330-funded FQHC, ARcare is a medical home providing access to high quality, affordable primary care and behavioral health services to people of all ages regardless of their financial or insurance status. ARcare's Board has continually evaluated the health needs and barriers to care in both its own community and in those in the surrounding states. As a result, it has expanded its service delivery capacity to 60 primary care clinics, 8 pharmacies, and 2 fitness centers covering 13 counties in Arkansas. All ARcare sites qualify as medically underserved communities, solidifying its unequivocal mandate to serve "the least, the last, and the lost."

Arkansas College for Osteopathic Medicine (ARCOM)

ARCOM is one of several health-related training programs under the auspices of the Arkansas Colleges of Health Education, an entity formed for the express purpose of training highly competent and

compassionate health care professionals, to support health research and to provide a healthy living environment. The key focus of ARCOM and its programs is to provide service in underserved areas. The faculty provides medical students instruction in basic sciences, clinical practice, and precepts of osteopathic medicine. Clinical experiences are provided in cooperation with regional clinics and hospitals through the expertise of health care providers in Western Arkansas and Eastern Oklahoma. Located in Sebastian County, AR, a MUC, the college opened with 150 medical students in 2017 after receiving provisional accreditation status from the Commission on Osteopathic College Accreditation on July 1, 2016.

Arkansas Good Medicine Fellowship Program

The AGM Fellowship program is broken down into three distinct phases: (1) the Curriculum Phase, (2) the Planning Phase, and (3) the Project Phase. At this time, the AGM fellowship program has graduated nine fellows. Cohort 1 graduated in August 2020 and cohort 2 graduated in February 2021. Each of these fellows completed the 12-week online curriculum, created and implemented their own practice transformation project, and presented on their work to the AGM staff and relevant stakeholders. We are proud of the work done by all our fellows and hope they will continue working towards true practice transformation for many years to come.

The Curriculum Phase

The Curriculum Phase for the AGM Fellowship program consists of six online modules conducted over the first twelve weeks of the fellowship. The curriculum is made up of reading assignments, webinars, case studies, pre- and post-tests, and online video calls in which the fellows and mentors discuss the module's content.

Each cohort has provided feedback which has led to alterations and changes to the curriculum. The most impactful change has been the addition of technical assistance (TA) video calls. Originally, fellows were required to answer a set of discussion questions on the AGM curriculum platform and discuss in writing with their peers and the mentors. However, cohort 1 expressed that the lack of interaction with their peers through video calls or live chat limited their understanding of each module and their interactions between one another and the AGM mentors. Cohorts 2 and 3 were both required to attend bi-weekly TA video calls and all fellows expressed their appreciation for the increased learning, understanding and interaction amongst their peers and AGM mentors.

Module 1: Trauma-Informed Care (TIC) & Adverse Childhood Experiences (ACEs)		
Activity Type	**Activity Title**	**Description**
Pre-Test	TIC & ACEs Pre-Test	This test will assess your understanding of TIC and ACEs.
Webinar 1	Adverse Childhood Experiences & Trauma	This webinar will introduce you to ACEs, trauma and toxic stress.
Webinar 2	Implementing TIC Pediatric & Adult Primary Care Settings	Highlights the strategies for implementing TIC to best help health care professionals care for their patients more effectively.

Reading 1	Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study by Felitti et al.	The original ACEs study describes what adverse childhood experiences are and how they relate to chronic physical and mental diseases as well as behaviors.
Reading 2	Addressing ACEs and Other Types of Trauma in the Primary Care Setting	This article provides initial suggestions for pediatricians to consider when addressing ACEs in their practice.
Reading 3	Pediatric Medical Traumatic Stress	This guide helps providers address the emotional, as well as the physical side of trauma.
Reading 4	Trauma-Informed Care as a Universal Precaution: Beyond the ACEs Questionnaire	This article provides reasoning why TIC should be utilized universally, regardless of someone's ACE score.
Case Study 1	Pediatric Medical Traumatic Stress Toolkit	This toolkit offers two case studies on how to address traumatic stress in a pediatric setting in a trauma-informed way using the D-E-F protocol.
Case Study 2	IRT Case Presentation #1: Sharon	Using trauma-informed care in a substance abuse case. Read pages 13-32 of "Integrated Substance Abuse, Mental Health, and Trauma Treatment with Women."
Technical Assistance Call	Module 1 TA Call	Discuss module 1 curriculum content, discussion questions, and introduce projects with AGM Mentors.
Post-Test	TIC & ACEs Post-Test	This test will assess your understanding of TIC & ACEs after you have completed all other assignments.
Module 2: Social Determinants of Health		
Activity Type	**Activity Title**	**Description**
Pre-Test	Social Determinants of Health Pre-Test	This test will assess your understanding of SDOH.
Webinar 1	Epigenetics & SDOH	This webinar focuses on how SDOH disproportionately disadvantage the most vulnerable populations in our society through an overview of the emerging field of epigenetics.
Webinar 2	Allegories on Race and Racism by Dr. Camara Jones	Is there a need to address the SDOH from the viewpoint of the three components of racism described within the TED Talk by Dr. Camara Jones?

Reading 1	Constitution of the World Health Organization	Read page one, paying close attention to how the WHO defines "health."
Reading 2	ODPHP: Social Determinants of Health (SDOH)	Almost everyone is impacted by SDOH. Healthy People 2020 organized the SDOH into 5 key domains.
Reading 3	A Practical Approach to Screening for Social Determinants of Health	Discusses the need for screening, screening tools, and advice on implementation.
Reading 4	When Talking About Social Determinants, Precision Matters by K. Green & M. Zook	Highlights five principles that health care leaders should keep in mind when discussing and implementing interventions that address SDOH.
Technical Assistance Call	Module 2 TA Call	Discuss module 2 curriculum content, discussion questions, and introduce projects with AGM Mentors.
Post-Test	SDOH Post-Test	This test will assess your understanding of SDOH after you have completed all other assignments.
Module 3: Leadership & Team-Based Health care		
Activity Type	**Activity Title**	**Description**
Pre-Test	Leadership & Team-Based Health care Pre-test	This test will assess your understanding of Leadership, team-based health care and conflict management.
Webinar 1	The Role of Leadership in Creating a Culture of Patient & Family Centered Care	Presents how leadership behaviors and actions facilitate the delivery of patient and family centered care.
Webinar 2	Team Based Care Related to Addressing Social Determinants of Health	Presents the fundamentals of team-based care and how it can best be utilized to address SDOH.
Reading 1	Five Keys to Leading Transformational Change in Primary Care Delivery	Offers five strategies that are pivotal to create a high-functioning primary care system.
Reading 2	Keys to High-Functioning Office Teams	This article focuses on the primary components of team-based health care.
Reading 3	Conflict Management: Difficult Conversations with Difficult People	Addresses conflict management strategies that could be utilized in a health care system.
Reading 4	Examination of Leadership and Personality Traits on the Effectiveness of Professional Communications in Health care	Demonstrates the differences and importance of having extroverts & introverts in leadership roles.

Case Study 1	Mutiny	This case study describes how the behavior of a superior has started to put your patients at risk. What do you do?
Technical Assistance Call	Module 3 TA Call	Discuss module 3 curriculum content, discussion questions, and introduce projects with AGM Mentors.
Post-Test	Leadership & Team-Based Health care Post-test	This test will assess your understanding of leadership, team-based health care, and conflict management after you have completed all other assignments.
Module 4: Population Health & Collective Impact		
Activity Type	**Activity Title**	**Description**
Pre-Test	Population Health & Collective Impact Pre-Test	This test will assess your understanding of population health and collective impact.
Webinar 1	Public Health 101 Series	An introduction to public health that covers the sciences essential to public health practices.
Webinar 2	Collective Impact in Health	Learn how practitioners across the country are using collective impact to address complex problems in health.
Reading 1	The 10 Essential Public Health Services	Describes and reviews the 10 essential public health services in a historical and practical context.
Reading 2	Community Health Assessments & Health Improvement Plans	An overview of community health assessments.
Reading 3	"The Health Impact Pyramid" by Dr. Thomas Frieden	This five-tiered pyramid best describes the impact of different types of public health interventions and provides a framework to improve health.
Reading 4	Systems-Level Impact: Using the Collective Impact Framework for Public Health Systems Building	Introduces collective impact and how it could be utilized to make health care more effective.
Reading 5	What to Expect When Uou Are Managing a Population Health Coalition by L. Taylor	Learn how to manage a population health coalition.
Technical Assistance Call	Module 4 TA Call	Discuss module 4 curriculum content, discussion questions, and introduce projects with AGM Mentors.
Post-Test	Population Health & Collective Impact Post-Test	This test will assess your understanding of population health and collective impact after you have completed all other assignments.

Module 5: Health Education & Policy		
Activity Type	**Activity Title**	**Description**
Pre-Test	Health Education & Policy Pre-Test	This test will assess your understanding of health promotion, education, policy and systems change.
Reading 1	Rural Health Promotion and Disease Prevention Toolkit	Designed to help organizations identify and implement a health promotion program.
Reading 2	Influencing Policy Development	Provides guidance for bringing policy change in organizations and communities.
Case Study 1	Colorado Case Study	Examines how a cross-disability coalition works to ensure full participation of people with disabilities within a society.
Case Study 2	Komo Case Study	Examines the Ministry of Public Health and Sanitation's policies in Komo.
Technical Assistance Call	Module 5 TA Call	Discuss module 5 curriculum content, discussion questions, and introduce projects with AGM Mentors.
Post-Test	Health Education & Policy Post-Test	This test will assess your understanding of health promotion, education, policy, and systems change after you have completed all other assignments.
Optional Reading	Rural Community Health Toolkit	Provides rural communities with the information, resources, and materials they need to develop a community health program.
Module 6: Quality Improvement		
Activity Type	**Activity Title**	**Description**
Pre-Test	Quality Improvement Pre-Test	This test will assess your understanding of quality improvement models and frameworks.
Webinar 1	Pave Your Path #1: How to Improve – Will, Ideas, and Execution	The focus of this webinar is to prepare attendees for successful change and contextual issues in home health care.
Webinar 2	Pave Your Path #2: Using the Model for Improvement	The focus of this webinar is how to use the Model for Improvement.
Webinar 3	Pave Your Path #3: Learning Towards Improvements	The focus of this webinar is using the Model for Improvement measures and testing changes.
Reading 1	Basics of Quality Improvement – Practice Management	This is an article that provides the basics of quality improvement, provided from the American Academy of Family Physicians.
Reading 2	The Institute for Health care Improvement (IHI)	This article gives a brief history of the IHI and an overview of the science of improvement.

Reading 3	Plan-Do-Study-Act (PDSA)	Learn about the fundamentals of the Model for Improvement and testing changes on a small-scale using PDSA cycles.
Reading 4	Six Sigma	Learn about the Six Sigma methodology to eliminate inefficiencies and to improve processes.
Case Study 1	An Insulin Overdose	Use the PDSA Model to analyze this case study.
Technical Assistance Call	Module 6 TA Call	Discuss module 6 curriculum content, discussion questions, and introduce projects with AGM Mentors.
Post-Test	Quality Improvement Post-Test	This test will assess your understanding of quality improvement models after you have completed all other assignments.

The Planning Phase

The Planning Phase is the three-month period after the Curriculum Phase in which the fellows plan and prepare for their health care transformation projects. During this time, fellows write an abstract, conduct research through the ARCOM online library system to write a review of the literature related to their project, write a project protocol, and submit their protocol and any necessary documentation to the institutional review board used by the AGM fellowship program Advarra Ltd.

The Project Phase

The Project Phase is the final six-month period of the fellowship. Fellows implement their chosen health care transformation project on the topic of substance use, mental health, obesity, or TIC within their medical clinic. At this time, Cohorts 1 – 3 have successfully implemented their projects and Cohort 3 is expected to finalize their reports and present to the AGM mentors, AFMC team, and partners ARcare and ARCOM at the end of February 2022. Below you can read the abstracts of all fellows from Cohorts 1 – 3.

Cohort 1 Fellows (2019 – 2020):

Monica Bomar, PA "Adverse Childhood Experiences as it Relates to Obesity and Diabetes in adults in a Rural Health Care Setting"

> Adverse childhood experiences (ACEs) can influence adult health specifically in the development of diabetes. This study looks to see the correlation of ACEs and persons with diabetes. Research was done on published studies linking diabetes and ACEs. Data was collected on 47 individuals from a rural community based on ACE score, diabetes status, BMI, age, race, gender, and co-morbid depression. Data was analyzed using logistical methods. The odds ratio for being in the pre-diabetic hemoglobin A1C (HbA1c) status and experiencing one or more ACEs was 1.408 indicating a positive association between experiencing one or more ACEs and the likelihood of having a pre-diabetic HbA1c diagnosis. The odds ratio for having a diabetic HbA1c status and experiencing one or more ACEs was 2.183 indicating a strong positive association between the two variables. The increasing odds ratio across HbA1c status groups indicates a positive association between

experiencing at least one ACE and being diabetic. Findings in this study concur with recent research showing a positive association between a patient history of at least one ACE and a diagnosis of diabetes. However, it should be noted these results may be viewed with caution due to small sample size.

Renee Jones, DO "Could be Bill"

A retrospective chart review of children 10 – 19 years old with an obesity diagnosis will be conducted to determine if there is a connection between Adverse Childhood Experiences obesity and comorbidities such as depression. Charts will be pulled of patients with a diagnosis of obesity from 2014 to 2018 to look for comorbidity of depression. For patients who were diagnosed with both childhood obesity and depression the outcomes of their depression treatment will be classified (if recorded in their chart). The number of ACEs in the child's life along with age sex race socioeconomic background and access to health care will be compared to determine what roles each plays in the children co-diagnosed with obesity and depression. In this way a better understanding of the needs of children co-diagnosed with obesity and depression can be identified to ensure children get the proper care needed.

Amy Julian, MD "Adverse Childhood Experiences as it Relates to Mental Health Disorders in Obese Pediatric Patients"

Childhood obesity has been liked with numerous psychological and emotional problems in children. Adverse childhood experiences (ACEs) are known causes of toxic stress in children. Exposure to ACEs in early childhood has been linked to learning and behavior problems, poor mental health, and obesity. This study examined the relationship between ACEs in obese children and their correlation with other mental health conditions. It was a retrospective chart review of children ages 8 to 11 years old with a BMI-for-age ≥ 95%. Patients with an ACEs score of 0 were compared to those with an ACEs score ≥ 1 to determine if there was an increased incidence of mental health problems in those with an ACEs score ≥ 1. A total of 123 charts were reviewed, and 62% of these patients had an ACEs score ≥ 1. Of the 123 patients, 21% were found to have a diagnosis of depression, and 54% had some sort of mental health diagnosis. Data was analyzed using a multinomial logistic regression model. The results showed a positive association between experiencing at least 1 ACE and having a mental health diagnosis, such as depression or anxiety. Based on this data, it appears that having experienced ≥ 1 ACE in obese children increases the risk of being diagnosed with depression or other mental illness.

Edward Merritt, MD "Adverse Childhood Experiences' Role in Diabetes and Obesity"

This is a prospective study based on information obtained from a small, rural family practice clinic, ARcare-17, in Carlisle, Arkansas during May and June 2020. The study involved a total of fifty patients. Thirty-three patients met the criteria for this study, being eighteen years of age or older with a body mass index (BMI) of forty (40) or greater. The other seventeen patients were part of the control group which involved patients who were 18 years old and older with a BMI less than forty. The study strove to understand

how adverse childhood experiences (ACE) negatively impact BMI and hemoglobin A1c (HbA1c), which are measures of obesity and diabetes. The results demonstrated a trend towards a higher HbA1c level with an increased ACE score. The study did not establish a relationship between higher BMI and higher ACE scores.

Lidwina Powers, PA-C "Adverse Childhood Experiences as it Relates to Obesity and Co-morbidities in Adults"

This study explores the long-term effects of adverse childhood experiences (ACEs) on adult health outcomes, specifically diabetes and obesity. This study strove to identify adverse childhood experiences (ACEs) and examine the association of ACEs to the development of obesity and diabetes within the study population. Data was obtained at the ARcare Midtown Health Center in Jonesboro, Arkansas from April 23, 2020 to June 29, 2020. All participants were adults aged 18 years and older. Participants were categorized by their demographic factors, including age, race, gender, and a history of any depression diagnosis was collected. A questionnaire was provided for the purpose of identifying any ACEs present. The ACE questionnaire consisted of 10 items where participants were asked if they experienced any adverse events while growing up during their first 18 years of life. Diabetes was defined by using criteria from the American Diabetes Association as those having a Hemoglobin A1c (HbA1c) ≥ 6.5%, using antidiabetic medication, and on self-reported physician diagnosis of diabetes observed during at least one of the previous visits. BMI was calculated using the answer to questions regarding participant's height and weight and then was used to determine each participant's overweight (BMI ≥ 25) or obesity (BMI ≥30) status. A multinomial logistic regression model, Firth, was performed by the AFMC Analytic Team to determine the association between (1) ACE score and weight status and (2) ACE score and HbA1c status among study participants. The methodology presented in Davis et al. (2019) was followed for this analysis. Due to the small sample size logistic regression model was not able to be performed. In this study the odds ratio for having HbA1c ≥ 6.5 status is 2.896, indicating a strong positive association between experiencing 1 or more ACEs and the likelihood of having a diabetes diagnosis. In the final analysis, results demonstrated that the more ACEs a person experienced the higher likelihood of having obesity or diabetes later in life. Research is only beginning to examine the long-term effects of ACEs on adult health outcomes. Studies such as this add to the body of research that the psychosocial stress caused by ACEs, especially in the early stages of life, can cause certain physiologic reactions that can result in chronic diseases such as obesity and diabetes. Hopefully, this data will help to cultivate a more interdisciplinary approach to patient care; providing educational resources and opportunities; and working with patients in a more comprehensive manner to help curb the development of cardiometabolic diseases, such as diabetes and obesity.

Cohort 2 Fellows (2020 – 2021):

David Brightwell, PA-C, "Adverse Childhood Experiences as it Relates to Anxiety and Depression in Adults"

Mental Health is a growing concern among health care providers. According to the Anxiety and Depression Association of America, Anxiety disorders are the most common mental illness in the US, affecting 40 million adults in the United States age 18 and older. Anxiety disorders are highly treatable, yet only 36.9% of those suffering receive treatment. Depression is often associated with anxiety as part of the working diagnosis. Adverse Childhood Events (ACEs) are known to contribute to one's mental well-being. The objective of this study is to find out what affect, if any, ACEs have on anxiety and depression in terms of diagnosis and treatment. The purpose, therefore, will focus on finding if a correlation exists between how patients with anxiety/depression respond to treatment and their ACE score.

Broderick Eaton, DO "Adverse Childhood Experiences' Effects on Prevalence and Treatment of Depression"

Depression is a growing problem in the US population, especially in rural communities. Depression can lead to multiple chronic health problems. There are many underlying reasons a person becomes depressed. Adverse Childhood Experiences (ACEs) are known causes of several chronic health problems, including depression. This study aims to determine, in a small rural clinic in Eastern Arkansas, 1) the percentage of the depressed patient population who have experienced at least one ACE, 2) do depressed patients who have experienced at least one ACE have a more difficult time responding or adhering to treatment programs than patients who have not experienced an ACE.

Jason Lofton, MD "Comparing Outcomes of In-Office vs Telemedicine Intensive Weight Loss Counseling"

Obesity in the United States is a growing problem affecting 1 in 3 US adults and has an annual cost of 147 billion dollars. One of the methods of treating obesity involves some form of dietary counseling. The Lofton Family Clinic has been helping patients with weight loss through dietary counseling and we have seen good results. As a clinic that is a part of a value-based care model we want to do our part to help lower costs and improve the lives of our patients. With the onset of the COVID pandemic many clinics have shifted towards providing clinic appointments via telemedicine. As part of this project, we wanted to study the impact of different approaches to providing dietary counseling. This study was a prospective study in which patients of Dr. Jason Lofton with a Body Mass Index (BMI) over 30 were asked if they wanted to participate in a medical weight loss program, we call intensive weight loss counseling (IWC). The patients that answered yes were then placed in either a group that would see Dr. Lofton or a group that would see Dr. Lofton's nurse Angel Espinoza. The patients assigned to see either Dr. Lofton or Angel Espinoza were then further subdivided into groups that would be seen either in the clinic vs online for their IWC. Each IWC session is designed to last approximately 15 minutes Prior to starting the IWC each patient was given an ACEs survey to determine if there was any correlation between the ACE score and the outcome of the IWC. All participants in the study were patients of Dr. Lofton's seen between September 1, 2020 and December 31, 2020. All participants were adults ages 18 years of age or older with a BMI over 30

initially seen at the office of Dr. Jason Lofton. Participants who indicated yes to participating in the study were given surveys in either Spanish or English depending on the patients race and preference. All participating patients were categorized by their demographic factors including race and ethnicity, age, and gender. A comprehensive data analysis was performed by the AFMC Analytic Team. A summary of this data follows.

Randy Walker, MD "Failure to Achieve Control of Diabetes Type II and Correlation with Socioeconomic Factors"

This study was a prospective study in which patients of Dr. Randy D Walker were given a social determinants of health (SDOH) survey to explore the effects of these barriers on their health outcomes, more specifically a Type II Diabetic patients ability to control Hemoglobin A1c (HgA1c). Social determinants, such as poverty, education, payer source, housing, food insecurity and transportation, have a dramatic impact on a patient's ability and attitude towards controlling and the ultimate outcome on their chronic diseases. A better understanding of these relationships/associations with SDOH could improve development of cost-effective, culturally tailored programs for these patients. Study participants were also required to have a Type II Diabetic diagnosis for more than a year. A comprehensive data analysis was performed by the AFMC Analytic Team. Some important observations that should be noted for patients with an elevated HgA1c are the negative correlations of employment status, wages, confidence in filling out medical forms, ability to manage their chronic disease, food insecurities and the ability to pick up prescriptions.

Cohort 3 Fellows (2021 – 2022):

Amber Acord, PA-C "The Relationship between Adverse Childhood Experiences and Type 2 Diabetes Mellitus, Obesity, and Cigarette/E-cigarette Use"

Cassidy Cooper, PA-C "Awareness of Personal Adverse Childhood Experiences in Rural Arkansas"

Kristin Martin, DO, MS, FAAFP "The Correlation of Adverse Childhood Experiences (ACEs) with Substance Use and Co-occurring Mental Health Disorders in Rural Arkansas"

Olabode Olumofin, MD, MPH "A Move Towards Trauma-informed Care in the First US Clinic of Pine Bluff, Arkansas"

Resource List

Citation	Tags	Abstract	Page
Acosta J, Chandra A, Madrigano J. (2017). An Agenda to Advance Integrative Resilience Research and Practice: Key Themes from a Resilience Roundtable. *Rand health quarterly*, 7(1), 5.	Behaviors, community, policy, resilience, social determinants of health (SDOH)	In June 2016, the Resilience Roundtable brought together researchers, practitioners, and policymakers, across disciplines and sectors for a daylong discussion of where and how we can move to a more integrated and cohesive resilience agenda, with attention to critical factors that would motivate more collaborative work. The roundtable identified priorities for advancing a shared resilience agenda and made ten recommendations for implementing it.	40
AHIP. (2017). *Beyond the Boundaries of Health Care: Addressing Social Issues*. https://www.ahip.org/beyond-the-boundaries-of-health-care-addressing-social-issues/	Health outcomes, SDOH, social needs	To address social determinants of health we must go beyond the traditional roles of health care services using multifaceted, multi-stakeholder approaches, and coordinating health care and social services to best serve those in need.	40
America's Health Rankings United Health Foundation. (2017). 2017 Annual Report of America's Health Rankings – Arkansas. https://www.americashealthrankings.org/learn/reports/2017-annual-report/stste-summaries-arkansas	Adverse childhood experiences (ACEs), Arkansas, birth outcomes, child maltreatment, chronic health, family medicine, health care costs, health outcomes, mental health, obesity, primary care, SDOH, socio-economic status	This 2017 Annual Report demonstrates that determinants of health, such as behaviors, policy, clinical care, and environment directly influence health outcomes of Arkansans.	40
American Academy of Family Physicians. (2015, June). *Recommended Curriculum Guidelines for Family Medicine Residents: Human Behavior and Mental Health* (Issue No. 270). Sleepy Hollow, NY: Phelps Memorial Hospital.	ACEs, behaviors, education, family medicine, mental health, SDOH	This Curriculum Guideline provides suggestions for appropriate curricula in human behavior and mental health for family medicine residents.	41
American Academy of Family Physicians. (2017, June). *Recommended Curriculum Guidelines for Family Medicine Residents: Leadership* (Issue No.292). Los Angeles, CA: Kaiser Permanente.	Education, family medicine, leadership	The Residency Review Committee for Family Medicine (RRC-FM) has identified training in leadership and team-based health care as core program requirements. These requirements address the identified need for physicians to lead effectively in their practices, hospitals, professional organizations, and communities to advocate on behalf of the health of the public.	41
American Academy of Pediatrics. (2014). Addressing Adverse Childhood Experiences	ACEs, primary care, toxic stress, trauma	For many pediatricians, addressing exposure to traumatic events, particularly adverse childhood experiences (ACEs), that could cause toxic	41

and Other Types of Trauma in the Primary Care Setting. https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/healthy-foster-care-america/Pages/Trauma-Guide.aspx		stress in their patients is seen as difficult due to lack of time, complexity of the topics, limited referral resources, and discomfort. However, the effects of trauma on the developing brain and health across the life span is a natural concern for all pediatricians, therefore this document provides initial suggestions for pediatricians to consider when addressing ACEs in their practices.	
Anderson R, Edwards L, Silver K, Johnson D. (2018). Intergenerational transmission of child abuse: Predictors of child abuse potential among racially diverse women residing in domestic violence shelters. *Child Abuse Neglect*, 85; 80-90. https://doi.org/10.1016/j.chiabu.2018.08.004	ACEs, child maltreatment, intergenerational trauma, race, trauma	Parental risk for perpetrating child abuse is frequently associated with intergenerational patterns of abuse: being abused increases the risk for future abuse. Yet, the mechanisms of intergenerational abuse are unclear, and the risk factors for perpetrating child abuse are interrelated. Research suggests that history of childhood abuse, psychiatric distress, and exposure to intimate partner violence (IPV) are all related risk factors for perpetrating child abuse. Results of this study suggest that IPV-related PTSD symptoms, rather than exposure to abuse is most strongly associated with child abuse potential in recent IPV survivors.	42
Arkansas State Epidemiological Outcomes Workgroup. (2017). 2017 Arkansas Epidemiological State Profile of Substance Use. https://afmc.org/health-care-professionals/behavioral-health/reports/	Arkansas, behaviors, mental health, prevention, protective factors, substance use	The primary purpose of the State Epidemiological Profile is to devise a tool for data-driven, informed decision-making pertaining to substance abuse prevention. This report provides information on the consumption and consequences of substance abuse. It also highlights the risk factors, protective factors, and mental or behavioral health problems as they relate to substance abuse issues.	42
Arseneault L. (2018). The persistent and pervasive impact of being bullied in childhood and adolescence: implications for policy and practice. *J Child Psychol Psyc*, 59(4):405-21. https://doi.org/10.1111/jcpp.12841	Bullying, health outcomes, mental health, SDOH, socio-economic status, trauma	This paper aims to review the evidence for an independent contribution of childhood bullying victimization to the development of poor outcomes throughout the life span, including mental, physical, and socioeconomic outcomes, and discuss the implications for policy and practice.	43
Association of State & Territorial Health Officials. (2020, April). *Preventing Adverse childhood Experiences During COVID-19*. Arlington, VA. https://www.astho.org/COVID-19/Preventing-ACEs-During-Pandemic/	ACEs, policy, prevention	This highlights policy considerations to strengthen jurisdictions' ability to continue to create and maintain safe, stable, nurturing environments for children and families during the COVID-19 response and in preparation for pandemic recovery.	43
Austin A, Smith M. (2017). Examining Material Hardship in Mothers: Associations of Diaper Need and Food Insufficiency with Maternal Depressive Symptoms. *Health*	Depression, mental health, pediatrics, pregnancy, SDOH, social needs, socio-economic status	This study examined the association between two forms of material hardship, diaper need and food insufficiency, and maternal depressive symptoms.	44

Equity, 1.1:127-33. https://doi.org/10.1089/heq.2016.0023			
Bachrach D, Pfister H, Wallis K, Lipson M. (2014). *Addressing Patients' Social Needs: An Emerging Business Case for Provider Investment.* https://www.commonwealthfund.org/publications/fund-reports/2014/may/addressing-patients-social-needs-emerging-business-case-provider	Health care costs, interventions, SDOH, social needs	Social determinant of health intervention models create economic incentives for providers to incorporate social interventions into their approach to care. Investing in these interventions can enhance patient satisfaction and loyalty, as well as satisfaction and productivity among providers.	44
Baquet C, Bromwell J, Hall M, Frego J. (2013). Rural community-academic partnership model for community engagement and partnered research. *Prog Comm Hlth Partn*, 7(3):281-90. https://doi.org/10.1353/cpr.2013.0028	Community, education, partnership, policy, rural health	This article provides an overview of a rural community–academic partnership developed in 1997 between the Eastern Shore Area Health Education Center (ESAHEC) and the University of Maryland School of Medicine's (UMSOM) Office of Policy and Planning (OPP).	45
Battistone M, Barker A, Grotzke M, Beck J, Larence P, Cannon G. (2016). Mini-Residency in Musculoskeletal care: a national continuing professional development program for primary care providers. *J Gen Intern Med*, 31(11): 1301-7. https://doi.org/10.1007/s11606-016-3773-4	Competencies, education, partnership, primary care	The Musculoskeletal (MSK) Mini-residency program is an effective and well-received mixed-method educational initiative to strengthen the skills of primary care physicians in evaluating and managing patients with MSK complaints and to document their competence in performing physical examinations. The 2-year experience in implementation suggests that this model of educational partnerships is a feasible approach to disseminating innovative educational programs in a way that preserves curricular consistency yet is adaptable to local needs.	45
Bellis M, Hughes K, Ford K, Hardcastle K, Sharp C, Wood S, Homolova L, et al. (2018). Adverse childhood experiences and sources of childhood resilience: a retrospective study of their combined relationship with child health and educational attendance. *BMC Public Health*, 18(1):792. https://doi.org/10.1186/s12889-018-5699-8	ACEs, children, chronic health, community, education, health outcomes, resilience	This article examines if a history of adverse childhood experiences (ACEs) is associated with poor childhood health and school attendance and the extent to which such outcomes are counteracted by community resilience assets.	46
Bethell C, Carle A, Hudziak J, Gombojav N, Powers N, Wade R, Braveman P. (2017). Methods to Assess Adverse Childhood Experiences of Children and Families: Toward Approaches to Promote Child Well-	ACEs, children, pediatrics, resilience, screening, trauma	Researchers identified and compared methods to assess adverse childhood experiences (ACEs) among children and families, evaluated the acceptability and validity of the new National Survey of Children's Health ACEs measure, and identified implications for assessing ACEs in research and practice.	46

being in Policy and Practice. *Acad Pediatr*, 17(7):51-9. https://doi.org/10.1016/j.acap .2017.04.161			
Billioux A, Verlander K, Anthony S, Alley D. (2017). Standardized Screening for Health-Related Social Needs in Clinical Settings: The Accountable Health Communities Screening Tool. *National Academy of Medicine*, Washington, DC. https://nam.edu/wp-content/uploads/2017/05/Standardized-Screening-for-Health-Related-Social-Needs-in-Clinical-Settings.pdf	Community, health care costs, screening, SDOH, social needs, socio-economic status	The Centers for Medicare & Medicaid Services (CMS) Accountable Health Communities Model, tested by the Center for Medicare and Medicaid Innovation, addresses the critical gap between clinical care and community services in the current health care delivery system by testing whether systematically identifying and addressing the health-related social needs of Medicare and Medicaid beneficiaries impacts their total health care costs and improves health.	47
Blodgett C. (2015). *A Review of Community Efforts to Mitigate and Prevent Adverse Childhood Experiences and Trauma*. Washington State University Area Health Education Center.	ACEs, behaviors, community, prevention, resilience, trauma	This paper summarizes community and treatment system initiatives in Washington State that address elements of Adverse Childhood Experiences (ACEs) prevention and mitigation across a range of social, behavioral, and emotional consequences.	48
Blue Cross Blue Shield of Massachusetts Foundation. (2015, June). *Leveraging the Social Determinants of Health: What Works?* (Policy Brief). Boston, MA: Taylor L, Coyle C Ndumele C, Rogan E, Canavan M, Curry L, Bradley E.	Health care costs, interventions, partnership, SDOH	This report evaluates and summarizes the evidence base for interventions that address social determinants of health, paying special attention to the innovative models that may improve health outcomes and reduce health care costs and that may be applicable in the Massachusetts policy context.	48
Bodenmann P, Favrat B, Wolff H, Guessous I, Panese F, Herzig L, Bischoff T, et al. (2014). Screening Primary-Care Patients Forging Health Care for Economic Reasons. *PLOS ONE*, 9(4):1-9. https://doi.org /10.1371/journal.pone.0094006	Primary care, screening, SDOH, social needs, socio-economic status	General practitioners should systematically evaluate the socio-economic status of their patients. Asking patients whether they experience any difficulties in paying their bills is an effective means of identifying patients who might forgo health care.	48
Bowen E, Murshid N. (2016). Trauma-Informed Social Policy: A Conceptual Framework for Policy Analysis and Advocacy. *Am J Public Health*, 106: 223-9. https://doi.org/10.2105 /AJPH.2015.302970	Advocacy, health disparities, policy, trauma-informed	TIC is a service provision model used across a range of practice settings. Drawing on an extensive body of research on trauma and health outcomes, we have argued that the principles of TIC can be extended to social policy. This framework conveys a politicized understanding of trauma, reflecting the reality that trauma and its effects are not equally distributed, and offers a pathway for public health professionals to disrupt trauma-driven health disparities through policy action.	49

Braveman P, Gottlieb L, Francis D, Arkin E, Acker J. (2019). *What can the health care sector do to advance health equity?* https://www.rwjf.org/en/library/research/2019/11/what-can-the-health-care-sector-do-to-advance-health-equity.html	Health equity, health outcomes	This report discusses how inequities in education, employment, housing, and structural racism result not only in poorer health outcomes but also in higher health care costs.	49
Brenes G. (2007). Anxiety, Depression, and Quality of Life in Primary Care Patients. *The Primary Care Companion to the J Clin Psychiat*, 9:437-43. https://doi.org/10.4088/pcc.v09n0606	Anxiety, depression, primary care	The purpose of this study was to examine the impact of anxiety and depressive symptoms on emotional and physical functioning, the effects of anxiety symptoms on functioning independent of depressive symptoms, and the effects of depressive symptoms on functioning independent of anxiety symptoms.	50
Brinker J, Cheruvu V. (2017). Social and emotional support as a protective factor against current depression among individuals with adverse childhood experiences (ACEs). *Prev Med Reports*, 5:127-33. https://doi.org/10.1016/j.pmedr.2016.11.018	ACEs, depression, mental health, protective factors, resilience	This study tests the hypothesis that perceived social and emotional support is a protective factor against current depression among adults with adverse childhood experiences.	51
Brockie T, Elm J, Walls M. (2018). Examining protective and buffering associations between sociocultural factors and adverse childhood experiences among American Indian adults with type 2 diabetes: a quantitative, community-based participatory research approach. *BMJ Open*, 8:e022265. https://doi.org/10.1136bmjopen-2018-022265	ACEs, community, diabetes, health outcomes, mental health, race, resilience	The purpose of this study was to determine the frequency of select adverse childhood experiences (ACEs) among a sample of American Indian (AI) adults living with type 2 diabetes (T2D) and the associations between ACEs and self-rated physical and mental health.	51
Brown R, Plener P, Braehler E, Fegert J, Huber-Lang M. (2018). Associations of adverse childhood experiences and bullying on physical pain in the general population of Germany. *J Pain Res*, 11:3099-108. https://doi.org/10.2147/jpr.5169135	ACEs, bullying, child maltreatment, children, chronic health, depression, health outcomes, mental health, trauma	Child maltreatment and bullying are risk factors for the development of chronic pain. Aim of this cross-sectional study was to investigate the association of child maltreatment and bullying and pain experiences in a representative sample of the general population.	52
Bunting L, Davidson G, McCartan C, Hanratty J, Bywaters P, Mason W, Steils N. (2018). The association between child maltreatment	ACEs, child maltreatment, health outcomes, SDOH,	Although establishing child maltreatment as a causal mechanism for adult economic outcomes is fraught with difficulty, understanding the relationship between the two is essential to reducing such inequality.	52

and adult poverty - A systemic review of longitudinal research. *Child Abuse Neglect*, 77:121-33. https://doi.org/10.1016/j.chiabu.2017.12.022	social needs, socio-economic status, trauma	This paper presents findings from a systematic review of longitudinal research examining experiences of child maltreatment and economic outcomes in adulthood.	
Burns J, Paul D, Paz S. (2012, April). *Participatory Asset Mapping: A Community Research Lab Toolkit*. Healthy City: Advancement Project. http://communityscience.com/knowledge4equity/AssetMappingToolkit.pdf	Advocacy, collective impact, community, leadership, partnership, policy, protective factors, SDOH, social needs	This is an instructional toolkit for using and applying Participatory Asset Mapping. Community-Based Organizations can use the concepts, methods, and tools provided, such as the Community-Engaged Mapping Facilitation Guide and Guide to Planning a Community-Engaged Mapping Event, to host an event or activity that collects knowledge and experiences from community members about local assets.	53
Campbell J, Farmer G, Nguyen-Rodriguez S, Walker R, Egede L. (2018). Relationship between individual categories of adverse childhood experiences and diabetes in adulthood in a sample of US Adults: Does it differ by gender? *J Diabetes Complicat*, 32(2): 139-43. https://doi.org/10.1016/j.jdiacomp.201 7.11.005	ACEs, diabetes, health outcomes	Adverse Childhood Experiences (ACEs) are known to increase risk for poor health outcomes in adulthood and impact the development of chronic illness, specifically diabetes. However, little is known about the differential impact of individual ACE categories on diabetes risk, and whether this relationship is gender specific. Overall, this study found that four ACE categories were significantly associated with increased odds of diabetes in adulthood with sexual abuse being the strongest predictor	53
Caron R, Ulrich-Schad J, Lafferty C. (2015). Academic-Community Partnerships: Effectiveness Evaluated Beyond the Ivory Walls. *Journal of Community Engagement and Scholarship*, 8(1), 125-38.	Community, education, partnership, SDOH	The authors conducted a survey of U.S. schools and programs in public health and community groups working with these academic partners to: identify the most common local public health issues addressed; examine the characteristics of the partnership and the actual or perceived benefits and challenges for each partner; assess the perceived effectiveness of the partnership and their evaluation techniques; and analyze the intent to continue or dissolve the partnership and the associated factors that influence this decision.	54
Caudill T, Lofgren R, Jennings D, Karpf M. (2011). Health Care Reform and Primary Care: Training Physicians for Tomorrow's Challenges. *Acad Med*, 86(2):158-60. https://doi.org/10.1097/acm.0b013e318 2045f13	Advocacy, education, health care cost, primary care	The authors argue that for our health care system to be successful the current fee-for-service model needs to change to a reimbursement model approach, and for additional comprehensive primary care physicians to be trained	54
Chang X, Jiang X, Mkandarwire T, Shen M. (2019). Associations between adverse childhood experiences and health outcomes in adults aged 18-59 years. *PLoS ONE*,	ACEs, behaviors, chronic health, health outcomes, mental health	The objective of the present study was to examine the relationship between adverse childhood experiences and health-related behaviors, chronic diseases, and mental health in adults.	55

14(2)e0211850. https://doi.org/10.1371/journal.pone.0211850			
Chanlongbutra A, Singh G, Mueller C. (2018). Adverse childhood experiences, health-related quality of life, and chronic disease risks in rural areas of the US. *Journal of Environmental and Public Health*, 2018 (7151297): 1-15. https://doi.org/10.1155/2018/7151297	ACEs, behaviors, chronic health, health outcomes, mental health, rural health	This study examined whether adverse childhood experience (ACE) exposure among individuals living in rural areas of the United States is associated with adult activity limitations, self-reported general poor health status, chronic diseases, and poor mental health.	55
Chapman D, Whitfield C, Felitti V, Dube S, Edwards V, Anda R. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *J Affect Disorders*, 82(2014):217-25. https://doi.org/10.1016/j.jad.2003.12.013	ACEs, child maltreatment, depression, health outcomes, interventions, mental health	Results of this study suggest that exposure to adverse childhood experiences is associated with increased risk of depressive disorders up to decades after their occurrence. Early recognition of childhood abuse and appropriate intervention may thus play an important role in the prevention of depressive disorders throughout the life span.	56
Children's HealthWatch. (2012, June). A Safe, Stable Place to Call Home Supports Young Children's Health in Arkansas. Boston, MA: Weiss I, Ettinger S, Casey P, Barrett K, Schiffmiller A, Cook J, Pasquariello J, Coleman S.	Arkansas, children, pediatrics, SDOH, social needs	Children's HealthWatch researchers analyzed survey data collected from caregivers in Arkansas between 2005 and 2011 about the housing security and stability of children.	56
Chuang Y, Chuang K, Yang T. (2013). Social cohesion matters in health. *Int J Equity Health*, 12(87). https://doi.org/10.1186/1475-9276-12-87	Health equity, population health, social needs	This paper attempts to examine the concept of social cohesion, develop measurements, and investigate the relationship between social cohesion and individual health. The researchers recommend that to achieve further advancement in population health, developed countries should consider policies that would foster a society with a high level of social inclusion, social capital, and social diversity.	57
Clack L. (2017). Examination of Leadership and Personality Traits on the Effectiveness of Professional Communication in Health care. *Journal of Health care Communications,* 2(2). https://doi.org/10.4172/242-1654.100051	Leadership	The purpose of this article was to conduct a thorough review of leadership communication from a personality perspective. Leadership and personality theories were examined in depth through review of current and past research studies.	57
Cohen J, Kelleher K, Mannarino A. (2008). Identifying, Treating, and Referring Traumatized Children: The Role of Pediatric	ACEs, child maltreatment, children, health outcomes, interventions, mental	To describe practical ways for pediatric providers to screen children for exposure to potentially traumatic events and trauma symptoms, provide brief office-based pediatric interventions for trauma-exposed children,	58

Providers. *Arch Pediat Adol Med*, 162(5):447-52. https://doi.org/10.1001/archpedi.162.5.447	health, pediatrics, screening, trauma	engage families in mental health care referrals, and recognize elements of evidence-based practices for traumatized children.	
Collective Impact Forum & FSG. (2017). *Backbone Starter Guide: A Summary of Major Resources about the Backbone from FSG and the Collective Impact Forum*. https://www.collectiveimpactforum.org/resources/backbone-starter-guide-summary-major-resources-about-backbone	Collective impact	The starter guide includes a short overview of the collective impact approach, as well as addresses: the backbone's purpose and functions; different types of backbone structures; leadership skills for backbone staff; the importance of centering equity within a backbone's work; and the role of the funder in supporting a backbone's sustainability.	58
Cook C, Freedman J, Freedman L, Arick R, Miller M. (1996). Screening for Social and Environmental Problems in a VA Primary Care Setting. *Health Soc Work*, 21(1): 41-7. https://doi.org/10.1093/hsw/21.1.41	Primary care, screening, SDOH, social needs, socio-economic status	This study assessed the social and environmental problems of patients seen in a primary care clinic at a Veterans Affairs (VA) medical center. The most prevalent social problems were financial difficulties, personal stress, family problems, legal concerns, and employment concerns. When asked, nearly one third of all respondents requested social work services or information about services related to their problems. The findings suggest a dear need for social work interventions in VA primary care clinics that focus on both psychosocial problems.	58
Cowell R, Cicchetti D, Rogosch F, Toth S. (2015). Childhood maltreatment and its effect on neurocognitive functioning: Timing and chronicity matter. *Dev Psychopathol*, 27: 521-33. https://doi.org/10.1017/S0954579415000139	Child maltreatment, children, chronic health, epigenetics	This study extends prior research by examining the effect of childhood maltreatment on neurocognitive functioning based on developmental timing of maltreatment, including onset, chronicity, and recency.	59
Crandall A, Miller J, Cheung A, Novilla L, Glade R, Novilla M, Magnusson B, et al. (2019). ACEs and counter-ACEs: How positive and negative childhood experiences influence adult health. *Child Abuse Neglect*, 96(104089). https://doi.org/10.10 16/j.chiabu.2019.104089	ACEs, child maltreatment, children, health outcome, mental health, pediatrics, protective factors, resilience, trauma	Findings suggest that counter-ACEs protect against poor adult health and lead to better adult wellness. When ACEs scores are moderate, counter-ACEs largely neutralize the negative effects of ACEs on adult health. Ultimately, the results demonstrate that a public health approach to promoting positive childhood experiences may promote better lifelong health.	59
Danese A, Moffitt T, Harrington H, Milne B, Polanczyk G, Pariante C, Poulton R, et al. (2009). Adverse Childhood Experiences and Adult Risk Factors for Age-Related Disease: Depression, Inflammation, and Clustering of	ACEs, child maltreatment, chronic health, health outcomes, trauma	The objective of this study was to understand why children exposed to adverse psychosocial experiences are at elevated risk for age-related disease, such as cardiovascular disease, by testing whether adverse childhood experiences predict enduring abnormalities in stress-sensitive	59

Metabolic Risk Markers. *Arch Pediat Adol Med*, 163(12): 1135-43. https://doi.org/10.1001/archpedia trics.2009.214		biological systems, namely, the nervous, immune, and endocrine/metabolic systems.	
Downey J, Gudmunson C, Pang Y, Lee K. (2017). Adverse Childhood Experiences Affect Health Risk Behaviors and Chronic Health of Iowans. *J Fam Violence*, 32:557-64. https://doi.org/10.1007/s10896-017-9909-4	ACEs, behaviors, child maltreatment, chronic health, health outcomes, trauma	This study replicates the original adverse childhood experiences (ACEs) study (Felitti, et al. 1998) with a representative sample of adults in Iowa. This replication study demonstrates that the need for intervention and prevention programs in Iowa are similar to the needs found in other states in the U.S. for addressing the consequences of ACEs.	60
Earls M, Yogman M, Mattson G, Rafferty J. (2019). Incorporating Recognition and Management of Perinatal Depression into Pediatric Practice. *Pediatrics*, 143(1): e20183259. https://doi.org/10.1542/peds.2018-3259	Advocacy, community, depression, mental health, pediatrics, policy, pregnancy, prenatal care, screening	The authors argue that because perinatal depression can have adverse effects on the infant and mother, pediatric medical homes should coordinate care more effectively, implement postpartum depression screenings, use community resources for treatment and referral, and provide support for the maternal-child relationship.	61
Ellis W, Dietz W. (2017). A New Framework for addressing Adverse Childhood and Community Experiences: The Building Community Resilience Model. *Acad Pediatr*, 17(7):S86-93. https://doi.org/10.1016/j.acap.2016.12.011	ACEs, community, collective impact, population health, SDOH, toxic stress, trauma	We propose a transformative approach to foster collaboration across child health, public health, and community-based agencies to address the root causes of toxic stress and childhood adversity and to build community resilience.	61
Felitti V, Anda R, Nordenberg D, Williamson D, Spitz A, Edwards V, Koss M, et al. (1998). Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study. *Am J Prev Med*, 14(4): 245-58. https://doi.org/10.1016/s074 9-3797(98)00017-8	ACEs, child maltreatment, chronic health, depression, epigenetics, health outcomes, mental health, screening, toxic stress, trauma	The Adverse Childhood Experience (ACE) Study found a strong graded relationship between the breadth of exposure to abuse or household dysfunction during childhood and multiple risk factors for several of the leading causes of death in adults.	62
Flaherty E, Legano L, Idzerda S, American Academic of Pediatrics Council on Child Abuse and Neglect. (2019). Ongoing Pediatric Health Care for the Child Who Has Been Maltreated. *Pediatrics*, 143(4). https://doi.org/10.1542/peds.2019.0284	ACEs, child maltreatment, children, health outcomes, pediatrics	This new clinical report will provide guidance to pediatricians about how they can best oversee and foster the optimal physical health, growth, and development of children who have been maltreated and remain in the care of their biological family or are returned to their care by Child Protective Services agencies.	63
Flanagan T, Alabaster A, McCaw B, Stoller N, Watson C, Young-Wolff K. (2018). Feasibility	ACEs, pregnancy, policy, screening	Adverse childhood experiences (ACEs) are common among pregnant women and contribute to increased risk for negative perinatal outcomes,	63

and Acceptability of Screening for Adverse Childhood Experiences in Prenatal Care. *J Womens Health*, 27(7): 903-11. https://doi.org/10.1089/jwh.2017.6649		yet few clinicians screen prenatal patients for ACEs. The purpose of this study was to evaluate the feasibility and acceptability of screening for ACEs in standard prenatal care.	
Fortier K, Parent S, Lessard G. (2020). Child maltreatment in sport: smashing the wall of silence: a narrative review of physical, sexual, psychological abuses and neglect. *Brit J Sport Med*, 54:4-7. https://doi.org/10.1136/bjsports-2018-100224	Child maltreatment, education	The aim of this paper is to propose concrete manifestations of each type of child maltreatment in sport. We aim to help practitioners better understand and researchers better measure this problem	64
Frampton N, Poole J, Dobson K, Pusch D. (2018). The effects of adult depression on the recollection of adverse childhood experiences. *Child Abuse Neglect*, 86:45-54. https://doi.org/10.1016/j.chiabu.2018.09.006	ACEs, depression, primary care, trauma	This study provides support for the stability and reliability of ACE scores over time, regardless of depression status, and suggests that ACE measures are appropriate for use in health care settings.	64
Frieden T. (2010). A Framework for Public Health Action: The Health Impact Pyramid. *Am J Public Health*, 100(4):590-5. https://doi.org/10.2105/AJPH.2009.185652	Health outcomes, interventions, population health, SDOH, socio-economic status	A 5-tier pyramid best describes the impact of different types of public health interventions and provides a framework to improve health.	64
FSG. (2017, March). *How to Lead Collective Impact Working Groups: A Comprehensive Toolkit* (Report). Uribe D, Wendel C, Bockstette V.	Collective impact, community, leadership	Built on our experience with numerous Working Groups, this kit provides detailed tools, templates, and tips. From increasing membership and community engagement to planning and running effective meetings, Co-chairs will find strategic and tactical resources to help them contribute to a successful initiative.	65
Garner A, Yogman M, Committee on Psychosocial Aspects of Child and Family Health, Section on Developmental and Behavioral Pediatrics, Council on Early Childhood. (2021). *Pediatrics*, 148(2). https://doi.org/10.1542/peds.2021-052582	ACEs, Advocacy, children, health outcomes, policy, population health, resilience, toxic stress	This revised policy statement on childhood toxic stress acknowledges a spectrum of potential adversities and reaffirms the benefits of an ecobiodevelopmental model for understanding the childhood origins of adult-manifested disease and wellness. It also endorses a paradigm shift toward relational health because SSNRs not only buffer childhood adversity when it occurs but also promote the capacities needed to be resilient in the future.	65
Gartland D, Giallo R, Woolhouse H, Mensah F, Brown S. (2019). Intergenerational Impacts of Family Violence - Mothers and Children in a Large Prospective Pregnancy	Intergenerational trauma, interventions, pregnancy, trauma	The clustering of child and adult violence experiences and the accumulation of risk within families (IPV, poor maternal health, child difficulties) highlight the need for effective early intervention to limit or	66

Cohort Study. *EClinical Medicine*, 15:51-61. https://doi.org/10.1016/j.eclinm.2019.08.008		a meliorate the impact of violence across the lifespan, and to break the intergenerational cycle of disadvantage.	
Gillespie R. (2019). Screening for Adverse Childhood Experiences in Pediatric Primary Care: Pitfalls and Possibilities. *Pediatric Ann*, 48(7): e257-61. https://doi.org/10.3928/19382359-20190610.02	ACEs, children, pediatrics, primary care, screening, toxic stress, trauma, trauma-informed	This article reviews the current state of screening for ACEs and toxic stress in practice, describes how pediatricians and clinics have overcome pitfalls during implementation of practice-based screening initiatives, and discusses possibilities for the future of primary care-based screening.	66
Glowa P, Olson A, Johnson D. (2016). Screening for Adverse Childhood Experiences in a Family Medicine Setting: A Feasibility Study. *J Am Board Fam Med*, 29:303-7. https://doi.org/10.3122/jabfm.2016.03.150310	ACEs, family medicine, interventions, primary care, screening	This study seeks to explore the feasibility of implementing the ACE screening of adults during routine family medicine office visits. ACE screening offers clinicians a more complete picture of important social determinants of health. Primary care–specific interventions that incorporate treatment of early life trauma are needed.	67
Gottlieb L, Hessler D, Long D, Laves E, Burns A, Amaya A, Sweeney P, et al. (2016). Effects of Social Needs Screening and In-Person Service Navigation on Child Health. *JAMA Pediatr*, e1-7. https://doi.org/10.1001/jamapediatrics.2016.2521	Children, health outcome, interventions, prevention, SDOH, social needs	Researchers evaluated the effects of social needs screening and in-person resource navigation services on social needs and child health.	67
Grey H, Ford K, Bellis M, Lowey H, Wood S. (2019). Associations between childhood deaths and adverse childhood experiences: An audit of data from a child death overview panel. *Child Abuse Neglect*, 90: 22-31. https://doi.org/10.1016/j.chiabu.2019.01.020	ACEs, child maltreatment, children, infant mortality, trauma	This study explored if data routinely collected by child death overview panels (CDOPs) could be used to measure ACE exposure and examined associations between ACEs and child death categories.	68
Groenewald C, Murray C, Palermo T. (2020). Adverse childhood experiences and chronic pain among children and adolescents in the United States. *Pain Reports*, 5(5), e839. https://doi.org/10.1097/PR9.0000000000000839	ACEs, children, chronic health, race, socio-economic status	Evaluates the association between adverse childhood experiences (ACEs) and chronic pain during childhood and adolescence.	68
Harris D, Krause K, Parish D, Smith M. (2007). Academic Competencies for Medical Faculty. *Fam Med*, 39(5), 343-50.	Competencies, education	The competencies and time allocations presented here help faculty and institutions define skills needed for particular faculty roles, plan for faculty evaluation, mentoring and advancement, and design faculty development programs based on identified needs.	69

Hassan A, Scherer E, Pikcilingis A, Krull E, McNickles L, Marmon G, Woods E, et al. (2015). Improving Social Determinants of Health: Effectiveness of a Web-Based Intervention. *Am J Prev Med*, 49(6):822-31. https://doi.org/10.1016/j.amepre.2015.04.023	Interventions, SDOH, social needs	Although patients who experience health-related social problems such as food insecurity are at increased risk for negative health outcomes, there are few systems for screening and intervention. The study aimed to determine whether a web-based intervention can (1) connect youth to services to address these problems and (2) increase their resolution.	69
Health Leads. (2018). *Social Needs Screening Toolkit*. Boston, MA. https://healthleadsusa.org/resources/the-health-leads-screening-toolkit/	Health care cost, screening, SDOH, social needs	This Social Needs Screening Toolkit shares the latest research on how to screen patients for social needs.	70
Herold B, St. Claire K, Snider S, Narayan A. (2018). Integration of the Nurse practitioner into your child abuse team. *J Pediatr Health Car*, 32: 313-18. https://doi.org/10.1016/j.pedhc.2018 .01.005	Child maltreatment, children, health outcomes, pediatrics, team-based health care, trauma, trauma-informed	Using the outcomes logic model, the researchers present a systematic process through which the pediatric nurse practitioners (PNPs) can be effectively integrated into a medical child abuse team.	70
Hillis S, Anda R, Dube S, Felitti V, Marchbanks P, Marks J. (2004). The Association Between Adverse Children Experiences and Adolescent Pregnancy, Long-Term Psychosocial Consequences, and Fetal Death. *Pediatrics*, 113: 320-7. https://doi.org/10.1542/peds.113.2.320	ACEs, infant mortality, pregnancy, prenatal care	This report examined whether adolescent pregnancy increased as types of adverse childhood experiences (ACE score) increased and whether ACEs or adolescent pregnancy was the principal source of elevated risk for long-term psychosocial consequences and fetal death.	71
Hope SF Learning Center. (2015, July). *Trauma Informed Community Building Evaluation: A Formative Evaluation of the TICB Model and its Implementation in Potrero Hill.* San Francisco, CA: Gordon D, Rebanal D, Simon-Ortiz S, Tat S, Tokunaga J, Wolin J.	Community, trauma-informed	At its core, the Trauma Informed Community Building (TICB) model aims to increase the readiness of the community to sustain personal and neighborhood change. TICB strives to promote social cohesion and foster resiliency so that residents will have the capacity to adjust to changing circumstances, including the transition to a mixed-income neighborhood.	71
Hornor G, Davis C, Sherfield J, Wilkinson K. (2019). Trauma-Informed Care: Essential Elements for Pediatric Health Care. *J Pediatr Health Car*, 33:214-21. https://doi.org/10.1016/j.pedhc.2018.09.009	ACEs, child maltreatment, children, chronic health, health outcomes, mental health, pediatrics, trauma, trauma-informed	Defines childhood trauma and TIC, discuss incorporation into pediatric health care, describe trauma-informed mental health care, explore the concept of a trauma-informed community, and provide implications for practice.	72

Horwitz A. (2010). How an Age of Anxiety Became and Age of Depression. *The Milbank Quarterly*, 88(1): 112-38. https://doi.org/10.1111;j.1468-0009.2010.0591.x	Anxiety, depression, mental health	This article reviews statistical trends in anxiety and depression diagnosis, treatment, drug prescriptions, and textual readings of diagnostic criteria and secondary literature.	72
Hovdestad W, Shields M, Shaw A, Tonmyr L. (2020). Childhood maltreatment as a risk factor for cancer: findings from a population-based survey of Canadian adults. *BMC Cancer*, 20(70). https://doi.org/10.1186/s12885-019-6481-8	ACEs, child maltreatment, chronic health, health outcomes, trauma	This analysis explores mediated associations between cancer in adulthood and different levels of exposure to three types of child maltreatment—childhood physical abuse, childhood sexual abuse, and childhood exposure to intimate partner violence.	72
Hughes K, Bellis M, Hardcastle K, Sethi D, Butchart A, Mikton C, Jones L, et al. (2017). The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. *Lancet Public Health*, 2: e356-66. https://doi.org/10.1016/S2468-2667(17)30118-4	ACEs, health outcomes, protective factors, resilience	In this systematic review and meta-analysis, we searched five electronic databases for cross-sectional, case-control, or cohort studies, reporting risks of health outcomes, consisting of substance use, sexual health, mental health, weight and physical exercise, violence, and physical health status and conditions, associated with multiple ACEs. The outcomes most strongly associated with multiple ACEs represent ACE risks for the next generation.	73
Iglesias-Gonzalez M, Aznar-Lou I, Penarrubia-Maria M, Gil-Girbau M, Fernandez-Vergel R, Alonso J, Serrano-Blanco A, Rubio-Valera M. (2018). Effectiveness of watchful waiting versus antidepressants for patients diagnosed of mild to moderate depression in primary care: a 12-month pragmatic clinical trial. *Eur Psychiat*, 53: 66-73. https://doi.org/10.1016/j.eurpsy.2018.06.005	Depression, interventions, mental health, primary care	The aim of this study was to evaluate the clinical effectiveness of watchful waiting (WW) compared with the use of antidepressants (ADs) for the treatment of mild to moderate depressive symptoms in primary care patients.	74
Iniguez K, Stankowski R. (2016). Adverse Childhood Experiences and Health in Adulthood in a Rural Population-Based Sample. *Clinical Medicine & Research*, 14(3-4); 126-37. https://doi.org/10.3121/cmr.2016.1306	ACEs, community, health outcomes, rural health	In the first community-based study to link self-reported adverse childhood experiences to comprehensive health measures documented in the medical record, we observed previously reported associations between childhood adversity and poor outcomes in adulthood, but also noted an inverse relationship between ACE score and certain medical diagnoses.	75
Institute for Health care Improvement. (2016). *Achieving Health Equity: A Guide for Health Care Organizations*. Cambridge, MA:	Health disparities, health equity, SDOH, social needs	Guidance on how health care organizations can reduce health disparities related to racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual	75

Wyatt R, Laderman M, Botwinick L, Mate K, Whittington J.		orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion.	
Iqbal A, Kumar S, Hansen J, Heyrman M, Spee R, Lteif A. (2020). Association of Adverse Childhood Experiences with Glycemic Control and Lipids in Children with Type 1 Diabetes. *Children*, 7(8). https://doi.org/10.3390/children7010008	ACEs, child maltreatment, children, chronic health, diabetes, obesity, trauma	This study examines the relationship between adverse childhood experiences in children and adolescents with type 1 diabetes (T1DM) and glycemic control, BMI, and lipids.	76
Jichlinski A. (2017). Defang ACEs: End Toxic Stress by Developing Resilience Through Physician-Community Partnerships. *Pediatrics,* 140(6): e20172869. https://doi.org/10.1542/peds. 2017-2869	ACEs, communities, partnership, resilience, toxic stress	As physicians, we can help children suffering from toxic stress by guiding our patients, their families, and our communities to identify and develop resilience through 3 critical steps: (1) identifying children at risk for toxic stress, (2) creating a network of support, and (3) building a community that promotes change.	76
Kania J, Kramer M. (2011). Collective Impact. *Stanford Social innovation Review*, 9(1): 36-41.	Collective impact, partnership	This article lays out a clear framework for how organizations across all sectors can work together to achieve a common goal. The Collective Impact approach has been adopted by hundreds of organizations around the world.	76
Kaufman J, Montalvo-Ortiz J, Holbrook H, O'Loughlin K, Orr C, Kearney C, Yang B, et al. (2018). Adverse Childhood Experiences, Epigenetic Measures, and Obesity in Youth. *The Journal of Pediatrics*, 202: 150-6. https://doi.org/10.1016/j.jpeds.2018.06.051	ACEs, children, epigenetic, health outcomes, obesity, pediatrics	This study strove to determine if measures of adverse childhood experiences and DNA methylation relate to indices of obesity in youth.	76
Kendall-Tackett K. (2007). A new paradigm for depression in new mothers: the central role of inflammation and how breastfeeding and anti-inflammatory treatments protect maternal mental health. *International Breastfeeding Journal*, 2(6), 1-14. https//doi.org/10.1186/1746-4358-2-6	Anxiety, birth outcomes, depression, mental health, pregnancy, prevention	Research suggests two goals for the prevention and treatment of postpartum depression: reducing maternal stress and reducing inflammation.	77
Kendall-Tackett K. (2014). Intervention for Mothers who have experienced childbirth-related trauma and posttraumatic stress disorder. *Clinical Lactation*, 5(2): 56-61. https://doi.org/10.1891/2158-0782.5.2.56	Birth outcomes, interventions, mental health, pregnancy, prenatal care, trauma, trauma-informed	This article describes breastfeeding issues that might arise in the wake of a traumatic birth and summarizes evidence-based treatment options for posttraumatic stress disorder so that International Board-Certified Lactation Consultant's (IBCLC) can share this information with mothers.	78

Kendall-Tackett K. (2007). Violence against women and the perinatal period: the impact of lifetime violence and abuse on pregnancy, postpartum, and breastfeeding. *Trauma Violence Abus*, 8(3): 344-53. https://doi.org/10.1177/1524838007304406	Child maltreatment, depression, pregnancy, prenatal care	During pregnancy, a woman's history of past abuse increases her risk of depression and posttraumatic stress disorder. And these increase the risk of pregnancy and neonatal complications. Women who have experienced past or current abuse are also at high risk for postpartum depression, which can affect their relationships with other adults and their babies.	78
Kerns C, Newschaffer C, Berkowitz S, Lee B. (2017). Examining the Association of Autism and ACEs in the National Survey of children's health: The important role of income and co-occurring mental health conditions. *J Autism Dev Disord*, 47: 2275-81. https://doi.org/10.1007/s1080 3-017-3111-7	ACEs, anxiety, behavior, child maltreatment, children, depression, mental health, pediatrics, SDOH, social needs, socio-economic status	Adverse childhood experiences (ACEs) are risk factors for mental and physical illness and more likely to occur for children with autism spectrum disorder (ASD). The present study aimed to clarify the contribution of poverty, intellectual disability and mental health conditions to this disparity.	78
Klein M, Kahn R, Baker R, Fink E, Parrish D, White D. (2011). Training in Social Determinants of Health in Primary Care: Does it Change Resident Behavior? *Acad Pediatr*, 11(5): 387-93. https://doi.org/10.1016/j.acap.2011.04.004	Behaviors, education, primary care, social determinants of health	The aim of this study was to examine the effects of a new social determinants of health curriculum on pediatric interns' attitudes, knowledge, documentation, and clinical practice.	79
Koball A, Rasmussen C, Olson-Dorff D, Kleven J, Ramirez L, Domoff S. (2019). The relationship between adverse childhood experiences, health care utilization, cost of care, and medical comorbidities. *Child Abuse Neglect,* 90:120-6. https://doi.org/10.1016/j.chiabu.2019.01.021	ACEs, child maltreatment, chronic health, health care cost, health outcomes, toxic stress, trauma	The researchers studied the impact of adverse childhood experiences (ACEs) on health care utilization in a sample of US adults.	79
Kolak M, Bhatt J, Park Y, Padron N, Molefe A. (2020). Quantification of Neighborhood-Level Social Determinants of Health in the Continental United States. *JAMA Network Open*, 3(1):e1919928. https://doi.org/10.1001/jamanetworkopen.2019.19928	SDOH, social needs	In this study, census information was used to develop multidimensional social determinants of health indices were used to estimate age-adjusted mortality rates in Chicago while controlling for violent crime.	80
Kroenke K, Spitzer R, Williams J. (2001). The PHQ-9: Validity of a Brief Depression Severity Measure. *J Gen Intern Med*,	Depression, health outcomes, mental health, screening	While considerable attention has focused on improving the detection of depression, assessment of severity is also important in guiding treatment decisions. Therefore, researchers examined the validity of the Patient	81

16(9):606-13. https://doi.org/10.1046/j.1525-1497.2001.016009606.x		Health Questionnaire (PHQ), a brief, new measure of depression severity.	
Leitch L. (2017). Action steps using ACEs and trauma-informed care: a resilience model. *Health and Justice*, 5(5). https://doi.org/10.1186/s40352-017-0050-5	ACEs, resilience, trauma, trauma-informed	This paper discusses the important contributions and unintended consequences of the 1998 Adverse Childhood Experiences Study and the concept of Trauma-Informed Care.	81
Lown A, Lui C, Karriker-Jaffe K, Mulia N, Williams E, Ye Y, Li L, et al. (2019). Adverse childhood events and risk of diabetes onset in the 1979 National longitudinal survey of youth cohort. *BMC Public Health*, 19(1): 1007. https://doi.org/10.1186/s12889-019-7337-5	ACEs, diabetes, health outcomes	This study examines the impact of adverse childhood experiences on the risk of diabetes onset.	82
Lynch B, Rutten L, Wilson P, Kumar S, Phelan S, Jacobson R, Fan C, et al. (2018). The impact of positive contextual factors on the association between adverse family experiences and obesity in a National Survey of Children. *Prev Med*, 116:81-6. https://doi.org/10.1016/j.ypmed.2018.09.002	ACEs, child maltreatment, depression, family medicine, mental health, obesity, pediatrics	The researchers evaluated whether certain positive contextual factors reduce the risk of obesity and overweight among children exposed to adverse family experiences in a nationally representative sample.	82
Madigan S, Wade M, Plamondon A, Maguire J, Jenkins J. (2017). Maternal Adverse Childhood Experience and Infant Health: Biomedical and Psychosocial risks as Intermediary Mechanisms. *The Journal of Pediatrics*, 187:282-9. https://doi.org/10.1016/j.jpeds.2017.04.052	ACEs, birth outcomes, chronic health, health outcomes, infant mortality, intergenerational trauma, mental health, pregnancy, prenatal care, prevention, protective factors, trauma	The objective of this study was to assess the mechanisms accounting for the transfer of risk from one generation to the next, especially as they relate to maternal adverse childhood experiences and infant physical and emotional health outcomes.	83
Maine Rural Health Research Center. (2016). *Adverse Childhood Experiences in Rural and Urban Contexts*. (Issue Brief No. 64). Portland, ME: Talbot J, Szlocek D, Ziller E.	ACEs, rural health, trauma	Using data from the Behavioral Risk Factor Surveillance System Assessment, this study found that, while the prevalence of ACEs was comparable in rural and urban adults, over half of rural adults surveyed reported having ACE exposure. Among those with any ACE history, about one quarter experienced four or more ACEs.	83
Manyema M, Norris S, Richter L. (2018). Stress begets stress: the association of adverse childhood experiences with psychological distress in the presence of	ACEs, chronic health, depression, mental health, socio-economic status, toxic stress, trauma	The aims of this study were to describe the prevalence of adverse childhood experiences (ACEs) and psychological distress and to assess the separate and cumulative effect of ACEs on psychological distress, while accounting for the effect of adult stress.	84

adult life stress. *BMC Public Health*, 18. https://doi.org/10.1186/s12889-018-5767-0			
Maunder R, Tannenbaum D, Permaul J, Nutik M, Haber C, Mitri M, Costantini D, et al. (2019). The prevalence and clinical correlates of adverse childhood experiences in a cross-sectional study of primary care patients with cardiometabolic disease or risk factors. *BMC Cardiovasc Disor*, 19:304. https ://doi.org/10.1186/s12872-019 -01277-3	ACEs, chronic health, health care cost, prevention, trauma	Adult primary care patients with cardiometabolic disease (hypertension, diabetes, stroke, angina, myocardial infarction, coronary artery bypass graft, angioplasty) or with a risk factor (obesity, smoking, high cholesterol, family history) were surveyed regarding adverse childhood experiences, psychological distress, attachment insecurity, quality of life, behavior change goals, stages of change, and attitudes toward potential prevention strategies.	84
McClinton A, Laurencin C. (2020). Just in TIME - Trauma-Informed Medical Education. *Journal of Racial and Ethnic Health Disparities*, 1-7. https://doi.org/10.1007/s40 615-020-00881-w	ACEs, competencies, education, race, trauma, trauma-informed	This trauma-informed model assists institutions in providing care and education that delivers support to members who have undergone traumatic experiences, and many institutions apply trauma-informed principles as a universal precaution.	85
Merrick M, Ford D, Ports K, Guinn A, Chen J, Klevens J, Metzler M, et al. (2019). Estimated Proportion of adult health problems attributable to adverse childhood experiences and implications for prevention - 25 states, 2015-2017. *Morbid Mortal W*, 68(44): 999-1005. https://doi.org/10.15585 /mmwr.mm6844e1	ACEs, behavior, community, health outcomes, mental health, policy, social needs	Behavioral Risk Factor Surveillance System data collected by 25 states in 2015 - 2017 that included state-added adverse childhood experience (ACE) items were used to examine the proportion of adult health problems attributable to ACEs.	85
Merrick M, Ports K, Ford D, Afifi T, Gershoff E, Grogan-Kaylor A. (2017). Unpacking the impact of adverse childhood experiences on adult mental health. *Child Abuse Neglect*, 69: 10-9. https://doi.org/10.1016/j.chiabu.2 017.03.016	ACEs, child maltreatment, depression, health outcomes, mental health, trauma	The current study analyzes the relationship between an expanded adverse childhood experience (ACE) score that includes being spanked as a child and adult mental health outcomes by examining each ACE separately to determine the contribution of each ACE.	86
Mersky J, Lee C. (2019). Adverse childhood experiences and poor birth outcomes in a diverse, low-income sample. *BMC Pregnancy Childb*, 19(387). https://doi.org/10.1186/s12884-019-2560-8	ACEs, birth outcomes, health equity, pregnancy, socio-economic status	The authors analyzed data gathered from a sample of 1848 low-income women who received services from home visiting programs in Wisconsin to determine the effects adverse childhood experiences have on birth outcomes.	87

Mobilizing Action for Resilient Communities. (2017). *Community Voices: Creating a Just, Healthy and Resilient World*. Philadelphia, PA: Health Federation of Philadelphia.	Community, health equity, resilience	Learn how fourteen communities are utilizing ACEs and resiliency science to build strong cross-sector networks to help heal and prevent early childhood adversity within their communities.	87
Monnat S, Chandler R. (2015). Long term physical health consequences of adverse childhood experiences. *The Sociological Quarterly*, 56(4):723-52. https://doi.org/10.1111/tsq.12107	ACEs, behaviors, health outcomes, mental health, social needs	This study examined associations between adverse childhood family experiences and adult physical health. Results demonstrated that adverse childhood family experiences were associated with one or more of the following health outcomes: self-rated health, functional limitations, diabetes, and heart attack. Adult socioeconomic status and poor mental health and health behaviors significantly mediated several of these associations.	87
Morrow A, Villodas M. (2017). Direct and Indirect Pathways from ACEs to High School Dropout Among High-Risk Adolescents. *J Res Adolescence*, 28(2): 327-41. https://doi.org/10.1111/jora.1233 2	ACEs, behaviors, education	This study examined pathways from childhood adversity to school dropout through academic, behavioral, emotional, and social pathways.	88
National Academies of Sciences, Engineering, and Medicine 2017. *Communities in Action: Pathways to Health Equity*. Washington, DC: The National Academies Press. https://doi.org/10.17226/24624.	Advocacy, community, health equity, partnership, policy, SDOH, social needs	This report focuses on community-based solutions, strategies, and policies to address the root causes of health inequities including unemployment, poverty, and school dropout rates.	88
National Academy for State Health Policy. (2017, April). *Case Study: How Minnesota uses Medicaid Levers to Address Maternal Depression and Improve Healthy Child Development*. Washington, DC: Kartika T.	Depression, mental health, pregnancy, prenatal care, quality improvement, screening, socio-economic status	Minnesota has administered a Quality Improvement Project (QIP) that focuses on addressing postpartum depression and improving healthy child development.	88
National Advisory Committee on Rural Health and Human Services. (2018, August). *Exploring the Rural Context for Adverse Childhood Experiences (ACEs)* (Policy Brief). Washington DC: US Department of Health and Human Services.	ACEs, health disparities, rural health, SDOH	In this policy brief, the Committee examines how social determinants of health and adverse childhood experiences (ACEs) exacerbate rural health disparities and outcomes. The brief emphasizes the importance of prevention, education, and awareness at the local, state, and federal levels of health and human service delivery.	89
National Center for Medical Legal Partnerships at the George Washington University. (2018, January). *Medical-Legal*	Partnership	The integration of legal services in health centers through Medical-Legal Partnerships (MLPs) has the potential to resolve some of the most intractable social problems that our nation's vulnerable and underserved	89

Partnerships: Where they are, how they work, and how they are funded. Washington DC: Williamson A, Trott J, Regenstein M.		patients face. The MLP model also shows promise in reducing health disparities and improving health equity for underserved, particularly vulnerable populations. MLPs have documented experiences improving health outcomes, increasing patient engagement, and lowering health care costs.	
Nelson C, Gabard-Durnam L. (2020). Early Adversity and Critical Periods: Neurodevelopmental Consequences of Violating the Expectable Environment. *Trends Neurosci*, 43(3): 133-43. https://doi.org/10.1016/j.tins.2020.01.002	ACEs, behavior, child maltreatment, health outcomes, SDOH	This paper discusses how adverse events represent a violation of the expectable environment. If such violations occur during a critical period of brain development, the detrimental effects of early adversity are likely to be long lasting. The authors also discuss the various ways adversity becomes neurobiologically embedded, and how the timing of such adversity plays an important role in determining outcomes.	90
Newhook J, Newhook L, Midodzi W, Goodridge J, Burrage L, Gill N, Halfyard B, et al. (2017). Poverty and Breastfeeding: Comparing Determinants of Early Breastfeeding Cessation Incidence in Socioeconomically Marginalized and Privileged Populations in the Final study. *Health Equity*, 1.1:96-102. https://doi.org/10.1089/heq.2016.0028	Birth outcomes, health outcomes, pregnancy, prenatal care, SDOH, social needs, socio-economic status	The goal of this study is to compare determinants of early breastfeeding cessation incidence in socioeconomically marginalized (SEM) and socioeconomically privileged (SEP) populations, focusing on birthing parents who intended to breastfeed.	90
Nordstrom B, Saunders E, McLeman B, Meier A, Xie H, Lambert-Harris C, Tanzman B, et al. (2016). Using a Learning collaborative Strategy with Office-Based practices to increase access and improve quality of care for patients with opioid use disorders. *J Addict Med*, 10(2): 115-21. https ://doi.org/10.1097/adm.0000000000000200	Education, quality improvement, substance use	This study explored the use of a learning collaborative method to improve the provision of buprenorphine for patients with opioid use disorders in the state of Vermont.	90
O'Neill A, Beck K, Chae D, Dyer T, He X, Lee S. (2018). The pathway from childhood maltreatment to adulthood obesity: the role of mediation by adolescent depressive symptoms and BMI. *J Adolescence*, 67:22-30. https://doi.org/10.1016/j.adolesc ence.2018 .05.010	ACEs, child maltreatment, depression, obesity	This study examined associations between childhood maltreatment and adulthood obesity, and the mediating effects of adolescent depressive symptoms and BMI, using the U.S. National Longitudinal Study of Adolescent to Adult Health.	91

Onigu-Otite E, Idicula S. (2020). Introducing ACEs (Adverse Childhood Experiences) and Resilience to First-Year Medical Students. *MedEdPORTAL*, 16:10964. https://doi.org/10.15766/mep_2374-8265.10964	ACEs, child maltreatment, chronic health, education, mental health, trauma, trauma-informed	Introducing ACEs in medical student education is feasible. Educating the next generation of health providers on ACEs while highlighting prevention and resilience and teaching TIC is crucial.	91
Peterson E. (2017). *Screening Families for Unmet Social Needs in a Pediatric Clinic*. Wright State University, Dayton, Ohio.	Family medicine, pediatrics, screening, SDOH, social needs	The purpose of this study was to describe trends in unmet social needs of children attending a well-child visit in Dayton, Ohio.	92
Pinderhughes H, Davis R, Williams M. (2015). *Adverse Community Experiences and Resilience: A Framework for Addressing and Preventing Community Trauma*. Prevention Institute, Oakland CA.	ACEs, community, population health, resilience	This report provides a framework for understanding, addressing, and preventing trauma at a community or population level.	92
Poole J, Dobson K, Pusch D. (2017). Anxiety among adults with history of childhood adversity: Psychological resilience moderates the indirect effect of emotion dysregulation. *J Affect Disorders*, 217:144-52. https://doi.org/10.1016/j.jad.2017.03.047	ACEs, anxiety, child maltreatment, mental health, primary care, resilience, trauma	The current study evaluated whether emotion dysregulation and psychological resilience influence the association between adverse childhood experiences and symptoms of anxiety.	93
Prentice J, Lu M, Lange L, Halfon N. (2002). The Association Between Reported Childhood Sexual Abuse and Breastfeeding Initiation. *J Hum Lact,* 18(3): 219-26. https://doi.org/10.1177/08903344 0201800303	ACEs, birth outcomes, pregnancy, prenatal care, trauma	This study examined the association between self-identified childhood sexual abuse and breastfeeding initiation. Women who reported childhood sexual abuse were more than twice as likely to initiate breastfeeding compared with women who did not report childhood sexual abuse.	93
Purkey E, Patel R, Phillips S. (2018). Trauma-informed care: better care for everyone. *Can Fam Physician*, 64(3):170-72.	ACEs, trauma, trauma-informed	The authors describe the five principles of TIC to guide clinicians in caring for complex patients who are often survivors of ACEs.	94
Racine N, Killam T, Madigan S. (2019). Trauma-Informed Care as a Universal Precaution: Beyond the Adverse Childhood Experiences Questionnaire. *JAMA Pediat*. https://doi.org/10.1001/jamapediatrics.2019.3866	ACEs, child maltreatment, protective factors, screening, trauma-informed	The authors encourage health care practitioners to adopt a trauma-informed approach to patient care, which extends beyond the use of a single Adverse Childhood Experiences (ACEs) questionnaire.	94
Robert Wood Johnson Foundation. (2010). A New Way to Talk about the Social	Advocacy, health care cost, health equity, health	The Foundation developed a commission focusing on social determinants of health (SDOH) to help determine why some Americans	94

Determinants of Health. https://www.rwjf.org/en/library/research/2010/01/a-new-way-to-talk-about-the-social-determinants-of-health.html	outcomes, policy, SDOH, social needs	are healthier than others and why Americans overall aren't as healthy as they could be. This commission helped create this framework which describes how to talk about SDOH in a meaningful way that would make it easier for policymakers to understand the importance of SDOH.	
Robert Wood Johnson Foundation. (2018). Countering the Production of Health Inequalities: Ensuring the Opportunity for Health for All. https://www.preventioninstitute.org/countering-inequities	Health equity, SDOH, social needs	With support from the Robert Wood Johnson Foundation, Prevention Institute has analyzed what has contributed to inequities to determine a pathway forward to produce health equity. There is a role for every institution, sector, and system working together to achieve an equitable culture of health across the United States.	95
Roberts, B. (2019). Caring for Patients with Adverse Childhood Experiences. *Radiol Technol*, 91(2) 141-57.	ACEs, chronic health, health outcomes, trauma-informed	Radiologic technologists can improve patient care by using research validated techniques for promoting resilience when working with patients and families affected by adverse childhood experiences.	95
Sachs-Ericsson N, Sheffler J, Stanley I, Piazza J, Preacher K. (2017). When Emotional pain becomes physical: Adverse childhood experiences, pain, and the role of mood and anxiety disorders. *J Clin Psychol*, 73(10): 1403-28. https://doi.org/10.1002/jclp.22444	ACEs, anxiety, chronic health, depression, health outcomes, mental health, trauma	Researchers examined the association between retrospective reports of adverse childhood experiences (ACEs) and painful medical conditions, and the mediating and moderating roles of mood and anxiety disorders in the ACEs–painful medical conditions relationship.	95
Sandel M, Cook J, Poblacion A, Sheward R, Coleman S, Viveiros J, Sturtevant L. (2016). Housing as a Health Care Investment: Affordable Housing Supports Children's Health. Insights from Housing Policy Research, National Housing Conference and Children's HealthWatch.	Children, community, health care cost, pediatrics, SDOH, social needs	Affordable and stable housing plays a critical role in supporting the health and wellbeing of children. Research from Children's HealthWatch shows public investment in housing – including housing for homeless families and rental assistance for food-insecure families – improves the health outcomes of vulnerable infants and young children and lowers health care spending.	96
Sandel M, Sheward R, Ettinger de Cuba S, Coleman S, Frank D, Chilton M, Black M, et al. (2018). Unstable Housing and Caregiver and Child Health in Renter Families. *Pediatrics*, 141(2):e20172199. https://doi.org/10.1542/peds.2018-2199	Children, pediatrics, policy, SDOH, socio-economic status	This study evaluated how three forms of housing instability were associated with adverse caregiver and child health among low-income renter households.	96
Sarvet B, Wegner L. (2010). Developing Effective Child Psychiatry Collaboration with Primary Care: Leadership and Management Strategies. *Child Adol Psych Cl*, 19: 139-48. https://doi.org/10.1016/j.chc.2009.08.004	Leadership, mental health, pediatrics, primary care	By working in collaboration with pediatric primary care providers, child and adolescent psychiatrists have the opportunity to address significant levels of unmet need for the majority of children and teenagers with serious mental health problems who have been unable to gain access to care.	97

Schulman M., Menschner C. (2018). Laying the Groundwork for Trauma-Informed Care. Center for Health Care Strategies, Inc. https://www.chcs.org/resource/laying-groundwork-trauma-informed-care/	Trauma-informed	This brief outlines practical recommendations for health care organizations interested in taking steps to becoming more trauma-informed.	97
Sciolla A. (2018). Screening for Childhood Adversities in Prenatal Care: What Works and Why. *J Womens Health*, 27(7):854-55. https://doi.org/10.1089/jwh.2018.6995	ACEs, birth outcomes, children, health outcomes, mental health, pregnancy, prenatal care, screening, trauma	Dr. Sciolla describes why screening for adverse childhood experiences is important during prenatal care to have better outcomes for mother and baby.	97
Shonkoff J. (2012). Leveraging the biology of adversity to address the roots of disparities in health and development. *P Natl Acad Sci USA*, 109(2): 17302-7. https://doi.org/10.1073/pnas.1121259109	ACEs, child maltreatment, chronic health, education, family medicine, health disparities, health outcomes, pediatrics, policy, toxic stress, trauma	Drawing on emerging hypotheses about causal mechanisms that link early adversity with lifelong impairments in learning, behavior, and health, this paper proposes an enhanced theory of change to promote better outcomes for vulnerable, young children by strengthening caregiver and community capacities to reduce or mitigate the impacts of toxic stress, rather than simply providing developmental enrichment for the children and parenting education for their mothers.	97
Short A, Baram T. (2019). Early-life adversity and neurological disease: age-old questions and novel answers. *Nat Rev Neurol*, 15(11): 657-69. https://doi.org/1 0.1038/s41582-019-0246-5	ACEs, child maltreatment, chronic health, epigenetics, health outcomes, mental health, pregnancy, prenatal care, trauma	In this Review, we focus on the contribution of adverse early-life experiences to aberrant brain maturation, which might underlie vulnerability to cognitive brain disorders.	98
Sonney J, Willgerodt M, Lindhorst T, Brock D. (2018). Elizabeth: Typical or Troubled Teen? A Training Case for Health Professionals to Recognize and Report Child Maltreatment. *MedEdPORTAL*, 14(10712). https//doi.org/10.15766/mep_2374-8265.10712	Child maltreatment, education	Training on the recognition and reporting of child maltreatment is a critical component of any health professional education program. In this case, the learners see an adolescent female and her mother during a provider visit to establish care. Learners develop a prioritized plan of care following the vignette. Additional case details unfold during the second vignette, and teams revised their initial plan based on this new information. Interprofessional faculty facilitators guided discussions using prompts from the faculty guide.	98
Spitzer R, Kroenke K, Williams J, Lowe B. (2006). A Brief Measure for Assessing Generalized Anxiety Disorder - the GAD-7. *Arch Intern Med*, 166(10):1092-7. https//doi.org/10.1001/archinte.166.10.1092	Anxiety, mental health, screening	Generalized anxiety disorder (GAD) is one of the most common mental disorders; however, there is no brief clinical measure for assessing GAD. The objective of this study was to develop a brief self-report scale to identify probable cases of GAD and evaluate its reliability and validity.	99

Sumner J, Colich N, Uddin M, Armstrong D, McLaughlin K. (2019). Early Experiences of Threat, but Not Deprivation, Are Associated with Accelerated Biological Aging in Children and Adolescents. *Biol Psychiat*, 85(3):268-78. https://doi.org/10.1016/j.biop sych.2018.09.008	ACEs, child maltreatment, children, chronic health, epigenetics, health outcomes, trauma	Researchers evaluated the hypothesis that early environments characterized by threat, but not deprivation, would be associated with accelerated development across two global biological aging metrics: DNA methylation (DNAm) age and pubertal stage relative to chronological age. They also examined whether accelerated development explained associations of early life adversities with depressive symptoms and externalizing problems.	99
Sun J, Patel F, Rose-Jacobs R, Frank D, Black M, Chilton M. (2017). Mothers' Adverse Childhood Experiences and their Young Children's Development. *Am J Prev Med*, 53(6): 882-91. https://doi.org/10.1016/j. amepre.2017.07.015	ACEs, children, depression, health outcomes, mental health, pediatrics, pregnancy, prenatal care	This study examined how mothers' Adverse Childhood Experiences (ACEs) relate to their children's developmental risk and assessed how the association is mediated through mothers' depressive symptoms and fair/poor health.	100
Tan E, McGill S, Tanner E, Carlson M, Rebok G, Seeman T, Fried L. (2013). The Evolution of an Academic-Community Partnership in the Design, Implementation, and Evaluation of Experience Corps Baltimore City: A Courtship Model. *Gerontologist*, 54(2):314-21. https://doi.org/10.1093/geron t/gnt072	Community, education, partnership	Describes how community-based participatory research principals, such as shared governance, were applied at the following stages: (1) partner selection, (2) getting serious, (3) commitment, and (4) leaving a legacy.	100
Thomas J, Letourneau N, Campbell T, Giesbrecht G, Apron Study Team. (2018). Social buffering of the maternal and infant HPA axes: Mediation and moderation in the intergenerational transmission of adverse childhood experiences. *Dev Psychopathol*, 30:921-39. https://doi.org/10.1017/s0954 579418000512	ACEs, birth outcomes, child maltreatment, children, intergenerational trauma, pediatrics, pregnancy, prenatal care	The objective of the current study was, therefore, to determine whether the association between maternal adverse childhood experiences (ACEs) and infant hypothalamic–pituitary– adrenal (HPA) axis function is mediated by maternal HPA axis function during pregnancy and moderated by social support.	101
Thornton R, Glover C, Cene C, Glik D, Henderson J, Williams D. (2016). Evaluating Strategies for Reducing Health Disparities by Addressing the Social Determinants of Health. *Health Affairs*, 35(8): 1416-23. https: //doi.org/10.1377/hlthaff.2015.1357	Health disparities, health outcomes, interventions, policy, population health, SDOH, social needs	The opportunities for healthy choices in homes, neighborhoods, schools, and workplaces can have decisive impacts on health. We review scientific evidence from promising interventions focused on the social determinants of health and discuss how such interventions can improve population health and reduce health disparities.	102

TMF Health Quality Institute. (2018, November). *Addressing Social Determinants of Health: The Need for Provider-Community Collaboration*. Austin, TX: Kohl R, Calderon K, Daly S.	Community, education, interventions, partnership, primary care, SDOH	This whitepaper describes key social determinants of health (SDoH) and their impact on health outcomes, as well as how providers from across the care spectrum can and are addressing SDoH. This paper will also highlight innovative community SDoH interventions and approaches and propose emerging SDoH-focused frameworks for provider and community stakeholder collaboration to impact health outcomes.	102
U.S. Department of Health and Human Services, Administration of Children, Youth, and Families. (2017). *Building Community, Building Hope: 2016-2017 Prevention Resource Guide*. Washington DC.	Community, resilience, prevention, protective factors, resilience	This Resource Guide was developed to support service providers in their work with parents, caregivers, and their children to prevent child abuse and neglect and promote child and family well-being.	102
Varkey P, Reller M, Resar R. (2007). Basics of Quality Improvement in Health Care. *Mayo Clin Proc*, 82(6):735-39. https://doi .org/10.4065/82.6.735	Quality improvement	The goals of this review are to provide clinicians with sufficient information to understand the fundamentals of quality improvement, provide a starting point for improvement projects, and stimulate further inquiry into the quality improvement methodologies currently being used in health care.	103
Vermilyea E. (2012). Developing a Community Approach to Trauma. In *Moving Forward in Challenging Times Conference*. Conference conducted at the meeting of SafePlace, Austin, TX.	Community, trauma, trauma-informed	This workshop was a primarily interactive effort to identify and clarify the process of developing a community response to trauma.	103
Windle M, Haardorfer R, Getachew B, Shah J, Payne J, Pillai D, Berg C. (2018). A multivariate analysis of adverse childhood experiences and health behaviors and outcomes among college students. *J Am Coll Health*, 66(4):246-51. https://doi.org/10.10 80/07448481.2018.1431892	ACEs, behavior, health outcomes	This study investigated associations between adverse childhood experiences (ACE) prior to age 18 years and multiple health behaviors (e.g., cigarette and other substance use) and outcomes (e.g., obesity, depression).	103
Young-Wolff K, Alabaster A, McCaw B, Stoller N, Watson C, Sterling S, Ridout K, et al. (2018). Adverse Childhood Experiences and Mental and Behavioral Health Conditions During Pregnancy: The Role of Resilience. *J Womens Health*, 28(4), 452-61. https://doi.org/10.1089/jwh .2018.7108	ACEs, behaviors, mental health, pregnancy, resilience	Adverse childhood experiences predicted mental and behavioral health conditions among pregnant women, and associations were the strongest among women with low levels of current resilience.	104

Resource Abstracts

Acosta J, Chandra A, Madrigano J. (2017). An Agenda to Advance Integrative Resilience Research and Practice: Key Themes from a Resilience Roundtable. *Rand health quarterly*, *7*(1), 5.

TAGS: behaviors, community, policy, resilience, social determinants of health (SDOH)

People are facing an increasing variety and number of stressors, ranging from interpersonal difficulties to environmental hazards and societal forces. Resilience is the process of, capacity for, or outcome of adapting well in the face of adversity, trauma, tragedy, threats, or significant sources of stress. The science of resilience has advanced greatly since 2000, but there is an increasing recognition of the need for researchers and practitioners from different disciplines and sectors to work better together on this topic and for a shared agenda for promoting transdisciplinary resilience research. The study provides a path forward, primarily built on proceedings from a Resilience Roundtable, held in June 2016, and supplemented with relevant literature review. The Resilience Roundtable brought together researchers, practitioners, and policymakers, across disciplines and sectors for a daylong discussion of where and how we can move to a more integrated and cohesive resilience agenda, with attention to critical factors that would motivate more collaborative work. The roundtable identified priorities for advancing a shared resilience agenda and made ten recommendations for implementing it.

AHIP. (2017). *Beyond the Boundaries of Health Care: Addressing Social Issues*. https://www.ahip.org/beyond-the-boundaries-of-health-care-addressing-social-issues/

TAGS: health outcomes, SDOH, social needs

Beyond health care, the conditions and environment in which people are born, grow, live, work, and age impact a person's overall health. Addressing the social determinants of health requires multifaceted, multi-stakeholder approaches, and coordinating health care and social services to best serve those in need. Health plans address the social determinants of health by coordinating housing, employment, education, and food services and supporting other needs (e.g., childcare) in addition to traditional health care services.

America's Health Rankings United Health Foundation. (2017). 2017 Annual Report of America's Health Rankings – Arkansas. https://www.americashealthrankings.org/learn/reports/2017-annual-report/state-summaries-arkansas

TAGS: adverse childhood experiences (ACEs), Arkansas, birth outcomes, child maltreatment, chronic health, family medicine, health care costs, health outcomes, mental health, obesity, primary care, SDOH, socio-economic status

America's Health Rankings® was built upon the World Health Organization definition of health: "Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." The model reflects that determinants of health directly influence health outcomes. A health outcomes category and four categories of health determinants are included in the model: behaviors, community & environment, policy, and clinical care. This report provides Arkansas specific statistics.

American Academy of Family Physicians. (2015). *Recommended Curriculum Guidelines for Family Medicine Residents: Human Behavior and Mental Health* (Issue No. 270). Sleepy Hollow, NY: Phelps Memorial Hospital.

TAGS: ACEs, behaviors, education, family medicine, mental health, SDOH

Family physicians incorporate knowledge of human behavior, mental health, and mental disorders into their everyday practice of medicine. This Curriculum Guideline provides suggestions for appropriate curricula in human behavior and mental health for family medicine residents. The relationship between the patient and the patient's family is considered basic to an understanding of human behavior and mental health throughout the curriculum. The family medicine resident should have sensitivity to and knowledge of the mind-body connection that comes into play in every aspect of wellness, illness, and family and individual stress, as well as how the mind-body connection may influence a patient's presentation at any given time. Additionally, residents should learn to recognize the effect of their medical practice on their own wellness so that they can develop coping and self-care strategies in order to commit not only to their patients' lifelong health and well-being, but also to their own. It is suggested that residencies develop a curriculum regarding physician wellness. Family physicians must be able to recognize interrelationships among biologic, psychologic, and social factors in all patients. It is important that the ethical dimensions of patient care be considered among these interrelationships. To facilitate learning, attention must be paid to these principles as a continuum throughout the family medicine residency training period.

American Academy of Family Physicians. (2017). *Recommended Curriculum Guidelines for Family Medicine Residents: Leadership* (Issue No.292). Los Angeles, CA: Kaiser Permanente.

TAGS: education, family medicine, leadership

It is crucial to the future of the U.S. health care system that family physicians take a leadership role in advanced primary care practices and evolving health care systems. The Residency Review Committee for Family Medicine (RRC-FM) has identified training in these vital roles as core program requirements. These requirements address the identified need for physicians to lead effectively in their practices, hospitals, professional organizations, and communities in order to advocate on behalf of the health of the public. Similarly, the recent emphasis on team-based medical care as a component of the patient-centered medical home concept shows the increasing importance of physicians as leaders of such teams. As resident physicians gain knowledge and skill over the course of their training period, they are called upon to lead the clinical team. The ability to lead effectively is one of the benchmarks often used to determine a resident's advancement from one year to the next. Yet historically, little attention has been given to the specific teaching of leadership concepts to physicians. This Curriculum Guideline is designed to provide a structural framework to assist residency program faculty in addressing the essential elements of leadership over the three years of training.

American Academy of Pediatrics. (2014). Addressing Adverse childhood Experiences and Other Types of Trauma in the Primary Care Setting. https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/healthy-foster-care-america/Pages/Trauma-Guide.aspx

TAGS: ACEs, primary care, toxic stress, trauma

For many pediatricians, addressing exposure to traumatic events that could cause toxic stress in their patients is seen as difficult for a number of reasons, including lack of time, complexity of the topics, limited referral resources, and discomfort. At the same time, the study conducted by the Centers for Disease Control and Prevention and Kaiser Permanente on adverse childhood experiences (ACEs) emphasized the effect of trauma on the developing brain and health across the life span—a natural concern for all pediatricians. Importantly, ACEs described in the study are present in every socioeconomic level and can be devastating to a child's physical, mental, and emotional health and well-being into adulthood. This document provides initial suggestions for pediatricians to consider when addressing ACEs in their practices.

Anderson R, Edwards L, Silver K, Johnson D. (2018). Intergenerational transmission of child abuse: Predictors of child abuse potential among racially diverse women residing in domestic violence shelters. *Child Abuse Neglect*, 85; 80-90. https://doi.org/10.1016/j.chiabu.2018.08.004

TAGS: ACEs, child maltreatment, intergenerational trauma, race, trauma

Parental risk for perpetrating child abuse is frequently associated with intergenerational patterns of abuse: being abused increases the risk for future abuse. Yet, the mechanisms of intergenerational abuse are unclear, and the risk factors for perpetrating child abuse are interrelated. Research suggests that history of childhood abuse, psychiatric distress, and exposure to intimate partner violence (IPV) are all related risk factors for perpetrating child abuse. We investigated these three risk factors using the developmental psychopathology framework in a racially diverse sample of high-risk women: women residing in domestic violence shelters. 211 mothers residing in domestic violence shelters completed measures of their own childhood abuse (defined narrowly in a 10-item self-report survey), exposure to and severity of IPV victimization, and structured interviews to diagnose psychiatric disorders. We utilized a hierarchical regression model to predict child abuse potential, accounting for risk factors in blocks roughly representing theorized temporal relationships: childhood abuse followed by psychiatric diagnoses, and then recency of exposure to IPV. Consistent with hypotheses, the strongest predictor of current child abuse potential was the psychiatric diagnosis of PTSD. Mediation tests further explicated that the relationship between maternal history of childhood sexual abuse and current potential for perpetrating child abuse is mediated by IPV-related PTSD symptoms. Results suggest that IPV-related PTSD symptoms, rather than exposure to abuse (i.e., childhood abuse or IPV), is most strongly associated with child abuse potential in recent IPV survivors. Interventions which can ameliorate maternal psychopathology and provide resources are recommended for these vulnerable families.

Arkansas State Epidemiological Outcomes Workgroup. (2017). 2017 Arkansas Epidemiological State Profile of Substance Use. https://afmc.org/health-care-professionals/behavioral-health/reports/

TAGS: Arkansas, behaviors, mental health, prevention, protective factors, substance use

The SEOW (State Epidemiological Outcomes Workgroup) serves as a forum for policymakers, researchers, and community representatives to have a data-driven exchange of ideas. One of SEOW's goals is to "bring systematic, analytical thinking to the causes and consequences of the use of alcohol, tobacco, and other drugs in order to effectively and efficiently utilize prevention

resources." In support of this goal, SEOW collaborated with AFMC to update the State Epidemiological Profile. The primary purpose of the State Epidemiological Profile is to devise a tool for data-driven, informed decision-making pertaining to substance abuse prevention. This report provides information on the consumption and consequences of substance abuse. It also highlights the risk factors, protective factors, and mental or behavioral health problems as they relate to substance abuse issues. This report is intended to analyze systematically disparate sources of data from across the nation and state and to synthesize a comprehensive informational tool. This report serves as a resource in supporting the efforts of key social players to conduct community need assessments relating to substance abuse and its consequences and strategizing evidence-based programs and policies for substance abuse prevention. Individual factors, such as education and income, and societal factors, such as community support and crime, play an influential role in substance abuse initiation and prevention. Therefore, it is important to have an understanding of the concerned population. For this reason, the State Epidemiological Profile also includes a brief overview of Arkansas' population. A change in variables over time, such as youth smoking rates, provides useful information about any impact of the efforts/actions on that variable. Trend data, where available, were also studied to assess the changes in substance abuse and its relating factors over time.

Arseneault L. (2018). The persistent and pervasive impact of being bullied in childhood and adolescence: implications for policy and practice. *J Child Psychol Psyc*, 59(4):405-21. https://doi.org/10.1111/jcpp.12841

TAGS: bullying, health outcomes, mental health, SDOH, socio-economic status, trauma

We have known for some time that being bullied was associated with children's and adolescents' adjustment difficulties and well-being. In recent years, we have come to recognize that the impact of childhood bullying victimization on the development of mental health problems is more complex. This paper aims to review the evidence for an independent contribution of childhood bullying victimization to the development of poor outcomes throughout the life span, including mental, physical, and socioeconomic outcomes, and discuss the implications for policy and practice. Existing research indicates that (a) being bullied in childhood is associated with distress and symptoms of mental health problems. This large body of evidence supports actions aimed at reducing the occurrence of bullying behaviors; (b) the consequences of childhood bullying victimization can persist up to midlife and, in addition to mental health, can impact physical and socioeconomic outcomes. These new findings indicate that interventions should also focus on supporting victims of bullying and helping them build resilience; (c) research has identified some factors that predispose children to be targeted by bullying behaviors. These studies suggest that public health interventions could aim at preventing children from becoming the target of bullying behaviors from an early age. It is a truism to emphasize that further work is needed to understand why and how young people's aspirations are often cut short by this all too common adverse social experience. In parallel, we must develop effective strategies to tackle this form of abuse and its consequences for the victims. Addressing bullying in childhood could not only reduce children's and adolescents' mental health symptoms but also prevent psychiatric and socioeconomic difficulties up to adulthood and reduce considerable costs for society.

Association of State & Territorial Health Officials. (2020). *Preventing Adverse childhood Experiences During COVID-19*. Arlington, VA. https://www.astho.org/COVID-19/Preventing-ACEs-During-Pandemic/

TAGS: ACEs, policy, prevention

State and territorial health officials (S/THOs) can continue providing leadership to prevent adverse childhood experiences (ACEs) by leveraging policies around state public health infrastructure, family services, and financial supports. Because of the significant social impacts of the COVID-19 response, children and their families are experiencing disruptions at multiple levels, S/THOs have opportunities to promote well-being, even during the crisis. This brief highlights policy considerations to strengthen jurisdictions' ability to continue to create and maintain safe, stable, nurturing environments for children and families during the COVID-19 response and in preparation for pandemic recovery.

Austin A, Smith M. (2017). Examining Material Hardship in Mothers: Associations of Diaper Need and Food Insufficiency with Maternal Depressive Symptoms. *Health Equity,* 1.1:127-33. https://doi.org/10.1089/heq.2016.0023

TAGS: depression, mental health, pediatrics, pregnancy, SDOH, social needs, socio-economic status

Material hardship represents a potential mechanism by which poverty influences the mental health of mothers. This study examined the association between two forms of material hardship, diaper need and food insufficiency, and maternal depressive symptoms. Data were from a cross-sectional study of 296 urban, pregnant or parenting, low-income women. A linear regression model was used to examine the association of maternal depressive symptoms, measured by the Center for Epidemiologic Studies Depression (CES-D) score, with diaper need and food insufficiency, after adjustment for demographic factors. More than half of women reported diaper need (50.3%) and food insufficiency (54.7%). Nearly one-third of women who reported diaper need did not report food insufficiency (32.2%). In bivariate analyses, diaper need, and food insufficiency were associated with maternal CES-D score. In multivariate analyses, women who reported diaper need had a significantly higher CES-D score than women who did not report diaper need ($b = 3.5$, $p = 0.03$). Women who reported food insufficiency did not have a significantly higher CES-D score than women who did not report food insufficiency ($b = 2.4$, $p = 0.15$). Diaper need is a form of material hardship that has received little attention in the research literature. Diapers, unlike food, are currently not an allowable expense in U.S. antipoverty programs. Diaper need may contribute to maternal depressive symptoms, beyond the contribution of other forms of material hardship, because there are no supports in place to provide assistance meeting this basic need. Importantly, diaper need is a malleable factor amenable to public health and policy interventions.

Bachrach D, Pfister H, Wallis K, Lipson M. (2014). *Addressing Patients' Social Needs: An Emerging Business Case for Provider Investment.* https://www.commonwealthfund.org/publications/fund-reports/2014/may/addressing-patients-social-needs-emerging-business-case-provider

TAGS: health care costs, interventions, SDOH, social needs

Despite growing evidence documenting the impact of social factors on health, providers have rarely addressed patients' social needs in clinical settings. But today, changes in the health care landscape are catapulting social determinants of health from an academic topic to an on-the-ground reality for providers, with public and private payers holding providers accountable for patients'

health and health care costs and linking payments to outcomes. These new models are creating economic incentives for providers to incorporate social interventions into their approach to care. Investing in these interventions can enhance patient satisfaction and loyalty, as well as satisfaction and productivity among providers. A variety of tools for addressing patients' social needs are available to providers looking to leverage these opportunities. With the confluence of sound economics and good policy, investing in interventions that address patients' social as well as clinical needs is starting to make good business sense.

Baquet C, Bromwell J, Hall M, & Frego, J. (2013). Rural community-academic partnership model for community engagement and partnered research. *Prog Comm Hlth Partn*, 7(3):281-90. https://doi.org/10.1353/cpr.2013.0028

TAGS: community, education, partnership, policy, rural health

A rural community–academic partnership was developed in 1997 between the Eastern Shore Area Health Education Center and the University of Maryland School of Medicine's Office of Policy and Planning. The model supports partnered research, bidirectional interactions, and community and health professional education. The primary aim was to develop a sustainable community–academic partnership that addressed health and social issues on the rural Eastern Shore. Mutual respect and trust led to sustained, bidirectional interactions and communication. Community and academic partner empowerment were supported by shared grant funds. Continual refinement of the partnership and programs occurred in response to community input and qualitative and quantitative research. The partnership led to community empowerment, increased willingness to participate in clinical trials and biospecimen donation, leveraged grant funds, partnered research, and policies to support health and social interventions. This partnership model has significant benefits and demonstrates its relevance for addressing complex rural health issues. Innovative aspects of the model include shared university grants, community inclusion on research protocols, bidirectional research planning and research ethics training of partners and communities. The model is replicable in other rural areas of the United States.

Battistone M, Barker A, Grotzke M, Beck J, Lawrence P, Cannon G. (2016). Mini-Residency in Musculoskeletal care: a national continuing professional development program for primary care providers. *J Gen Intern Med*, 31(11): 1301-7. https://doi.org/10.1007/s11606-016-3773-4

TAGS: competencies, education, primary care

A cost-effective professional development program enhancing musculoskeletal (MSK) skills of physicians and allied health providers working in primary care settings has been reported at a single site. This article describes the first 2 years of the national expansion and implementation of a 3-day "MSK Mini-residency." Faculty from Veterans Affairs (VA) medical centers worked in partnership with national program faculty from the Salt Lake City VA to present an intensive, integrated, multidisciplinary program to strengthen the skills of primary care providers in evaluating and managing MSK conditions common in primary care. Course assessments included written surveys and a two-station observed structured clinical examination (OSCE) evaluating the physical examination of the shoulder and knee. RESULTS: In the first 2 years of the program, 13 VA facilities participated. Two hundred twenty-seven health care providers, including 135 physicians, were trained. Two hundred seven participants (91 %) completed all pre- and post-

course written assessments and the two station OSCE. The MSK Mini-residency program is an effective and well-received mixed-method educational initiative to strengthen the skills of primary care physicians and other health care providers in evaluating and managing patients with MSK complaints and to document their competence in performing physical examinations of the shoulder and knee. The 2-year experience in implementation suggests that this model of educational partnerships is a feasible approach to disseminating innovative educational programs in a way that preserves curricular consistency yet is adaptable to local needs.

Bellis M, Hughes K, Ford K, Hardcastle K, Sharp C, Wood S, Homolova L, et al. (2018). Adverse childhood experiences and sources of childhood resilience: a retrospective study of their combined relationship with child health and educational attendance. *BMC Public Health*, 18(1):792. https://doi.org/10.1186/s12889-018-5699-8

TAGS: ACEs, children, chronic health, community, education, health outcomes, resilience

Adverse childhood experiences (ACEs) including maltreatment and exposure to household stressors can impact the health of children. Community factors that provide support, friendship and opportunities for development may build children's resilience and protect them against some harmful impacts of ACEs. We examine if a history of ACEs is associated with poor childhood health and school attendance and the extent to which such outcomes are counteracted by community resilience assets. A national (Wales) cross-sectional retrospective survey (n = 2452) using a stratified random probability sampling methodology and including a boost sample (n = 471) of Welsh speakers. Data collection used face-to-face interviews at participants' places of residence. Outcome measures were self-reported poor childhood health, specific conditions (asthma, allergies, headaches, digestive disorders) and school absenteeism. Prevalence of each common childhood condition, poor childhood health and school absenteeism increased with number of ACEs reported. Childhood community resilience assets (being treated fairly, supportive childhood friends, being given opportunities to use your abilities, access to a trusted adult and having someone to look up to) were independently linked to better outcomes. In those with ≥4 ACEs the presence of all significant resilience assets (vs none) reduced adjusted prevalence of poor childhood health from 59.8 to 21.3%. Better prevention of ACEs through the combined actions of public services may reduce levels of common childhood conditions, improve school attendance, and help alleviate pressures on public services. Whilst the eradication of ACEs remains unlikely, actions to strengthen community resilience assets may partially offset their immediate harms.

Bethell C, Carle A, Hudziak J, Gombojav N, Powers N, Wade R, Braveman P. (2017). Methods to Assess Adverse Childhood Experiences of Children and Families: Toward Approaches to Promote Child Well-being in Policy and Practice. *Acad Pediatr*, 17(7):51-9. https://doi.org/10.1016/j.acap.2017.04.161

TAGS: ACEs, children, pediatrics, resilience, screening, trauma

Advances in human development sciences point to tremendous possibilities to promote healthy child development and well-being across life by proactively supporting safe, stable and nurturing family relationships (SSNRs), teaching resilience, and intervening early to promote healing the trauma and stress associated with disruptions in SSNRs. Assessing potential disruptions in SSNRs, such as adverse childhood experiences (ACEs), can contribute to assessing risk for trauma and

chronic and toxic stress. Asking about ACEs can help with efforts to prevent and attenuate negative impacts on child development and both child and family well-being. Many methods to assess ACEs exist but have not been compared. The National Survey of Children's Health (NSCH) now measures ACEs for children but requires further assessment and validation. We identified and compared methods to assess ACEs among children and families, evaluated the acceptability and validity of the new NSCH-ACEs measure, and identified implications for assessing ACEs in research and practice. Of 14 ACEs assessment methods identified, 5 have been used in clinical settings (vs public health assessment or research) and all but 1 require self or parent report (3 allow child report). Across methods, 6 to 20 constructs are assessed, 4 of which are common to all: parental incarceration, domestic violence, household mental illness/suicide, household alcohol or substance abuse. Common additional content includes assessing exposure to neighborhood violence, bullying, discrimination, or parental death. All methods use a numeric, cumulative risk scoring methodology. The NSCH-ACEs measure was acceptable to respondents as evidenced by few missing values and no reduction in response rate attributable to asking about children's ACEs. The 9 ACEs assessed in the NSCH co-occur, with most children with 1 ACE having additional ACEs. This measure showed efficiency and confirmatory factor analysis as well as latent class analysis supported a cumulative risk scoring method. Formative as well as reflective measurement models further support cumulative risk scoring and provide evidence of predictive validity of the NSCH-ACEs. Common effects of ACEs across household income groups confirm information distinct from economic status is provided and suggest use of population-wide versus high-risk approaches to assessing ACEs. Although important variations exist, available ACEs measurement methods are similar and show consistent associations with poorer health outcomes in absence of protective factors and resilience. All methods reviewed appear to coincide with broader goals to facilitate health education, promote health and, where needed, to mitigate the trauma, chronic stress, and behavioral and emotional sequelae that can arise with exposure to ACEs. Assessing ACEs appears acceptable to individuals and families when conducted in population-based and clinical research contexts. Although research to date and neurobiological findings compel early identification and health education about ACEs in clinical settings, further research to guide use in pediatric practice is required, especially as it relates to distinguishing ACEs assessment from identifying current family psychosocial risks and child abuse. The reflective as well as formative psychometric analyses conducted in this study confirm use of cumulative risk scoring for the NSCH-ACEs measure. Even if children have not been exposed to ACEs, assessing ACEs has value as an educational tool for engaging and educating families and children about the importance of SSNRs and how to recognize and manage stress and learn resilience.

Billioux A, Verlander K, Anthony S, Alley D. (2017). Standardized Screening for Health-Related Social Needs in Clinical Settings: The Accountable Health Communities Screening Tool. *National Academy of Medicine*, Washington, DC. https://nam.edu/wp-content/uploads/2017/05/ Standardized-Screening-for-Health-Related-Social-Needs-in-Clinical-Settings.pdf.

TAGS: community, health care costs, screening, SDOH, social needs, socio-economic status

The impacts of unmet health-related social needs, such as homelessness, inconsistent access to food, and exposure to violence on health and health care utilization, are well-established. Growing evidence indicates that addressing these and other needs can help reverse their damaging health

effects, but screening for social needs is not yet standard clinical practice. In many communities, the absence of established pathways and infrastructure and perceptions of inadequate time to make community referrals are barriers that seem to often keep clinicians and their staff from broaching the topic. The Centers for Medicare & Medicaid Services Accountable Health Communities Model, tested by the Center for Medicare and Medicaid Innovation, addresses this critical gap between clinical care and community services in the current health care delivery system by testing whether systematically identifying and addressing the health-related social needs of Medicare and Medicaid beneficiaries impacts their total health care costs and improves health.

Blodgett C. (2015). *A Review of Community Efforts to Mitigate and Prevent Adverse Childhood Experiences and Trauma*. Washington State University Area Health Education Center.

TAGS: ACEs, behaviors, community, prevention, resilience, trauma

This paper summarizes a number of community and treatment system initiatives in Washington State that address elements of Adverse Childhood Experiences (ACEs) prevention and mitigation across a range of social, behavioral, and emotional consequences. In doing so, the 20-year history of Community Public Health and Safety Networks is reviewed. The community networks represent a foundational body of work because of its continuing integration in the ACEs Public Private Initiative (APPI) development effort and the systematic efforts of the community networks to use ACEs intentionally as a core set of concepts in community mobilization. To place these various programs in context, I review public health practice as a framework for addressing ACEs-focused community mobilization efforts through a common language. I then propose a trauma-informed model of public health practice that is intended to help APPI consider the unique challenges in using ACEs and trauma concepts. Finally, I review the recommendations from community prevention science which provides a detailed framework for what is required if community-centered public health efforts are to succeed.

Blue Cross Blue Shield of Massachusetts Foundation. (2015, June). *Leveraging the Social Determinants of Health: What Works?* (Policy Brief). Boston, MA: Taylor L, Coyle C, Ndumele C, Rogan E, Canavan M, Curry L, Bradley E.

TAGS: health care costs, interventions, partnership, SDOH

Social determinants of health—which encompass social, behavioral, and environmental influences on one's health—have taken center stage in recent health policy discussions, particularly with the growing focus on global payment, accountable care organizations, and other initiatives focusing on improving population health. Research indicates that greater attention to social determinants of health may both improve Americans' health and reduce health care costs. Nevertheless, translating this evidence into actionable recommendations for policy makers and others has been challenging. This report evaluates and summarizes the evidence base for interventions that address social determinants of health, paying special attention to the innovative models that may improve health outcomes and reduce health care costs and that may be applicable in the Massachusetts policy context.

Bodenmann P, Favrat B, Wolff H, Guessous I, Panese F, Herzig L, Bischoff T, et al. (2014). Screening Primary-Care Patients Forging Health Care for Economic Reasons. *PLOS ONE*, 9(4):1-9. https://doi.org/10.1371/journal.pone.0094006

TAGS: primary care, screening, SDOH, social needs, socio-economic status

Growing social inequities have made it important for general practitioners to verify if patients can afford treatment and procedures. Incorporating social conditions into clinical decision-making allows general practitioners to address mismatches between patients' health care needs and financial resources. Identify a screening question to, indirectly, rule out patients' social risk of forgoing health care for economic reasons, and estimate prevalence of forgoing health care and the influence of physicians' attitudes toward deprivation. Multicenter cross-sectional survey. Forty-seven general practitioners working in the French–speaking part of Switzerland enrolled a random sample of patients attending their private practices. Patients who had forgone health care were defined as those reporting a household member (including themselves) having forgone treatment for economic reasons during the previous 12 months, through a self-administered questionnaire. Patients were also asked about education and income levels, self-perceived social position, and deprivation levels. Overall, 2,026 patients were included in the analysis; 10.7% (CI95% 9.4–12.1) reported a member of their household to have forgone health care during the 12 previous months. The question ''Did you have difficulties paying your household bills during the last 12 months'' performed better in identifying patients at risk of forgoing health care than a combination of four objective measures of socio-economic status (gender, age, education level, and income) (R2 = 0.184 vs. 0.083). This question effectively ruled out that patients had forgone health care, with a negative predictive value of 96%. Furthermore, for physicians who felt powerless in the face of deprivation, we observed an increase in the odds of patients forgoing health care of 1.5 times. General practitioners should systematically evaluate the socio-economic status of their patients. Asking patients whether they experience any difficulties in paying their bills is an effective means of identifying patients who might forgo health care.

Bowen E, Murshid N. (2016). Trauma-Informed Social Policy: A Conceptual Framework for Policy Analysis and Advocacy. *Am J Public Health*, 106: 223-9. https://doi.org/10.2105/AJPH.2015.302970

TAGS: advocacy, health disparities, policy, trauma-informed

Trauma-informed care is a service provision model used across a range of practice settings. Drawing on an extensive body of research on trauma (broadly defined as experiences that produce enduring emotional pain and distress) and health outcomes, we have argued that the principles of trauma-informed care can be extended to social policy. Citing a variety of health-related policy examples, we have described how policy can better reflect 6 core principles of trauma-informed care: safety, trustworthiness and transparency, collaboration, empowerment, choice, and intersectionality. This framework conveys a politicized understanding of trauma, reflecting the reality that trauma and its effects are not equally distributed, and offers a pathway for public health professionals to disrupt trauma-driven health disparities through policy action.

Braveman P, Gottlieb L, Francis D, Arkin E, Acker J. (2019). *What can the health care sector do to advance health equity?* https://www.rwjf.org/en/library/research/2019/11/what-can-the-health-care-sector-do-to-advance-health-equity.html

TAGS: health care costs, health disparities, health equity, health outcomes, race, SDOH, socio-economic status

Despite the strong links between health and social conditions, inequities in the social determinants of health have traditionally been viewed as beyond the purview of health care. The sentiment is rapidly changing amid growing recognition among payers and providers that inequities in employment, housing, environment, transportation, and education limit the benefits of health care, drain resources, and make it challenging for health care organizations to operate efficiently. Making sure everyone has a fair and just opportunity to live the healthiest life possible would benefit society and the health care sector. Studies find that low-income people and racial and ethnic minorities experience worse health because of inequitable social conditions. One study estimates that eliminating racial/ethnic health disparities would reduce health care costs by $230 billion and indirect costs of excess disease and mortality by more than $1 trillion over four years. Inequities in health care—such as lack of health insurance, unaffordable medical expenses, and structural racism in health care—create disparities in care and make the system more costly and less effective. Health care providers and health care systems must play a major role in advancing health equity to prevent needless suffering, premature deaths, and avoidable costs. Initiatives described in the report include making health care institutions more equitable, improving the social conditions of individual patients, and improving social conditions in communities. Many health care organizations are now engaged in a wide range of efforts to advance health equity by creating more opportunities for health and removing obstacles to good health within health care institutions and communities. Produced in partnership with the University of California, San Francisco, this report describes many of these innovative efforts. The full report and an executive summary discuss research on how inequitable social conditions impact the health care system; the full report discusses in more detail how inequities in education, employment, housing, and structural racism result not only in poorer health outcomes but also in higher health care costs.

Brenes G. (2007). Anxiety, Depression, and Quality of Life in Primary Care Patients. *The Primary Care Companion to the J Clin Psychiat*, 9:437-43. https://doi.org/10.4088/pcc.v09n0606

TAGS: anxiety, depression, primary care

Anxiety and depressive disorders have a significant and negative impact on quality of life. However, less is known about the effects of anxiety and depressive symptoms on quality of life. The purpose of this study was to examine the impact of anxiety and depressive symptoms on emotional and physical functioning, the effects of anxiety symptoms on functioning independent of depressive symptoms, and the effects of depressive symptoms on functioning independent of anxiety symptoms. Participants included 919 patients, recruited from 2 university-affiliated primary care clinics between May 2004 and September 2006, who completed self-report measures of anxiety symptoms, depressive symptoms, and quality of life. Almost 40% of the sample reported anxiety symptoms and 30% reported depressive symptoms. In both unadjusted and adjusted models, anxiety, and depressive symptoms were significantly associated with all domains of quality of life. When anxiety and depressive symptoms were added simultaneously, both remained significant. As the severity of anxiety or depressive symptoms increased, quality of life decreased. Furthermore, patients with moderate to severe anxiety or depressive symptoms had greater impairments in most quality of life domains than patients with acute myocardial infarction, congestive heart failure, or diabetes. Detection and treatment of anxiety and depressive symptoms in the primary care setting should be emphasized.

Brinker J, Cheruvu V. (2017). Social and emotional support as a protective factor against current depression among individuals with adverse childhood experiences. *Prev Med Reports*, 5:127-33. https://doi.org/10.1016/j.pmedr.2016.11.018

TAGS: ACEs, depression, mental health, protective factors, resilience

Depression is one of the most prevalent mental health disorders among adults with adverse childhood experiences (ACE). Several studies have well documented the protective role of social support against depression in other populations. However, the impact of perceived social and emotional support (PSES) on current depression in a large community sample of adults with ACE has not been studied yet. This study tests the hypothesis that PSES is a protective factor against current depression among adults with ACE. Data from the 2010 Behavioral Risk Factor Surveillance System (BRFSS) involving adults with at least one ACE were used for the purpose of this study (n = 12.487). PSES had three categories: Always, Usually/Sometimes, and Rarely/Never. Current depression, defined based on the responses to the eight-item Patient Health Questionnaire (PHQ-8) depression scale, was treated as a binary outcome of interest: Present or absent. Logistic regression models were used for the analysis adjusting for all potential confounders. When compared to individuals who reported that they rarely/never received social and emotional support, individuals who reported that they always received were 87% less likely to report current depression (AOR: 0.13 [95% CI: 0.08–0.21]); and those who reported that they usually/sometimes received social and emotional support were 69% less likely to report current depression (AOR: 0.31 [95% CI: 0.20–0.46]). The results of this study highlight the importance of social and emotional support as a protective factor against depression in individuals with ACE. Health care providers should routinely screen for ACE to be able to facilitate the necessary social and emotional support.

Brockie T, Elm J, Walls M. (2018). Examining protective and buffering associations between sociocultural factors and adverse childhood experiences among American Indian adults with type 2 diabetes: a quantitative, community-based participatory research approach. *BMJ Open*, 8:e022265. https://doi.org/10.1136bmjopen-2018-022265

TAGS: ACEs, community, diabetes, health outcomes, mental health, race, resilience

The purpose of this study was to determine the frequency of select adverse childhood experiences (ACEs) among a sample of American Indian (AI) adults living with type 2 diabetes (T2D) and the associations between ACEs and self-rated physical and mental health. We also examined associations between sociocultural factors and health, including possible buffering processes. Survey data for this observational study were collected using computer-assisted survey interviewing techniques between 2013 and 2015. Participants were randomly selected from AI tribal clinic facilities on five reservations in the upper Midwestern USA. Participants Inclusion criteria were a diagnosis of T2D, age 18 years or older and self-identified as AI. The sample includes n=192 adults (55.7% female; mean age=46.3 years). We assessed nine ACEs related to household dysfunction and child maltreatment. Independent variables included social support, diabetes support and two cultural factors: spiritual activities and connectedness. Primary outcomes were self-rated physical and mental health. An average of 3.05 ACEs were reported by participants and 81.9% (n=149) said they had experienced at least one ACE. Controlling for gender, age and income, ACEs were negatively associated with self-rated physical and mental health ($p<0.05$). Connectedness and social support were positively and significantly associated with physical and

mental health. Involvement in spiritual activities was positively associated with mental health and diabetes-specific support was positively associated with physical health. Social support and diabetes-specific social support moderated associations between ACEs and physical health. This research demonstrates inverse associations between ACEs and well-being of adult AI patients with diabetes. The findings further demonstrate the promise of social and cultural integration as a critical component of wellness, a point of relevance for all cultures. Health professionals can use findings from this study to augment their assessment of patients and guide them to health-promoting social support services and resources for cultural involvement.

Brown R, Plener P, Braehler E, Fegert J, Huber-Lang M. (2018). Associations of adverse childhood experiences and bullying on physical pain in the general population of Germany. *J Pain Res*, 11:3099-108. https://doi.org/10.2147/jpr.5169135

TAGS: ACEs, bullying, child maltreatment, children, chronic health, depression, health outcomes, mental health, trauma

Chronic pain is a frequent burden in the general population. Child maltreatment and bullying are risk factors for the development of chronic pain. Aim of this cross-sectional study was to investigate the association of child maltreatment and bullying and pain experiences in a representative sample of the general population. A total of N=2,491 people from the general population of Germany participated in the study (Mage=48.3 years [SD=18.2], 53.2 % female). Child maltreatment was assessed with the Childhood Trauma Questionnaire, pain was rated with the Polytrauma Outcome -physical state domain, depression scores were assessed with the Patient Health Questionnaire, and anxiety scores via the General Anxiety Disorder Questionnaire. Regression analyses were calculated to investigate the effect of bullying and child maltreatment, as well as depression, anxiety, and gender on pain experiences. A significant correlation between increasing pain levels and number of adverse childhood experiences was found. With regard to specific types of maltreatment, largest effect sizes were found for emotional abuse. Bullying was significantly, but overall rather moderately, related to pain suffering. In women, all forms of maltreatment were associated with pain, while in men only sexual and physical abuse revealed significant effects. Although depression and anxiety scores were significantly associated with the experience of current pain, they did not change the effect of child maltreatment on pain significantly. In this sample of the general population, adverse childhood experiences were significantly associated with pain and showed cumulative effects, over and above depressive and anxiety symptoms.

Bunting L, Davidson G, McCartan C, Hanratty J, Bywaters P, Mason W, Steils N. (2018). The association between child maltreatment and adult poverty - A systemic review of longitudinal research. *Child Abuse Neglect*, 77:121-33. https://doi.org/10.1016/j.chiabu.2017.12.022

TAGS: ACEs, child maltreatment, health outcomes, SDOH, social needs, socio-economic status, trauma

Child maltreatment is a global problem affecting millions of children and is associated with an array of cumulative negative outcomes later in life, including unemployment and financial difficulties. Although establishing child maltreatment as a causal mechanism for adult economic outcomes is fraught with difficulty, understanding the relationship between the two is essential to

reducing such inequality. This paper presents findings from a systematic review of longitudinal research examining experiences of child maltreatment and economic outcomes in adulthood. A systematic search of seven databases found twelve eligible retrospective and prospective cohort studies. From the available evidence, there was a relatively clear relationship between 'child maltreatment' and poorer economic outcomes such as reduced income, unemployment, lower level of job skill and fewer assets, over and above the influence of family of origin socio- economic status. Despite an extremely limited evidence base, neglect had a consistent relationship with a number of long-term economic outcomes, while physical abuse has a more consistent relationship with income and employment. Studies examining sexual abuse found less of an association with income and employment, although they did find a relationship other outcomes such as sickness absence, assets, welfare receipt and financial insecurity. Nonetheless, all twelve studies showed some association between at least one maltreatment type and at least one economic measure. The task for future research is to clarify the relationship between specific maltreatment types and specific economic outcomes, taking account of how this may be influenced by gender and life course stage.

Burns J, Paul D, Paz S. (2012, April). *Participatory Asset Mapping: A Community Research Lab Toolkit*. Healthy City: Advancement Project. http://communityscience.com/knowledge4equity/AssetMappingToolkit.pdf

TAGS: advocacy, collective impact, community, leadership, partnership, policy, protective factors, SDOH, social needs

This is an instructional toolkit for using and applying Participatory Asset Mapping. Community-Based Organizations can use the concepts, methods, and tools provided, such as the Community-Engaged Mapping Facilitation Guide and Guide to Planning a Community-Engaged Mapping Event, to host an event or activity that collects knowledge and experiences from community members about local assets.

Campbell J, Farmer G, Nguyen-Rodriguez S, Walker R., Egede L. (2018). Relationship between individual categories of adverse childhood experiences and diabetes in adulthood in a sample of US Adults: Does it differ by gender? *J Diabetes Complicat*, 32(2): 139-43. https://doi.org/10.1016/j.jdiacomp.2017.11.005

TAGS: ACEs, diabetes, health outcomes

Adverse Childhood Experiences (ACEs) are known to increase risk for poor health outcomes in adulthood and impact the development of chronic illness, specifically diabetes. However, little is known about the differential impact of individual ACE categories on diabetes risk, and whether this relationship is gender specific. Data from the 2011 Behavioral Risk Factor Surveillance System (BRFSS) was used in this study. Participants included 48,526 adults who completed the ACE module across 5 states. Using logistic regression, we examined the odds of diabetes in adulthood related each of the eight individual categories of adverse childhood experiences: sexual abuse, physical abuse, verbal abuse, mental illness, substance abuse, incarceration, separation/divorce, and violence. A gender interaction term was included to test if this relationship varied between men and women. In adjusted analyses, the sexual abuse component (OR 1.57, CI 1.240; 1.995) had the strongest positive association followed by the verbal (OR 1.29, CI 1.117; 1.484) and the physical abuse component (OR 1.26, CI 1.040; 1.516). Having a parent with mental

illness was also significantly associated with increased odds of diabetes (OR 1.19, CI 0.996; 1.416). We did not find an interaction between ACEs and diabetes status by gender in any of the eight categories. Overall, this study found that four ACE categories were significantly associated with increased odds of diabetes in adulthood with sexual abuse being the strongest predictor.

Caron R, Ulrich-Schad J, Lafferty C. (2015). Academic-Community Partnerships: Effectiveness Evaluated Beyond the Ivory Walls. *Journal of Community Engagement and Scholarship*, 8(1), 125-38.

TAGS: community, education, partnership, SDOH

Community-based participatory research has furthered our understanding of the working principles required for academic-community partnerships to address persistent public health problems. However, little is known about how effective these partnerships have been in eliminating or reducing community-based public health issues. To contribute to the literature in this area, the authors conducted a survey of U.S. schools and programs in public health and community groups working with these academic partners to: (1) identify the most common local public health issues addressed; (2) examine the characteristics of the partnership and the actual or perceived benefits and challenges for each partner; (3) assess the perceived effectiveness of the partnership and their evaluation techniques; and (4) analyze the intent to continue or dissolve the partnership and the associated factors that influence this decision. The authors provide recommendations that can improve the development, functioning, and effectiveness of academic-community collaborations aimed at addressing a variety of public health concerns.

Caudill T, Lofgren R, Jennings D, Karpf M. (2011). Health Care Reform and Primary Care: Training Physicians for Tomorrow's Challenges. *Acad Med*, 86(2):158-60. https://doi.org/10.1097/acm.0b013e3182045f13

TAGS: advocacy, education, health care cost, primary care

Although Congress recently passed health insurance reform legislation, the real catalyst for change in the health care delivery system, the authors argue, will be changes to the reimbursement model. To rein in increasing costs, the Centers for Medicare and Medicaid aims to move Medicare from the current fee-for-service model to a reimbursement approach that shifts the risk to providers and encourages greater accountability both for the cost and the quality of care. This level of increased accountability can only be achieved by clinical integration among health care providers. Central to this reorganized delivery model are primary care providers who coordinate and organize the care of their patients, using best practices and evidence-based medicine while respecting the patient's values, wishes, and dictates. Thus, the authors ask whether primary care physicians will be available in sufficient numbers and if they will be adequately and appropriately trained to take on this role. Most workforce researchers report inadequate numbers of primary care doctors today, a shortage that will only be exacerbated in the future. Even more ominously, the authors argue that primary care physicians being trained today will not have the requisite skills to fulfill their contemplated responsibilities because of a variety of factors that encourage fragmentation of care. If this training issue is not debated vigorously to determine new and appropriate training approaches, the future workforce may eventually have the appropriate number of physicians but inadequately trained individuals, a situation that would doom any effort at system reform.

Chang X, Jiang X, Mkandarwire T, Shen M. (2019). Associations between adverse childhood experiences and health outcomes in adults aged 18-59 years. *PLoS ONE,* 14(2)e0211850. https://doi.org/10.1371/journal.pone.0211850

TAGS: ACEs, behaviors, chronic health, health outcomes, mental health

Adverse childhood experiences (ACEs) have been associated with poor health status later in life. The objective of the present study was to examine the relationship between ACEs and health-related behaviors, chronic diseases, and mental health in adults. A cross-sectional study was performed with 1501 residents of Macheng, China. The ACE International Questionnaire was used to assess ACEs, including psychological, physical, and sexual forms of abuse, as well as household dysfunction. The main outcome variables were lifetime drinking status, lifetime smoking status, chronic diseases, depression, and posttraumatic stress disorder. Multiple logistic regression models were used to examine the associations between overall ACE score and individual ACE component scores and risk behaviors/comorbidities in adulthood after controlling for potential confounders. A total of 66.2% of participants reported at least one ACE, and 5.93% reported four or more ACEs. Increased ACE scores were associated with increased risks of drinking (adjusted odds ratio [AOR] = 1.09, 95% confidence intervals [CI]: 1.00–1.09), chronic disease (AOR = 1.17, 95% CI: 1.06–1.28), depression (AOR = 1.37, 95% CI: 1.27–1.48), and posttraumatic stress disorder (AOR = 1.32, 95% CI: 1.23–1.42) in adulthood. After adjusting for confounding factors, the individual ACE components had different impacts on risk behavior and health, particularly on poor mental health outcomes in adulthood. ACEs during childhood were significantly associated with risk behaviors and poor health outcomes in adulthood, and different ACE components had different long-term effects on health outcomes in adulthood.

Chanlongbutra A, Singh G, Mueller C. (2018). Adverse childhood experiences, health-related quality of life, and chronic disease risks in rural areas of the United States. *Journal of Environmental and Public Health*, 2018(7151297): 1-15. https://doi.org/10.1155/2018/7151297

TAGS: ACEs, behaviors, chronic health, health outcomes, mental health, rural health

Exposure to adverse childhood experiences (ACEs) is associated with increased odds of high-risk behaviors and adverse health outcomes. This study examined whether ACE exposure among individuals living in rural areas of the United States is associated with adult activity limitations, self-reported general poor health status, chronic diseases, and poor mental health. Data from the 2011 and 2012 Behavioral Risk Factor Surveillance System (BRFSS) (N=79,810) from nine states were used to calculate the prevalence of ACEs in rural and urban areas. ACE scores were determined by summing 11 survey items. Multiple logistic regression was used to examine the association between ACE scores and health outcomes, including self-reported general health status, chronic diseases, and health-related quality of life. Approximately 55.4% of rural respondents aged ≥18 years reported at least one ACE and 14.7% reported experiencing ≥4 ACEs in their childhood, compared to 59.5% of urban residents who reported at least one ACE and 15.5% reporting ≥4 ACEs. After adjusting for sociodemographic covariates, compared to rural respondents who never reported an ACE, rural respondents who experienced ≥1ACEs had increased odds of reporting fair/poor general health, activity limitations, and heart disease, which is consistent with previous studies. The odds of experiencing a heart attack were higher for rural residents reporting 2 and ≥4 ACEs; the odds of diabetes were higher for those with 3 ACEs; and

the odds of ever having asthma or poor mental health was higher for those with ≥3 ACEs. Although individuals in rural areas are less likely to experience ACEs, over half of rural respondents reported experiencing an ACE in childhood. Programs aimed at preventing ACEs, including child maltreatment, can benefit rural areas by reducing adult morbidity and increasing quality of life.

Chapman D, Whitfield C, Felitti V, Dube S, Edwards V, Anda R. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *J Affect Disorders*, 82(2014): 217-25. https://doi.org/10.1016/j.jad.2003.12.013

TAGS: ACEs, child maltreatment, depression, health outcomes, interventions, mental health

Background: Research examining the association between childhood abuse and depressive disorders has frequently assessed abuse categorically, thus not permitting discernment of the cumulative impact of multiple types of abuse. As previous research has documented that adverse childhood experiences (ACEs) are highly interrelated, we examined the association between the number of such experiences (ACE score) and the risk of depressive disorders. *Methods:* retrospective cohort study of 9460 adult health maintenance organization members in a primary care clinic in San Diego, CA who completed a survey addressing a variety of health-related concerns, which included standardized assessments of lifetime and recent depressive disorders, childhood abuse and household dysfunction. *Results:* Lifetime prevalence of depressive disorders was 23%. Childhood emotional abuse increased risk for lifetime depressive disorders, with adjusted odds ratios (ORs) of 2.7 [95% confidence interval (CI), 2.3–3.2] in women and 2.5 (95% CI, 1.9–3.2) in men. We found a strong, dose–response relationship between the ACE score and the probability of lifetime and recent depressive disorders ($P < 0.0001$). This relationship was attenuated slightly when a history of growing up with a mentally ill household member was included in the model but remained significant ($P < 0.001$). *Conclusions:* The number of ACEs has a graded relationship to both lifetime and recent depressive disorders. These results suggest that exposure to ACEs is associated with increased risk of depressive disorders up to decades after their occurrence. Early recognition of childhood abuse and appropriate intervention may thus play an important role in the prevention of depressive disorders throughout the life span.

Children's HealthWatch. (2012, June). *A Safe, Stable Place to Call Home Supports Young Children's Health in Arkansas*. Boston, MA: Weiss I, Ettinger S, Casey P, Barrett K, Schiffmiller A, Cook J, Pasquariello J, Coleman S.

TAGS: Arkansas, children, pediatrics, SDOH, social needs

Children’s HealthWatch researchers analyzed survey data collected from caregivers in Arkansas between 2005 and 2011. In the sample of 5,000 families with children under age four, Children’s HealthWatch found that about 51% of families were housing insecure. Housing insecurity is associated with fair or poor health, and greater risk of developmental delays in children in Arkansas. For example, Children’s HealthWatch found that children in households who moved frequently are 34% more likely to be underweight as compared with children in stably housed families.

Chuang Y, Chuang K, Yang T. (2013). Social cohesion matters in health. *Int J Equity Health*, 12(87). https://doi.org/10.1186/1475-9276-12-87

TAGS: health equity, population health, SDOH, social needs

The concept of social cohesion has invoked debate due to the vagueness of its definition and the limitations of current measurements. This paper attempts to examine the concept of social cohesion, develop measurements, and investigate the relationship between social cohesion and individual health. This study used a multilevel study design. The individual-level samples from 29 high-income countries were obtained from the 2000 World Value Survey (WVS) and the 2002 European Value Survey. National-level social cohesion statistics were obtained from Organization of Economic Cooperation and Development datasets, World Development Indicators, and Asian Development Bank key indicators for the year 2000, and from aggregating responses from the WVS. In total 47,923 individuals were included in this study. The factor analysis was applied to identify dimensions of social cohesion, which were used as entities in the cluster analysis to generate a regime typology of social cohesion. Then, multilevel regression models were applied to assess the influences of social cohesion on an individual's self-rated health. Factor analysis identified five dimensions of social cohesion: social equality, social inclusion, social development, social capital, and social diversity. Then, the cluster analysis revealed five regimes of social cohesion. A multi-level analysis showed that respondents in countries with higher social inclusion, social capital, and social diversity were more likely to report good health above and beyond individual-level characteristics. This study is an innovative effort to incorporate different aspects of social cohesion. This study suggests that social cohesion was associated with individual self-rated after controlling individual characteristics. To achieve further advancement in population health, developed countries should consider policies that would foster a society with a high level of social inclusion, social capital, and social diversity. Future research could focus on identifying possible pathways by which social cohesion influences various health outcomes.

Clack L. (2017). Examination of Leadership and Personality Traits on the Effectiveness of Professional Communication in Health care. *Journal of Health care Communications*, 2(2). https://doi.org/10.4172/242-1654.100051

TAGS: leadership

A common perception exists that extroverts are better communicators than introverts, and thus make the best leaders. Research studies throughout time have consistently resulted in the belief that extroverts are more likely to emerge as leaders and are more likely to be perceived as effective. The Trait Theory of Leadership and the Personality Type Theory have been used in research to suggest that theories support that extraversion is key to professional leadership communication and success. The purpose of this article was to conduct a thorough review of leadership communication from a personality perspective. Leadership and personality theories were examined in depth through review of current and past research studies. There is a growing body of research adding to the newfound belief that introverts possess traits that can contribute to their success in leadership roles. According to a review of recent research, organizations may benefit immensely from the inclusion of introverts in leadership positions. Thus, the field of health care would benefit from further research regarding how best to utilize introverts within leadership of organizations. Since introverts communicate in different ways than extroverts, organizations

should look at their current methods of communication and ensure that the channels of communication are effective for all types of leaders.

Cohen J, Kelleher K, Mannarino A. (2008). Identifying, Treating, and Referring Traumatized Children: The Role of Pediatric Providers. *Arch Pediat Adol Med*, 162(5): 447-52. https://doi.org/10.1001/archpedi.162.5.447

TAGS: ACEs, child maltreatment, children, health outcomes, interventions, mental health, pediatrics, screening, trauma

Objectives: To describe practical ways for pediatric providers to screen children for exposure to potentially traumatic events and trauma symptoms, provide brief office-based pediatric interventions for trauma-exposed children, engage families in mental health care referrals, and recognize elements of evidence-based practices for traumatized children. *Main Exposure:* Many children exposed to potentially traumatic events develop severe and long-lasting negative somatic and psychological problems. Pediatric providers are often ideally situated to detect children with these symptoms, provide office-based interventions, and make referrals to optimal community treatment providers. *Main Outcome Measures:* Several comprehensive literature reviews of evidence-based treatments for traumatized children conducted by other organizations were evaluated and summarized for their relevance to primary care pediatricians. *Results:* Optimal pediatric screening and office-based interventions for traumatized children are described. Evidence-based practices for traumatized children are summarized and their common treatment elements extracted. Suggestions for engaging families in mental health care referrals are included. *Conclusions:* Pediatric providers can identify and provide office-based interventions for traumatized children as well as play a critical role in referring children for optimal mental health treatments.

Collective Impact Forum & FSG. (2017). *Backbone Starter Guide: A Summary of Major Resources about the Backbone from FSG and the Collective Impact Forum*. https://www. collectiveimpactforum.org/ resources/backbone-starter-guide-summary-major-resources-about-backbone

TAGS: collective impact

For collective impact efforts, backbone support plays a critical role in helping a collaborative achieve its results, but it can be difficult to know where to start when building the backbone. What role should the backbone play? How can it be structured? How does it sustain itself? The Backbone Starter Guide is a new resource for those thinking about how to start a backbone, or for established backbone teams who are bringing in new members and partners. The starter guide includes a short overview of the collective impact approach, as well as addresses: the backbone's purpose and functions; different types of backbone structures; leadership skills for backbone staff; the importance of centering equity within a backbone's work; and the role of the funder in supporting a backbone's sustainability.

Cook C, Freedman J, Freedman L, Arick R, Miller M. (1996). Screening for Social and Environmental Problems in a VA Primary Care Setting. *Health Soc Work*, 21(1): 41-7. https://doi.org/10.1093/hsw/21.1.41

TAGS: primary care, screening, SDOH, social needs, socio-economic status

Social workers are in an ideal position to identify and treat social and environmental problems early in the continuum of care. Information on these problems will facilitate informed decision making on the development and reallocation of resources to better meet patient needs. This study assessed the social and environmental problems of 132 patients seen in a primary care clinic at a university-affiliated Veterans Affairs (VA) medical center. The most prevalent social problems were financial difficulties, personal stress, family problems, legal concerns, and employment concerns. When asked, nearly one third of all respondents requested social work services or information about services related to their problems. The findings suggest a dear need for social work interventions in VA primary care clinics that focus on both psychosocial problems.

Cowell R, Cicchetti D, Rogosch F, Toth S. (2015). Childhood maltreatment and its effect on neurocognitive functioning: Timing and chronicity matter. *Dev Psychopathol*, 27: 521-33. https://doi.org/10.1017/S0954579415000139

TAGS: child maltreatment, children, chronic health, epigenetics

Childhood maltreatment represents a complex stressor, with the developmental timing, duration, frequency, and type of maltreatment varying with each child (Barnett, Manly, & Cicchetti, 1993; Cicchetti & Manly, 2001). Multiple brain regions and neural circuits are disrupted by the experience of child maltreatment (Cicchetti & Toth, in press; DeBellis et al., 2002; McCrory & Viding, 2010; Teicher, Anderson, & Polcari, 2012). These neurobiological compromises indicate the impairment of a number of important cognitive functions, including working memory and inhibitory control. The present study extends prior research by examining the effect of childhood maltreatment on neurocognitive functioning based on developmental timing of maltreatment, including onset, chronicity, and recency, in a sample of 3- to 9-year-old non-maltreated (n¼136) and maltreated children (n¼223). Maltreated children performed more poorly on inhibitory control and working-memory tasks than did non-maltreated children. Group differences between maltreated children based on the timing of maltreatment and the chronicity of maltreatment also were evident. Specifically, children who were maltreated during infancy, and children with a chronic history of maltreatment, exhibited significantly poorer inhibitory control and working-memory performance than did children without a history of maltreatment. The results suggest that maltreatment occurring during infancy, a period of major brain organization, disrupts normative structure and function, and these deficits are further instantiated by the prolonged stress of chronic maltreatment during the early years of life.

Crandall A, Miller J, Cheung A, Novilla L, Glade R, Novilla M, Magnusson B, et al. (2019). ACEs and counter-ACEs: How positive and negative childhood experiences influence adult health. *Child Abuse Neglect*, 96(104089). https://doi.org/10.1016/j.chiabu.2019.104089

TAGS: ACEs, child maltreatment, children, health outcome, mental health, pediatrics, protective factors, resilience, trauma

Background: Numerous studies over the past two decades have found a link between adverse childhood experiences (ACEs) and worse adult health outcomes. Less well understood is how advantageous childhood experiences (counter-ACEs) may lead to better adult health, especially in

the presence of adversity. *Objective:* To examine how counter-ACEs and ACEs affect adult physical and mental health using Resiliency Theory as the theoretical framework. *Participants and setting:* Participants were Amazon Turk users ages 19–57 years (*N*=246; 42% female) who completed an online survey. *Methods:* We conducted a series of regression analyses to examine how counter-ACEs and ACEs predicted adult health. *Results:* Corresponding to the Compensatory Model of Resiliency Theory, higher counter-ACEs scores were associated with improved adult health and that counter-ACEs neutralized the negative impact of ACEs on adult health. Contrary to the Protective Factors Model, there was a stronger relationship between ACEs and worse adult health among those with above average counter-ACEs scores compared to those with below average counter-ACEs scores. Consistent with the Challenge Model, counter-ACEs had a reduced positive effect on adult health among those with four or more ACEs compared to those with fewer than four ACEs. *Conclusions:* Overall, the findings suggest that counter-ACEs protect against poor adult health and lead to better adult wellness. When ACEs scores are moderate, counter-ACEs largely neutralize the negative effects of ACEs on adult health. Ultimately, the results demonstrate that a public health approach to promoting positive childhood experiences may promote better lifelong health.

Danese A, Moffitt T, Harrington H, Milne B, Polanczyk G, Pariante C, Poulton R, et al. (2009). Adverse Childhood Experiences and Adult Risk Factors for Age-Related Disease: Depression, Inflammation, and Clustering of Metabolic Risk Markers. *Arch Pediat Adol Med*, 163(12): 1135-43. https://doi.org/10.1001/archpediatrics.2009.214

TAGS: ACEs, child maltreatment, chronic health, health outcomes, trauma

Objective: To understand why children exposed to adverse psychosocial experiences are at elevated risk for age-related disease, such as cardiovascular disease, by testing whether adverse childhood experiences predict enduring abnormalities in stress-sensitive biological systems, namely, the nervous, immune, and endocrine/metabolic systems. *Design:* A 32-year prospective longitudinal study of a representative birth cohort. *Setting:* New Zealand. *Participants:* A total of 1037 members of the Dunedin Multidisciplinary Health and Development Study. *Main Exposures:* During their first decade of life, study members were assessed for exposure to 3 adverse psychosocial experiences: socioeconomic disadvantage, maltreatment, and social isolation. *Main Outcome Measures:* At age 32 years, study members were assessed for the presence of 3 age-related-disease risks: major depression, high inflammation levels (high-sensitivity Creactive protein level >3 mg/L), and the clustering of metabolic risk biomarkers (overweight, high blood pressure, high total cholesterol, low high-density lipoprotein cholesterol, high glycated hemoglobin, and low maximum oxygen consumption levels.

Downey J, Gudmunson C, Pang Y, Lee K. (2017). Adverse Childhood Experiences Affect Health Risk Behaviors and Chronic Health of Iowans. *J Fam Violence*, 32:557-64. https://doi.org/10.1007/s10896-017-9909-4

TAGS: ACEs, child maltreatment, chronic health, health outcomes, trauma

Adverse childhood experiences (ACEs) include childhood abuse and household dysfunction, and are associated with a variety of behavioral risk factors and chronic illnesses in adulthood. This study replicates the original ACEs study (Felitti, et al. 1998) with a representative sample of adults in Iowa. Data come from the Behavioral Risk Factor Surveillance System (BRFSS) survey of 2012

when ACE assessments were first introduced in Iowa by the Centers for Disease Control and Prevention (2012). The majority of adults in Iowa (58%) have experienced at least one ACE, and depending on the type of ACE, co-occurrence of ACEs ranged from 76% to 97%. Health risk behaviors in adulthood, such as drinking, smoking, and obesity were significantly related to the number of ACEs experienced. ACEs were also associated with depression. Chronic health outcomes including heart disease, stroke, and COPD were also significantly predicted by the number of ACEs. This replication study demonstrates that the need for intervention and prevention programs in Iowa are similar to the needs found in other states in the U.S. for addressing the consequences of ACEs.

Earls M, Yogman M, Mattson G, Rafferty J. (2019). Incorporating Recognition and Management of Perinatal Depression into Pediatric Practice. *Pediatrics*, 143(1):e20183259. https://doi.org/10.1542/peds.2018-3259

TAGS: advocacy, depression, mental health, pediatrics, policy, pregnancy, prenatal care, screening

Perinatal depression (PND) is the most common obstetric complication in the United States. Even when screening results are positive, mothers often do not receive further evaluation, and even when PND is diagnosed, mothers do not receive evidence-based treatments. Studies reveal that postpartum depression (PPD), a subset of PND, leads to increased costs of medical care, inappropriate medical treatment of the infant, discontinuation of breastfeeding, family dysfunction, and an increased risk of abuse and neglect. PPD, specifically, adversely affects this critical early period of infant brain development. PND is an example of an adverse childhood experience that has potential long-term adverse health complications for the mother, her partner, the infant, and the mother-infant dyad. However, PND can be treated effectively, and the stress on the infant can be buffered. Pediatric medical homes should coordinate care more effectively with prenatal providers for women with prenatally diagnosed maternal depression; establish a system to implement PPD screening at the 1-, 2-, 4-, and 6-month well-child visits; use community resources for the treatment and referral of the mother with depression; and provide support for the maternal-child (dyad) relationship, including breastfeeding support. State chapters of the American Academy of Pediatrics, working with state departments of public health, public and private payers, and maternal and child health programs, should advocate for payment and for increased training for PND screening and treatment. American Academy of Pediatrics recommends advocacy for workforce development for mental health professionals who care for young children and mother-infant dyads, and for promotion of evidence-based interventions focused on healthy attachment and parent-child relationships.

Ellis W, Dietz W. (2017). A New Framework for addressing Adverse Childhood and Community Experiences: The Building Community Resilience Model. *Acad Pediatr*, 17(7):S86-93. https://doi.org/10.1016/j.acap.2016.12.011

TAGS: ACEs, collective impact, community, population health, SDOH, toxic stress, trauma

We propose a transformative approach to foster collaboration across child health, public health, and community-based agencies to address the root causes of toxic stress and childhood adversity and to build community resilience. Physicians, members of social service agencies, and experts in toxic stress and adverse childhood experiences (ACEs) were interviewed to inform development

of the Building Community Resilience (BCR) model. Through a series of key informant interviews and focus groups, we sought to understand the role of BCR for child health systems and their partners to reduce toxic stress and build community resilience to improve child health outcomes. Key informants indicated the intentional approach to ACEs and toxic stress through continuous quality improvement (data-driven decisions and program development, partners testing and adapting to changes to their needs, and iterative development and testing) which provides a mechanism by which social determinants or a population health approach could be introduced to physicians and community partners as part of a larger effort to build community resilience. Structured interviews also reveal a need for a framework that provides guidance, structure, and support for child health systems and community partners to develop collective goals, shared work plans, and a means for data-sharing to reinforce the components that will contribute to community resilience. Key informant interviews and focus group dialogues revealed a deep understanding of the factors related to toxic stress and ACEs. Respondents endorsed the BCR approach as a means to explore capacity issues, reduce fragmented health care delivery, and facilitate integrated systems across partners in efforts to build community resilience. Current financing models are seen as a potential barrier, because they often do not support restructured roles, partnership development, and the work to sustain upstream efforts to address toxic stress and community resilience.

Felitti V, Anda R, Nordenberg D, Williamson D, Spitz A, Edwards V, Koss M, et al. (1998). Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study. *Am J Prev Med*, 14(4): 245-58. https://doi.org/10.1016/s0749-3797(98) 00017-8

TAGS: ACEs, child maltreatment, chronic health, depression, epigenetics, health outcomes, mental health, screening, toxic stress, trauma

Background: The relationship of health risk behavior and disease in adulthood to the breadth of exposure to childhood emotional, physical, or sexual abuse, and household dysfunction during childhood has not previously been described. *Methods:* A questionnaire about adverse childhood experiences was mailed to 13,494 adults who had completed a standardized medical evaluation at a large HMO; 9,508 (70.5%) responded. Seven categories of adverse childhood experiences were studied: psychological, physical, or sexual abuse; violence against mother; or living with household members who were substance abusers, mentally ill or suicidal, or ever imprisoned. The number of categories of these adverse childhood experiences was then compared to measures of adult risk behavior, health status, and disease. Logistic regression was used to adjust for effects of demographic factors on the association between the cumulative number of categories of childhood exposures (range: 0–7) and risk factors for the leading causes of death in adult life. *Results:* More than half of respondents reported at least one, and one-fourth reported $2 categories of childhood exposures. We found a graded relationship between the number of categories of childhood exposure and each of the adult health risk behaviors and diseases that were studied (*P*, .001). Persons who had experienced four or more categories of childhood exposure, compared to those who had experienced none, had 4 to 12-fold increased health risks for alcoholism, drug abuse, depression, and suicide attempt; a 2- to 4-fold increase in smoking, poor self-rated health, $50 sexual intercourse partners, and sexually transmitted disease; and a 1.4- to 1.6-fold increase in physical inactivity and severe obesity. The number of categories of adverse childhood exposures showed a graded relationship to the presence of adult diseases including ischemic heart disease, cancer, chronic lung disease, skeletal fractures, and liver disease. The seven categories of adverse

childhood experiences were strongly interrelated and persons with multiple categories of childhood exposure were likely to have multiple health risk factors later in life. *Conclusions:* We found a strong graded relationship between the breadth of exposure to abuse or household dysfunction during childhood and multiple risk factors for several of the leading causes of death in adults.

Flaherty E, Legano L, Idzerda S, American Academic of Pediatrics Council on Child Abuse and Neglect. (2019). Ongoing Pediatric Health Care for the Child Who Has Been Maltreated. *Pediatrics*, 143(4). https://doi.org/10.1542/peds.2019.0284

TAGS: ACEs, child maltreatment, children, health outcomes, pediatrics

Pediatricians provide continuous medical care and anticipatory guidance for children who have been reported to state child protection agencies, including tribal child protection agencies, because of suspected child maltreatment. Because families may continue their relationships with their pediatricians after these reports, these primary care providers are in a unique position to recognize and manage the physical, developmental, academic, and emotional consequences of maltreatment and exposure to childhood adversity. Substantial information is available to optimize follow-up medical care of maltreated children. This new clinical report will provide guidance to pediatricians about how they can best oversee and foster the optimal physical health, growth, and development of children who have been maltreated and remain in the care of their biological family or are returned to their care by Child Protective Services agencies. The report describes the pediatrician's role in helping to strengthen families' and caregivers' capabilities and competencies and in promoting and maximizing high-quality services for their families in their community. Pediatricians should refer to other reports and policies from the American Academy of Pediatrics for more information about the emotional and behavioral consequences of child maltreatment and the treatment of these consequences.

Flanagan T, Alabaster A, McCaw B, Stoller N, Watson C, Young-Wolff K. (2018). Feasibility and Acceptability of Screening for Adverse Childhood Experiences in Prenatal Care. *J Womens Health*, 27(7): 903-11. https://doi.org/10.1089/jwh.2017.6649

TAGS: ACEs, policy, pregnancy, screening

Introduction: Adverse childhood experiences (ACEs) are common among pregnant women and contribute to increased risk for negative perinatal outcomes, yet few clinicians screen prenatal patients for ACEs. The purpose of this study was to evaluate the feasibility and acceptability of screening for ACEs in standard prenatal care. *Methods*: We evaluated a 4-month pilot (March 2016–June 2016) to screen pregnant women (at*14–23 weeks of gestation) for ACEs and resiliency in two Kaiser Permanente Northern California medical centers (N = 480). We examined the acceptability of the screening to patients through telephone surveys (N= 210) and to clinicians through surveys and focus groups (N = 26). *Results*: Most eligible patients (78%) were screened. Patients who received the screening were significantly more likely to be non-Hispanic White, Asian, or of ''Other'' or ''Unknown'' race/ethnicity than African American or Hispanic race/ethnicity (p = 0.02). Among those screened, 88% completed the questionnaires; 54% reported 0 ACEs, 28% reported 1–2 ACEs, and 18% reported ‡3 ACEs. Most patients were somewhat or very comfortable completing the questionnaires (91%) and discussing ACEs with their clinician (93%), and strongly or somewhat strongly agreed that clinicians should ask their prenatal patients

about ACEs (85%). Clinicians reported significant pre- to post-pilot increases in comfort discussing ACEs, providing education, and offering resources (ps < 0.01). Clinicians' willingness to screen for ACEs was contingent on adequate training, streamlined workflows, inclusion of resilience screening, and availability of mental health, parenting, and social work resources. *Conclusion:* ACEs screening as part of standard prenatal care is feasible and generally acceptable to patients. Women's health clinicians are willing to screen patients for ACEs when appropriately trained and adequate behavioral health referral resources are available.

Fortier K, Parent S, Lessard G. (2020). Child maltreatment in sport: smashing the wall of silence: a narrative review of physical, sexual, psychological abuses and neglect. *Brit J Sport Med*, 54:4-7. https://doi.org/10.1136/bjsports-2018-100224

TAGS: child maltreatment, education

Child maltreatment in sport is an undeniable problem. High-profile cases of sexual abuse of child athletes are obvious examples of child maltreatment in this context. Young athletes also face physical and psychological maltreatment, as well as neglect, although these types of child maltreatment are understudied in sport and receive less public attention. Little is known as to how to define physical and psychological maltreatment and neglect in sport and their diverse manifestations. The aim of this paper is to propose concrete manifestations of each type of child maltreatment in sport. We aim to help practitioners better understand and researchers better measure this problem.

Frampton N, Poole J, Dobson K, Pusch D. (2018). The effects of adult depression on the recollection of adverse childhood experiences. *Child Abuse Neglect*, 86; 45-54. https://doi.org/10.1016/j.chiabu.2018.09.006

TAGS: ACEs, depression, primary care, trauma

Adverse childhood experiences (ACEs) have been linked to numerous negative physical and mental health outcomes across the lifespan. As such, self-report questionnaires that assess for ACEs are increasingly used in health care settings. However, previous research has generated some concern over the reliability of retrospective reports of childhood adversity, and it has been proposed that symptoms of depression may increase recall of negative memories. To investigate the stability of ACE scores over time and whether they are influenced by symptoms of depression, we recruited 284 participants (M age = 40.96, SD=16.05) from primary care clinics. Participants completed self-report measures of depression and ACEs twice, three months apart. The test-retest reliability of ACEs was very high (r=.91, p < .001). A cross-lagged panel analysis indicated that PHQ-9 scores at Time 1 were not predictive of changes in ACE scores at Time 2 (β=0.00, p=.96). Results of this study indicate that changes in symptoms of depression do not correspond with changes in ACE scores among adults. This study provides support for the stability and reliability of ACE scores over time, regardless of depression status, and suggests that ACE measures are appropriate for use in health care settings.

Frieden T. (2010). A Framework for Public Health Action: The Health Impact Pyramid. *Am J Public Health*, 100(4):590-5. https://doi.org/10.2105/AJPH.2009.185652

TAGS: Health outcomes, interventions, population health, SDOH, socio-economic status

A 5-tier pyramid best describes the impact of different types of public health interventions and provides a framework to improve health. At the base of this pyramid, indicating interventions with the greatest potential impact, are efforts to address socio-economic determinants of health. In ascending order are interventions that change the context to make individuals' default decisions healthy, clinical interventions that require limited contact but confer long-term protection, ongoing direct clinical care, and health education and counseling. Interventions focusing on lower levels of the pyramid tend to be more effective because they reach broader segments of society and require less individual effort. Implementing interventions at each of the levels can achieve the maximum possible sustained public health benefit.

FSG. (2017, March). *How to Lead Collective Impact Working Groups: A Comprehensive Toolkit* (Report). Uribe D, Wendel C, Bockstette V.

TAGS: collective impact, leadership

Working Group Co-chairs are not simply symbolic leaders; the success of a collective impact initiative hinges on Co-chairs bringing their commitment and leadership to a range of tasks. Built on our experience with numerous Working Groups, this kit provides detailed tools, templates, and tips. From increasing membership and community engagement to planning and running effective meetings, Co-chairs will find strategic and tactical resources to help them contribute to a successful initiative.

Garner A, Yogman M, Committee on Psychosocial Aspects of Child and Family Health, Section on Developmental and Behavioral Pediatrics, Council on Early Childhood. (2021). *Pediatrics*, 148(2):e2021052582

TAGS: ACEs, Advocacy, children, health outcomes, policy, population health, resilience, toxic stress

By focusing on the safe, stable, and nurturing relationships (SSNRs) that buffer adversity and build resilience, pediatric care is on the cusp of a paradigm shift that could reprioritize clinical activities, rewrite research agendas, and realign or collective advocacy. Driving this transformation are advances in developmental sciences as they inform a deeper understanding of how early life experiences, both nurturing and adverse, are biologically embedded and influence outcomes in health, education, and economic stability across the life span. This revised policy statement on childhood toxic stress acknowledges a spectrum of potential adversities and reaffirms the benefits of an ecobiodevelopmental model for understanding the childhood origins of adult-manifested disease and wellness. It also endorses a paradigm shift toward relational health because SSNRs not only buffer childhood adversity when it occurs but also promote the capacities needed to be resilient in the future. To translate this relational health framework into clinical practice, generative research, and public policy, the entire pediatric community needs to adopt a public health approach that builds relational health by partnering with families and communities. This public health approach to relational health needs to be integrated both vertically (by including primary, secondary, and tertiary preventions) and horizontally (by including public service sectors beyond health care). The American Academy of Pediatrics asserts that SSNRs are biological necessities for all children because they mitigate childhood toxic stress responses and proactively build resilience by fostering the adaptive skills needed to cope with future adversity in a healthy manner.

Gartland D, Giallo R, Woolhouse H, Mensah F, Brown S. (2019). Intergenerational Impacts of Family Violence - Mothers and Children in a Large Prospective Pregnancy Cohort Study. *EClinical Medicine*, 15:51-61. https://doi.org/10.1016/j.eclinm.2019.08.008

TAGS: intergenerational trauma, interventions, pregnancy, trauma

Background: Violence and other adversities commonly co-occur yet are usually investigated individually. The primary objectives of this paper are to investigate: (i) the relationship between maternal exposure to violence (including childhood abuse and intimate partner violence) and postpartum mental and physical health; and (ii) the extent to which exposure to violence and poor maternal mental and physical health are associated with children's emotional-behavioral difficulties. *Methods:* Prospective pregnancy cohort (n=1507) followed up to 4 year postpartum. Validated measures used: Composite Abuse Scale; Edinburgh Postnatal Depression Scale, SF-36, Child Maltreatment History Self Report; Strengths and Difficulties Questionnaire. Logistic regression was used to investigate associations between maternal childhood abuse, intimate partner violence (IPV), maternal health and child emotional and behavioral difficulties at age 4. *Outcomes:* Two out of five women (41%) reported abuse in childhood, and almost one in three (29%) reported IPV during the first four years of motherhood. Women reporting both physical and sexual childhood abuse had markedly raised odds of IPV and poor physical and mental health at all time points (pregnancy, first year postpartum and four year postpartum). For the index child, violence exposures (maternal childhood abuse or IPV) and poor maternal physical or mental health were associated with higher odds of emotional/behavioral difficulties at age four. In multivariable models (adjusted for child gender and maternal age), cumulative exposures (multiple violence exposures or poor maternal mental or physical health at multiple time points) each independently added to increased odds of emotional-behavioral difficulties. Children of mothers who reported a history of childhood abuse but were not exposed to IPV had odds of difficulties similar to children of mothers not reporting any violence exposure, suggesting resilient outcomes where violence experiences are not repeated in the next generation. *Interpretation:* The clustering of risk (child and adult violence experiences) and the accumulation of risk within families (IPV, poor maternal health, child difficulties) highlight the need for effective early intervention to limit or a meliorate the impact of violence across the lifespan, and to break the intergenerational cycle of disadvantage.

Gillespie R. (2019). Screening for Adverse Childhood Experiences in Pediatric Primary Care: Pitfalls and Possibilities. *Pediatric Annals*, 48(7):e257-61. https://doi.org/10.3928/19382359-20190610.02

TAGS: ACEs, children, pediatrics, primary care, screening, toxic stress, trauma, trauma-informed

Addressing adverse childhood experiences (ACEs) in primary care pediatric practice is riddled with potential pitfalls that prevent most providers from implementing ACE or toxic stress screening in their practices. However, the growing body of literature and clinician experience about ACE screening shows how this practice is also ripe with possibilities beyond just the treatment of trauma-related diagnoses and for the prevention of intergenerational transmission of toxic stress. This article reviews the current state of screening for ACEs and toxic stress in practice, describes how pediatricians and clinics have overcome pitfalls during implementation of practice-based screening initiatives, and discusses possibilities for the future of primary care-based screening.

Glowa P, Olson A, Johnson D. (2016). Screening for Adverse Childhood Experiences in a Family Medicine Setting: A Feasibility Study. *J Am Board Fam Med*, 29: 303-7. https://doi.org/10.3122/jabfm.2016.03.150310

TAGS: ACEs, family medicine, interventions, primary care, screening

Introduction: The role of adverse childhood experiences (ACEs) in predicting later adverse adult health outcomes is being widely recognized by makers of public policy. ACE questionnaires have the potential to identify in clinical practice unaddressed key social issues that can influence current health risks, morbidity, and early mortality. This study seeks to explore the feasibility of implementing the ACE screening of adults during routine family medicine office visits. *Methods*: At 3 rural clinical practices, the 10-question ACE screen was used before visits with 111 consecutive patients of 7 clinicians. Clinician surveys about the use of the results and the effect on the visits were completed immediately after the visits. The presence of any ACE risk and "high-risk" ACE scores (>4) were compared with clinician survey responses. *Results:* A risk of ACEs was present in 62% of patients; 22% had scores >4. Clinicians were more likely to have discussed ACE issues for high-risk patients (score 0–3, 36.8%; score >4, 83.3%; P=.00). Clinicians also perceived that they gained new information (score 0–3, 35.6%; score >4, 83.3%; P=.00). Clinical care changed for a small proportion of high-risk patients, with no change in immediate referrals or plan for follow-up. In 91% of visits where a risk of ACEs was present, visit length increased by <5 minutes. *Conclusions:* Incorporation of ACE screening during routine care is feasible and merits further study. ACE screening offers clinicians a more complete picture of important social determinants of health. Primary care–specific interventions that incorporate treatment of early life trauma are needed.

Gottlieb L, Hessler D, Long D, Laves E, Burns A, Amaya A, Sweeney P, et al. (2016). Effects of Social Needs Screening and In-Person Service Navigation on Child Health. *JAMA Pediat,* e1-7. https://doi.org/10.1001/jamapediatrics.2016.2521

TAGS: children, health outcome, interventions, prevention, SDOH, social needs

Importance: Social determinants of health shape both children's immediate health and their lifetime risk for disease. Increasingly, pediatric health care organizations are intervening to address family social adversity. However, little evidence is available on the effectiveness of related interventions. *Objective*: To evaluate the effects of social needs screening and in-person resource navigation services on social needs and child health. *Design, Setting, and Participants*: Patients were randomized to intervention or active control conditions by the day of the week. Primary outcomes observed at 4 months after enrollment included caregivers' reports of social needs and child health status. Recruitment occurred between October 13, 2013, and August 27, 2015, in pediatric primary and urgent care clinics in 2 safety-net hospitals. Participants were English-speaking or Spanish-speaking caregivers accompanying minor children to nonacute medical visits. *Interventions*: After standardized screening, caregivers either received written information on relevant community services (active control) or received in-person help to access services with follow-up telephone calls for further assistance if needed (navigation intervention). *Main Outcomes & Measures*: Change in reported social needs and in caregiver assessment of child's overall health reported 4 months later. RESULTS: Among 1809 patients enrolled in the study, evenly split between the 2 sites, 31.6% (n = 572) were enrolled in a primary care clinic and

68.4%(n = 1237) were enrolled in an urgent care setting. The children were primarily Hispanic white individuals (50.9%[n = 921]) and non-Hispanic black individuals (26.2%[n = 473]) and had a mean (SD) age of 5.1 (4.8) years; 50.5%(n = 913) were female. The reported number of social needs at baseline ranged from 0 to 11 of 14 total possible items, with a mean (SD) of 2.7 (2.2). At 4 months after enrollment, the number of social needs reported by the intervention arm decreased more than that reported by the control arm, with a mean (SE) change of −0.39 (0.13) vs 0.22 (0.13) (P < .001). In addition, caregivers in the intervention arm reported significantly greater improvement in their child's health, with a mean (SE) change of −0.36 (0.05) vs −0.12 (0.05) (P < .001). *Conclusion & Relevance*: To our knowledge, this investigation is the first randomized clinical trial to evaluate health outcomes of a pediatric social-needs navigation program. Compared with an active control at 4 months after enrollment, the intervention significantly decreased families' reports of social needs and significantly improved children's overall health status as reported by caregivers. These findings support the feasibility and potential effect of addressing social needs in pediatric health care settings.

Grey H, Ford K, Bellis M, Lowey H, Wood S. (2019). Associations between childhood deaths and adverse childhood experiences: An audit of data from a child death overview panel. *Child Abuse Neglect*, 90: 22-31. https://doi.org/10.1016/j.chiabu.2019.01.020

TAGS: ACEs, child maltreatment, children, infant mortality, trauma

Background: Despite strong associations between adverse childhood experiences (ACEs) and poor health, few studies have examined the cumulative impact of ACEs on causes of childhood mortality. *Methods*: This study explored if data routinely collected by child death overview panels (CDOPs) could be used to measure ACE exposure and examined associations between ACEs and child death categories. Data covering four years (2012–2016) of cases from a CDOP in North West England were examined. *Result*s: Of 489 cases, 20% were identified as having ≥4 ACEs. Deaths of children with ≥4 ACEs were 22.26 (5.72–86.59) times more likely (than those with 0 ACEs) to be classified as 'avoidable and non-natural' causes (e.g., injury, abuse, suicide; compared with 'genetic and medical conditions'). Such children were also 3.44 (1.75–6.73) times more likely to have their deaths classified as 'chronic and acute conditions'. *Conclusions*: This study evidences that a history of ACEs can be compiled from CDOP records. Measurements of ACE prevalence in retrospective studies will miss individuals who died in childhood and may underestimate the impacts of ACEs on lifetime health. Strong associations between ACEs and deaths from 'chronic and acute conditions' suggest that ACEs may be important factors in child deaths in addition to those classified as 'avoidable and non-natural'. Results add to an already compelling case for ACE prevention in the general population and families affected by child health problems. Broader use of routinely collected child death records could play an important role in improving multi-agency awareness of ACEs and their negative health and mortality risks as well in the development of ACE informed responses.

Groenewald C, Murray C, Palermo T. (2020). Adverse childhood experiences and chronic pain among children and adolescents in the United States. *Pain Reports*, 5(5), e839. https://doi.org/10.1097/PR9.0000000000000839

TAGS: ACEs, children, chronic health, race, socio-economic status

Objective: To evaluate the association between adverse childhood experiences (ACEs) and chronic pain during childhood and adolescence. *Methods*: Cross-sectional analysis of the 2016-2017 National Survey of Children's Health, including 48,567 child participants of 6 to 17 years of age. Parents of children reported on 9 ACEs. Chronic pain was defined as parents reporting that their children had *"frequent or chronic difficulty with repeated or chronic physical pain, including headache or other back or body pain during the past 12 months."* Multivariate logistic regression analysis adjusted for sociodemographic and health-related factors. *Results*: In this nationally representative sample, 49.8% of children were exposed to one or more ACEs during their lifetime. Children with exposure to 1 or more ACEs had higher rates of chronic pain (8.7%) as compared to those with no reported ACEs (4.8%). In multivariate analysis, children with ACEs had increased odds for chronic pain (adjusted odds ratio [aOR]: 1.6, 95% confidence interval [CI]: 1.3–2.2, for 0 vs 1 ACE and aOR: 2.7, 95% CI: 2.1–3.4 for 0 vs 4+ ACEs). The strongest associations of individually measured ACEs with chronic pain included financial instability (aOR: 1.9, 95% CI: 1.6–2.2), living with a mentally ill adult (aOR: 1.8, 95% CI: 1.5–2.2), and having experienced discrimination based on race (aOR: 1.7, 95% CI: 1.3–2.2). *Conclusions*: Children and adolescents with ACEs had increased risk for chronic pain, and this association increased in a dose-dependent fashion.

Harris D, Krause K, Parish D, Smith M. (2007). Academic Competencies for Medical Faculty. *Fam Med*, 39(5), 343-50.

TAGS: competencies, education

Introduction: Physicians and basic scientists join medical school faculties after years of education. These individuals are then required to function in roles for which they have had little preparation. While competencies needed to perform in medical school, residency, and practice are defined, there is little guidance for faculty. *Methods*: An expert advisory group of the Faculty Futures Initiative developed a document delineating competencies required for successful medical faculty. The proportion of time faculty in various roles should allocate to activities related to each competency was also identified. Competencies and time allocations were developed for various teacher/administrators, teacher/educators, teacher/researchers, and teacher/clinicians. This work was validated by multiple reviews by an external panel. *Results*: Trial implementation of the products has occurred in faculty development programs at four medical schools to guide in planning, career guidance, and evaluations of faculty fellows. *Discussion*: The competencies and time allocations presented here help faculty and institutions define skills needed for particular faculty roles, plan for faculty evaluation, mentoring and advancement, and design faculty development programs based on identified needs.

Hassan A, Scherer E, Pikcilingis A, Krull E, McNickles L, Marmon G, Woods E, et al. (2015). Improving Social Determinants of Health: Effectiveness of a Web-Based Intervention. *Am J Prev Med*, 49(6):822-31. https://doi.org/10.1016/j.am epre.2015.04.023

TAGS: interventions, SDOH, social needs

Introduction: Although patients who experience health-related social problems such as food insecurity are at increased risk for negative health outcomes, there are few systems for screening

and intervention. The study aimed to determine whether a web-based intervention can (1) connect youth to services to address these problems and (2) increase their resolution. *Setting/participants*: A total of 401 youth, aged 15–25 years, from an urban adolescent/young adult clinic were recruited. *Intervention*: A self-administered, web-based tool was developed to screen participants for problems in nine health-related social domains, identify and provide feedback about potential problems, and facilitate a patient-centered selection process of recommended local health and human service agencies to assist in addressing selected problems (conducted in 2008–2010). Follow-up phone calls 1–2 months later determined if patients had contacted recommended agencies and resolved their top-priority problem. *Main outcome measures*: Outcome measures included prevalence of identified problems, selected problems, and priority problem selected by domain. We also examined frequencies of referral agencies contacted and resolution of priority problem at time of follow-up analysis conducted in 2011–2013. *Results*: Seventy-eight percent (313/401) of youth selected at least one problem to address. The most frequent domains selected as priority were income security (21%); nutrition/fitness (15%); and health care access (15%). Eighty-three percent (259/313) were reached at follow-up; overall, 40% contacted a selected agency and 47% reported "completely" or "mostly" resolving their priority problem. *Conclusions*: When provided with services to address health-related social problems, the majority of youth choose to receive help, with nearly half successfully addressing their priority concern. Further research to understand the barriers to contacting and utilizing services is needed. A technology-based patient-centered feedback and referral system for social determinants of health can facilitate screening and connect patients with resources to address these problems.

Health Leads. (2018). *Social Needs Screening Toolkit*. Boston, MA. https://healthleadsusa.org /resources/the-health-leads-screening-toolkit/

TAGS: health care cost, screening, SDOH, social needs

Health care leaders and front-line clinicians have long recognized the connection between unmet essential resource needs – e.g., food, housing, and transportation – and the health of their patients. Indeed, research suggests that more than 70% of health outcomes are attributable to social and environmental factors – and the behaviors linked to them – that patients face outside of the practice or hospital.1 One of the first steps to addressing social needs is asking your patients about this aspect of their lives. Building on Health Leads' 20+ years of experience implementing these programs, as well as recent guidelines from the Institute of Medicine and Centers for Medicare & Medicaid Services, this Social Needs Screening Toolkit shares the latest research on how to screen patients for social needs.

Herold B, St. Claire K, Snider S, Narayan A. (2018). Integration of the Nurse practitioner into your child abuse team. *J Pediatr Health Car*, 32: 313-8. https://doi.org/10.1016/j.pedhc. 2018.01.005

TAGS: child maltreatment, children, health outcomes, pediatrics, team-based health care, trauma, trauma-informed

Child maltreatment is a leading cause of childhood morbidity in the United States, often leading to lifelong adverse health consequences. Currently, there is a nationwide shortage of child abuse pediatricians (CAPs), resulting in many unfilled child abuse positions throughout the United States. In addition, the number of future CAPs currently in fellowship training will meet neither

the current need for CAPs nor provide replacements for the senior CAPs who will be retiring in the next 5 to 10 years. Although it is recognized that pediatric nurse practitioners (PNPs) play an important role in the care of maltreated children, there are few available data on the impact of the PNP as an integral member of the child abuse team. Using the outcomes logic model, we present a systematic process through which the PNP can be effectively integrated into a medical child abuse team. The outcomes from this process show that the addition of PNPs to the child abuse team not only provides immediate relief to the nationwide CAP shortage but also significantly augments the diverse clinical skills and expertise available to the child abuse team.

Hillis S, Anda R, Dube S, Felitti V, Marchbanks P, Marks J. (2004). The Association Between Adverse Children Experiences and Adolescent Pregnancy, Long-Term Psychosocial Consequences, and Fetal Death. *Pediatrics*, 113:320-7. https://doi.org/10.1542/peds.113.2.320

TAGS: ACEs, infant mortality, pregnancy, prenatal care

Objectives. Few reports address the impact of cumulative exposure to childhood abuse and family dysfunction on teen pregnancy and consequences commonly attributed to teen pregnancy. Therefore, we examined whether adolescent pregnancy increased as types of adverse childhood experiences (ACE score) increased and whether ACEs or adolescent pregnancy was the principal source of elevated risk for long-term psychosocial consequences and fetal death. *Design, Setting, and Participants.* A retrospective cohort study of 9159 women aged >18 years (mean 56 years) who attended a primary care clinic in San Diego, California in 1995–1997. *Main Outcome Measure.* Adolescent pregnancy, psychosocial consequences, and fetal death, compared by ACE score (emotional, physical, or sexual abuse; exposure to domestic violence, substance abusing, mentally ill, or criminal household member; or separated/divorced parent). *Results.* Sixty-six percent (*n* _ 6015) of women reported >1 ACE. Teen pregnancy occurred in 16%, 21%, 26%, 29%, 32%, 40%, 43%, and 53% of those with 0, 1, 2, 3, 4, 5, 6, and 7 to 8 ACEs. As the ACE score rose from zero to 1 to 2, 3 to 4, and >5, odds ratios for each adult consequence increased (family problems: 1.0, 1.5, 2.2, 3.3; financial problems: 1.0, 1.6, 2.3, 2.4; job problems: 1.0, 1.4, 2.3, 2.9; high stress: 1.0, 1.4, 1.9, 2.2; and uncontrollable anger: 1.0, 1.6, 2.8, 4.5, respectively). Adolescent pregnancy was not associated with any of these adult outcomes in the absence of childhood adversity (ACEs: 0). The ACE score was associated with increased fetal death after first pregnancy (odds ratios for 0, 1–2, 3–4, and 5–8 ACEs: 1.0, 1.2, 1.4, and 1.8, respectively); teen pregnancy was not related to fetal death. *Conclusions.* The relationship between ACEs and adolescent pregnancy is strong and graded. Moreover, the negative psychosocial sequelae and fetal deaths commonly attributed to adolescent pregnancy seem to result from underlying ACEs rather than adolescent pregnancy per se.

Hope SF Learning Center. (2015, July). *Trauma Informed Community Building Evaluation: A Formative Evaluation of the TICB Model and its Implementation in Potrero Hill.* San Francisco, CA: Gordon D, Rebanal D, Simon-Ortiz S, Tat S, Tokunaga J, Wolin J.

TAGS: community, trauma-informed

For decades, traumatic experiences have been endemic in public housing communities such as the Potrero Terrace and Annex in the Potrero Hill neighborhood of San Francisco, Calif. Such units were rife with community violence, concentrated poverty, structural racism, depravation, and

isolation. In 2011, San Francisco started HOPE SF, the nation's first large-scale public housing revitalization project to tackle these monumental issues. A new community-building approach evolved as resident trauma and chronic stress made it tough to implement traditional redevelopment strategies. This new approach acknowledged chronic health and safety issues and became known as the Trauma Informed Community Building (TICB) model.

Hornor G, Davis C, Sherfield J, Wilkinson K. (2019). Trauma-Informed Care: Essential Elements for Pediatric Health Care. *J Pediatr Health Car*, 33:214-21. https://doi.org/10.1016/j.pedhc.2018.09.009

TAGS: ACEs, child maltreatment, children, chronic health, health outcomes, mental health, pediatrics, trauma, trauma-informed

Childhood psychosocial trauma exposure is highly prevalent and associated with risk for poor physical and mental health outcomes extending throughout life. In a study of nearly 54,000 adult Americans (Gilbert et al., 2015), 60% reported experiencing at least one adverse childhood experience (ACE). According to the National Survey of Child Health, 48% of American children have suffered at least one ACE (Bethell, Newacheck, Hawkes and Halfon, 2014). U.S. Department of Health & Human Services 2017 states that more than 650,000 American children experienced child maltreatment in 2016 and up to 10 million children in the United States witness domestic violence each year (National Coalition Against Domestic Violence 2015). Trauma exposure is a problem of epidemic proportions. Numerous studies (Anda et al., 2008, Brown et al., 2017, Dong et al., 2004) have solidified the realization that exposure to trauma early in life affects the developmental and health outcomes of children in a graded, dose-response fashion (Traub and Boynton-Jarrett, 2017). The greater an individual's trauma exposure, the poorer their potential lifetime developmental and health outcomes unless appropriate interventions occur. It is crucial that pediatric nurse practitioners (PNPs) incorporate trauma-informed care into their practice. This continuing education article will define childhood trauma and trauma-informed care (TIC), discuss incorporation into pediatric health care, describe trauma-informed mental health care, explore the concept of a trauma-informed community, and provide implications for practice.

Horwitz A. (2010). How an Age of Anxiety Became and Age of Depression. *The Milbank Quarterly*, 88(1): 112-38. https://doi.org/10.1111;j.1468-0009.2010.0591.x

TAGS: anxiety, depression, mental health

Context: During the 1950s and 1960s, anxiety was the emblematic mental health problem in the United States, and depression was considered to be a rare condition. One of the most puzzling phenomena regarding mental health treatment, research, and policy is why depression has become the central component of the stress tradition since then. *Methods:* This article reviews statistical trends in diagnosis, treatment, drug prescriptions, and textual readings of diagnostic criteria and secondary literature. *Findings:* The association of anxiety with diffuse and amorphous conceptions of "stress" and "neuroses" became incompatible with professional norms demanding diagnostic specificity. At the same time, the contrasting nosologies of anxiety and depression in the *Diagnostic and Statistical Manual of Mental Disorders III* extended major depressive disorder to encompass far more patients than any particular anxiety disorder. In addition, antidepressant drugs were not associated with the stigma and alleged side effects of the anxiolytic drugs. *Conclusion:* Various factors combined between the 1970s and the 1990s to transform conditions that had been

viewed as “anxiety” into “depression.” New interests in the twenty-first century, however, might lead to the reemergence of anxiety as the signature mental health problem of American society.

Hovdestad W, Shields M, Shaw A, Tonmyr L. (2020). Childhood maltreatment as a risk factor for cancer: findings from a population-based survey of Canadian adults. *BMC Cancer*, 20(70). https://doi.org/10.1186/s12885-019-6481-8

TAGS: ACEs, child maltreatment, chronic health, health outcomes, trauma

Background: Childhood maltreatment (CM) is an established risk factor for various mental and substance use disorders. This study adds to existing evidence that CM may also be a risk factor for cancer. *Methods*: Based on data from a sample of 9783 men and 12,132 women from the 2012 Canadian Community Health Survey - Mental Health (CCHS-MH), this analysis explores mediated associations between cancer in adulthood and different levels of exposure to three types of CM—childhood physical abuse (CPA), childhood sexual abuse (CSA), and childhood exposure to intimate partner violence (CEIPV). “Cancer” was defined as an affirmative response to either of these questions: “Do you have cancer?” or “Have you ever been diagnosed with cancer?” The potential mediators were: smoking, depression, alcohol abuse/dependence, life stress, obesity, and physical activity. *Results*: For women, but not men, having experienced CM was significantly associated with a cancer diagnosis in adulthood, even when effects due to age and socio-demographic characteristics were controlled. Smoking, life stress, depression, and alcohol abuse/dependence reduced the strength of the association between CM and cancer in women. However, most associations remained statistically significant when controlling for effects due to these behavioral and other mediators. Evidence indicated a “dose-response” relationship, in that the likelihood of reporting cancer increased with the number of abuse types (CPA, CSA, CEIPV) reported, and with the severity of CPA. *Conclusions*: The analyses suggest an association between CM and cancer in women, even when the effects of known risk factors were taken into account. The association was graded, becoming stronger as CM exposure increased. Implications for the provision of cancer screening and other health care services to women with histories of CM to reduce health disparities are discussed.

Hughes K, Bellis M, Hardcastle K, Sethi D, Butchart A, Mikton C, Jones L, et al. (2017). The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. *Lancet Public Health*, 2: e356-66. https://doi.org/10.1016/S2468-2667(17)30118-4

TAGS: ACEs, health outcomes, protective factors, resilience

Background: A growing body of research identifies the harmful effects that adverse childhood experiences (ACEs; occurring during childhood or adolescence; e.g., child maltreatment or exposure to domestic violence) have on health throughout life. Studies have quantified such effects for individual ACEs. However, ACEs frequently co-occur and no synthesis of findings from studies measuring the effect of multiple ACE types has been done. *Methods*: In this systematic review and meta-analysis, we searched five electronic databases for cross-sectional, case-control, or cohort studies published up to May 6, 2016, reporting risks of health outcomes, consisting of substance use, sexual health, mental health, weight and physical exercise, violence, and physical health status and conditions, associated with multiple ACEs. We selected articles that presented

risk estimates for individuals with at least four ACEs compared with those with none for outcomes with sufficient data for meta-analysis (at least four populations). Included studies also focused on adults aged at least 18 years with a sample size of at least 100. We excluded studies based on high-risk or clinical populations. We extracted data from published reports. We calculated pooled odds ratios (ORs) using a random-effects model. *Findings*: Of 11 621 references identified by the search, 37 included studies provided risk estimates for 23 outcomes, with a total of 253 719 participants. Individuals with at least four ACEs were at increased risk of all health outcomes compared with individuals with no ACEs. Associations were weak or modest for physical inactivity, overweight or obesity, and diabetes (ORs of less than two); moderate for smoking, heavy alcohol use, poor self-rated health, cancer, heart disease, and respiratory disease (ORs of two to three), strong for sexual risk taking, mental ill health, and problematic alcohol use (ORs of more than three to six), and strongest for problematic drug use and interpersonal and self-directed violence (ORs of more than seven). We identified considerable heterogeneity (I^2 of >75%) between estimates for almost half of the outcomes. *Interpretation*: To have multiple ACEs is a major risk factor for many health conditions. The outcomes most strongly associated with multiple ACEs represent ACE risks for the next generation (e.g., violence, mental illness, and substance use). To sustain improvements in public health requires a shift in focus to include prevention of ACEs, resilience building, and ACE-informed service provision. The Sustainable Development Goals provide a global platform to reduce ACEs and their life-course effect on health.

Iglesias-Gonzalez M, Aznar-Lou I, Penarrubia-Maria M, Gil-Girbau M, Fernandez-Vergel R, Alonso J, Serrano-Blanco A, Rubio-Valera M. (2018). Effectiveness of watchful waiting versus antidepressants for patients diagnosed of mild to moderate depression in primary care: a 12-month pragmatic clinical trial. *Eur Psychiat*, 53: 66-73. https://doi.org/10.1016/j.eurpsy.2018.06.005

TAGS: depression, interventions, mental health, primary care

Background: Although mild to moderate major depressive disorder (MDD) is one of the main reasons for consulting a general practitioner, there is still no international consensus on the most appropriate therapeutic approach. *Methods*: The aim of this study is to evaluate the clinical effectiveness of watchful waiting (WW) compared with the use of antidepressants (ADs) for the treatment of mild to moderate depressive symptoms in 263 primary care (PC) usual-practice patients in a 12-month pragmatic non-randomized controlled trial. Both longitudinal and per-protocol analyses were performed, through a multilevel longitudinal analysis and a sensitivity analysis. *Results*: We observed a statistically significant time x treatment interaction in the severity of depression (Patient Health Questionnaire, PHQ-9) and disability (World Health Organization Disability Assessment Schedule, WHODAS) in favor of the AD group at 6 months but not at 12 months. The effect size of this difference was small. No statistically significant differences were observed between groups in severity of anxiety (Beck Anxiety Inventory, BAI) or health-related quality-of-life (EuroQol-5D, EQ-5D). Sensitivity analysis and per-protocol analysis showed no differences between the two groups in any of the evaluated scales. *Conclusions*: Superiority of either treatment (WW and AD) was not demonstrated in patients treated for depression in PC after one year of follow-up.

Iniguez K, Stankowski R. (2016). Adverse Childhood Experiences and Health in Adulthood in a Rural Population-Based Sample. *Clinical Medicine & Research*, 14(3-4); 126-37. https://doi.org/10.3121/cmr.2016.1306

TAGS: ACEs, health outcomes, rural health

Background: Adverse childhood experiences (ACEs), including emotional abuse, substance abuse in the household, separation or divorce, physical abuse, violence between adults, mental illness in the household, sexual abuse, or incarceration of a household member, have the potential to profoundly impact health and well-being in adulthood. To assess whether previously reported relationships between ACEs and health outcomes withstand validation, we conducted a community-based ACE study with the unique capacity to link self-reported ACEs and other survey results to validated health data in an electronic medical record (EMR). *Methods:* Information regarding ACEs and health outcomes was captured from 2013–2014 via a telephone survey of residents of the predominantly rural northern and central regions of Wisconsin and electronic abstraction of EMR data. ACE score was calculated by counting each exposure as one point. We examined the relationship between ACE score, type, and self-reported and validated health outcomes. *Results:* A total of 800 participants completed the telephone survey. Overall, 62% reported at least one ACE and 15% reported experiencing four or more. All self-reported measures of poor health were associated with increased ACE score. EMR data were positively correlated with ACE score for increased body mass index and diagnoses of depression, anxiety, and asthma. In contrast, diagnoses of hypertension, hypercholesterolemia, myocardial infarction, and skin and other cancers were inversely related to ACE score. Emotional abuse was the most common ACE reported followed by substance abuse in the household. ACEs tended to cluster so that people who reported at least one ACE were likely to have experienced multiple ACEs. There was no clear correlation between abuse type (e.g., direct abuse vs. household dysfunction) and health outcomes. *Conclusions:* In the first community-based study to link self-reported ACEs to comprehensive health measures documented in the medical record, we observed previously reported associations between childhood adversity and poor outcomes in adulthood, but also noted an inverse relationship between ACE score and certain medical diagnoses. Potential explanations for this finding warrant further investigation.

Institute for Health care Improvement. (2016). *Achieving Health Equity: A Guide for Health Care Organizations*. Cambridge, MA: Wyatt R, Laderman M, Botwinick L, Mate K, Whittington J.

TAGS: health disparities, health equity, SDOH, social needs

Significant disparities in life expectancy and other health outcomes persist across the United States. Health care has a significant role to play in achieving health equity. While health care organizations alone do not have the power to improve all of the multiple determinants of health for all of society, they do have the power to address disparities directly at the point of care, and to impact many of the determinants that create these disparities. This white paper provides guidance on how health care organizations can reduce health disparities related to racial or ethnic group; religion; socioeconomic status; gender; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion.

Iqbal A. Kumar S, Hansen J, Heyrman M, Spee R, Lteif A. (2020). Association of Adverse Childhood Experiences with Glycemic Control and Lipids in Children with Type 1 Diabetes. *Children*, 7(8). https://doi.org/10.3390/children7010008

TAGS: ACEs, child maltreatment, children, chronic health, diabetes, obesity, trauma

Adverse childhood experiences (ACE) have been associated with a greater prevalence of risky behaviors and chronic health conditions, such as diabetes in adulthood. While adolescents with risk taking behaviors experience worsening of diabetic metabolic control, it is yet to be determined whether glycemic management in children and adolescents is negatively and independently influenced by ACEs. This study examines the relationship between ACEs in children and adolescents with type 1 diabetes (T1DM) and glycemic control, BMI and lipids. For such children, we hypothesized that hemoglobin A1c (HbA1c) is positively correlated with ACE scores. Parents of children (age 2–18 years) with T1DM completed a validated ACE questionnaire. The associations between parent and child ACE score and HbA1c, lipids and BMI z-scores were assessed using linear regression. The prevalence of any ACE was 27.9% among children and 49.0% among parents. HbA1c was significantly higher in children who had exposure to three or more ACEs (β:0.63 (4.5 mmol/mol); $p = 0.02$), in those who had a parent exposed to four or more ACEs (β:0.87 (7.2 mmol/mol); $p = 0.03$), in children who had exposure to household incarceration (β:0.62 (4.4 mmol/mol); $p = 0.05$) and children who witnessed or had been victim of violence in the neighborhood (β:0.71 (5.4 mmol/mol); $p = 0.02$). ACEs were highly prevalent among children with T1DM and had a positive association with glycemic control.

Jichlinski A. (2017). Defang ACEs: End Toxic Stress by Developing Resilience Through Physician-Community Partnerships. *Pediatrics,* 140(6): e20172869. https://doi.org/10.1542/peds.2017-2869

TAGS: ACEs, partnership, resilience, toxic stress

In the research on toxic stress, to have resilience is the ability to withstand the adversity of childhood and, despite it, to have a life of fulfillment, happiness, and health. As physicians, we can help children suffering from toxic stress by guiding our patients, their families, and our communities to identify and develop resilience through 3 critical steps: (1) identifying children at risk for toxic stress, (2) creating a network of support, and (3) building a community that promotes change.

Kania J, Kramer M. (2011). Collective Impact. *Stanford Social innovation Review*, 9(1): 36-41.

TAGS: collective impact, partnership

This article, written by John Kania and Mark Kramer of the consulting firm FSG, lays out a clear framework for how organizations across all sectors can work together to achieve a common goal, such as improving K-12 education or cleaning up a river. The Collective Impact approach has been adopted by hundreds of organizations around the world.

Kaufman J, Montalvo-Ortiz J, Holbrook H, O'Loughlin K, Orr C, Kearney C, Yang B, et al. (2018). Adverse Childhood Experiences, Epigenetic Measures, and Obesity in Youth. The *Journal of Pediatrics,* 202: 150-6. https://doi.org/10.1016/j.jpeds.2018.06.051

TAGS: ACEs, children, epigenetic, health outcomes, obesity, pediatrics

Objective: To determine if measures of adverse childhood experiences and DNA methylation relate to indices of obesity in youth. *Study design:* Participants were derived from a cohort of 321 8 to 15-year-old children recruited for an investigation examining risk and resilience and psychiatric outcomes in maltreated children. Assessments of obesity were collected as an add-on for a subset of 234 participants (56% female; 52% maltreated). Illumina arrays were used to examine whole genome epigenetic predictors of obesity in saliva DNA. For analytic purposes, the cohort analyzed in the first batch comprised the discovery sample (n = 160), and the cohort analyzed in the second batch the replication sample (n = 74). *Results:* After controlling for race, sex, age, cell heterogeneity, 3 principal components, and whole genome testing, 10 methylation sites were found to interact with adverse childhood experiences to predict cross-sectional measures of body mass index, and an additional 6 sites were found to exert a main effect in predicting body mass index ($P < 5.0 \times 10{-}7$, all comparisons). Eight of the methylation sites were in genes previously associated with obesity risk (e.g., PCK2, CxCl10, BCAT1, HID1, PRDM16, MADD, PXDN, GALE), with several of the findings from the discovery data set replicated in the second cohort. *Conclusions:* This study lays the groundwork for future longitudinal studies to elucidate these mechanisms further and identify novel interventions to alleviate the health burdens associated with early adversity.

Kendall-Tackett K. (2007). A new paradigm for depression in new mothers: the central role of inflammation and how breastfeeding and anti-inflammatory treatments protect maternal mental health. *International Breastfeeding Journal*, 2(6): 1-14. https//doi.org/10.1186/1746-4358-2-6

TAGS: anxiety, birth outcomes, depression, mental health, pregnancy, prevention

Background: Research in the field of psychoneuroimmunology (PNI) has revealed that depression is associated with inflammation manifested by increased levels of proinflammatory cytokines. *Discussion:* The old paradigm described inflammation as simply one of many risk factors for depression. The new paradigm is based on more recent research that has indicated that physical and psychological stressors increase inflammation. These recent studies constitute an important shift in the depression paradigm: inflammation is not simply *a* risk factor; it is *the* risk factor that underlies all the others. Moreover, inflammation explains why psychosocial, behavioral and physical risk factors increase the risk of depression. This is true for depression in general and for postpartum depression in particular. Puerperal women are especially vulnerable to these effects because their levels of proinflammatory cytokines significantly increase during the last trimester of pregnancy – a time when they are also at high risk for depression. Moreover, common experiences of new motherhood, such as sleep disturbance, postpartum pain, and past or current psychological trauma, act as stressors that cause proinflammatory cytokine levels to rise. Breastfeeding has a protective effect on maternal mental health because it attenuates stress and modulates the inflammatory response. However, breastfeeding difficulties, such as nipple pain, can increase the risk of depression and must be addressed promptly. *Conclusion:* PNI research suggests two goals for the prevention and treatment of postpartum depression: reducing maternal stress and reducing inflammation. Breastfeeding and exercise reduce maternal stress and are protective of maternal mood. In addition, most current treatments for depression are anti-

inflammatory. These include long-chain omega-3 fatty acids, cognitive therapy, St. John's wort, and conventional antidepressants.

Kendall-Tackett K. (2014). Intervention for Mothers who have experienced childbirth-related trauma and posttraumatic stress disorder. *Clinical Lactation*, 5(2): 56-61. https://doi.org/10.1891/2158-0782.5.2.56

TAGS: birth outcomes, interventions, mental health, pregnancy, prenatal care, trauma, trauma-informed

Lactation consultants may be one of the first health care providers who see mothers following a difficult birth. As such, they can be key sources of support and information for mothers at this critical time. Several aspects of the International Board Certified Lactation Consultant's (IBCLC) scope of practice can fit within trauma-informed care, including helping mothers identify possible trauma symptoms and posttraumatic stress disorder (PTSD), and addressing breastfeeding issues that may be sequelae of a traumatic birth. IBCLCs can inform mothers about their treatment options and refer them to additional sources of support. This article describes breastfeeding issues that might arise in the wake of a traumatic birth and summarizes evidence-based treatment options for PTSD so that IBCLCs can share this information with mothers.

Kendall-Tackett K. (2007). Violence against women and the perinatal period: the impact of lifetime violence and abuse on pregnancy, postpartum, and breastfeeding. *Trauma Violence Abuse*, 8(3): 344-53. https://doi.org/10.1177/1524838007304406

TAGS: child maltreatment, depression, pregnancy, prenatal care

Violence against women affects millions of women, including women who are pregnant or have recently given birth. During pregnancy, a woman's history of past abuse increases her risk of depression and posttraumatic stress disorder. And these increase the risk of pregnancy and neonatal complications. Women who have experienced past or current abuse are also at high risk for postpartum depression, which can affect their relationships with other adults and their babies. Violence against women can also affect women's ability to breastfeed, although abuse survivors often express an intention to breastfeed and are more likely to initiate breastfeeding than their non-abused counterparts. Current abuse, depression, posttraumatic stress disorder, social isolation, lack of social support, and cessation of breastfeeding all have negative health effects for mothers and babies.

Kerns C, Newschaffer C, Berkowitz S, Lee B. (2017). Examining the Association of Autism and Adverse Childhood Experiences in the National Survey of Children's Health: The Important Role of Income and Co-occurring Mental Health Conditions. *J Autism Dev Disord*, 47: 2275-81. https://doi.org/10.1007/s10803-017-3111-7

TAGS: ACEs, anxiety, behavior, child maltreatment, children, depression, mental health, pediatrics, SDOH, social needs, socio-economic status

Adverse childhood experiences (ACEs) are risk factors for mental and physical illness and more likely to occur for children with autism spectrum disorder (ASD). The present study aimed to clarify the contribution of poverty, intellectual disability and mental health conditions to this

disparity. Data on child and family characteristics, mental health conditions and ACEs were analyzed in 67,067 youth from the 2011–2012 National Survey of Children's Health. In an income-stratified sample, the association of ASD and ACEs was greater for lower income children and significantly diminished after controlling for child mental health conditions, but not intellectual disability. Findings suggest that the association of ACEs and ASD is moderated by family income and contingent on co-occurring mental health conditions.

Klein M, Kahn R, Baker R, Fink E, Parrish D, White D. (2011). Training in Social Determinants of Health in Primary Care: Does it Change Resident Behavior? *Acad Pediatr*, 11(5): 387-93. https://doi.org/10.1016/j.acap.2011.04.004

TAGS: education, primary care, SDOH

Objectives: The aim of this study was to examine the effects of a new social determinants of health curriculum on pediatric interns' attitudes, knowledge, documentation, and clinical practice. *Methods*: A nonrandomized mixed-methods study of an educational intervention conducted over a 1-year period was performed. The 2008–2009 pediatric interns (intervention group) participated in a new social determinants of health curriculum; prior year interns were controls. An anonymous online survey at the end of internship to both groups (post-tests) and the beginning of internship to the intervention group (pretest) assessed attitudes and knowledge. Documentation from the electronic medical record of social history questions was audited during the same 3-month period in successive years. Medical-legal partnership (MLP) referrals from both groups were compared. *Results*: Intervention interns (n ¼ 20) were more comfortable discussing issues (100% vs 71%; P < .01) and felt more knowledgeable regarding issues (100% vs 64%; P ¼ .005), community resources (94% vs 29%; P < .001), and housing (39% vs 6%; P ¼.04) than control group interns (n ¼ 18). No differences regarding the importance of social hardships or screening for food security or education issues were found. Knowledge was greater in the intervention group post-test in all domains: benefits (72% vs 52%), housing (48% vs 21%), and education (52% vs 33%; P < .001 for all). Intervention interns were more likely to document each issue (benefits 98% vs 60%, housing 93% vs 57%, food 74% vs 56%; P <.001 for all). The intervention group had a slightly higher rate of referral to MLP, although the difference did not reach statistical significance. *Conclusion*: The educational intervention increased interns' comfort and knowledge of social determinants of health and community resources. Documentation of social questions also increased.

Koball A, Rasmussen C, Olson-Dorff D, Kleven J, Ramirez L, Domoff S. (2019). The relationship between adverse childhood experiences, health care utilization, cost of care, and medical comorbidities. *Child Abuse Neglect*, 90:120-6. https://doi.org/10.1016/j.chiabu.2019.01.021

TAGS: ACEs, child maltreatment, chronic health, health care cost, health outcomes, toxic stress, trauma

Background: Prior research suggests that those experiencing adverse childhood experiences (ACEs) may be higher utilizers of the health care system. The frequency and financial impact of kept, cancelled and no-showed visits is largely unknown. *Objective*: To examine the impact of adverse childhood experiences (ACEs) on health care utilization in a sample of US adults.

Participants and Setting: Two thousand thirty-eight adult patients who completed an ACE screening within the behavioral health department of a medium sized, Midwestern health care system during 2015–2017 were included. *Methods*: Data was extracted retrospectively from 1-year post ACE screen. *Results*: Individuals with high ACEs (4+) made more but kept fewer appointments than those with no or moderate (1–3) ACEs ($p<0.0001$). Individuals with high ACES had more late-cancelled and no-showed appointments compared to those with no ACEs (p's<.0001). Relationships were significant even after controlling for age, gender, and insurance type. Those with high ACEs had the greatest impact on potential lost revenue given that they late-cancelled and no-showed more appointments. Those with high ACEs also had more medical comorbidities, medications, and needed care coordinator than those with moderate or no ACEs (p's<.05). *Conclusions*: Results from this study should be used to inform providers and health care systems on the effects of adversity on patterns of utilization of health care and encourage innovative strategies to better address the needs of these patients.

Kolak M, Bhatt J, Park Y, Padron N, Molefe A. (2020). Quantification of Neighborhood-Level Social Determinants of Health in the Continental United States. *JAMA Network Open*, 3(1):e1919928. https://doi.org/10.1001/jamanetworkopen.2019.19928

TAGS: SDOH, social needs

Importance: An association between social and neighborhood characteristics and health outcomes has been reported but remains poorly understood owing to complex multidimensional factors that vary across geographic space. *Objectives:* To quantify social determinants of health (SDOH) as multiple dimensions across the continental United States (the 48 contiguous states and the District of Columbia) at a small-area resolution and to examine the association of SDOH with premature mortality within Chicago, Illinois. *Design, Setting, and Participants:* In this cross-sectional study, census tracts from the US Census Bureau from 2014 were used to develop multidimensional SDOH indices and a regional typology of the continental United States at a small-area level (n = 71 901 census tracts with approximately 312 million persons) using dimension reduction and clustering machine learning techniques (unsupervised algorithms used to reduce dimensions of multivariate data). The SDOH indices were used to estimate age-adjusted mortality rates in Chicago (n = 789 census tracts with approximately 7.5 million persons) with a spatial regression for the same period, while controlling for violent crime. *Main Outcomes and Measures:* Fifteen variables, measured as a 5-year mean, were selected to characterize SDOH as small-area variations for demographic characteristics of vulnerable groups, economic status, social and neighborhood characteristics, and housing and transportation availability at the census-tract level. This SDOH data matrix was reduced to 4 indices reflecting advantage, isolation, opportunity, and mixed immigrant cohesion and accessibility, which were then clustered into 7 distinct multidimensional neighborhood typologies. The association between SDOH indices and premature mortality (defined as death before age 75 years) in Chicago was measured by years of potential life lost and aggregated to a 5-year mean. Data analyses were conducted between July 1, 2018, and August 30, 2019. *Results:* Among the 71 901 census tracts examined across the continental United States, a median (interquartile range) of 27.2% (47.1%) of residents had minority status, 12.1% (7.5%) had disabilities, 22.9% (7.6%) were 18 years and younger, and 13.6%(8.1%) were 65 years and older. Among the 789 census tracts examined in Chicago, a median (interquartile range) of 80.4% (56.3%) of residents had minority status, 10.2% (8.2%) had disabilities, 23.2% (10.9%) were 18 years and younger, and 9.5% (7.1%) were 65 years and older. Four SDOH indices accounted for

71% of the variance across all census tracts in the continental United States in 2014. The SDOH neighborhood typology of extreme poverty, which is of greatest concern to health care practitioners and policy advocates, comprised only 9.6%of all census tracts across the continental United States but characterized small areas of known public health crises. An association was observed between all SDOH indices and age-adjusted premature mortality rates in Chicago ($R2$ = 0.63; $P < .001$), even after accounting for violent crime and spatial structures.

Kroenke K, Spitzer R, Williams J. (2001). The PHQ-9: Validity of a Brief Depression Severity Measure. *J Gen Intern Med*, 16(9):606-13. https://doi.org/10.1046/j.1525-1497.2001.016009606.x

TAGS: depression, health outcomes, mental health, screening

Objective: While considerable attention has focused on improving the detection of depression, assessment of severity is also important in guiding treatment decisions. Therefore, we examined the validity of a brief, new measure of depression severity. *Measurements:* The Patient Health Questionnaire (PHQ) is a self-administered version of the PRIME-MD diagnostic instrument for common mental disorders. The PHQ-9 is the depression module, which scores each of the 9 DSM-IV criteria as "0" (not at all) to "3" (nearly every day). The PHQ-9 was completed by 6,000 patients in 8 primary care clinics and 7 obstetrics-gynecology clinics. Construct validity was assessed using the 20-item Short-Form General Health Survey, self-reported sick days and clinic visits, and symptom-related difficulty. Criterion validity was assessed against an independent structured mental health professional (MHP) interview in a sample of 580 patients. *Results:* As PHQ-9 depression severity increased, there was a substantial decrease in functional status on all 6 SF-20 subscales. Also, symptom-related difficulty, sick days, and health care utilization increased. Using the MHP reinterview as the criterion standard, a PHQ-9 score > or =10 had a sensitivity of 88% and a specificity of 88% for major depression. PHQ-9 scores of 5, 10, 15, and 20 represented mild, moderate, moderately severe, and severe depression, respectively. Results were similar in the primary care and obstetrics-gynecology samples. *Conclusion:* In addition to making criteria-based diagnoses of depressive disorders, the PHQ-9 is also a reliable and valid measure of depression severity. These characteristics plus its brevity make the PHQ-9 a useful clinical and research tool.

Leitch L. (2017). Action steps using ACEs and trauma-informed care: a resilience model. *Health and Justice*, 5(5). https://doi.org/10.1186/s40352-017-0050-5

TAGS: ACEs, resilience, trauma, trauma-informed

This paper 1) discusses two important contributions that are shaping work with vulnerable and under-resourced populations: Kaiser Permanente's (1998) Adverse Childhood Experiences Study (ACE) which includes the impact of adverse experiences in childhood on adult health and health behaviors and the more recent advent of what has come to be known as Trauma-Informed Care (TIC), programs which incorporate knowledge of the impact of early trauma into policies and programs. 2) Despite many positive benefits that have come from both contributions there are unintended consequences, described in the paper, that have an impact on research and program evaluation as well as social policies and programs. 3) Three key neuroscience concepts are recommended for inclusion in Trauma-Informed Care programs and practices in ways that can enrich program design and guide the development of practical, resilience-oriented interventions

that can be evaluated for outcomes. 4) Finally, a resilience-oriented approach to TIC is recommended that moves from trauma information to neuroscience-based action with practical skills to build greater capacity for self-regulation and self-care in both service providers and clients. Examples from criminal justice are used.

Lown A, Lui C, Karriker-Jaffe K, Mulia N, Williams E, Ye Y, Li L, et al. (2019). Adverse childhood events and risk of diabetes onset in the 1979 National longitudinal survey of youth cohort. *BMC Public Health*, 19(1):1007. https://doi.org/10.1186/s12889-019-7337-5

TAGS: ACEs, diabetes, health outcomes

Background: Type 2 diabetes is a major public health problem with considerable personal and societal costs. Adverse childhood experiences (ACE) are associated with a number of serious and chronic health problems in adulthood, but these experiences have not been adequately studied in relation to diabetes in a US national sample. The association between ACE and poor health can be partially explained by greater risky health behaviors (RHB) such as smoking, heavy alcohol use, or obesity. Few studies have examined ACE in relation to adult onset Type 2 diabetes mellitus (T2DM) taking into account the role of RHB. Using longitudinal data from a representative US population sample followed over 30 years, this study examines the impact of ACE on the risk of diabetes onset. *Methods:* Data from the 1982 to 2012 waves of the 1979 National Longitudinal Survey of Youth were analyzed, spanning ages 14 to 56. Bivariate and discrete-time survival models were used to assess the relationships between ACE and RHB including smoking, alcohol use, and obesity, and subsequent onset of diabetes. *Results:* T2DM was reported by almost 10% of participants. Over 30% of women and 21% of men reported 2+ ACE events. Women reporting 2-3 or 4+ ACE events were more likely to develop diabetes with the mean number of ACE events being greater in those with diabetes compared to without (1.28 vs.1.05, $p < .0001$). For men there was no significant association between ACE and diabetes onset. For women, ACE was associated with heavy drinking, current smoking, and obesity. For men, ACE was associated with being underweight and daily smoking. In multivariate discrete-time survival models, each additional ACE increased risk of T2DM onset ($OR_{adj} = 1.14$; 95% CI 1.02-1.26) for women but not for men. The relationship in women was attenuated when controlling for body mass index (BMI). *Conclusion:* ACE predicted diabetes onset among women, though this relationship was attenuated when controlling for BMI. Being overweight or obese was significantly more common among women with a history of ACE, which suggests BMI may be on the pathway from ACE to diabetes onset for women.

Lynch B, Rutten L, Wilson P, Kumar S, Phelan S, Jacobson R, Fan C, et al. (2018). The impact of positive contextual factors on the association between adverse family experiences and obesity in a National Survey of Children. *Prev Med*, 116: 81-6. https://doi.org/10.1016/j.ypmed.2018.09.002

TAGS: ACEs, child maltreatment, depression, family medicine, mental health, obesity, pediatrics

Adverse family experiences (AFEs) are associated with childhood obesity. We evaluated whether certain positive contextual factors reduce the risk of obesity and overweight among children

exposed to AFEs in a nationally representative sample. Using data derived from the National Survey of Children's Health 2011–12 (N=43,864), we calculated the distribution of positive contextual factors (very good/excellent maternal mental health, neighborhood and school safety, and child resilience) and AFEs across weight status. The AFEs composite score was modeled as a categorical measure (0 or ≥1 AFEs). Positive contextual factors, AFEs and their interactions were evaluated in weighted, adjusted, multinomial logistic regression models predicting the odds of overweight and obesity. Children exposed to lack of very good/excellent maternal mental health and at least one AFE were at risk for overweight (OR=1.43; 95% CI: 1.16, 1.76) and obesity (OR=1.53; 95% CI: 1.22, 1.93). Unsafe school or neighborhood environment and exposure to 1 or more AFEs was associated with overweight (OR=1.32; 95% CI: 1.08, 1.61) and obesity (OR=1.66; 95% CI: 1.34, 2.05). Lack of child resilience and exposure to 1 or more AFEs was associated with an increased risk of obesity (OR=1.45; 95% CI: 1.17, 1.90) and overweight (OR=1.29; 95% CI: 1.06, 1.57). These odds of obesity and overweight all decreased when positive contextual factors were present. Among children exposed to AFEs, overweight and obesity risk is reduced with positive contextual factors. Optimizing the early childhood environment can impact obesity risk.

Madigan S, Wade M, Plamondon A, Maguire J, Jenkins J. (2017). Maternal Adverse Childhood Experience and Infant Health: Biomedical and Psychosocial risks as Intermediary Mechanisms. *The Journal of Pediatrics*, 187:282-9. https://doi.org/10.1016/j.jpeds.2017.04.052

TAGS: ACEs, birth outcomes, chronic health, health outcomes, infant mortality, intergenerational trauma, mental health, pregnancy, prenatal care, prevention, protective factors, trauma

Objective: To assess the mechanisms accounting for the transfer of risk from one generation to the next, especially as they relate to maternal adverse childhood experiences and infant physical and emotional health outcomes. *Study design:* Participants were 501 community mother-infant dyads recruited shortly after the birth and followed up at 18 months. Mothers retrospectively reported on their adverse childhood experiences. The main outcome measures were parent-reported infant physical health and emotional problems. Potential mechanisms of intergenerational transmission included cumulative biomedical risk (e.g. prenatal and perinatal complications) and postnatal psychosocial risk (e.g., maternal depression, single parenthood, marital conflict). *Results:* Four or more adverse childhood experiences were related to a 2- and 5-fold increased risk of experiencing any biomedical or psychosocial risk, respectively. There was a linear association between number of adverse childhood experiences and extent of biomedical and psychosocial risk. Path analysis revealed that the association between maternal adverse childhood experiences and infant physical health operated specifically through cumulative biomedical risk, while the relationship between adverse childhood experiences and infant emotional health operated specifically through cumulative psychosocial risk. This pattern was not explained by maternal childhood disadvantage or current neighborhood poverty. *Conclusions*: Maternal adverse childhood experiences confer vulnerability to prenatal, perinatal, and postnatal psychosocial health. The association between adverse childhood experiences and offspring physical and emotional health operates through discrete intermediary mechanisms.

Maine Rural Health Research Center. (2016, April). *Adverse Childhood Experiences in Rural and Urban Contexts*. (Issue Brief No. 64). Portland, ME: Talbot J, Szlocek D, Ziller E.

TAGS: ACEs, rural health, trauma

Recent research shows that rural children are more likely than urban children to experience certain kinds of adversity. Researchers at the Maine Rural Health Research Center looked at how adverse childhood experiences (ACEs) have affected rural and urban adults. Using data from the Behavioral Risk Factor Surveillance System Assessment, this study found that, while the prevalence of ACEs was comparable in rural and urban adults, over half of rural adults surveyed reported having ACE exposure. Among those with any ACE history, about one quarter experienced four or more ACEs. Policy implications and strategies are highlighted in this brief.

Manyema M, Norris S, Richter L. (2018). Stress begets stress: the association of adverse childhood experiences with psychological distress in the presence of adult life stress. *BMC Public Health*, 18. https://doi.org/10.1186/s12889-018-5767-0

TAGS: ACEs, chronic health, depression, mental health, socio-economic status, toxic stress, trauma

Background: Adverse childhood experiences (ACEs) have been linked to poor health and well-being outcomes, including poor mental health such as psychological distress. Both ACEs and psychological distress pose a significant public health burden, particularly in low to middle income countries. Contemporaneous stress events in adulthood may also impact psychological distress. The aims of this study were to describe the prevalence of ACEs and psychological distress and to assess the separate and cumulative effect of ACEs on psychological distress, while accounting for the effect of adult stress. *Methods*: In this cross-sectional study, we used retrospectively measured ACEs from a sample of 1223 young adults aged between 22 and 23 years (52% female) from the Birth to Twenty Plus Study. Psychological distress and adult life stress were measured with a six-month recall period. Hierarchical logistic regression was employed to assess the associations between the exposures and outcome. *Results*: Nearly 90% of the sample reported at least one ACE and 28% reported psychological distress. The median number of ACEs reported was three (range 0–11). After accounting for demographic and socio-economic factors, all ACEs were individually associated with psychological distress except for parental divorce and unemployment. The individual ACEs increased the odds of PD by between 1.42 and 2.79 times. Compared to participants experiencing no ACEs, those experiencing one to five ACEs were three times more likely to report psychological distress (AOR 3.2 95% CI: 1.83–5.63), while participants who experienced six or more ACEs had nearly eight times greater odds of reporting psychological distress (AOR 7.98 95% CI: 4.28–14.91). Interaction analysis showed that in the absence of adult life stress, the effect of low ACEs compared to high ACEs on PD was not significantly different. *Discussion and conclusion*: The prevalence of ACEs in this young adult population is high, similar to other studies in young adult populations. A significant direct association exists between ACEs and psychological distress. Adult life stress seems to be a mediator of this relationship. Interventions targeted at psychological distress should address both early life adversity and contemporary stress.

Maunder R, Tannenbaum D, Permaul J, Nutik M, Haber C, Mitri M, Costantini D, et al. (2019). The prevalence and clinical correlates of adverse childhood experiences in a cross-sectional study of primary care patients with cardiometabolic disease or risk factors. *BMC Cardiovascular Disorders*, 19:304. https://doi.org/10.1186/s12872-019-01277-3

TAGS: ACEs, chronic health, health care cost, prevention, trauma

Background: Adverse childhood experiences (ACEs) are associated with risk of poor adult health, including cardiometabolic diseases. Little is known about the correlates of ACEs for adults who have already developed cardiometabolic diseases, or who are at elevated risk. *Methods*: Adult primary care patients with cardiometabolic disease (hypertension, diabetes, stroke, angina, myocardial infarction, coronary artery bypass graft, angioplasty) or with a risk factor (obesity, smoking, high cholesterol, family history) were surveyed regarding ACEs, psychological distress, attachment insecurity, quality of life, behavior change goals, stages of change, and attitudes toward potential prevention strategies. *Results*: Of 387 eligible patients, 74% completed the ACEs survey. Exposure to ACEs was reported by 174 participants (61%). Controlling for age, gender, relationship status and income, number of ACEs was associated with psychological distress ($F = 3.7$, $p = .01$), quality of life ($F = 8.9$, $p = .001$), attachment anxiety ($F = 3.4$, $p = .02$), drinking alcohol most days ($F = 4.0$, $p = .008$) and smoking ($F = 2.7$, $p = .04$). Greater ACE exposure was associated with less likelihood of selecting diet or physical activity as a behavior change goal (linear-by-linear association $p = .009$). Stage of change was not associated with ACEs. ACEs exposure was not related to preferred resources for behavior change. *Conclusions*: ACEs are common among patients at cardiometabolic risk and are related to quality of life, psychological factors that influence cardiometabolic outcomes and behavior change goals. ACEs should be taken into account when managing cardiometabolic risk in family medicine.

McClinton A, Laurencin C. (2020). Just in TIME - Trauma-Informed Medical Education. *Journal of Racial and Ethnic Health Disparities*, 1-7. https://doi.org/10.1007/s40615-020-00881-w

TAGS: ACEs, competencies, education, race, trauma, trauma-informed

Numerous organizations implement a trauma-informed approach. This model assists institutions in providing care and education that delivers support to members who have undergone traumatic experiences, and many institutions apply the principles as a universal precaution. Student and trainee experiences in medical education reveal a hidden curriculum that may deliver conflicting messages about the values of an institution, in which equity is promoted, but biased and discriminatory practices are commonplace. Implicit racial bias has been identified in the patient-provider interaction and may also extend its impact on the learner experience. Bias and discrimination inflict trauma on its targets via emotional injury. Applying the principles of the trauma-informed approach, we advocate for trauma-informed medical education (TIME). TIME fosters awareness that students and trainees can experience trauma from a biased system and culture and advocates for the establishment of policies and practices that support learners to prevent further re-traumatization. TIME will serve as a means to deliver just and equitable education.

Merrick M, Ford D, Ports K, Guinn A, Chen J, Klevens J, Metzler M, et al. (2019). Estimated Proportion of adult health problems attributable to adverse childhood experiences and implications for prevention - 25 states, 2015-2017. *Morbid Mort W*, 68(44): 999-1005. https://doi.org/10.15585/mmwr.mm6844e1

TAGS: ACEs, behavior, community, health outcomes, mental health, policy, social needs

Introduction: Adverse childhood experiences, such as violence victimization, substance misuse in the household, or witnessing intimate partner violence, have been linked to leading causes of adult morbidity and mortality. Therefore, reducing adverse childhood experiences is critical to avoiding multiple negative health and socioeconomic outcomes in adulthood. *Methods:* Behavioral Risk Factor Surveillance System data were collected from 25 states that included state-added adverse childhood experience items during 2015–2017. Outcomes were self-reported status for coronary heart disease, stroke, asthma, chronic obstructive pulmonary disease, cancer (excluding skin cancer), kidney disease, diabetes, depression, overweight or obesity, current smoking, heavy drinking, less than high school completion, unemployment, and lack of health insurance. Logistic regression modeling adjusting for age group, race/ethnicity, and sex was used to calculate population attributable fractions representing the potential reduction in outcomes associated with preventing adverse childhood experiences. *Results:* Nearly one in six adults in the study population (15.6%) reported four or more types of adverse childhood experiences. Adverse childhood experiences were significantly associated with poorer health outcomes, health risk behaviors, and socioeconomic challenges. Potential percentage reductions in the number of observed cases as indicated by population attributable fractions ranged from 1.7% for overweight or obesity to 23.9% for heavy drinking, 27.0% for chronic obstructive pulmonary disease, and 44.1% for depression. *Conclusions and implications for public health practice:* Efforts that prevent adverse childhood experiences could also potentially prevent adult chronic conditions, depression, health risk behaviors, and negative socioeconomic outcomes. States can use comprehensive public health approaches derived from the best available evidence to prevent childhood adversity before it begins. By creating the conditions for healthy communities and focusing on primary prevention, it is possible to reduce risk for adverse childhood experiences while also mitigating consequences for those already affected by these experiences.

Merrick M, Ports K, Ford D, Afifi T, Gershoff E, Grogan-Kaylor A. (2017). Unpacking the impact of adverse childhood experiences on adult mental health. *Child Abuse Neglect*, 69: 10-9. https://doi.org/10.1016/j.chiabu.2017.03.016

TAGS: ACEs, child maltreatment, depression, health outcomes, mental health, trauma

Exposure to childhood adversity has an impact on adult mental health, increasing the risk for depression and suicide. Associations between Adverse Childhood Experiences (ACEs) and several adult mental and behavioral health outcomes are well documented in the literature, establishing the need for prevention. The current study analyzes the relationship between an expanded ACE score that includes being spanked as a child and adult mental health outcomes by examining each ACE separately to determine the contribution of each ACE. Data were drawn from Wave II of the CDC-Kaiser ACE Study, consisting of 7465 adult members of Kaiser Permanente in southern California. Dichotomous variables corresponding to each of the 11 ACE categories were created, with ACE score ranging from 0 to 11 corresponding to the total number of ACEs experienced. Multiple logistic regression modeling was used to examine the relationship between ACEs and adult mental health outcomes adjusting for sociodemographic covariates. Results indicated a graded dose-response relationship between the expanded ACE score and the likelihood of moderate to heavy drinking, drug use, depressed affect, and suicide attempts in adulthood. In the adjusted models, being spanked as a child was significantly associated with all self-reported mental health outcomes. Over 80% of the sample reported exposure to at least one ACE, signifying the potential to capture experiences not previously considered by traditional ACE indices. The

findings highlight the importance of examining both cumulative ACE scores and individual ACEs on adult health outcomes to better understand key risk and protective factors for future prevention efforts.

Mersky J, Lee C. (2019). Adverse childhood experiences and poor birth outcomes in a diverse, low-income sample. *BMC Pregnancy Childb*, 19(387). https://doi.org/10.1186/s12884-019-2560-8

TAGS: ACEs, birth outcomes, health equity, pregnancy, socio-economic status

Background: Adverse childhood experiences (ACE) are associated with an array of health consequences in later life, but few studies have examined the effects of ACEs on women's birth outcomes. *Methods:* We analyzed data gathered from a sample of 1848 low-income women who received services from home visiting programs in Wisconsin. Archival program records from a public health database were used to create three birth outcomes reflecting each participant's reproductive health history: any pregnancy loss; any preterm birth; any low birthweight. Multivariate logistic regressions were performed to test the linear and non-linear effects of ACEs on birth outcomes, controlling for age, race/ethnicity, and education. *Results:* Descriptive analyses showed that 84.4% of women had at least one ACE, and that 68.2% reported multiple ACEs. Multivariate logistic regression analyses showed that cumulative ACE scores were associated with an increased likelihood of pregnancy loss (OR = 1.12; 95% CI = 1.08–1.17), preterm birth (OR = 1.07; 95% CI = 1.01–1.12), and low birthweight (OR = 1.08; 95% CI = 1.03–1.15). Additional analyses revealed that the ACE-birthweight association deviated from a linear, dose-response pattern. *Conclusions:* Findings confirmed that high levels of childhood adversity are associated with poor birth outcomes. Alongside additive risk models, future ACE research should test interactive risk models and causal mechanisms through which childhood adversity compromises reproductive health.

Mobilizing Action for Resilient Communities. (2017). *Community Voices: Creating a Just, Healthy and Resilient World*. Philadelphia, PA: Health Federation of Philadelphia.

TAGS: community, health equity, resilience

Mobilizing Action for Resilient Communities is a vibrant learning collaborative of fourteen sites actively engaged in building the movement for a just, healthy and resilient world. Using the science of adverse childhood experiences (ACEs) and resilience as their organizing framework, these communities have build strong cross-sector networks to help heal and prevent early childhood adversity.

Monnat, S., & Chandler, R. (2015). Long term physical health consequences of adverse childhood experiences. *The Sociological Quarterly*, 56(4):723-52. https://doi.org/10.1111/tsq.12107

TAGS: ACEs, health outcomes, mental health, social needs

This study examined associations between adverse childhood family experiences and adult physical health using data from 52,250 US adults aged 18-64 from the 2009-2012 Behavioral Risk Factor Surveillance System (BRFSS). We found that experiencing childhood physical, verbal, or

sexual abuse, witnessing parental domestic violence, experiencing parental divorce, and living with someone who was depressed, abused drugs or alcohol, or who had been incarcerated were associated with one or more of the following health outcomes: self-rated health, functional limitations, diabetes, and heart attack. Adult socioeconomic status and poor mental health and health behaviors significantly mediated several of these associations. The results of this study highlight the importance of family-based adverse childhood experiences on adult health outcomes and suggest that adult SES and stress-related coping behaviors may be crucial links between trauma in the childhood home and adult health.

Morrow A, Villodas M. (2017). Direct and Indirect Pathways from Adverse Childhood Experiences to High School Dropout Among High-Risk Adolescents. *J Res Adolescence*, 28(2): 327-41. https://doi.org/10.1111/jora.12332

TAGS: ACEs, education

Adverse childhood experiences (ACEs) are associated with an increased risk for school dropout. This study examined pathways from childhood adversity to school dropout through academic, behavioral, emotional, and social pathways. Data were collected prospectively from 728 adolescents and their caregivers who participated in the Longitudinal Studies of Child Abuse and Neglect and from child protective services records. Path analyses revealed a direct association between ACEs and dropout, as well as indirect effects through poor reading achievement and elevated externalizing problems. ACEs were associated with elevated internalizing problems, which were negatively associated with dropout. However, ACEs were not associated with peer influences. Implications of the identified mechanisms in the ACEs and school dropout association for future preventive interventions are discussed.

National Academies of Sciences, Engineering, and Medicine 2017. *Communities in Action: Pathways to Health Equity*. Washington, DC: The National Academies Press. https://doi.org/10.17226/24624.

TAGS: advocacy, community, health equity, partnership, policy, SDOH, social needs

There are systemic root causes of health inequities in this country that can seem overwhelming to local communities working to tackle unemployment, concentrated poverty, and school dropout rates. It will take considerable time to address these root causes, and it will require system-level changes to reduce poverty, eliminate structural racism, improve income equality, increase educational opportunity, and fix the laws and policies that perpetuate structural inequities. All actors in the community—businesses, state and local governments, anchor institutions, and other community residents—have the power to change the narrative and help promote health equity. Although the report focuses on community-based solutions, where possible, promising strategies to address these hard-to-tackle root causes at higher levels are provided, including the policy context and the supportive actions of partners.

National Academy for State Health Policy. (2017, April). *Case Study: How Minnesota uses Medicaid Levers to Address Maternal Depression and Improve Healthy Child Development*. Washington, DC: Kartika T.

TAGS: Depression, mental health, pregnancy, prenatal care, quality improvement, screening, socio-economic status

Despite evidence that maternal depression is quite common and can negatively impact the development of young children, it is often undiagnosed and untreated; however, states can use policy levers to increase maternal depression screening and treatment. Since the rate of maternal depression is disproportionately higher in low-income women, Medicaid can play a leading role in identifying at-risk mothers and connecting them to treatment. Minnesota has administered a Quality Improvement Project (QIP) that focuses on addressing postpartum depression and through the project has developed tools that may be useful to other states.

National Advisory Committee on Rural Health and Human Services. (2018, August). *Exploring the Rural Context for Adverse Childhood Experiences (ACEs)* (Policy Brief). Washington DC: US Department of Health and Human Services.

TAGS: ACEs, health disparities, rural health, SDOH

Over the past decade, the National Advisory Committee on Rural Health and Human Services (hereinafter referred to as "the Committee") has examined a number of rural issues that touch upon the social determinants of health. The Committee's past work has focused on understanding how conditions and outcomes such as homelessness, childhood poverty, intimate partner violence, opioid misuse and suicide can be mitigated or more effectively addressed through health and human service programs under the purview of the U.S. Department of Health and Human Services (HHS). In this policy brief, the Committee takes up adverse childhood experiences or ACEs, another layer and set of conditions that may exacerbate rural health disparities and outcomes. ACEs refer to any form of chronic stress or trauma (e.g., abuse, neglect, and household dysfunction) that, when experienced during childhood and adolescence, can have both short- and long-term impacts on an individual's development, health and overall well-being. The brief emphasizes the importance of prevention, education, and awareness at the local, state, and federal levels of health and human service delivery. Additionally, it provides a set of actionable recommendations that advise the Secretary and HHS on how to better address ACEs and their outcomes to develop comprehensive, integrated, federal partnerships.

National Center for Medical Legal Partnerships at the George Washington University. (2018, January). *Medical-Legal Partnerships: Where they are, how they work, and how they are funded*. Washington DC: Williamson A, Trott J, Regenstein M.

TAGS: partnership

The integration of legal services in health centers through Medical-Legal Partnerships (MLPs) has the potential to resolve some of the most intractable social problems that our nation’s vulnerable and underserved patients face. The MLP model also shows promise in reducing health disparities and improving health equity for underserved, particularly vulnerable populations. MLPs have documented experiences improving health outcomes, increasing patient engagement, and lowering health care costs.

Nelson C, Gabard-Durnam L. (2020). Early Adversity and Critical Periods: Neurodevelopmental Consequences of Violating the Expectable Environment. *Trends Neurosci*, 43(3): 133-43. https://doi.org/10.1016/j.tins.2020.01.002

TAGS: ACEs, behavior, child maltreatment, health outcomes, SDOH

It is now widely recognized that children exposed to adverse life events in the first years of life are at increased risk for a variety of neural, behavioral, and psychological sequelae. As we discuss in this paper, adverse events represent a violation of the expectable environment. If such violations occur during a critical period of brain development, the detrimental effects of early adversity are likely to be long lasting. Here we discuss the various ways adversity becomes neurobiologically embedded, and how the timing of such adversity plays an important role in determining outcomes. We conclude our paper by offering recommendations for how to elucidate the neural mechanisms responsible for the behavioral sequelae and how best to model the effects of early adversity.

Newhook J, Newhook L, Midodzi W, Goodridge J, Burrage L, Gill N, Halfyard B, et al. (2017). Poverty and Breastfeeding: Comparing Determinants of Early Breastfeeding Cessation Incidence in Socioeconomically Marginalized and Privileged Populations in the Final study. *Health Equity*, 1.1:96-102. https://doi.org/10.1089/heq.2016.0028

TAGS: birth outcomes, health outcomes, pregnancy, prenatal care, SDOH, social needs, socio-economic status

Purpose: Infant feeding differences are strongly tied to socioeconomic status. The goal of this study is to compare determinants of early breastfeeding cessation incidence in socioeconomically marginalized (SEM) and socioeconomically privileged (SEP) populations, focusing on birthing parents who intended to breastfeed. *Methods*: This cohort study includes data from 451 birthing parents in the Canadian province of Newfoundland and Labrador who reported intention to breastfeed in the baseline prenatal survey. Multivariate logistic regression techniques were used to assess the determinants of breastfeeding cessation at 1 month in both SEM and SEP populations. *Results*: The analysis data included 73 SEM and 378 SEP birthing parents who reported intention to breastfeed at baseline. At 1 month, 24.7% (18/73) in the SEM group had ceased breastfeeding compared to 6.9% (26/378) in the SEP group. In the SEP population, score on the Iowa Infant Feeding Attitude Scale (IIFAS) (odds ratio [OR] 3.33, $p = 0.01$) was the sole significant determinant. In the SEM population, three significant determinants were identified: unpartnered marital status (OR 5.10, $p = 0.05$), <1 h of skin-to-skin contact after birth (OR 11.92, $p = 0.02$), and negative first impression of breastfeeding (OR 11.07, $p = 0.01$). *Conclusion*: These results indicate that determinants of breastfeeding cessation differ between SEM and SEP populations intending to breastfeed. Interventions intended on improving the SEM population's postpartum breastfeeding experience using best practices, increasing support, and ensuring at least 1 h of skin–skin contact may increase breastfeeding rates.

Nordstrom B, Saunders E, McLeman B, Meier A, Xie H, Lambert-Harris C, Tanzman B, et al. (2016). Using a Learning collaborative Strategy with Office-Based practices to increase access and improve quality of care for patients with opioid use disorders. *J Addict Med*, 10(2): 115-21. https://doi.org/10.1097/adm.0000000000000200

TAGS: education, quality improvement, substance use

Objectives: Rapidly escalating rates of heroin and prescription opioid use have been widely observed in rural areas across the United States. Although US Food and Drug Administration-approved medications for opioid use disorders exist, they are not routinely accessible to patients. One medication, buprenorphine, can be prescribed by waivered physicians in office-based practice settings, but practice patterns vary widely. This study explored the use of a learning collaborative method to improve the provision of buprenorphine in the state of Vermont. *Methods:* We initiated a learning collaborative with 4 cohorts of physician practices (28 total practices). The learning collaborative consisted of a series of 4 face-to-face and 5 teleconference sessions over 9 months. Practices collected and reported on 8 quality-improvement data measures, which included the number of patients prescribed buprenorphine, and the percent of unstable patients seen weekly. Changes from baseline to 8 months were examined using a p-chart and logistic regression methodology. *Results:* Physician engagement in the learning collaborative was favorable across all 4 cohorts (85.7%). On 6 of the 7 quality-improvement measures, there were improvements from baseline to 8 months. On 4 measures, these improvements were statistically significant ($P < 0.001$). Importantly, practice variation decreased over time on all measures. The number of patients receiving medication increased only slightly (3.4%). *Conclusions:* Results support the effectiveness of a learning collaborative approach to engage physicians, modestly improve patient access, and significantly reduce practice variation. The strategy is potentially generalizable to other systems and regions struggling with this important public health problem.

O'Neill A, Beck K, Chae D, Dyer T, He X, Lee S. (2018). The pathway from childhood maltreatment to adulthood obesity: the role of mediation by adolescent depressive symptoms and BMI. *J Adolescence*, 67:22-30. https://doi.org/10.1016/j.adolescence.2018.05.010

TAGS: ACEs, child maltreatment, depression, obesity

The aim of this study was to examine associations between childhood maltreatment and adulthood obesity, and mediating effects of adolescent depressive symptoms and BMI, using the U.S. National Longitudinal Study of Adolescent to Adult Health (n=10,894). Individuals who reported sexual maltreatment were 27% more likely to be obese (BMI≥30; AOR=1.27, 95% CI: 0.98–1.63) and 72% more likely to be extremely obese (BMI≥40) in adulthood (AOR=1.72, 1.18–2.51) than those who did not. Individuals who reported physical maltreatment were 37% more likely to be extremely obese than those who did not (AOR=1.37, 1.11–1.70). These relationships were true for males and females, and interaction terms by sex were not statistically significant. Adolescent depressive symptoms and BMI were statistically significant mediators between sexual and physical maltreatment and extreme obesity ($p < .05$), and between physical maltreatment and self-rated obesity ($p < .05$). Therefore, adolescent characteristics are mechanisms on the causal pathway between maltreatment and obesity in adulthood. Further research should explore these mechanisms.

Onigu-Otite E, Idicula S. (2020). Introducing ACEs (Adverse Childhood Experiences) and Resilience to First-Year Medical Students. *MedEdPORTAL*, 16:10964. https://doi.org/10.15766/mep_2374-8265.10964

TAGS: ACEs, child maltreatment, chronic health, education, mental health, trauma, trauma-informed

Introduction: Adverse childhood experiences (ACEs) are associated with negative mental and physical health outcomes and predictive of higher sociodemographic risk. Introducing ACEs into undergraduate medical education is key to prevention, early recognition, and intervention. *Methods*: In a 1-hour lecture, held live and viewed online, we delivered a condensed introduction to ACEs to first-year medical students. Live-classroom participants completed pre-/post-session questionnaires self-assessing their knowledge of 10 content areas on a 5-point Likert scale. We analyzed quantitative data to determine mean scores and differences. We synthesized qualitative data obtained from feedback. *Results*: One hundred twenty-four students, including 32 live-classroom attendees and 92 online viewers, participated in this activity. Self-assessment scores increased in all content areas measured, with a mean increase of 1.5 ($p < .0001$). The most significant increases occurred in identifying household dysfunction as ACEs (increase of 2.3), calculating an ACE score (increase of 2.2), differentiating between child abuse acts of commission and omission (increase of 1.9), describing resilience (increase of 1.7), and recognizing the link between ACEs and chronic medical conditions (increase of 1.4). Participants found the lecture informative, appreciating the use of the case illustrating how ACEs impact health and an interactive slide on the risks conferred by cumulative ACEs. Learners welcomed the positive message of resilience. *Discussion*: Introducing ACEs in medical student education is feasible. Educating the next generation of health providers on ACEs while highlighting prevention and resilience and teaching trauma-informed care is crucial. This lecture can be readily incorporated into medical student curricula.

Peterson E. (2017). *Screening Families for Unmet Social Needs in a Pediatric Clinic.* Wright State University, Dayton, Ohio.

TAGS: family medicine, pediatrics, screening, SDOH, social needs

Background: Previous research indicates that at least 60% of preventable deaths are caused by modifiable factors. Children, especially those under the age of five, are the most at-risk population for negative social determinants of health. Identifying and mitigating these factors could break the poverty impact cycle and promote wellness into adulthood, improving community health outcomes. *Purpose*: The purpose of this study was to describe trends in unmet social needs of children attending a well-child visit in Dayton, Ohio. *Methods*: Families attending a hospital-affiliated clinic during a well-child visit were asked to complete a simple, 10-item questionnaire. This cross-sectional study utilized collected data from October 3 to December 1, 2016, with 645 surveys completed and an age range of the patients from three days to 18 years. Results: The study sample included a 94.7% return rate of the survey tool with 221 positive responses for unmet social needs (34.3%). Two or more unmet social needs were specified in 52.3% of the group requesting services with 39.7% of the group two years of age or less. The needs group requested 444 specific needs, a ratio of 2.04 needs per child. In addition, 99.1% of families identified in this program were previously unidentified in traditional social work channels. *Discussion*: Preliminary data from the program indicates a need to connect families to essential resources.

Pinderhughes H, Davis R, Williams M. (2015). *Adverse Community Experiences and Resilience: A Framework for Addressing and Preventing Community Trauma*. Prevention Institute, Oakland CA.

TAGS: ACEs, community, population health, resilience

Many communities are working to prevent violence and promote community safety and, through comprehensive, multi-sector actions, are making progress. However, communities that experience high rates of violence continue to be plagued with persistently high rates of trauma. Trauma and its associated symptoms of mental and psychological illness are more prevalent in the U.S. than in most other countries in the world. What is more, trauma can be a barrier to the most successful implementation of healing and well-being strategies, including those to prevent violence. The impact of trauma extends beyond the individuals who directly witness or experience violence. Trauma is also produced by structural violence, which prevents people and communities from meeting their basic needs. The result is both high levels of trauma across the population and a breakdown of social networks, social relationships, and positive social norms across the community — all of which could otherwise be protective against violence and other health outcomes. While new models are emerging to counter the effects of trauma, promote community healing and foster community resilience, there has not been an existing framework for understanding, addressing, and preventing trauma at a community or population level. Our paper provides one.

Poole J, Dobson K, Pusch D. (2017). Anxiety among adults with history of childhood adversity: Psychological resilience moderates the indirect effect of emotion dysregulation. *J Affect Disorders*, 217:144-52. https://doi.org/10.1016/j.jad.2017.03.047

TAGS: ACEs, anxiety, child maltreatment, mental health, primary care, resilience, trauma

Background: Adverse childhood experiences (ACEs) have been widely identified as risk factors for increased symptoms of anxiety across the lifespan. Little is known, however, about the processes by which ACEs set the stage for increased symptoms of anxiety in adulthood. The current study evaluated whether emotion dysregulation and psychological resilience influence the association between ACEs and symptoms of anxiety. *Methods:* A sample of adult primary care patients (N=4006) completed self-report measures related to ACEs, symptoms of anxiety, emotion dysregulation, and psychological resilience. *Results:* A moderated mediation analysis showed that emotion dysregulation mediated the association between ACEs and anxiety symptoms, and that the strength of this effect varied as a function of psychological resilience. Specifically, the influence of ACEs on emotional dysregulation was stronger among individuals with low levels of psychological resilience than among those with high levels of psychological resilience. These findings remained significant when controlling for a range of sociodemographic variables in the model. *Limitations:* Cross-sectional designs preclude inferences about causality and self-report data may be susceptible to reporting biases. Other psychological variables that may be relevant to the current results, such as protective factors in childhood, were not assessed. *Conclusions:* These results have implications for the conceptualization of ACEs, emotion dysregulation, and psychological resilience in etiological models of anxiety. They also highlight the relevance of ACEs, emotion dysregulation, and psychological resilience to the detection, treatment, and prevention of anxiety disorders.

Prentice J, Lu M, Lange L, Halfon N. (2002). The Association Between reported Childhood Sexual Abuse and Breastfeeding Initiation. *J Hum Lact*, 18(3): 219-26. https://doi.org/10.1177/089033440201800303

TAGS: ACEs, birth outcomes, pregnancy, prenatal care, trauma

This study examined the association between self-identified childhood sexual abuse and breastfeeding initiation. A nationally representative sample of 2017 parents with children younger than 3 years was surveyed by telephone about child-rearing needs. Respondents were asked to report childhood sexual abuse and breastfeeding practices. Responses of 1220 biological mothers were analyzed. A possible association between self-reported childhood sexual abuse and breastfeeding initiation was investigated through multivariate logistic regression. Seven percent of the respondents reported experiencing childhood sexual abuse. Women who reported childhood sexual abuse were more than twice (adjusted odds ratio = 2.58; 95% confidence interval = 1.14, 5.85; *P* = .02) as likely to initiate breastfeeding compared with women who did not report childhood sexual abuse. Parenting attitudes and behaviors were compared to consider whether greater concern with parenting is an explanation for this association. In this nationally representative sample, self-identified childhood sexual abuse is associated with an increased likelihood of breastfeeding initiation.

Purkey E, Patel R, Phillips S. (2018). Trauma-informed care: Better care for everyone. *Can Fam Physician*, 64(3):170-172.

TAGS: ACEs, trauma, trauma-informed

The authors describe the five principles of trauma-informed care to guide clinicians in caring for complex patients who are often survivors of adverse childhood experiences (ACEs), who are neglected or shunned, and who might be labeled as difficult, borderline, or chronic pain patients. The trauma-informed care model offers a clear, compassionate, and rewarding approach.

Racine N, Killam T, Madigan S. (2019). Trauma-Informed Care as a Universal Precaution: Beyond the Adverse Childhood Experiences Questionnaire. *JAMA Pediat.* https://doi.org/10.1001/jamapediatrics.2019.3866

TAGS: ACEs, child maltreatment, protective factors, screening, trauma-informed

The authors encourage health care practitioners to adopt a trauma-informed approach to patient care, which extends beyond the use of a single Adverse Childhood Experiences (ACEs) questionnaire. Trauma-informed care (TIC) realizes the universal effect of trauma; recognizes how trauma presents in children, families, and staff; and responds in a way that resists retraumatization.

Robert Wood Johnson Foundation. (2010). A New Way to Talk about the Social Determinants of Health. https://www.rwjf.org/en/library/research/2010/01/a-new-way-to-talk-about-the-social-determinants-of-health.html.

TAGS: advocacy, health care cost, health equity, health outcomes, policy, SDOH, social needs

The Foundation developed a commission focusing on social determinants of health (SDOH) to help determine why some Americans are healthier than others and why Americans overall aren't as healthy as they could be. This commission helped create this framework which describes how to talk about SDOH in a meaningful way that would make it easier for policymakers to understand the importance of SDOH.

Robert Wood Johnson Foundation. (2018). Countering the Production of Health Inequalities: Ensuring the Opportunity for Health for All. https://www.preventioninstitute.org/countering-inequities

TAGS: health equity, SDOH, social needs

The opportunity to be healthy is not afforded to everyone in America. As a result, heart disease, cancer, type II diabetes, injury, mental illness, substance abuse, suicide, and other illnesses occur in higher frequency, earlier, and with greater severity among people living in concentrated poverty and in communities of color. This is not coincidental, and it is not about poor choices or only about access to quality health care. Indeed, these poor outcomes have been produced by historical and current-day policies, laws, practices, and procedures that shape the determinants of health and, consequently, have segregated too many people from the opportunity to be healthy. With support from the Robert Wood Johnson Foundation, Prevention Institute has analyzed what has contributed to these inequities to determine a pathway forward to produce health equity. There is a role for every institution, sector, and system working together to achieve an equitable culture of health across the United States. It is our urgent imperative to create health and opportunity for all.

Roberts, B. (2019). Caring for Patients with Adverse Childhood Experiences. *Radiol Technol,* 91(2) 141-57.

TAGS: ACEs, chronic health, health outcomes, trauma-informed

Adverse childhood experiences are associated with many poor health outcomes. Research has demonstrated associations between childhood trauma and increased incidence of heart disease, lung disease, cancer, mental health disorders, addiction, and a host of autoimmune diseases including diabetes. Current understanding of the mechanisms of injury relies on numerous theoretical frameworks and diagnostic criteria. Radiologic technologists can improve patient care by using research validated techniques for promoting resilience when working with patients and families affected by adverse childhood experiences.

Sachs-Ericsson N, Sheffler J, Stanley I, Piazza J, Preacher K. (2017). When Emotional pain becomes physical: Adverse childhood experiences, pain, and the role of mood and anxiety disorders. *J Clin Psychol,* 73(10):1403-28. https://doi.org/10.1002/jclp.22444

TAGS: ACEs, anxiety, chronic health, depression, health outcomes, mental health, trauma

Objective: We examined the association between retrospective reports of adverse childhood experiences (ACEs) and painful medical conditions. We also examined the mediating and moderating roles of mood and anxiety disorders in the ACEs–painful medical conditions relationship. *Method:* Ten-year longitudinal data were obtained from the National Comorbidity Surveys (NCS-1, NCS-2; N = 5001). The NCS-1 obtained reports of ACEs, current health conditions, current pain severity, and mood and anxiety disorders. The NCS-2 assessed for painful medical conditions (e.g., arthritis/rheumatism, chronic back/neck problems, severe headaches, other chronic pain). *Results:* Specific ACEs (e.g., verbal and sexual abuse, parental psychopathology, and early parental loss) were associated with the painful medical conditions. Baseline measures of depression, bipolar disorder, and posttraumatic stress disorder were also associated with the number of painful medical conditions. Anxiety and mood disorders were found to partially mediate the ACEs–painful medical conditions relationship. We determined through

mediation analyses that ACEs were linked to an increase in anxiety and mood disorders, which, in turn, were associated with an increase in the number of painful medical conditions. We determined through moderation analyses that ACEs had an effect on increasing the painful medical conditions at both high and low levels of anxiety and mood disorders; though, surprisingly, the effect was greater among participants at lower levels of mood and anxiety disorders. *Conclusion:* There are pernicious effects of ACEs across mental and physical domains. Dysregulation of the hypothalamic-pituitary-adrenal stress response and the theory of reserve capacity are reviewed to integrate our findings of the complex relationships.

Sandel M, Cook J, Poblacion A, Sheward R, Coleman S, Viveiros J, Sturtevant L. (2016). Housing as a Health Care Investment: Affordable Housing Supports Children's Health. Insights from Housing Policy Research, National Housing Conference and Children's HealthWatch.

TAGS: children, community, health care cost, pediatrics, SDOH, social needs

Affordable and stable housing plays a critical role in supporting the health and wellbeing of children. Research from Children's HealthWatch shows public investment in housing – including housing for homeless families and rental assistance for food-insecure families – improves the health outcomes of vulnerable infants and young children and lowers health care spending.

Sandel M, Sheward R, Ettinger de Cuba S, Coleman S, Frank D, Chilton M, Black M, et al. (2018). Unstable Housing and Caregiver and Child Health in Renter Families. *Pediatrics*, 141(2):e20172199. https://doi.org/10.1542/peds.2018-2199

TAGS: children, pediatrics, policy, SDOH, socio-economic status

Objectives: To evaluate how 3 forms of housing instability relate to caregiver and child health among low-income renter households. *Methods*: Caregivers of children 0 to 48 months of age were interviewed in 5 urban medical centers from May 2009 to December 2015. Caregivers reported on the following: caregiver health, maternal depressive symptoms, child's health, lifetime hospitalizations, developmental risk, and 3 housing circumstances, which were categorized as being behind on rent in the past 12 months, multiple moves (≥ 2 in past 12 months), and child's lifetime history of homelessness. Associations with caregiver and child health outcomes were examined through multivariable logistic regression. R*esults*: Of 22 324 families, 34% had at least 1 of the following adverse housing circumstances: 27% had been behind on rent, 8% had made multiple moves, and 12% had a history of being homeless. Overlap between these was limited; 86% experienced only 1 adverse housing circumstance. Each circumstance was individually associated with increased adjusted odds of adverse health and material hardship compared with stable housing. Households behind on rent had increased adjusted odds of fair and/ or poor caregiver health (adjusted odds ratio [aOR]: 1.91; 95% confidence interval [CI]: 1.77–2.05), maternal depressive symptoms (aOR: 2.71; 95% CI: 2.51–2.93), child lifetime hospitalizations (aOR: 1.19; 95% CI: 1.10–1.27), fair and/or poor child health (aOR: 1.41; 95% CI: 1.28–1.56), and household material hardships. Families with multiple moves and history of homelessness had similar adverse caregiver, child, health, and hardship outcomes. C*onclusions*: Three forms of housing instability were associated with adverse caregiver and child health among low-income renter households. The American Academy of Pediatrics recommends social screening within

health care; providers could consider assessing for behind on rent, multiple moves, and homelessness in high-risk practices.

Sarvet B, Wegner L. (2010). Developing Effective Child Psychiatry Collaboration with Primary Care: Leadership and Management Strategies. *Child Adol Psych Cl*, 19: 139-48. https://doi.org/10.1016/j.chc.2009.08.004

TAGS: leadership, mental health, pediatrics, primary care

By working in collaboration with pediatric primary care providers, child and adolescent psychiatrists have the opportunity to address significant levels of unmet need for the majority of children and teenagers with serious mental health problems who have been unable to gain access to care. Effective collaboration with primary care represents a significant change from practice-as-usual for many child and adolescent psychiatrists. Implementation of progressive levels of collaborative practice, from the improvement of provider communication through the development of comprehensive collaborative systems, may be possible with sustained management efforts and application of process improvement methodology.

Schulman M, Menschner C. (2018). Laying the Groundwork for Trauma-Informed Care. Center for Health Care Strategies, Inc. https://www.chcs.org/resource/laying-groundwork-trauma-informed-care/

TAGS: trauma-informed

This brief outlines practical recommendations for health care organizations interested in taking steps to becoming more trauma-informed. It draws from the experiences of pilot sites in Advancing Trauma-Informed Care, a CHCS-led national initiative made possible through support from the Robert Wood Johnson Foundation. Opportunities outlined in this brief may serve as a starting place to help health care organizations generate awareness of the impact of trauma, encourage staff wellness, improve hiring practices, and enhance their physical, social, and emotional environments.

Sciolla A. (2018). Screening for Childhood Adversities in Prenatal Care: What Works and Why. *J Womens Health*, 27(7):854-5. https://doi.org/10.1089/jwh.2018.6995

TAGS: ACEs, birth outcomes, children, health outcomes, mental health, pregnancy, prenatal care, screening, trauma

Dr. Sciolla describes why screening for adverse childhood experiences is important during prenatal care in order to have better outcomes for mother and baby.

Shonkoff J. (2012). Leveraging the biology of adversity to address the roots of disparities in health and development. *P Natl Acad Sci USA*, 109(2): 17302-7. https://doi.org/10.1073/pnas.1121259109

TAGS: ACEs, child maltreatment, chronic health, education, family medicine, health disparities, health outcomes, pediatrics, policy, toxic stress, trauma

Extensive evidence that personal experiences and environmental exposures are embedded biologically (for better or for worse) and the cumulative knowledge of more than four decades of

intervention research provide a promising opportunity to mobilize evolving scientific insights to catalyze a new era of more effective early childhood policy and practice. Drawing on emerging hypotheses about causal mechanisms that link early adversity with lifelong impairments in learning, behavior, and health, this paper proposes an enhanced theory of change to promote better outcomes for vulnerable, young children by strengthening caregiver and community capacities to reduce or mitigate the impacts of toxic stress, rather than simply providing developmental enrichment for the children and parenting education for their mothers.

Short A, Baram T. (2019). Early-life adversity and neurological disease: age-old questions and novel answers. *Nat Rev Neurol*, 15(11): 657-69. https://doi.org/10.1038/s41582-019-0246-5

TAGS: ACEs, child maltreatment, chronic health, epigenetics, health outcomes, mental health, pregnancy, prenatal care, trauma

Neurological illnesses, including cognitive impairment, memory decline and dementia, affect over 50 million people worldwide, imposing a substantial burden on individuals and society. These disorders arise from a combination of genetic, environmental, and experiential factors, with the latter two factors having the greatest impact during sensitive periods in development. In this Review, we focus on the contribution of adverse early-life experiences to aberrant brain maturation, which might underlie vulnerability to cognitive brain disorders. Specifically, we draw on recent robust discoveries from diverse disciplines, encompassing human studies and experimental models. These discoveries suggest that early-life adversity, especially in the perinatal period, influences the maturation of brain circuits involved in cognition. Importantly, new findings suggest that fragmented and unpredictable environmental and parental signals comprise a novel potent type of adversity, which contributes to subsequent vulnerabilities to cognitive illnesses via mechanisms involving disordered maturation of brain 'wiring'.

Sonney J, Willgerodt M, Lindhorst T, Brock D. (2018). Elizabeth: Typical or Troubled Teen? A Training Case for Health Professionals to Recognize and Report Child Maltreatment. *MedEdPORTAL*, 14(10712). https//doi.org/10.15766/mep_2374-8265.10712

TAGS: child maltreatment, education

Introduction: Training on the recognition and reporting of child maltreatment is a critical component of any health professional education program. Unfortunately, it is nationally recognized that health care professional training on recognition and reporting suspected child maltreatment is insufficient. Similarly, recent attention has been given to the need for interprofessional learning opportunities targeting to advanced health profession trainees such as doctor of nursing practice, masters in social work, physician assistant, and family medicine residents. *Methods:* An interprofessional case-writing faculty team convened to develop this case and the affiliated materials, including video vignettes, faculty training, comprehensive faculty guide, evaluations, and trainee resources. Trainees were divided into interprofessional teams and advised to develop a prioritized plan of care for a complex patient case, though it was not revealed that the case involved child maltreatment. An initial video vignette showed an adolescent female and her mother during a provider visit to establish care. Teams developed a prioritized plan of care following the vignette. Additional case details unfold during the second vignette, and teams revised their initial plan based on this new information. Interprofessional faculty facilitators guided

discussions using prompts from the faculty guide. *Results:* Post-session surveys revealed that the learning objectives were met, and that both facilitators (N = 20) and trainees (N = 69) were very satisfied with the overall curriculum. Challenges centered around focusing on care priorities rather than provider critique. *Discussion:* This curriculum is relevant for a variety of trainees and is an important complement to the curricula of many professions.

Spitzer R, Kroenke K, Williams J, Lowe B. (2006). A Brief Measure for Assessing Generalized Anxiety Disorder - the GAD-7. *Arch Intern Med*, 166(10):1092-7. https//doi.org/10.1001/archinte.166.10.1092

TAGS: anxiety, mental health, screening

Background: Generalized anxiety disorder (GAD) is one of the most common mental disorders; however, there is no brief clinical measure for assessing GAD. The objective of this study was to develop a brief self-report scale to identify probable cases of GAD and evaluate its reliability and validity. *Methods:* A criterion-standard study was performed in 15 primary care clinics in the United States from November 2004 through June 2005. Of a total of 2740 adult patients completing a study questionnaire, 965 patients had a telephone interview with a mental health professional within 1 week. For criterion and construct validity, GAD self-report scale diagnoses were compared with independent diagnoses made by mental health professionals; functional status measures; disability days; and health care use. *Results:* A 7-item anxiety scale (GAD-7) had good reliability, as well as criterion, construct, factorial, and procedural validity. A cut point was identified that optimized sensitivity (89%) and specificity (82%). Increasing scores on the scale were strongly associated with multiple domains of functional impairment (all 6 Medical Outcomes Study Short-Form General Health Survey scales and disability days). Although GAD and depression symptoms frequently co-occurred, factor analysis confirmed them as distinct dimensions. Moreover, GAD and depression symptoms had differing but independent effects on functional impairment and disability. There was good agreement between self-report and interviewer administered versions of the scale. *Conclusion:* The GAD-7 is a valid and efficient tool for screening for GAD and assessing its severity in clinical practice and research.

Sumner J, Colich N, Uddin M, Armstrong D, McLaughlin K. (2019). Early Experiences of Threat, but Not Deprivation, Are Associated with Accelerated Biological Aging in Children and Adolescents. *Biol Psychiat*, 85(3):268-78. https://doi.org/10.1016/j.biopsych.2018.09.008

TAGS: ACEs, child maltreatment, children, chronic health, epigenetics, health outcomes, trauma

Background: Recent conceptual models argue that early life adversity (ELA) accelerates development, which may contribute to poor mental and physical health outcomes. Evidence for accelerated development in youths comes from studies of telomere shortening or advanced pubertal development following circumscribed ELA experiences and neuroimaging studies of circuits involved in emotional processing. It is unclear whether all ELA is associated with accelerated development across global metrics of biological aging or whether this pattern emerges following specific adversity types. *Methods:* In 247 children and adolescents 8 to 16 years of age with wide variability in ELA exposure, we evaluated the hypothesis that early environments characterized by threat, but not deprivation, would be associated with accelerated development

across two global biological aging metrics: DNA methylation (DNAm) age and pubertal stage relative to chronological age. We also examined whether accelerated development explained associations of ELA with depressive symptoms and externalizing problems. *Results:* Exposure to threat-related ELA (e.g., violence) was associated with accelerated DNAm age and advanced pubertal stage, but exposure to deprivation (e.g., neglect, food insecurity) was not. In models including both ELA types, threat-related ELA was uniquely associated with accelerated DNAm age (b = .18) and advanced pubertal stage (b = .28), whereas deprivation was uniquely associated with delayed pubertal stage (b = 2.21). Older DNAm age was related to greater depressive symptoms, and a significant indirect effect of threat exposure on depressive symptoms was observed through DNAm age. *Conclusions:* Early threat-related experiences are particularly associated with accelerated biological aging in youths, which may be a mechanism linking ELA with depressive symptoms.

Sun J, Patel F, Rose-Jacobs R, Frank D, Black M, Chilton M. (2017). Mothers' Adverse Childhood Experiences and their Young Children's Development. *Am J Prev Med*, 53(6): 882-91. https://doi.org/10.1016/j.amepre.2017.07.015

TAGS: ACEs, children, depression, health outcomes, mental health, pediatrics, pregnancy, prenatal care

Introduction: This study examined how mothers' Adverse Childhood Experiences (ACEs) relate to their children's developmental risk and assessed how the association is mediated through mothers' depressive symptoms and fair/poor health. *Methods*: Mothers of children aged between 4 months and 4 years were recruited from the emergency department of a children's hospital between March 2012 and June 2015 and interviewed about ACEs, mothers' depressive symptoms and health status, and children's developmental risk (screened via Parents' evaluations of Developmental Status [PEDS]). Between August and November 2016, a Cochran–Armitage test assessed trend of PEDS by ACEs. Multinomial regression models examined differences in PEDS by ACEs severity. Mediation by mothers' depressive symptoms and self-rated health was also assessed. *Results:* Of 1,293 mothers, 56.7% reported one or more ACEs. Mothers also reported developmental risk (20.4% overall): 120 (9.2%) reported one concern and 144 (11.2%) reported two or more concerns on the PEDS. Mothers who reported household substance use, mental illness, or an incarcerated household member during childhood were more likely to report at least one child developmental concern on the PEDS. After controlling for covariates, odds of one PEDS concern were 1.86 (95% CI¼1.16, 3.00) for ACEs, one to three versus none, and 2.21 (95% CI¼1.26, 3.87) for ACEs four or more versus none. Adjusted odds of two or more concerns were 1.70 (95% CI¼1.07, 2.72) for ACEs, one to three versus none, and 1.76 (95% CI¼1.02, 3.05) for ACEs, four or more versus none. Mothers' depressive symptoms and self-rated health were potential mediators. *Conclusions:* Mothers' ACEs are significantly associated with their children's developmental risk. If replicated, findings suggest that addressing intergenerational trauma through focus on childhood adversity among young children's caregivers may promote child development.

Tan E, McGill S, Tanner E, Carlson M, Rebok G, Seeman T, Fried L. (2013). The Evolution of an Academic-Community Partnership in the Design, Implementation, and Evaluation of Experience Corps Baltimore City: A Courtship Model. *Gerontologist*, 54(2):314-21. https://doi.org/10.1093/geront/gnt072

TAGS: community, education, partnership

Purpose: Experience Corps Baltimore City (EC) is a product of a partnership between the Greater Homewood Community Corporation (GHCC) and the Johns Hopkins Center on Aging and Health (COAH) that began in 1998. EC recruits volunteers aged 55 and older into high-impact mentoring and tutoring roles in public elementary schools that are designed to also benefit the volunteers. We describe the evolution of the GHCC–COAH partnership through the "Courtship Model." *Design and Methods:* We describe how community-based participatory research principals, such as shared governance, were applied at the following stages: (1) partner selection, (2) getting serious, (3) commitment, and (4) leaving a legacy. *Results:* EC could not have achieved its current level of success without academic–community partnership. In early stages of the "Courtship Model," GHCC and COAH were able to rely on the trust developed between the leadership of the partner organizations. Competing missions from different community and academic funders led to tension in later stages of the "Courtship Model" and necessitated a formal Memorandum of Understanding between the partners as they embarked on a randomized controlled trial. *Implications:* The GHCC–COAH partnership demonstrates how academic–community partnerships can serve as an engine for social innovation. The partnership could serve as a model for other communities seeking multiple funding sources to implement similar public health interventions that are based on national service models. Unified funding mechanisms would assist the formation of academic–community partnerships that could support the design, implementation, and the evaluation of community-based public health interventions.

Thomas J, Letourneau N, Campbell T, Giesbrecht G, Apron Study Team. (2018). Social buffering of the maternal and infant HPA axes: Mediation and moderation in the intergenerational transmission of adverse childhood experiences. *Dev Psychopathol*, 30:921-39. https://doi.org/10.1017/s0954579418000512

TAGS: ACEs, birth outcomes, child maltreatment, children, intergenerational trauma, pediatrics, pregnancy, prenatal care

Supportive social relationships can reduce both psychological and physiological responses to stressful experiences. Recently, studies have also assessed the potential for social relationships to buffer the intergenerational transmission of stress. The majority of these studies, however, have focused on social learning as a mechanism responsible for the intergenerational transmission of stress. Evidence of biological mechanisms is lacking. The objective of the current study was, therefore, to determine whether the association between maternal adverse childhood experiences (ACEs) and infant hypothalamic–pituitary– adrenal (HPA) axis function is mediated by maternal HPA axis function during pregnancy and moderated by social support. Data were from 243 mother–infant dyads enrolled in a prospective longitudinal cohort (the Alberta Pregnancy Outcomes and Nutrition Study). Maternal history of ACEs was retrospectively assessed while maternal perceived social support and salivary cortisol were assessed prospectively at 6–22 weeks gestation (Time 1) and 27–37 weeks gestation (Time 2), and infant cortisol reactivity to a laboratory stressor and maternal perceived social support were assessed at 5–10 months postnatal (Time 3). Results revealed that maternal HPA axis function during pregnancy mediated the effects of maternal ACEs on infant HPA axis reactivity, suggesting that the maternal HPA axis is a mechanism by which maternal early life stress is transmitted to offspring. Furthermore, social support in the prenatal and postnatal periods moderated the cascade from maternal ACEs to infant

HPA axis reactivity. Specifically, prenatal social support moderated the association between ACEs and maternal HPA axis function during pregnancy, and postnatal social support moderated the association between maternal HPA axis function and infant cortisol reactivity. These findings highlight the social sensitivity of the HPA axis and suggest the utility of social relationships as an intervention target to reduce the effects of maternal early life stress on infant outcomes.

Thornton R, Glover C, Cené C, Glik D, Henderson J, Williams D. (2016). Evaluating Strategies for Reducing Health Disparities by Addressing the Social Determinants of Health. *Health Affairs*, 35(8): 1416-23. https://doi.org/10.1377/hlthaff.2015.1357

TAGS: health disparities, health outcomes, interventions, policy, population health, SDOH, social needs

The opportunities for healthy choices in homes, neighborhoods, schools, and workplaces can have decisive impacts on health. We review scientific evidence from promising interventions focused on the social determinants of health and discuss how such interventions can improve population health and reduce health disparities. We found sufficient evidence of successful outcomes to support disparity-reducing policy interventions targeted at education and early childhood; urban planning and community development; housing; income enhancements and supplements; and employment. Cost effectiveness evaluations show that these interventions lead to long-term societal savings, but the interventions require more routine attention to cost considerations. We discuss challenges to implementation, including the need for long-term financing to scale up effective interventions for implementation at the local, state, and national levels.

TMF Health Quality Institute. (2018, November). *Addressing Social Determinants of Health: The Need for Provider-Community Collaboration*. Austin, TX: Kohl R, Calderon K, Daly S.

TAGS: community, education, interventions, partnership, primary care, SDOH, social needs

Social determinants of health (SDoH)—encompassing the social, behavioral, and environmental influences over a person's health—have become an essential consideration when developing quality improvement interventions to impact health outcomes. This whitepaper describes key SDoH and their impact on health outcomes, as well as how providers from across the care spectrum can and are addressing SDoH. This paper will also highlight innovative community SDoH interventions and approaches and propose emerging SDoH-focused frameworks for provider and community stakeholder collaboration to impact health outcomes.

U.S. Department of Health and Human Services, Administration of Children, Youth, and Families. (2017). *Building Community, Building Hope: 2016-2017 Prevention Resource Guide*. Washington DC.

TAGS: community, prevention, protective factors, resilience

This Resource Guide was developed to support service providers in their work with parents, caregivers, and their children to prevent child abuse and neglect and promote child and family well-being. It was created by the U.S. Department of Health and Human Services' Children's Bureau, Office on Child Abuse and Neglect, its Child Welfare Information Gateway, and the

FRIENDS National Center for Community-Based Child Abuse Prevention. The resources featured represent the work of a broad-based partnership of national organizations, Federal partners, and parents committed to strengthening families and communities. The Resource Guide was created primarily to support community-based child abuse prevention professionals who work to prevent child maltreatment and promote well-being. However, others including policymakers, parent educators, family support workers, health-care providers, program administrators, teachers, childcare providers, mentors, and clergy also may find the resources useful.

Varkey P, Reller M, Resar R. (2007). Basics of Quality Improvement in Health care. *Mayo Clin Proc*, 82(6):735-9. https://doi.org/10.4065/82.6.735

TAGS: quality improvement

With the rapid expansion of knowledge and technology and a health care system that performs far below acceptable levels for ensuring patient safety and needs, front-line health care professionals must understand the basics of quality improvement methodologies and terminology. The goals of this review are to provide clinicians with sufficient information to understand the fundamentals of quality improvement, provide a starting point for improvement projects, and stimulate further inquiry into the quality improvement methodologies currently being used in health care. Key quality improvement concepts and methodologies, including plan-do-study-act, six-sigma, and lean strategies, are discussed, and the differences between quality improvement and quality-of-care research are explored.

Vermilyea E. (2012, April). Developing a Community Approach to Trauma. In *Moving Forward in Challenging Times Conference*. Conference conducted at the meeting of SafePlace, Austin, TX.

TAGS: community, trauma, trauma-informed

Traditional treatment in the field of traumatic stress has focused on individual care from a pathology-based perspective. Over time, this model has become less tenable and has failed to account for the wider range of the impact of traumatic stress on individuals, families, and communities. The need for community-based support for traumatized persons has become more apparent in spite of political, financial, social, and organizational challenges that can impede such programs. By implementing strategies outlined in the field of community psychology, many of these challenges can be addressed effectively and successfully. By making a commitment for planned social change based on citizen participation, networking, education and information dissemination, and alterations to public policy, a true trauma-informed community can be established to support community-based care for traumatized persons. This workshop was a primarily interactive effort to identify and clarify the process of developing a community response to trauma.

Windle M, Haardörfer R, Getachew B, Shah J, Payne J, Pillai D, Berg C. (2018). A multivariate analysis of adverse childhood experiences and health behaviors and outcomes among college students. *J Am Coll Health*, 66(4):246-51. https://doi.org/10.1080/07448481.2018.1431892

TAGS: ACEs, behavior, health outcomes

Objective: This study investigated associations between adverse childhood experiences (ACE) prior to age 18 years and multiple health behaviors (e.g., cigarette and other substance use) and outcomes (e.g., obesity, depression) for a large college sample. *Participants:* 2,969 college students from seven universities in the state of Georgia were included in the analysis. *Methods:* Web-based surveys were completed by students (45–60 minutes) during the spring semester, 2015. *Results:* Findings indicate that more ACEs are associated with higher levels of depressive symptoms, ADHD symptoms, cigarette use, alcohol use, marijuana use, and BMI, in addition to lower levels of fruit and vegetable intake, and sleep. *Conclusion:* ACEs may carry forward in the lifespan to influence a range of unhealthy outcomes among college students. College intervention programs may benefit by recognizing the pervasiveness of ACEs and their associations with health behaviors and outcomes, to include interventions across more than one health behavior.

Young-Wolff K, Alabaster A, McCaw B, Stoller N, Watson C, Sterling S, Ridout K, et al. (2019). Adverse Childhood Experiences and Mental and Behavioral Health Conditions During Pregnancy: The Role of Resilience. *J Womens Health*, 28(4), 452-61. https://doi.org/10.10 89/jwh.2018.7108

TAGS: ACEs, mental health, pregnancy, resilience

Introduction: Little is known about how exposure to adverse childhood experiences (ACEs) and protective factors, such as resilience, influence prenatal mental and behavioral health. This study examined associations between exposure to ACEs and mental and behavioral health during pregnancy overall and among women with high versus low levels of resilience. *Materials and methods:* Women in two Kaiser Permanente Northern California medical centers were screened for ACEs and resilience during prenatal care (~14-23 weeks of gestation; N = 355). Multivariable logistic regression analyses examined associations between ACEs and prenatal mental and behavioral health conditions overall and for women with low (≤32) versus high (>32) resilience on the 10-item Connor-Davidson Resilience Scale. *Results:* Overall, 54% of women reported 0 ACEs, 28% 1-2 ACEs, and 18% 3+ ACEs. Relative to women with 0 ACEs, those with 1-2 ACEs had higher odds of an anxiety or depressive disorder and intimate partner violence (IPV) (odds ratios [ORs] 2.42-3.12, $p < 0.05$), and those with 3+ ACEs had higher odds of an anxiety or depressive disorder, depression symptoms, and IPV (ORs 3.08-4.71, $p < 0.05$). In stratified analyses by high (56%) and low (44%) resilience, having one or more ACEs (vs. 0 ACEs) was only associated with worse mental and behavioral health in women with low resilience. *Conclusions:* ACEs predicted mental and behavioral health conditions among pregnant women, and associations were the strongest among women with low levels of current resilience. Longitudinal research is needed to understand the causal mechanisms underlying these associations.

Glossary

Term	Description
ACEs	Adverse Childhood Experiences
AFMC	Arkansas Foundation for Medical Care
AGM	Arkansas Good Medicine
ARCOM	Arkansas College of Osteopathic Medicine
BMI	Body Mass Index
BRFSS	Behavioral Risk Factor Surveillance System
GAD	Generalized anxiety disorder
HbA1c	Hemoglobin A1c
HRSA	Health Resources and Services Administration
IWC	Intensive weight loss counseling
IPV	Intimate Partner Violence
MLP	Medical-legal partnership
PCTE	Primary Care Training and Enhancement
PDSA	Plan-Do-Study-Act
PHQ	Patient health questionnaire depression scale
PNP	Pediatric nurse practitioners
PTSD	Post-traumatic stress disorder
SDOH	Social determinants of health
SSNR	Safe, stable, and nurturing family relationships
TA	Technical assistance
TIC	Trauma-informed care
US	United States of America
VA	Veteran Affairs

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