STRATEGIES TO PREVENT & MITIGATE CHILDHOOD ADVERSITY

A literature review

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EXECUTIVE SUMMARY

OVERVIEW

There is a growing recognition that certain harmful experiences in childhood are associated with a range of negative health and social impacts throughout life. These experiences include abuse or neglect, having a family member who is incarcerated, and living in an environment of community violence, among others.[1] Given the enduring effects of adverse experiences during childhood on health and social issues, researchers, policy makers, a range of service providers from healthcare to education to early childhood, and communities themselves are experimenting with ways to prevent and mitigate the harm of such experiences.

However, with heightened interest and research on this topic, rapid spread of interventions and ever-evolving theories of change, the field is lacking clarity and consensus regarding effective prevention and mitigation strategies. Further, while the long-term impacts of childhood adversity are well understood, there is less clarity and consensus about how success and outcomes from these interventions should be measured. In particular, there are gaps in the field about which outcomes are realistic, subject to impact, and suitable to track in the short and medium-term to assess whether interventions are working, why (or why not), and for whom.

PURPOSE

This literature review analysis aimed to address these gaps in information, focusing primarily on two questions:

1. What is the state of the evidence on interventions to prevent and mitigate childhood adversity among children o to 5 years of age in the clinical setting or with a clinical-community linkage?
2. How should impact be measured effectively and responsibly given the scale of childhood adversity, the fact that outcomes accrue over a longer term, and real-world constraints?

METHODS

JSI employed a variety of approaches to search the literature and other resources in the field including: targeted searches of electronic databases of peer-reviewed literature, reviewing references of select publications, review of publications from leading organizations in the field, and review of intervention databases related to child wellbeing. Overall, the search identified 641 peer-reviewed abstracts. Two authors reviewed 185 peer-reviewed publications in full, ultimately including 39 publications. Additionally, the review also identified 5 gray (non peer-reviewed) publications for a total of 44 included publications. For a full list of unique interventions identified via this literature scan, please see Appendix A.

[1] National Center for Injury Prevention and Control, Division of Violence Prevention. Preventing Adverse Childhood Experiences. Centers for Disease Control and Prevention. 2020. Available at: https://www.cdc.gov/violenceprevention/acestudy/fastfact.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fviolenceprevention%2Fchildabuseandneglect%2Faces%2Ffastfact.html

INTERVENTIONS AND PROMISING PRACTICES

The review identified a mix of interventions and strategies ranging from well-established and recognized programs (e.g., home visiting programs) to emerging evidence from strategies to address child and family wellbeing (e.g., navigator programs focused on poverty reduction with a linkage to clinical care). Broadly, the interventions and strategies can be categorized into four levels based on the primary recipient of the intervention:

- Parent or caregiver
- Family including a child-parent dyad
- Providers (e.g., clinical providers)
- The broader community level

Most interventions identified in this review focused on the family i.e., the child and parent or caregiver together (10 interventions), or the parent or caregiver alone (6). Fewer interventions and resources focused on the community (6), and providers (3).

The interventions reflect a range of strategies focused on various recipients (e.g., parents and children, providers, and communities) and using a variety of approaches. Examples include parental skill building, parental support including through provision of health and mental health services, navigator programs, adverse childhood experiences (ACEs) screenings, promotion of positive parent-child engagement, enhancing family relationships, provider training and range of strategies to support systems change. The interventions also illustrate that there are many levers available to address childhood adversity, and many points of intervention.

Overall, the literature review analysis revealed several promising practices that could inform future design and implementation of interventions and strategies. These include:

- Delivery of intervention by a trusted provider
- Co-location of family support services within health care settings
- Creative use of the group intervention format to address health and other needs
- Programming with an equity lens
- Employing staff with lived experiences on intervention teams
- Gathering community input through community advisory councils and parental feedback

Findings from this report could provide insights for philanthropy, policy makers, and other decision makers interested in seeding and scaling interventions and strategies to prevent and mitigate childhood adversity.

OUTCOMES TO MEASURE PROGRESS

The review also examined outcome measures being used in the literature to track ongoing progress and measure intervention impact. The focus was on examining the range and relevance of outcomes that are being measured in the literature, with an eye towards outcomes that may be easy to comprehend, subject to impact, and feasible in real-world contexts.

The outcomes identified in this literature review analysis can be broadly categorized into four groups based on the entity receiving the intervention, and, by extension, the main unit-of-analysis for measurement purposes:

- Children
- Parents/caregivers
- Providers and healthcare systems
- Communities

Additionally, JSI identified six domains or types of outcome measures by focus area:

- Adverse Childhood Experiences
- Response behaviors
- Services, workflow & systems changes
- Skills & strengths
- Assets, relationships, & social capital
- Health & wellbeing outcomes

Overall, the literature review analysis revealed that a wide range of outcomes are being measured in the literature. This includes deficit-based outcomes such as prevalence of ACEs, childhood trauma, and anxiety, as well as strength-based outcomes such as resilience, presence of caring adults, and family stability. Some outcomes focus more on mitigation (e.g., assessing behavioral problems) while others are more prevention-focused (e.g., receipt of well-child and preventive care visits, provider knowledge and self-efficacy).

Reflecting on the wide range of outcomes in the literature and outstanding measurement questions that the field is grappling with, the report concludes with insights that could be useful to advance measurement as the political will and resources to address childhood adversity builds. These include:

- Identify and prioritize intermediate outcomes that lie along the causal pathway
- Develop a robust theory of change along with a phased measurement approach
- Clarify the purpose and end users of measurement and evaluation
- Pick outcomes that programs can impact and that align with stakeholders' diverse needs
- Create shared spaces for reflection about measurement and evaluation to support evidence building
- Consider the importance of equity in measurement

HOW TO USE THIS REPORT?

Some Reflection Questions

Findings in this literature review analysis report can be useful to varied stakeholders and audiences, although they may come to this report with different questions, frames of reference and ultimately, potential uses of the information presented.

Importantly, this report underlines how many levers are available to address childhood adversity, and many points of intervention. Notably, the best intervention or strategy is one that decision makers and/or the stakeholders have the bandwidth and the will to implement.

This section presents a set of reflection questions that audiences may want to consider as they review this report. We start with questions relevant to any reader, followed by questions tailored to key audiences:

- Philanthropy
- Health care providers

There are many other stakeholders interested in addressing adversity in childhood, and, as such, many audiences (e.g., child welfare, education etc.). However, given the focus of this literature review analysis on clinical and clinical-community linked approaches, questions are tailored to health care providers interested in concrete strategies to support patients and families that have experienced childhood adversity and subsequent trauma, and philanthropy interested in intervention strategies where they have an opportunity to make the greatest impact.

GENERAL GUIDING QUESTIONS TO CONSIDER

Considering these guiding questions before reading this report could help readers get the most out of the information included. These questions are intended to spark reflection about key populations, how success is defined, and the best suited approaches for various stakeholders in the field per their values, vision, and other operating considerations.

Who is the target population?

What key population(s) does your work seek to impact? What populations do you most commonly work with right now or plan to work in the future?

- Children
- Parents
- Families (children and parents/caregivers)
- Community more broadly

What strategies and approaches align with your strategy, mission, and capacity?

What types of strategies are you most interested in supporting? What approaches align with your organization's strategy, strengths, mission, and broader funding approaches?

- Prevention of childhood adversity-focused efforts
- Mitigation of childhood adversity after the occurrence of adversity
- Training and technical assistance (e.g., training of health care providers, technical assistance to health centers in implementing ACEs screenings)
- Broader community level efforts (e.g., community development, advancement of economic security)

What types of strategies is your organization best equipped to support and/or implement given staff capacity and resources at this time?

- Group supports (e.g., parental support groups)
- One-on-one services (e.g., one-on-one psychotherapy)
- Capacity building (e.g., capacity building for community-based organizations in shared decision making, data and quality improvement, financing)
- Training and technical assistance

How do you define success from the initiatives you support and/or implement?

How do you and your stakeholders define success? What are your desired outcomes? What do you need to evaluate and by when to conclude whether your investment and/or efforts were successful?

- Process outcomes: services delivered, trainings conducted, number of children screened
- Intermediate outcomes: changes in systems, infrastructure, capacity, behaviors
- Changes or improvement in quality of life, wellbeing, health and other social and emotional developmental outcomes.

What is the level of rigor needed to measure success?

- Emphasis on learning versus establishing proof-of-concept
- Need for a control/comparison group
- Emphasis on establishing causality and attribution
- Preference for evidence-based practices versus promising and/or emerging practices with less evidence to date

GUIDING QUESTIONS FOR KEY AUDIENCES

A few additional questions for two key audiences of this analysis follow (philanthropy and health care providers).

Guiding Questions for Philanthropy:

What is your ultimate aim in funding efforts related to childhood adversity (e.g., field building, funding research, funding direct service, influencing policy through advocacy)?

- Field building: Convening and connecting stakeholders in the field, providing direction and a common organizing framework, or supporting progress towards large scale impact
- Supporting research: Funding research to identify the most effective strategies and interventions and support the scaling of effective interventions
- Direct service: Supporting community-based organizations and providers to provide direct services
- Catalyzing community level change and prevention efforts
- Influencing policy through advocacy: Campaigns for policy change, building public awareness

What areas are you most equipped to effectively influence?

- Other funders
- Policy makers
- Researchers and the research agenda
- Community-based organizations
- General public

Guiding Questions for Health Care Providers

What is your level of readiness for addressing childhood adversity in a clinical setting? Consider these and other factors:

- Staff capacity and staff training, staff understanding of childhood adversity
- Infrastructure, information and data systems
- Referral systems, linkages to other community resources

At what level is your organization best suited to address childhood adversity?

- On an individual level with each child or parents
- At a family level
- At a systems and community level

The questions included here are meant to guide readers and to make this report findings useful and actionable. The guiding questions are intended to be a starting point for consideration rather than a definitive or rigid structure for use of this report.

LITERATURE REVIEW

INTRODUCTION

There is increasing recognition that childhood adversity, negative experiences in childhood such as abuse, neglect or other adverse events, is widely prevalent. Furthermore, experiencing adversity in childhood is associated with a range of negative health and social outcomes across the life course. In California and several other states, the political will and commitment to address this issue is also growing. The appointment of Dr. Nadine Burke Harris as California's inaugural Surgeon General, and Governor Gavin Newsom's policy agenda reflect this commitment: funding adverse childhood experiences (ACEs) screenings in Medi-Cal and through other child and family-related initiatives.

However, with heightened interest and research on this topic, rapid spread of initiatives and ever-evolving theories of change, the field is lacking clarity and consensus regarding effective prevention and mitigation strategies. Further, while there is a growing consensus regarding long-term health and societal impacts of preventing adversity (e.g., improved health outcomes and educational attainment, reduced health care costs) there is less consensus regarding how these outcomes should be measured. The field faces a lack of clarity on the set of outcomes that are realistic, subject to impact, and that can track progress in the short and medium-term to assess whether interventions are working, why (or why not), and for whom.

JSI's literature review analysis aimed to address these gaps and focused primarily on two questions:

1. What is the state of the evidence on interventions to prevent and mitigate childhood adversity among children o to 5 years of age in the clinical setting or with a clinical-community linkage?
2. How should impact be measured effectively and responsibly given the scale of childhood adversity, the fact that outcomes accrue over a longer term, and real-world constraints?

This report presents a synthesis of the interventions and strategies to prevent and mitigate childhood adversity identified through literature review. Per the objectives and methodology employed, the review identified a mix of interventions and strategies ranging from well-established and recognized programs (e.g., home visiting programs) to emerging practices to address child and family wellbeing (e.g., navigator programs focused on poverty reduction with a linkage to clinical care). Due to the focus on interventions with a clinical-community linkage, the review does not include interventions based solely in other fields (such as child welfare, community development, education, or the legal system) and without a link to clinical care. Relatedly, since early childhood is the period of most frequent engagement with the clinical system and given emerging evidence that early intervention may have the most long-lasting effects because of the timing of brain development, the review focused on children 0 to 5 years of age (Wachs et al., 2014). As such, interventions focused on older children or youth, and in school-based settings were not included.

By taking a deeper look at the state and strength of the evidence and outcomes being measured, JSI's intent is not to offer an exhaustive set of interventions and outcomes, but rather to elevate promising practices, and offer insights that may inform future design, implementation, and measurement. As such, the review does not focus solely on evidence-based practices, but explores both the more well-established evidence-based interventions and strategies as well as those with emerging evidence or promising potential.

The report is organized into two sections:

Section 1 synthesizes the state of the evidence, and briefly describes key findings from a range of evidence-based, evidence-informed, and emerging strategies. The interventions reflect a range of strategies focused on various recipients (e.g., parents and children, providers, and communities) and using a variety of approaches (e.g., parental skill building, mental health services, navigator programs, ACE screenings, etc.).

Section 2 synthesizes the range of outcomes used in the literature to track ongoing progress and measure intervention impact. Outcomes can be broadly organized into four categories based on the unit-of-analysis or who is impacted. In addition, organized can be organized into six domains relating to prevalence, response behaviors, services and systems changes, skills and strengths, assets obtained through lived experience or as result of intervention exposure, and health and well-being outcomes. Reflecting on the range of outcomes present in the literature and the measurement questions that the field seems to be grappling with, we conclude with considerations for measurement approaches moving forward.

METHODS

JSI used the following methods to search the literature:

1. Targeted searches of electronic databases of peer-reviewed literature (PubMed, Medline, Google Scholar, and PsycInfo).
2. Cross-referencing of reference lists of select publications.
3. Website and review of publication lists of leading organizations in the field (Child Trends, Children Now, Center for Youth Wellness, The National Child Traumatic Stress Network, The Children's Partnership, The California Children's Trust, Center on the Developing Child, Harvard University).
4. Review of databases of interventions related to youth development and child welfare (Blueprints for Healthy Youth Development and the California Evidence-Based Clearinghouse for Child Welfare) (The Blueprints for Healthy Youth Development, n.d.; The California Evidence-Based Clearinghouse for Child Welfare, n.d.).

Searches were conducted on all possible combinations of a set of search terms pertinent to the research questions and target population. Examples of search terms include: ACEs, Adverse Childhood Experiences, childhood adversity, resilience, coping, child abuse, child neglect, effectiveness, evaluation, prevention, reduction, mitigation, epigenetics, clinic, attachment, and relationships.

Inclusion criteria were as follows:

- Peer reviewed and gray literature
- Published between 2015 – 2019
- Published in English and in the US (or relevant systematic reviews that included studies on US populations)
- Interventions focused on children 0 to 5 years of age
- Publications focused on clinical or clinical-community linked strategies (i.e. the strategy or intervention included a health care connection, whether via pediatric setting, home visitors, mental health specialists or other means). Studies meeting the other criteria that did not include an explicit linkage with health care (e.g., those that took place exclusively in education, juvenile justice, child welfare, etc.) were excluded.
- No exclusions or restrictions by study design in an effort to include evidence-based, evidence-informed and emerging (or cutting-edge) research, and conceptual papers.

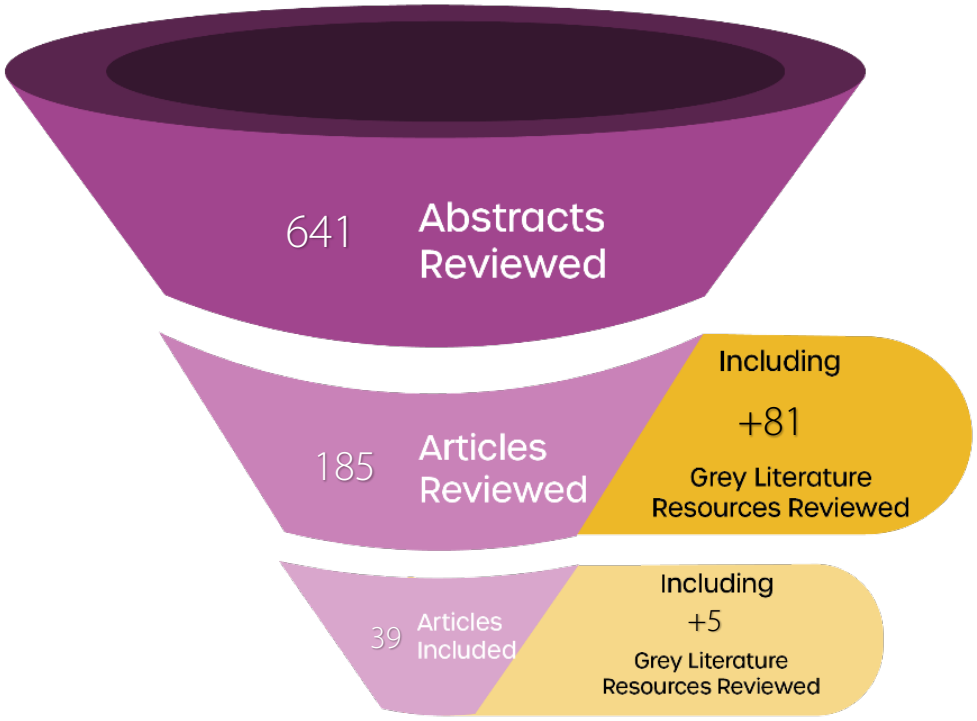
Additionally, the literature review was informed by interviews with key stakeholders who are leading efforts to prevent childhood adversity from various perspectives including public health, health care, philanthropy and education.

Figure 1 summarizes the peer-reviewed and gray resources included in this review. Electronic database searching yielded 641 abstracts. Authors reviewed abstracts and titles to determine eligibility; differences of opinion were resolved through meetings. Authors then worked in dyads to review a total of 185 publications in

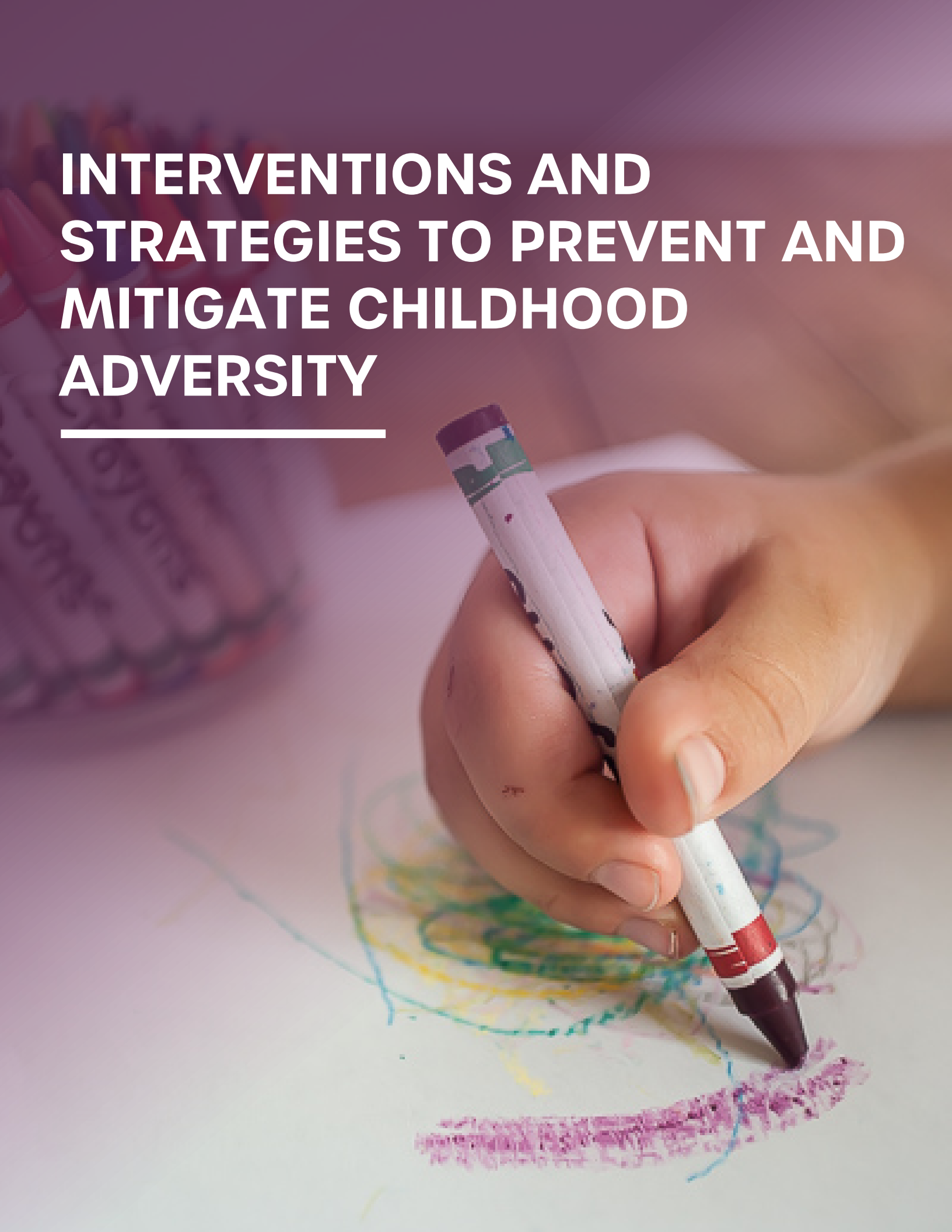
full to arrive at a total of 39 publications representing distinct interventions, strategies, and programs and that met inclusion criteria and were therefore included in the review. Additionally, a review of websites and publications from leading organizations yielded 5 reports that were included in the review.

The total count of documents included in this review is 44 (including 39 peer-reviewed publications and 5 resources from the gray literature). For a full list of unique interventions identified via this literature scan, please see Appendix A. Please note, subsequently throughout this report the term 'publications' is used to refer to peer-reviewed articles, briefs, reports obtained from journals and/or organization websites (not only to peer-reviewed publications).

Figure 1. Review Process



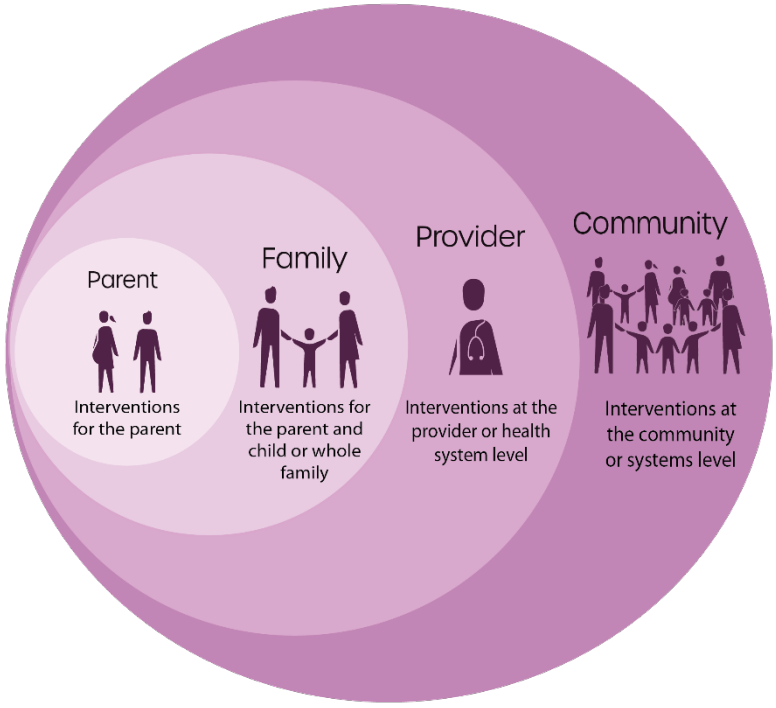
INTERVENTIONS AND STRATEGIES TO PREVENT AND MITIGATE CHILDHOOD ADVERSITY



OVERVIEW

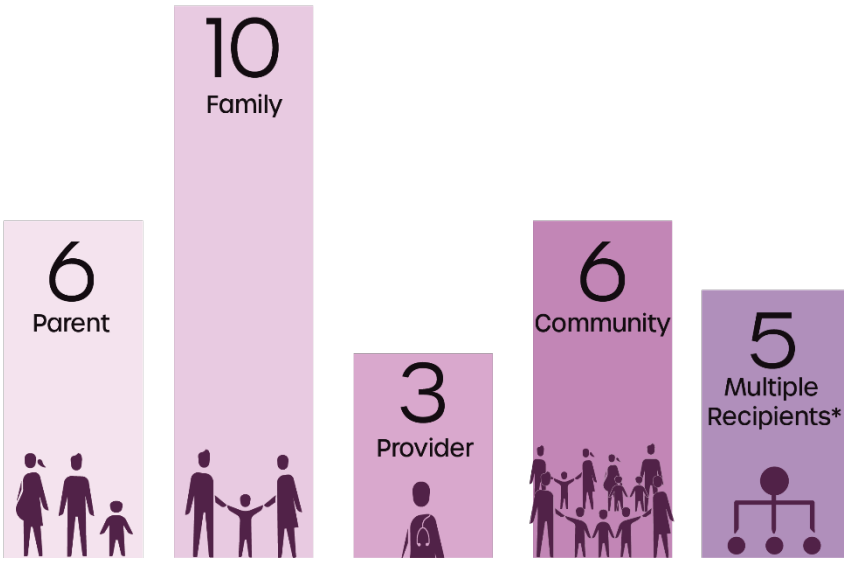
This section presents a synthesis of the interventions and strategies to mitigate and prevent childhood adversity identified through the literature review. Per the review objectives and methodology employed, the review identified a mix of interventions and strategies from well-established and recognized programs (e.g., home visiting programs) to emerging evidence from strategies to address child and family wellbeing (e.g., navigator programs focused on poverty reduction with a linkage to clinical care). Due to the focus on interventions in a clinical setting or with a clinical-community linkage, this review does not include strategies based solely in other fields (such as child welfare, education, or the legal system) and without a link to clinical care. As stated prior, given emerging evidence that early intervention may have the most long-lasting effects because of the timing of brain development, the review focused on children 0 to 5 years of age (Wachs et al., 2014). As such, interventions targeting older children or youth, and in school-based settings were not included.

Figure 2. Levels of Intervention



Based on the publications and resources reviewed, JSI identified four levels of interventions and strategies based on the primary recipient of the intervention. These four levels include: parent or caregiver, a child-parent dyad or the family together, providers, and the broader community level (see Figure 2). Most interventions identified in this review focused on the child and parent or caregiver together (referred to as "Family" on Figures 2 and 3) (10), or the parent or caregiver alone (6). Fewer studies and resources focused on the community (6), and providers (3) (see Figure 3).

Figure 3. Intervention-Focused Publication Distribution



This chart presents how publications are categorized based on the recipient of an intervention. Note that the publications described in this chart are those focused on interventions; publications focused on measurement only are not reflected in this chart —for this reason the total number of publications here does not total the 44 total publications included in this report.

SYNTHESIS OF INTERVENTIONS AT EACH LEVEL

PARENT OR CAREGIVER-FOCUSED INTERVENTIONS

The review identified a total of six studies and reports relating to parent or caregiver-focused interventions. Interventions and strategies can be broadly grouped as parental screening (to frame and enhance an understanding of childhood adversity), parent skill building, and parental support (including enhancing economic security). Additional details about interventions and strategies can be found in Box 1.

There is debate as to whether screening for ACEs by itself should be categorized as an intervention. However, studies focused on ACEs screenings were included in this report since screening helps to start the conversation on childhood adversity between parents and providers. The studies included herein tended to examine whether providers and parents were willing to complete screenings, and whether it influenced the patient-provider relationship. There is not a strong body of literature demonstrating whether screening alone for adversity influences social or health outcomes.

The interventions in this level tailor delivery in various ways, including by modifying the delivery format to meet varied patient needs, level of risk, and by focusing on prevention or mitigation. For example, programs could be delivered to individuals or using a group format; provided by phone, video, in person, or via printed materials; and could be delivered as a partnership between health care and early childhood-focused entities. Some interventions tailor services based on the level of risk or parental need. Some interventions are used both to prevent and mitigate the effects of childhood adversity and childhood trauma. In limited studies, interventions were tailored by race, ethnicity or cultural background.

Box 1. Types of Parent or Caregiver-Focused Interventions and Strategies Include:

- **Screening parents for ACEs**: Screening parents and expectant mothers for their own ACEs can take place in a pediatric primary care setting, home-visiting program, or prenatal care setting (Conn et al., 2018). This approach can open a conversation about childhood adversity, its long-term effects, effects on parenting, and needs that the parents or families may be experiencing in order to connect them to other services. Other research has examined parental ACE screenings during home visits, and has suggested that a home visitor with rapport with the family should ideally perform the screen (Johnson et al., 2017a). In a study of pregnant women (N=480), screening for ACEs was found to be feasible and acceptable to both the patients and the clinicians (Flanagan et al., 2018).
- **Skill building for parents and caregivers**: Skill building may include such topics as mindfulness, parental engagement and responsiveness to their children, and discipline strategies (Woods-Jaeger et al., 2018). For example, the **Dialectical Behavior Therapy Skills Training for Parents (DBT4P)** teaches Dialectical Behavioral Therapy mindfulness and emotion regulation skills to parents in a group setting. The program can be established as a collaboration between early childhood education and pediatric care, helping to support sustainability through shared costs, trainings and monitoring of quality (Woods-Jaeger et al., 2018). **GenerationPMTO** is a parental skill building intervention that can be either a preventive program or a treatment program for parents with children (2 – 18) (Parra-Cardona, 2019). GenerationPMTO has been adapted multiple times to be delivered in a group format ("GenerationPMTO (Individual Delivery Format)," 2009; The Blueprints for Healthy Youth Development, n.d.), for low-income Latinx parents and caregivers, and with additional content related to immigration, discrimination, and biculturalism (Parra-Cardona, 2019). There are also additional optional sessions if parents report child adversity, maltreatment or neglect (Parra-Cardona, 2019).
- **Parental skill building for foster parents, adoptive parents and kinship caregivers**: Parental skill building can also be adapted for different types of caregivers. For example, the **Resource Parent Curriculum** promotes "trauma-informed parenting" among "resource parents" (foster parents, adoptive parents and kinship caregivers). Trained facilitators deliver the program: a child welfare or mental health professional and an individual with experience parenting a child that has experienced trauma. The curriculum includes social learning (via interactive activities and discussions), and parent-facilitator consultations for issues specific to their children (Murray et al., 2019).
- **Addressing financial security in health care settings**: In addition to programs with a clear clinical linkage, there are examples of innovative programs in pediatric settings that address a broader set of issues such as poverty and financial stress. For example, one Boston-based program known as **StreetCred** assists clients with free tax assistance while patients wait in their health care provider's office. The goal of this program is to "decrease financial stress and maximize tax refunds, particularly [earned income tax credits], among low-income families" (Marcil et al., 2018). In addition to filing taxes, some volunteer tax preparers are also able to help enroll clients in programs such as Medicaid, Temporary Assistance for Needy Families (TANF), and the Supplemental Nutrition Assistance Program (SNAP). Research is in progress to estimate the health impact of this program.

CHILD- AND CAREGIVER-FOCUSED INTERVENTIONS

The review identified ten studies and reports related to interventions focused on the child and parent or caregiver together. Interventions in this category adopted various approaches to involving children and parents. Interventions also linked to clinical settings and providers to varying degrees. For example, some interventions were delivered in health care settings, such as pediatric medical homes. Studies included in this review also examined alternative primary care models for children and their caregivers, such as group primary care. Some interventions were based in the home or community settings but had some sort of link to clinical care (e.g., delivered by a health provider in the home). The focus of the interventions varied from child development and attachment to broader family economic wellbeing. Depending on the level of need of the child and their parent or caregiver, the interventions described below range from preventive in nature to identification of issues, and connection to other resources or treatment. Additional details about interventions and strategies can be found in Box 2.

Box 2. Types of Child- Caregiver Focused Interventions and Strategies:

- **Home visiting (general focus):** A few studies described home visiting programs, including **Family Check-Up** and **Family Connects** (Dishion et al., 2015; Dodge et al., 2019; "Family Check-Up (FCU)," 2016). These home visiting programs intend to promote positive engagement between parents/caregivers and their children and to reduce child maltreatment and neglect. Family Check-Up includes an assessment and feedback to parents followed by training that focuses on relationship building and other positive parenting strategies (Dishion et al., 2015; Yoshimoto et al., 2014). Family Connects provides families of newborn infants with home visits and connections to community resources. Trained nurses conduct the home visits and identify family needs for referrals while a community specialist helps facilitate referrals with the appropriate community agencies (Dodge et al., 2019).
- **Home visiting (mental health focus):** In addition to general home visiting, some home visiting programs focused on the mental health of the child and/or the parents. **The Infant Mental Health Home-based Early Head Start Program (IMB-HB EHS)**, for example, aims to promote strong relationships between an infant or toddler and their parents or caregivers as a foundation for healthy child development (McKelvey et al., 2015). Infant mental health programs tend to provide caregiver/parent assistance, assessment of early relationships, and infant-parent psychotherapy. The **Child First** program is a dual-generation home-based mental health intervention for families with children up to age 5 ("Child First," 2019). The program intends to improve mental health for children and their parents, reduce neglect and abuse, and improve healthy child development. To deliver home-based mental health services, a clinician provides psychotherapeutic services to support a safe and nurturing parent-child relationship and a care coordinator connects the families to community-based supports and services ("Child First," 2019).
- **Mental health therapy delivered to the caregiver and child together:** Some mental health therapies are delivered to the caregiver and child together. **Child Parent Psychotherapy (CPP)**, for example, is delivered to a child (age 0 – 5) and their primary caregiver, focusing on their relationship and the child's development. CPP incorporates the context in which the child and their caregiver live, including socioeconomic status, cultural beliefs, and specific stressors (e.g., related to immigration). In part, the treatment focuses on

ways to strengthen the relationship between the caregiver and the child as a means to support the child's mental health. The treatment facilitates the caregiver and child to identify "traumatic triggers" that impact the child's mental health ("Child-Parent Psychotherapy (CPP)," 2015).

- **Group primary care:** Group primary care models are one way to reach young children and their parents. Two such models are **Group Well-Child Care (GWCC)** and an adapted version of GWCC called **Trauma-Informed Group Well-Child Care (TI-GWCC)** that uses trauma-informed principles. A primary care physician or pediatrician and a case manager deliver these models for well child visits to four to eight children and their parents in a group session. Session topics include soothing and safety, attachment, toxic stress and coping, reflective parenting, and discipline (Graber et al., 2018).
- **Other group interventions**: Other group interventions include the trauma-informed and strengths-based intervention called **Group Attachment-Based Intervention (GABI)**. The main components of the 26-week intervention are child-parent psychotherapy, child developmental and social-emotional screening, parent support, and monitoring and treatment. GABI's goal is to promote parent-child secure attachment. Two clinicians and a team of graduate students form the GABI team (Murphy et al., 2015; Steele et al., 2019).
- **Navigator program or additional family-focused specialist with ties to clinical care**: While rarer than the other types of studies listed above, some programs used clinical care indicators (i.e., receipt of preventive services among children) as a conduit to understand broader contextual factors that families face, namely poverty. The **Family Success Alliance (FSA)**, aims to address poverty among children and income inequality in Orange County, North Carolina. Eligibility for families is based on income eligibility for free/reduced-price lunch (Schilling et al., 2019). The program pairs a family with a community navigator: an individual with similar lived experience and familiarity with navigating social systems. The navigator is also trained in motivational interviewing, and helps parents to set and meet goals for their family. The initiative was piloted in selected neighborhood zones and involved a community Advisory Council in program formation (Schilling et al., 2019).
- **Prevention-focused programs in pediatric primary care:** Some interventions focused on prevention (e.g., reducing risk, enhancing family relationships and attachment) rather than mitigation (e.g., additional services following ACE score questionnaires). **Healthy Steps, a program of Zero to Three**, is based in pediatric primary care settings where child development specialists see families at and between their visits to a primary care provider. Healthy Steps' goals are to strengthen family relationships and support attachment between parents and their young children. The child development specialist also covers topics like parental depression, feeding, sleep, and the social determinants of health (2018). The program has three tiers that correspond to a family's level of need (e.g., for all families, families with mild concerns, and families that are most at risk) (2018). **The Developmental Understanding and Legal Collaboration for Everyone (DULCE)** combines aspects of the program, Healthy Steps, and of a medical-legal partnership for infants ages zero – 6 months (Sege & Harper Browne, 2017).

PROVIDER-FOCUSED INTERVENTIONS

The review identified three studies and reports related to interventions focused on providers and health care systems. Most interventions in this category tended to focus on training and preparing providers to care for clients with exposure to childhood adversity or to screen for adverse experiences. The included interventions did not focus on treating or addressing childhood adversity among providers nor did they address the secondary trauma that providers may experience in treating patients who have experienced childhood adversity. Reviewed interventions that involved clinician training tended to report increased confidence among clinicians to screen and increased screening rates (Flynn et al., 2015). Clinicians expressed that processes and referrals should be in place if a child is identified as needing further attention due to adversity (e.g., mental health and social work resources, resources for parents) ("Safe Environment for Every Kid (SEEK)," 2014). Additional details about interventions and strategies can be found in Box 3.

Box 3. Types of Provider-Focused Interventions and Strategies:

- **Training providers to screen for childhood adversity or to identify children at higher risk**: One systematic review examined efforts to prevent and address traumatic stress in pediatric primary care settings (Flynn et al., 2015). Of the ten included studies, seven studies focused on providers (e.g., medical residents, pediatricians, etc.). Most interventions were multi-component interventions (making it impossible to isolate the effects of each component of the program). Included studies examined clinicians' use of a program or screening questionnaire, or trained providers to recognize child maltreatment and domestic violence. Overall, reviewed interventions reported increased screening rates and self-reported clinician confidence to carry out screening (Flynn et al., 2015).
- **Training providers to screen for parental ACEs or other parental issues**: Few publications focused on efforts to train providers to screen for parental ACEs (Flanagan et al., 2018) or to identify parental issues that may constitute adverse experiences for their children. In a study by Flanagan et al., clinicians received training including education about ACEs and resilience and information related to workflow and protocol changes. Clinicians' willingness to screen depended on training, supportive workflows, a desire to pair resilience screening with ACEs screening, and availability of mental health, parenting, and social work resources. In particular, clinicians noted the benefits of an onsite social worker and that clinics should not screen for ACEs until they have referral resources and processes established (Flanagan et al., 2018). **Safe Environment for Every Kid (SEEK)** trains health care professionals to identify child maltreatment and prevent psychosocial problems like parental depression ("Safe Environment for Every Kid (SEEK)," 2014). SEEK offers trainings via videos and other materials; medical professionals can receive Continuing Medical Education (CME) credit and other certification via the American Board of Pediatrics. SEEK uses a parent questionnaire to screen for food insecurity, parental depression, major stress, intimate partner violence, substance use, and harsh punishment.
- **Supporting providers with early childhood mental health consultations**: One study examined the effectiveness of early childhood mental health consultation (ECMHC) in rural settings where childcare providers are linked to mental health consultants (Vuyk et al., 2016). ECMHC is a preventive service (rather than treatment) wherein a mental health consultant may work with childcare staff to increase skills that boost socioemotional development, manage behavior and improve quality of care. (Vuyk et al., 2016).

COMMUNITY-FOCUSED INTERVENTIONS

JSI identified six publications describing community-focused interventions or approaches that featured a linkage between health care and other sectors. Compared to interventions focused on individuals (e.g., those focused on parents, children, and/or providers), there were relatively fewer interventions focused on community-level change. This may be because it is arguably harder to make change at the community level compared to at the individual level, since the former requires coordination of multiple sectors (e.g., coordination of measures and data across multiple sectors). Additional details about interventions and strategies can be found in Box 4.

Box 4. Examples of Community-Focused Models and Strategies:

- **Collaborations between health care entities and other community organizations**: There were limited examples of collaborations between community organizations and health care organizations. Woods-Jaeger et al. described the development of a community-based intervention to interrupt the intergenerational cycle of toxic stress. The program, **2Gen Thrive**, was developed iteratively as a collaboration between a children's hospital and an Early Head Start program. 2Gen Thrive intends to improve resilience, prevent toxic stress by supporting caregiver's abilities to respond to their child's needs (Woods-Jaeger et al., 2018). To develop 2Gen Thrive, the organizations used a community-based participatory research approach, engaged a Community Action Board, and solicited feedback from parents. **Help Me Grow** is a systems approach to promote the wellness of children at risk of developmental and behavioral issues (Bruner et al., 2017). Help Me Grow features 4 components: training child health providers and parents to promote early detection of problems in children, creating a directory of local services and programs, establishing referral and care coordination pathways, and gathering data to identify gaps in needed services (Dworkin & Sood, 2016). As of 2018, 92 Help Me Grow "systems" were in operation in 28 states. While there is a national network, local affiliates balance tailoring the program to their local contexts while maintaining program fidelity with the model.

Distinct from community-focused interventions, JSI also identified 4 publications describing efforts to foster and support systems change. The approaches described herein focus on strategies to achieve systems change; for example, through information collection, shared goal setting (including research and policy agendas), convening of multi-sector partners, discussion of data needs, and supporting a community-based approach to addressing child and family adversity (Bethell et al., 2017; Ellis & Dietz, 2017; Pachter et al., 2017; Steverman & Shern, 2017). Some approaches focus on a particular community or city, while others are broader and call for change at the field or national level.

Box 5: Examples of Efforts to Support Systems Change:

- **Convening of stakeholders:** A foundational role of the organizers of systems change efforts is to bring together stakeholders from various sectors that impact children, parents, and families. Few venues exist for these stakeholders in varied fields to connect. The scope of these convenings varied widely from local convenings bringing together a local Children's hospital, local public health academicians, nonprofit, and philanthropic leadership (Pachter et al., 2017) to a national effort to field-build at the broadest level (Bethell et al., 2017).
- **Information collection:** Another systems change strategy was to emphasize information collection. The information collection stages noted include environmental and literature scans, in-person listening forums (Bethell et al., 2017), qualitative research using key informant interviews and focus groups (Ellis & Dietz, 2017). In the case of Ellis & Dietz, the qualitative research aimed to answer the question, "What barriers in the child health system prevent stakeholders from addressing the social determinants of health that lead to ACEs and toxic stress?" Their qualitative research revealed that that participants had a strong understanding of ACEs and toxic stress, but were unsure how to address it in their clients.
- **Agenda setting or goal setting (including research and policy agendas):** Agenda and goal setting processes occurred in various format and scopes. The scope of the agenda setting process varied from a national scope to a scope specific to an urban city setting in Philadelphia (Bethell et al., 2017; Pachter et al., 2017).
- **Discussion of data needs**: Particularly at the local level, locally relevant data appears to be an important way to support systems change strategies, whether to make the case that the issue is important or to measure impact. For example, Pachter et al. described the efforts of the Philadelphia ACE Task Force (PATF), which gathered local data. Equipped with both local qualitative and quantitative data, members of the PATF made the case for a focus on childhood adversity to institutions in Philadelphia representing various sectors (Pachter et al., 2017).
- **Financing of community strategies**: Notably, missing from most of these resources was a close consideration of financing such efforts. One such exception was an article providing an overview of financing mechanisms and key challenges to financing of prevention-focused childhood adversity interventions (Steverman & Shern, 2017). Key challenges related to financing include differences in language used to describe childhood adversity and distinct desired outcomes among different fields (e.g., academic achievement in education, reduced substance use in the fields of mental health and substance use) (Steverman & Shern, 2017).

STRENGTH OF THE EVIDENCE

Although the goal of this review was not to offer assessments of whether some interventions and strategies are better than others, this section summaries JSI's reflections on the strength of the evidence, which can be broadly categorizes into three main levels: evidence-based, evidence-informed and emerging practice. Overall, the interventions included in this review were fairly evenly split among were evidence-based (10), evidence-informed (11) and emerging evidence (9).

The three categories are defined as follows:

- **Evidence-based:** 2 or more peer-reviewed publications focused on intervention effectiveness with a control group, publications demonstrate positive impact on children, parent, and/or family wellbeing outcomes *OR* at least 1 well-designed randomized controlled trial focused on intervention effectiveness that demonstrates positive impact(s) on children, parent, and/or family wellbeing outcomes.
- **Evidence-informed**: 1 or more peer-reviewed publication focused on intervention effectiveness with a control group, publications demonstrate positive impact on children, parent, and/or family wellbeing outcomes.
- **Emerging evidence:** 1 or more peer-reviewed publications, may not have studies to date including a control group, may include feasibility or acceptability studies, may not have data on study effectiveness or positive impact on children or family wellbeing outcomes.

In addition to the definitions described above, JSI looked to other published sources and databases that have commented on the strength of the evidence of various child and family wellbeing-focused interventions (namely the Evidence-based Models Eligible to Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Grantees, the California Evidence-Based Clearinghouse for Child Welfare (CEBC) and Healthy Blueprints (The Blueprints for Healthy Youth Development, n.d.; The California Evidence-Based Clearinghouse for Child Welfare, n.d.; U.S. Department of Health & Human Services, n.d.).

EVIDENCE-BASED

By the standards described above and taking the guidance of MIECHV and CEBC into account, evidence-based programs in this analysis total ten (see Table 1: Included Interventions). These evidence-based programs identified a positive impact on child, parent and/or family health and wellbeing. Some of these impacts include:

- Higher likelihood of completing well-child visits, higher likelihood of positive parenting practices, receipt of community resource information, and adherence to child safety guidelines (Healthy Steps) (Healthy Steps, n.d.).
- A favorable effect on positive parenting practices and child development (Family Check-Up) (U.S. Department of Health & Human Services, 2017).
- Significant improvement for post-traumatic stress symptoms (Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT) ("Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT)," 2006).

EVIDENCE-INFORMED

In total, JSI identified 11 evidence-informed interventions (see Table 1: Included Interventions). Evaluations of these interventions demonstrated outcomes in the following areas:

- Among children who had witnessed domestic violence, significant reductions in behavioral problems and symptoms of traumatic stress for intervention versus control group children (Child Parent Psychotherapy) ("Child-Parent Psychotherapy (CPP)," 2015).
- Favorable effects on child development, maternal health (Child First) ("Child First," n.d.; U.S. Department of Health & Human Services, 2011).
- Significantly lower rates of child maltreatment and emergency visits or hospitalizations for child maltreatment (Triple P - Positive Parenting Program ®) ("Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT)," 2006), higher likelihood of completing well-child visits.
- Among infants in intervention group, more likely to have accessed five or more routine preventive care visits by 1 year of age, be up to date on immunizations, and less likely to have an emergency department visit by 6 months of age. Participating families were more likely to be connected to resources SNAP, housing vouchers, or assistance with utilities (Developmental Understanding and Legal Collaboration for Everyone, DULCE) (Sege & Harper Browne, 2017).

EMERGING PRACTICE

In the analysis, nine total interventions fall into the emerging practice category (see Table 1: Included Interventions). This included some of the interventions for which publications and studies had primarily focused on feasibility or acceptability rather than experimental studies with control groups demonstrating positive health or wellbeing impacts. Also in the emerging practice category are some of the more cutting-edge programs that are linked to clinical care but also to broader social conditions (e.g., families experiencing poverty and financial stress, offering of free tax assistance to maximize tax returns and enhance a family's economic security).

The interventions or approaches in the emerging evidence category did not tend to report influences on health outcomes, but some did report impacts on intermediate measures.

- For example, studies on parental ACE screenings generally reported them to be feasible and acceptable to parents. Pregnant women reported an increased trust or feeling their clinician knew them better in a prenatal care setting (Flanagan et al., 2018) while parents in another study often viewed parental ACE screenings as a pathway to needed services for their child or family (Conn et al., 2018).
- The StreetCred program has yet to publish findings on impacts on health outcomes (an evaluation launched in 2019). However, given the well-researched linkage between economic security and health, their role in maximizing tax refunds for family participants is notable. In one study in four Boston clinics, not encompassing the entirety of the program, StreetCred reported that 753 clients received $1.6 million in federal tax refunds (roughly an average of $2,125 in tax refunds per family served) (Marcil et al., 2018).
- A feasibility study of the 2GenThrive program reported that parents felt positively about the program and that their relationship with their child had improved after completion of the program (Woods-Jaeger et al., 2018).

Table 1: Included Interventions and Evidence Grades

	Intervention	Description	Evidence Grade
		Evidence-Based Interventions	
1.	Attachment and Bio-Behavioral Catch-up (ABC)	An intervention focused on increasing nurturing and positive parenting for children aged 0 -2 years in low -income families with experience with neglect, abuse, or placement instability.	Evidence-Based
2.	Early Head Start (EHS)– Home-Based Option	A two-generation focused home-visiting program that consists of weekly visits to promote healthy child development for children aged 0-3 and improve parenting skills for low-income pregnant women and families.	Evidence-Based
3.	Infant Mental Health Home-Based Early Head Start Program (IMH-HB EHS)	A home-based intervention that aims to improve the relationship between parents and their toddlers or infants, develop healthy family functioning, and support mental health for both parents and children.	Evidence-Based
4.	Family Check-Up	A home-based family-centered intervention that aims to improve parenting and family management practices through reinforcing positive parenting practices.	Evidence-Based
5.	GenerationPMTO	GenerationPMTO is both a preventative and treatment program to train parents and other caregivers on family management skills for a variety of children's behavioral issues. It has also been adapted for group use as Parenting Through Change, and for Latinx immigrant groups as CAPAS: Criando con Amor, Promoviendo Armonía y Superación.	Evidence-Based
6.	Healthy Steps	An intervention involving the integration of social workers, nurses, nurse practitioners, and/or child development specialists into pediatric and other primary care settings to support healthy early development.	Evidence-Based
7.	Minding the Baby	A home visiting preventative intervention for at-risk pregnant mothers to improve mental and physical health and attachment outcomes for them and their children over their life course.	Evidence-Based
8.	Nurse Family Partnership	A home visiting program by a registered nurse for first-time, low-come mothers starting during pregnancy to improve outcomes in pregnancy, child health and development, and parental life course until age 2.	Evidence-Based
9.	Safe Environment for Every Kid (SEEK)	An intervention that trains health care professionals to identify child maltreatment and prevent psychosocial problems like parental depression.	Evidence-Based

	Intervention	Description	Evidence Grade
10.	Trauma-Focused Cognitive-Behavioral Therapy	Cognitive-behavioral psychological treatment for parents and children aged 3-18 who have experienced trauma and exhibited emotional issues such as posttraumatic stress disorder, anxiety, or depression.	Evidence-Based
		Evidence-Informed Interventions	
11.	ARC: Attachment, Self-Regulation, and Competency	Intervention based in attachment theory that addresses how a child's environment can be trauma informed to enhance trauma-based therapy.	Evidence-Informed
12.	Child First	A mental health provider-led two-generational home-visiting program for parents and children aged 0-5 and are at risk for or experienced abuse, neglect, trauma, have behavioral or developmental issues, or are in families facing adversity.	Evidence-Informed
13.	Child-Parent Psychotherapy	Psychotherapy treatment for parents and children aged 0-5 exposed to trauma to strengthen their relationship in a way that supports the child's mental health through encouraging positive images and interactions with each other.	Evidence-Informed
14.	Combined Parent-Child Cognitive-Behavioral Therapy (CPC-CBT)	CPC-CBT provides cognitive behavioral therapy to both the child and the parent in families at risk of or with a history of abuse.	Evidence-Informed
15.	Developmental Understanding and Legal Collaboration for Everyone (DULCE)	An intervention that includes a trained family specialist in a pediatric care team to address social determinants of health, support family understanding of child development, connect to resources, and promote resiliency with parents for the child's first six months of life.	Evidence-Informed
16.	Family Connects	Family Connects provides families of newborn infants with home visits and connections to community resources. Trained nurses and community specialists deliver the intervention.	Evidence-Informed
17.	Group Attachment-Based Intervention (GABI)	Group-based therapy with parents with a history of ACEs and at-risk children aged 0-3.	Evidence-Informed
18.	Help Me Grow	A cross-sector program to connect families with kids aged 0-8 with behavioral or development risks with services.	Evidence-Informed
19.	LAUNCH/MYCHILD Model	The LAUNCH/MYCHILD Model is an early childhood mental health model that incorporates mental health services into pediatric primary care medical homes.	Evidence-Informed

	Intervention	Description	Evidence Grade
20.	Promoting First Relationships (PFR)	An intervention that trains home visiting service providers in skills and give strategies to encourage and support healthy parenting and positive parent child relationships.	Evidence-Informed
21.	Triple P Positive Parenting Program	A multi-tiered preventative intervention aimed to support parents or caregivers of children aged 0-16. The program goals include preventing developmental and emotional issues, educating parents on positive parenting strategies, and increasing parenting confidence.	Evidence-Informed
		Emerging Practice Interventions	
22.	2GenThrive	A community clinic-based program aimed to help health care providers support low-income families with children aged 6-11 months by implementing interventions promoting intergenerational resilience and toxic stress prevention.	Emerging Practice
23.	Dialectical Behavior Therapy Skills Training for Parents (DBT4P)	An intervention that teaches Dialectical Behavioral Therapy mindfulness and emotion regulation skills to parents in order to improve their responsiveness to their children and decrease parental stress.	Emerging Practice
24.	Family Success Alliance	A community clinic-based initiative that aims to address poverty among children living in Orange County, North Carolina, including developing a community navigator program to connect families to vital services.	Emerging Practice
25.	Early childhood mental health consultation (ECMHC)	A preventative intervention that provides mental health consultants in early childcare home and center settings to help caregivers improve child development outcomes. Consultants aim to increase skills to boost socioemotional development, manage behavior, and improve quality of care.	Emerging Practice
26.	Everychild Bright Beginnings Initiative (EBBI) (The Children's Clinic, Long Beach, CA)	EBBI includes toxic stress screenings in routine prenatal and pediatric medical care and intends to address the effects of toxic stress on infants, toddlers, and mothers.	Emerging Practice
27.	Group Well-Child Care (GWCC)/Trauma-Informed Group Well-Child Care (TI- GWCC)	GWCC is a clinic-based intervention that delivers well-child visits by a primary care provider and case manager in a group setting to build support and community for parents; it emphasizes trauma-informed care and additional support to parents around toxic stress, child development, and healthy attachment.	Emerging Practice
28.	Resource Parent Curriculum for Foster Parents and Kinship Caregivers	A training intervention to provide guidance for parenting trauma-exposed children for a variety of nontraditional caregivers such as foster parents, adoptive parents, and kinship caregivers.	Emerging Practice

	Intervention	Description	Evidence Grade
29.	Project Healthy Grandparents (PHG)	Project Healthy Grandparents intends to improve the well-being of families in which grandparents are raising their grandchildren. PHG provides case management by social workers and health services by registered nurses through home visits.	Emerging Practice
30.	StreetCred	A clinic-based intervention providing low-income families with free tax preparation services in pediatric settings. The program aims to ensure that participants receive earned income tax credits they were eligible for and foster connection with their child's provider.	Emerging Practice

PROMISING PRACTICES

Overall, the interventions included in this review showcase a range of approaches demonstrating varied results. These interventions also illustrate that there are many levers available to address childhood adversity, and many points of intervention. How an organization or partnership chooses to intervene can influence the magnitude of the impact.

Notably, the best intervention is one that the providers and/or the community have the bandwidth and the will to implement. This is particularly relevant to community interventions; one community may be ready and willing to promote child wellbeing and prevention of trauma through a comprehensive systems-change approach; other communities may not be bought-in to or ready for such an effort. With this lens, decision makers, policy makers, community members and community leaders could focus their efforts where they are best suited to address the far-reaching issue of childhood adversity.

The literature review analysis also revealed several promising practices in these interventions, which could inform future design and implementation:

- **Delivery of intervention by a trusted provider.**
  Multiple interventions and strategies reviewed herein pointed to the important role of a trusted provider with whom the parent and/or child have rapport. Discussing adverse childhood experiences specifically or childhood adversity more broadly is a sensitive topic that could understandably cause trepidation and stress for parents. Having a trusted provider--whether a home visitor, primary care provider, mental health provider or other contact-- could help parents and caregivers to feel more comfortable. For example, one study examined two home visiting programs, one where the home visitor uniformly asked about adverse childhood experiences in the first visit and the other where the home visitor had the option to ask about ACEs later on in the intervention, if they deemed that appropriate. The group of home visitors who had the flexibility to ask about ACEs later on in the intervention revealed a higher number of ACEs in their population, which may indicate that parents felt more comfortable discussing such sensitive topics with a home visitor when they had established a trusting relationship (Johnson et al., 2017b).

- **Co-location of family support services within health care.**
  Co-locating or centralizing family support services at the pediatrician or primary care provider's office, can lead to increased and faster connections. Some programs, like Developmental Understanding and Legal Collaboration for Everyone (DULCE) or Healthy Steps, use waiting room time to offer additional support through a family specialist or child development specialist. This makes use of time that a family may otherwise spend waiting for their appointment. Logistically, it is more convenient and simpler for the parent or caregiver to coordinate; it necessitates fewer trips and less time away from work. Meanwhile, this could also keep the family or child development specialist up to date about the infant or child's primary care experience as well. Relatedly, there are a few examples of innovative use of wait time; for example, to provide free tax help or enroll in social service programs. This approach addresses a broader set of issues and stressors that families experience such as poverty and financial stress. Many of these programs showed significant improvements in families' financial situations while also improving patient-provider relationships (Marcil et al., 2018).

- **Creative use of the group intervention format to address health and other needs.**
  The review identified multiple instances of group formats being used (e.g., delivering an intervention to a group of parent-child dyads rather than one-on-one). Delivering interventions to children and their parents in groups was used in multiple interventions (e.g., Group Well Child Care or GWCC, Group

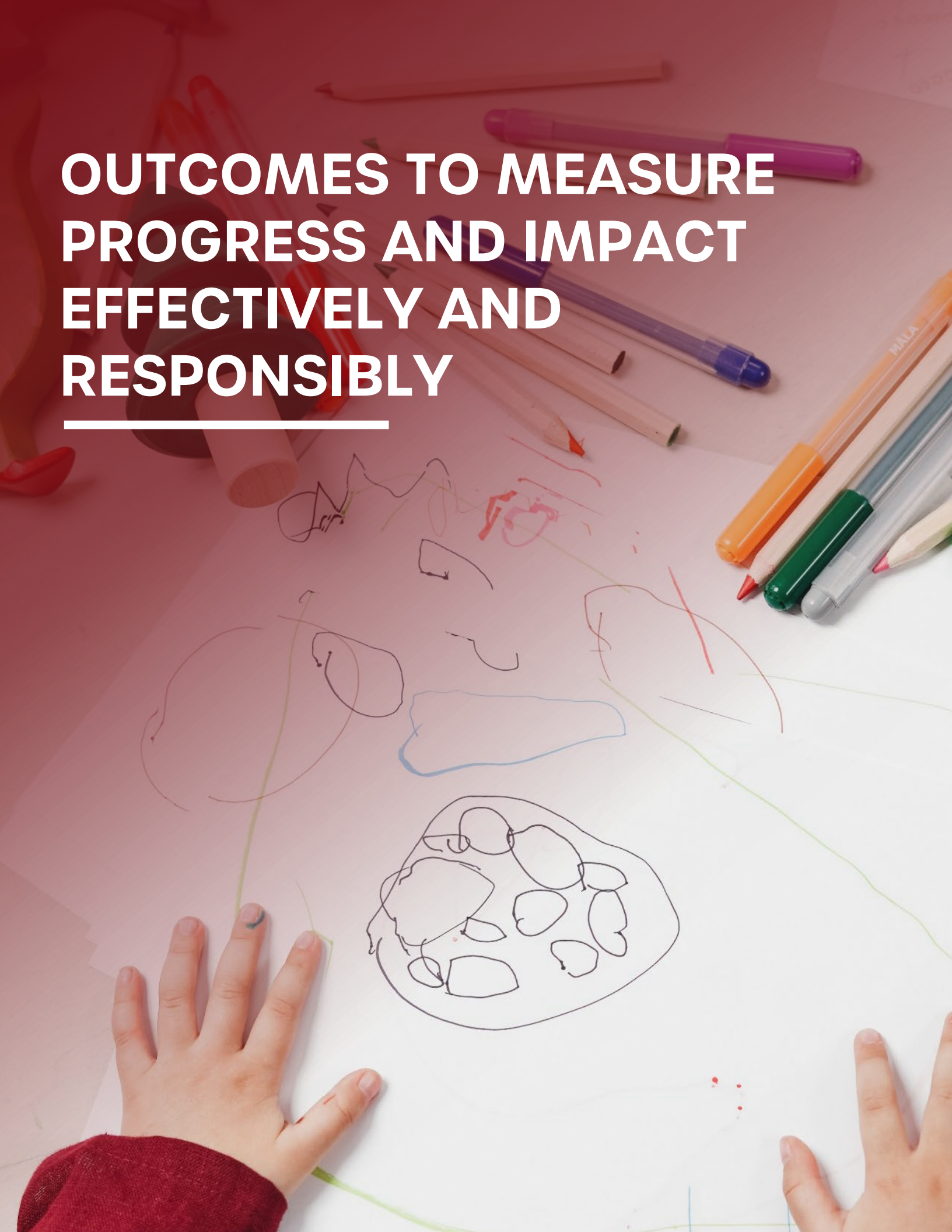
Attachment-Based Intervention or GABI). The group format could be beneficial for multiple reasons, including furthering the reach of a program; potentially decreasing program costs; and increasing camaraderie, support, and peer-learning among parents. For example, in one study, parents noted that the group format "provides an opportunity for parents to relate with other parents in a mutually supportive way, which encourages them to highlight each other's abilities, promote competence and self-worth, and reduce social isolation" (Murphy et al., 2015).

> **Programming with an equity lens.**
In limited studies, interventions were tailored by race, ethnicity, or cultural background and made a concerted effort to apply an equity lens. This was fairly rare, and could be one area of growth given the importance of programming that considers the stress of experiencing racism, discrimination, and punitive immigration laws for parents, families, and young children. While experiencing discrimination and racism are not part of the original adverse childhood experiences study (Felitti et al., 1998), several organizations have made the case to recognize the negative impacts of racism and discrimination on children and family health and wellbeing (Pachter et al., 2017). An increased focus on issues relevant to communities of color, rather than a one-size-fits all model, could also enhance the take-up and reach of these programs. For instance, of the interventions examined herein, few programs include an intentional focus on concerns relevant to Latinx families, including those experiencing discrimination, racism, and stress related to immigration (Parra-Cardona, 2019).

> **Including staff with lived experiences on intervention teams.**
Some interventions emphasized the importance of a team member with lived experience relevant to those being served (e.g., former foster parents delivering a program to current foster parents) or with experience navigating the systems that families may encounter (e.g., community navigator role, or community health workers) (Murray, Sullivan, Lent, Chaplo, & Tunno, 2019).The pediatrician is certainly a critical part of the prevention and response for a child living with adversity. However, pediatricians alone cannot meet all the needs of families. Other roles may be better suited to help families navigate intricate systems and may have the time, resources and expertise to do so more effectively (e.g., home visitors, care coordinators, family specialist, navigators).

> **Gathering community input through community advisory councils and parental feedback.**
Multiple interventions included in this review gathered input through community advisory councils, actively solicited parental input to improve programs, or used a community-based participatory approach. Gathering community input and community leadership is one way to ensure programs are responsive and rooted in the context of the local community.

OUTCOMES TO MEASURE PROGRESS AND IMPACT EFFECTIVELY AND RESPONSIBLY



OVERVIEW

This section focuses on the second key question: How should impact be measured effectively and responsibly given the scale of childhood adversity, given that outcomes accrue over a longer term, and real-world constraints?

Here we present a snapshot of the range of outcomes used in the literature to track ongoing progress and measure intervention impact. These outcomes may be easy to comprehend, subject to impact, and feasible in real-world contexts. Insights were drawn from peer-reviewed publications, conceptual papers, reports, and assessment tool validation studies. Themes relating to measurement from stakeholder interviews conducted for JSI's other report titled 'Focusing the Lens' were also reviewed. Together, the literature review and stakeholder interviews reveal a lack of alignment on outcome measures, varied perspectives on what is considered responsible and efficient measurement design given the scale of childhood adversity, and questions regarding who should define outcomes (funders, researchers, policy makers or community) and evaluation time-periods (short, medium, or long term).

As such, in this section, the intent is not to present an exhaustive list of outcomes but rather to stimulate discussion about the following two issues:

1) The range and relevance of outcomes that are being measured in the literature.
2) The readiness to shift focus from long-term to intermediate outcomes — intended effects or outcomes that are common, occur over the medium term, and typically lie on the causal pathway to final outcomes—that could yield 'good enough' evidence for decision-making.

The range of outcomes identified in the literature review analysis can be broadly organized into four categories based on the unit-of-analysis or who is impacted by the intervention: children, parents/ caregivers, providers and healthcare systems, or communities. These four categories are represented as rows in Table 2. In addition, we organized the outcomes into six domains, represented as columns in Table 2. Domains relate to the prevalence of ACEs, response behaviors at the individual-level, services and systems changes, skills and strengths, assets obtained through lived experience or as result of intervention exposure, and health and well-being outcomes. A brief description of each category follows Table 2. Reflecting on the range of outcomes present in the literature and the measurement questions that the field seems to be grappling with, we conclude with considerations for measurement approaches moving forward.

Table 2. Frequently Used Outcomes

Measurement Categories	Adverse Childhood Experiences	Response Behaviors	Services, Workflow & Systems Changes	Skills & Strengths	Assets, Relationships, & Social Capital	Health & Wellbeing Outcomes
Child Focused	– Prevalence of ACEs	– Externalizing & internalizing behaviors – Communication – Cortisol levels – Social & Emotional behaviors	– Receipt of services: well-child and preventative health visits – Receipt of screenings: developmental, social-emotional – Referrals when indicated	– Resilience – Cognitive skills – Psychomotor abilities – Safety at home – Age-appropriate functioning	– Family stability – Parental attachment – Predictive quality of life – Presence of at least one caring adult/mentor – Benevolent Childhood Experiences	– Mental health – Trauma – BMI – Healthy weight – Early child development
Parent or Caregiver	– Exposure to ACEs in childhood	– Parents' response behaviors – Parents' risk behaviors – Parents' adaptive behaviors	– Access to and quality of support services – Access to quality health care services – Utilization of services – Access to health insurance	– Resilience – Knowledge of child development – Trauma-informed parenting – Confidence and self-efficacy – Positive parenting	– Parent-child Sensitivity – Parent-child attachment – Parent involvement in child learning – Parent commitment to care for child – Social connections or network	– Parent mental health – Parent stress – Parent chronic diseases (e.g., diabetes, high blood pressure, COPD) – Pregnancy spacing – Prenatal and postpartum health

Table 2. Frequently Used Outcomes, Continued

Measurement Categories	Adverse Childhood Experiences	Services, Workflow & Systems Changes	Skills & Strengths	Assets, Relationships, & Social Capital	Health & Wellbeing Outcomes
Providers and Healthcare Systems	-N/A	– Screenings conducted: ACEs, developmental/ social-emotional – Services provided: preventative, well-child, developmental & behavioral specialist consults – Linkages to social services – Systems capacity enhancement – Care coordination	– Knowledge of childhood issues – Confidence in identifying ACEs, providing trauma-informed care – Skills in nurturing socio-emotional development among clients	– Awareness of community resources – Connection with parents – Connection with children	– Provider stress – Provider burnout – Personal and professional growth – Personal wellbeing
Community	– Community violence and trauma –Historical & structural racism –Prejudice & discrimination	– Early child development systems – Workforce development – Data sharing and use for quality improvement and accountability	– Shared family/community practices and engagement	– Community leadership – Network of community-led organizations – Collective efficacy – Proximity to services (healthy food, quality health care, early childhood, higher education) – Toxic-free living environments	– Safe and supportive communities – Social networks – Economic stability

MEASUREMENT CATEGORIES

CHILD-FOCUSED MEASUREMENT

Overview and Orientation

A wide range of child-focused outcomes are being measured in the literature. This includes deficit-based outcomes such as prevalence of ACEs, childhood trauma, and anxiety, as well as strength-based outcomes such as resilience, presence of caring adults, and family stability. The literature reveals a mix of mitigation-focused (e.g., assessing behavioral problems) and prevention-focused outcomes (e.g., receipt of well-child and preventative care visits).

Types of Outcomes

Prevalence of ACEs was commonly measured, with many studies measuring the feasibility and acceptability of integrating ACEs screening within existing evidence-based care models (Johnson et al., 2017b). Tools from the CDC/Kaiser landmark study (Felitti et al., 1998) or more recently developed tools (see Appendix B) are being used to retrospectively measure prevalence of childhood ACEs (Koita et al., 2018; Merrick et al., 2019). Outcomes relating to response behaviors such as conduct, communication, and behavioral problems are common. Specific example include: **disruptive behaviors, social withdrawal, aggression, abuse-related fear or shame, affective communication, changes in cortisol levels, sleep problems, attention problems, delinquent behavior, separation distress, secure attachment and sense of security** (Blaustein & Kinniburgh, 2010; Dubowitz et al., 2016; "Family Check-Up (FCU)," 2016; The National Child Traumatic Stress Network, 2012; "Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT)," 2006). ("Attachment and Biobehavioral Catch-up (ABC)," 2008; Blaustein & Kinniburgh, 2010; Dubowitz et al., 2016; The National Child Traumatic Stress Network, 2012).

Several studies measured the use of health care services. Examples of outcomes include **receipt of recommended preventative services, well-child visits, developmental and behavioral screenings, immunizations, and receipt of other screenings (e.g., vision and hearing tests, lead and hemoglobin testing, and annual influenza vaccinations)** (Graber et al., 2018; Schilling et al., 2019; Sege & Harper Browne, 2017).

Age-appropriate functioning and early child development constructs are used to assess a child's skills and strengths. Examples include **self-efficacy in eating, dressing, toileting; personal responsibility; psychomotor ability; and cognitive skills** (Attachment and Biobehavioral Catch-up (ABC)," 2008; Blaustein & Kinniburgh, 2010; Dubowitz et al., 2016). **Resilience** is also increasingly being measured in the literature, although definitions vary. Broadly, resilience is defined as the ability to withstand, adapt to, and recover from adversity (Traub & Boynton-Jarrett, 2017). Some studies conceptualized resilience as **a set of inherent characteristics such as high self-esteem, optimism, determination in the face of challenges, ability to face fears, and internal locus of control** (Traub & Boynton-Jarrett, 2017). Others viewed resilience **as learned behaviors and/or practices in the face of adversity**. For example, the development of resilience among children aged 2 to 6 was measured as successful adaptation of childhood development markers such as academic capabilities, ability to follow rules of conduct, and ability to engage with peers (Heard-Garris et al, (Dubowitz et al., 2016; Heard-Garris et al., 2018). Further, some studies emphasized that resilience should be viewed as resulting from the complex interplay of individual factors (such as genetics, natural temperament, knowledge, learned skills, past experiences), interpersonal relationships, and cultural and societal resources (Traub & Boynton-Jarrett, 2017). Importantly, there seems to be a focus in the literature on promoting resilience (Dubowitz et al., 2016; Traub & Boynton-Jarrett, 2017). Examples of **outcome measures focusing on promoting resilience include: caregivers' mental health needs, support to caregivers with employment stability, promoting family stability through household routines and predictive structures around mealtime,**

bedtime, and media consumption, and positive and optimistic parent appraisal styles and parent-child interactions.

Several interventions focused on returning children to a path of normal development, and measured outcomes relating to **family stability, attachment, and benevolent childhood experiences such as having at least one caring adult, safety and security, and a predictive and positive quality of life** (Arvidson et al., 2011; Merrick et al., 2019; Spieker et al., 2012; "Triple P - Positive Parenting Program® System," 2006).

PARENT OR CAREGIVER FOCUSED MEASUREMENT

Overview and Orientation

A large number of studies target the child and parent/caregiver by addressing and preventing intergenerational adversity. These studies focus on efforts to help parents/ caregivers reduce stress and to equip them with skills to promote healthy behaviors among their children. Not surprisingly, outcomes in this category may be viewed as largely strength-based and prevention focused.

Types of outcomes

Most interventions that included a child and parent/caregiver strategy studied the intervention impact on children and parents (or caregivers). As such, outcomes described above under the child-focused category apply. In addition, these interventions measured parent-level outcomes such as **parents' childhood exposure to ACEs and parents' adaptive and response behaviors** ("Attachment and Biobehavioral Catch-up (ABC)," 2008; "Combined Parent-Child Cognitive-Behavioral Therapy (CPC-CBT)," 2012; "Triple P - Positive Parenting Program® System," 2006). Specific examples of the latter include **how parents respond to children's behavior, calmly or aggressively; use of verbal or non-verbal support and encouragement versus hostility; use of physical abuse or other frightening and threatening behaviors (e.g., physical punishment)**. Studies measured **parents' stress levels and practice of risky behaviors (e.g., increased smoking and/or alcohol/substance use).**

Other outcomes include **parents access to and use of services, including health insurance; parents' resilience; knowledge about a child's social-emotional needs and behavioral problems; and confidence and efficacy in providing an environment that helps children develop regulatory capabilities** (e.g., by following a child's lead and showing delight) ("Attachment and Biobehavioral Catch-up (ABC)," 2008; Padamsee et al., 2018; Schilling et al., 2019; "Triple P - Positive Parenting Program® System," 2006). Interventions also measured **positive parenting practices** that promote healthy development and management of common behavior problems. Several validated scales were used to document parents and caregivers' perceptions about these issues, such as the Trauma Informed Parenting Scale, the Tolerance of Misbehavior Scale, and the Parent Efficacy Scale (Murray et al., 2019).

Examples of outcomes in the assets and relationships domain include **strength of the parent-child relationship, parental involvement in the child's growth and learning, and formation of social connections and networks both for the parent and child** ("Attachment and Biobehavioral Catch-up (ABC)," 2008; "Child-Parent Psychotherapy (CPP)," 2015; Graber et al., 2018; Padamsee et al., 2018). **Parent-child sensitivity,** another example in this domain, is used to assess whether there was a sense of warmth, acceptance, and reciprocity in parent-child interactions, and whether interactions were positive or dysfunctional ("Attachment and Biobehavioral Catch-up (ABC)," 2008; "Child-Parent Psychotherapy (CPP)," 2015; Padamsee et al., 2018) In terms of health and wellbeing domain **parenting stress, maternal stress, depression, PTSD, and chronic diseases** were commonly measured (Chemtob et al., 2013).

PROVIDER- AND HEALTH SYSTEMS-FOCUSED MEASURMENT

Overview and Orientation.

Interventions focused on the provider and health systems included efforts to promote screening, provider training, and development of tools and protocols to enhance providers' ability to identify and support children and families experiencing adversity. In terms of orientation, there are a mix of deficit-based outcomes (e.g. screening for ACEs, screening for behavioral problems) and strength-based outcomes (e.g. provider knowledge, self-efficacy and competency), and more of a prevention focus, for example through the establishment of workflows and care coordination to meet client needs.

Types of Outcomes.

The focus of measurement for interventions targeting providers ranges from **process outcomes such as number of screenings and trainings conducted, to workflow and system-level changes, to self-reported changes in provider knowledge, attitudes, practices.** Examples of outcomes include **increases in 'intent to screen', screening rates for ACEs, developmental, social-emotional and behavioral needs.** One study additionally screened for other social needs such as housing, safety, transportation, and further recommended tracking the nature, type and frequency of support offered (Narayan et al., 2018). For example, virtual support; provision of parenting resources; and linkages and referrals to specialists and community resources to offer care beyond the clinic walls and support parents in coordinating and navigating complex systems.

Outcomes relating to **provider knowledge, skills, self-efficacy and competency** were commonly measured. Studies measured benefits to providers such as **self-reported improvements in skills and confidence in identifying ACEs and providing trauma-informed care, and fostering socio-emotional skill development in their patients** (Flynn et al., 2015). Interventions that included consultations between a health care provider (typically mental health consultant) and home-based and center-based childcare providers also measured outcomes for patients and clients such as **fostering of deeper connections and attachment between providers and children, providers and parents, and reductions in self-reported provider burnout and stress** (Vuyk et al., 2016).

COMMUNITY-FOCUSED MEASUREMENT

Overview and Orientation

Given the parameters of this literature review, this section only touches upon the growing body of community-focused outcome measures. While we identified a few clinical-community linkage programs and described the outcomes tracked by these studies in this report, there is a growing body of literature on community development and neighborhood interventions that may not include an explicit linkage with health care and as such were not included in the review. Evidence on the role of community or neighborhoods and the interplay between family and community on childhood adversity is growing (Sandel et al., 2016). Research suggests that while children living in marginalized communities may be at risk for greater adversity, there are important strengths in a community setting such as consistent and supportive relationships with elders and other community members that can be protective. These protective factors build resilience and support children to mitigate the harmful effects of stress they may experience within their families. Consequently, 'community focused measures have the greatest potential for being strength-based and prevention-focused.

Types of outcomes

A few studies included in this review offered recommendations for community-focused outcomes measures. Examples include **measures to assess economic stability or lack thereof and everyday-living stressors** that can disrupt a child's social, emotional and physical development. The **Child Opportunity Index (COI)**, for example, is a tool to measure the prevalence and changes in child-related adversity at the community or

neighborhood level (Sandel et al., 2016). The COI incorporates 19 indicators of opportunity related to education, health and environment, and social and economic factors to create a composite index by neighborhood in each of the 100 largest metropolitan areas in the US. COI is used to identify areas of need, as well as to track the impact of social policies and interventions.

Other examples include the **prevalence of community violence and trauma** that are emerging in the literature as outcomes that can provide a broader understanding of the scale and challenges of childhood adversity. Another example is measuring **historical and current policies and practices of racism and discrimination** that have been perpetuated by institutions and put some communities at greater risk of childhood adversity (Williams et al., 2019).

Researchers also suggest **strength-based outcomes such as neighborhood and community strengths; for example, community safety, quality housing, safe and secure built environments that promote child development, access to shared recreational spaces (e.g., parks, libraries, community centers) community leadership, and enhanced community capacity and collaboration** (Hargreaves et al., 2017; Sandel et al., 2016). Other studies suggest measuring **resilience promoting factors such as whether families/communities engage in shared practices of eating together, sharing ideas, and attending religious services** (Traub & Boynton-Jarrett, 2017).

CONSIDERATIONS FOR MEASUREMENT

Reflecting on the wide range of outcomes in the literature and the questions the field seems to be grappling with, this section presents considerations for measurement moving forward. The following insights could be useful to advance measurement and the use of data more broadly as the political will and resources to address childhood adversity increase.

> **Identify and prioritize intermediate outcomes that lie along the causal pathway.**
The review of interventions to address childhood adversity suggests that a promising set of short- and medium-term outcomes exist, and are being actively measured in the peer-reviewed and gray literature. Outcomes range from prevalence measures to response behaviors to process outcomes (e.g., screening conducted) to skills, strengths, and assets obtained through exposure to intervention, and ultimately, to health and well-being measures. A range of validated tools and adaptations of these tools are also available to measure these outcomes.

These findings suggest that there may be an opportunity to shift focus from long-term to intermediate outcomes that may yield 'good enough' evidence for decision-making. Intermediate outcomes include the intended effects or outcomes that are common, occur over the medium term, and typically lie on the causal pathway to final outcomes. An intermediate outcome or intermediate results are critical outcomes that often must occur in order to reach the higher-level, end outcome/objective. For example, positive parenting, improved parent and provider capacity to provide trauma-informed care, child receipt of well-child and preventative services, safe and supportive communities, and collective efficacy, among others, are the building blocks necessary to prevent negative health and social outcomes that occur over the life course. Philanthropy may have a key role in supporting a mindset shift in measurement and evaluation away from generalizability and rigor towards assessing if interventions and strategies are working in real-time, why (or why not), and for whom.

> **Develop a robust theory of change along with a phased measurement approach.**
The review further indicates that while there are a wide range of outcomes they are not organized in any meaningful way. The challenge ahead is not in finding the perfect set of outcome measure(s) that field should adhere to, but rather it lies in developing a shared theory of change (TOC) and arriving at some consensus regarding what outcomes lie along the pathway from intervention to long-term impact and how

these should be responsibly measured. Developing a robust TOC that maps the pathways from intervention to long-term impact may be the first step in responsible measurement. A robust TOC can ensure that the right set of strategies are in play to achieve the desired outcomes. The next step is employing a phased approach to measurement by outlining what outcomes can be measured and when along the pathway from intervention exposure to long-term impact.

This approach could be useful for several reasons. First, given the magnitude of childhood adversity it hardly seems ethical to wait for outcomes that accrue over the long-term (e.g., health care costs, educational attainment rates) to deem an intervention a success or failure. Practitioners need real-time data and evaluative thinking to be continuously aware of the context, progress, and shifts occurring, and to be able to use data for program refinement. Second, outcomes that can be measured in the short and intermediate term could potentially be studied alongside existing evidence on long-term health outcomes (even if not from the same intervention). These data taken together could provide 'good enough' evidence to support decision-making. Finally, a growing field presents an opportunity for learning and evidence building. While piloting promising practices and interventions, it would be a missed opportunity to focus too narrowly on long-term health outcomes and lose sight of the journey – or what it takes to do this work well. A phased approach to measurement encourages the inclusion of measures that emphasize process, as well as the establishment of systems and building blocks that are necessary for programs to be successful and to achieve the end outcome or objectives. Overall, measurement approaches need to be responsive to the field, recognizing the varying data needs and outcomes that can be measured at each phase, to then tailor evaluation approaches to address phase-specific data needs.

> **Clarify the purpose and end users of measurement and evaluation.**

In the traditional evaluation paradigm, measurement decisions are driven largely by funders, their conceptualization of impact, and by the data they need to discern what they should fund to maximize impact. Traditional evaluation, informed by scholars and researchers, tends to be rooted in a scientific model with goals of objectivity, rigor, validity, and generalizability. Evaluation results, not surprisingly, tend to have less value for the grantees and/or the communities that they serve.

But it does not have to be this way. At its core, measurement and evaluation are about the systematic collection of information about activities, effects, and outcomes to assess whether programs are working as desired. The information collected needs to be examined with the goal of informing learning, decision-making, and action to improve effectiveness in real-time. Timely data can be invaluable to practitioners engaged in the day-to-day business of running programs. A culture of collecting and 'making meaning' from data can enhance understanding of how programs are working (or not), for whom, and under what circumstances, and, importantly be used to identify areas for course correction along the way.

Clarifying the purpose and end users of measurement and evaluation may be particularly relevant for more nascent fields such as childhood adversity, where there is widespread recognition of the harmful effects along, with an urgency to test and identify solutions that are commensurate. Measurement approaches that are responsive to the field's needs may be more valuable at this time than achieving objectivity and generalizability. It may be important to broaden the definition of 'evidence' and 'effectiveness' to include promising practices that may yield 'good enough' evidence for decision-making, including data about the pre-conditions for effective implementation.

Among evaluators working in the social sector, there is a growing sense that the merits of evaluation lie in its usefulness to its ultimate users (Patton, 2008). Evaluations should be designed and conducted in ways that increase the likely utilization of both evaluation results and of the process itself to inform decisions and improve performance. When designing measurement approaches, the field of childhood adversity may benefit from intentionality around the purpose of measurement by asking questions such as: Who needs to know what, by when, and how? What are the data needs of the varied stakeholders—those who design and

implement the programs, the children and caregivers that programs aim to serve, and the researchers and funders interested in examining how learnings can be scaled and/or replicated?

> **Pick outcomes that programs can impact and that align with stakeholders' diverse needs.**
Given real-world implementation challenges and the time it takes to realize change, it is important to select outcome measures that programs can realistically influence, and that are easy to understand and collect data on. This strategy helps to manage expectations, make a realistic assessment of the level of effort needed, create stakeholder buy-in, and enhance the utility of evaluation results.

In addition, as seen in the review, there are disparate but related ways of addressing and responding to childhood adversity, each with its own set of strategies, measurement approaches, and differential potential for impact. For example, some interventions focused on children, parents, and caregivers may be more focused on mitigation and lessening the effects of harmful behaviors after they have occurred. Others focused on health systems change, community and neighborhood development may take longer and be costlier, but are likely to influence prevention and have a more long-standing impact. Stakeholders need to embrace a 'both/and' mindset and need to be realistic about the outcomes that are possible based on the nature of the intervention. Philanthropy could support providers and community partners in better aligning expectations by encouraging deeper reflection on the kind of change desired, the level of intervention undertaken, and consequently, the potentential for impact.

Relatedly, varied stakeholders often have different outcome priorities. For instance, caregivers may be most interested in measuring the differences in their children's communication patterns or social-emotional attachment, while health care providers may want to track number of well-child and preventative visits and behavioral health outcomes as proxies for early child development and averting adverse health outcomes later in life. Including a range of outcomes in measurement planning can serve stakeholders' varied interests, while also supporting research parity between prevention and strength-based outcomes on the one hand and mitigation and deficit-based outcomes on the other—both of which have their own value in evidence building and resonate with different stakeholders.

> **Create shared spaces for reflection about measurement and evaluation to support evidence building.**
There is growing interest and research in the field of childhood adversity, a rapid spread of initiatives with multiple sectors and stakeholders engaged, and ever-evolving theories of change and definitions of impact and effectiveness. Consequently, there is no shared understanding of what to measure and how. While there will probably never be a one-size-fits-all perfect set of outcome measures, shared spaces to reflect on measurement successes, challenges, barriers, and promising practices can be an opportunity to build the evidence-base and capacity to undertake innovative approaches to assess what is working, for whom, and under what circumstances—going back to the core of measurement and evaluation. Philanthropy may have a key role in ensuring that such spaces exist, are inclusive, and that support shared capacity building.

> **Consider the importance of equity in measurement.**
The review found few interventions emphasizing the need for culturally-relevant programs focused on issues of most importance to vulnerable communities. Further, there is little attention to the issue of equity in measurement discussions. That is, outcomes are rarely disaggregated by race, income and other socioeconomic factors to assess if interventions have a differential impact by subpopulations. Although one of the key messages in the childhood adversity field is that "childhood adversity can happen to any child" irrespective of community and demographics, in reality historic and contemporary policies and practices such as the systemic oppression of communities of color may put some children at disproportionately higher risk for experiencing childhood adversity. It is also important to consider equity in measurement discussions, since measurement in and of itself can be painful and re-traumatizing. Adopting an equity-lens in measurement and evaluation can be useful to answer critical questions about: (1) the ways in which

historical and systemic injustices have contributed to present day conditions of childhood adversity in communities of color; (2) whether strategies have a differential impact on some populations; and (3) whether strategies in way can affect the underlying systemic drivers of inequity (Equitable Evaluation Initiative, 2017). Philanthropy may be able to shift and influence the ways in which an equity-lens can be used in measurement and evaluation.

CONCLUSION

This literature review revealed that there are numerous clinical and clinical-community linked intervention and strategies that have been employed with varied results to address childhood adversity. These strategies take advantage of the high-level of engagement between pediatric practices and families during the first five years of a child's life; are focused on various recipients; and have been studied and evaluated to provide a range of insights into effectiveness. Further, there are many promising practices from co-location of family support services within health care, to using wait time creatively for parent peer-to-peer engagement, to gathering community input via advisory councils, that may be ripe for further testing, refinement, and scaling. Altogether, the interventions reviewed here provide a robust set of both well-established and recognized programs as well as promising models for clinical leaders and partners with an interest in addressing childhood adversity.

The review also highlighted that there are many levers available to address childhood adversity, different points of intervention, and consequently, differential impact on prevention more broadly versus mitigation. Some interventions focused on children and families at the individual level, while others focused on the provider and health care systems level, or at the broader community level. Some interventions focus on preventing childhood adversity from occurring in the first place, while others were more mitigation-focused, intending to lessen the effects of harmful behaviors after they had occurred. Overall, the point of intervention and levels at which an organization or partnership chooses to intervene can influence the magnitude of the impact.

The interventions and strategies reviewed here are using a promising set of short and medium-term outcomes that may be easy to comprehend, subject to impact, and feasible in real-world contexts. There is a need, however, to arrive at some consensus on how to organize this range of outcomes. Further, the data suggest that there may be an opportunity to revisit or **adjust the traditional understanding of 'evidence-based' in ways that encourage innovative approaches and capture intermediate outcomes.** Perhaps convening interested partners around the development of a shared Theory of Change can help address some of these questions. The field may benefit by mapping out what outcomes lie along the pathway from intervention to desired impact; what is reasonable to measure and by when; what outcomes yield 'good enough' evidence to support decision-making and continuous quality improvement for the field.

The review also emphasized how the magnitude of societal challenge needed will require a multi-pronged response, from the individual to the community to the policy and systems levels. Clinical care is clearly important to the health of children and families, but other fields are playing equally important roles in child and family well-being. Some of them may be better positioned to work on social and structural issues such as poverty. The future model may be one where health care acts as one player in a network alongside early child development programs, schools, after school programs, and other public and private community services to ensure that children and their families have equitable opportunities for development and well-being. How can future research examine the design and implementation of such cross-sector solutions? A comprehensive approach to evidence-building that wrestles with these questions, builds on evidence across sectors, while continuing to illustrate the impact of effective strategies on the lives of children and families has the potential to fuel a lasting movement.

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APPENDIX A: LIST OF INCLUDED PUBLICATIONS

#	Name	Author	Year	Summary
1.	Methods to Assess Adverse Childhood Experiences of Children and Families: Toward Approaches to Promote Child Well-being in Policy and Practice	Bethell, C. D. et al.	2017	This study aimed to compare 14 ACEs assessment methods for adults and children as well as evaluate validity of the cumulative ACEs measure included in the National Survey of Children's Health (NSCH-ACEs). The authors found that the measurement methods were similar in what they assessed and that the NSCH-ACEs method was acceptable.
2.	Prioritizing Possibilities for Child and Family Health: An Agenda to Address Adverse Childhood Experiences and Foster the Social and Emotional Roots of Well-being in Pediatrics	Bethell, C. D. et al.	2017	This publication describes a field engagement process to set priority goals and research areas for a national ACEs agenda. Overall, the engagements revealed that safe, stable, nurturing relationships are paramount to the field for both agenda focuses.
3.	Preventing Adverse Childhood Experiences (ACEs): Leveraging the Best Available Evidence	Centers for Disease Control and Prevention	2019	This brief provided an overview of the CDC Technical Packages to Prevent Violence, specifically to mitigate the impacts of ACEs. Their core strategies include strengthening economic support to families, promoting social norms that protect against violence and adversity, ensuring a strong early childhood care, teaching skills for family cohesion, and connecting youth to caring adults.
4.	Childhood Adversity Screenings Are Just One Part of an Effective Policy Response to Childhood Trauma	Child Trends, Inc.	2019	This brief advocates that ACEs screenings are only one part of strategies for policy makers to address childhood trauma, and stresses the importance of evidence-based strategies to respond/prevent childhood trauma on a systems scale.
5.	What Works for Reducing Problem Behaviors in Early Childhood: Lessons From Experimental Evaluations	Child Trends, Inc.	2015	This brief synthesized findings from intervention evaluations of 50 programs aimed to reduce externalizing and internalizing behaviors of children 0-5, with the majority focused on preschool children (3-5).
6.	Screening Kids from Birth to Age 5 for Trauma	Children Now	2019	This brief supports the recent political will for early childhood adversity screening in clinical settings and provides insight into common challenges posed by implementation. They also provide recommendations for providers and California lawmakers to support children with trauma.

#	Name	Author	Year	Summary
7.	Parental perspectives of screening for adverse childhood experiences in pediatric primary care	Conn, A. M. et al.	2017	This study aimed to examine parent perspectives on the intergenerational transmission of ACEs and screening for ACEs in a pediatric primary care setting.
8.	Biomarkers of adverse childhood experiences: A scoping review	Deighton, S. et al.	2018	This review intended to identify recent research on biological measures of ACEs in adulthood.
9.	A transactional approach to preventing early childhood neglect: The Family Check-Up as a public health strategy	Dishion T.J. et al.	2015	This study examined the impact of the Family Check-Up, a strengths-based home visiting strategy, to promote positive engagement between parent/caregiver and child (ages 2-5).
10.	Effect of a Community Agency–Administered Nurse Home Visitation Program on Program Use and Maternal and Infant Health Outcomes A Randomized Clinical Trial	Dodge, K. A., et al.	2019	This study assesses the implementation and impact of the Family Connects program when administered by a community agency.
11.	A Population Health Approach to System Transformation for Children's Healthy Development	Dworkin, P. H. and Sood, A. B.	2016	This publication describes the rationale for a systems approach to promoting child development at a population level, and highlights Help Me Grow as one such model.
12.	A New Framework for Addressing Adverse Childhood and Community Experiences: The Building Community Resilience Model	Ellis, W. R. and Dietz, W. H.	2017	This study introduces the Building Community Resilience (BCR) model, an effort to convene multi-sector partners in child wellness. The model intends to align efforts in strategic readiness and implementation work providing resources and services for children and their families.
13.	Feasibility and Acceptability of Screening for Adverse Childhood Experiences in Prenatal Care	Flanagan, T. et al.	2018	This study evaluated the feasibility and acceptability of screening pregnant women for ACEs in prenatal care. Both clinicians and patients reacted positively to the pilot program, however clinicians noted that clinics should not screen for ACEs until they have referral resources and processes established.
14.	Primary Care Interventions to Prevent or Treat Traumatic Stress in Childhood: A Systematic Review	Flynn, A. B. et al.	2014	This systematic review examines primary care interventions for prevention and treatment of traumatic stress in childhood.
15.	Parent Perspectives on the Use of Group Well-Child Care to Address Toxic Stress in Early Childhood	Graber, L. K. et al.	2019	The study examined two programs delivered in an urban federally qualified health center: Group Well-Child Care (GWCC) and Trauma-Informed Group Well-Child Care.

#	Name	Author	Year	Summary
16.	Aligning Community Capacity, Networks, and Solutions to Address Adverse Childhood Experiences and Increase Resilience	Hargreaves, M. B., et al.	2017	This publication describes an effort to evaluate the Adverse Childhood Experiences Public-Private Initiative (APPI), a Washington state collaboration among private foundations and public agencies to study interventions which prevent and mitigate ACEs.
17.	Advancing the measurement of collective community capacity to address adverse childhood experiences and resilience	Hargreaves, M.B., et al.	2017	This paper describes the development and piloting of the Adverse Childhood Experiences Public-Private Initiative's ACEs and Resilience Collective Community Capacity (ARC3) survey, which measures community capacity to address ACEs.
18.	Childhood adversity and parent perceptions of child resilience	Heard-Garris, N. et al.	2018	This study examined "parent-perceived resilience" of a child and the relationship to ACEs exposure and community factors. The analysis revealed a negative dose-response relationship between the number of ACEs experienced and probability of parent-perceived resilience.
19.	Parents' adverse childhood experiences and mental health screening using home visiting programs: A pilot study	Johnson, K. et al.	2017	This study examined the feasibility of home-based parental ACE screening as a part of two home visiting programs provided by Early Head Start and Olmsted County Public Health Services in Rochester, Minnesota.
20.	Development and implementation of a pediatric adverse childhood experiences (ACEs) and other determinants of health questionnaire in the pediatric medical home: A pilot study	Koita, K. et al.	2018	The Bay Area Research Consortium on Toxic Stress and Health (BARC) aimed to develop a set of child adversity screening items, assess the validity of identified items via interviews with caregivers and providers, and note preferences for screening administration.
21.	Examining Long-Term Effects of an Infant Mental Health Home-Based Early Head Start Program on Family Strengths and Resilience	McKelvey, L. et al.	2015	This study researched the impacts of an Infant Mental Health Home-based Early Head Start Program (IMH-HB EHS).
22.	Assessing adverse experiences from infancy through early childhood in home visiting programs	McKelvey, L. M. et al.	2016	This study used Family Map Inventories (FMI) in a home visiting setting to assess young children's exposure to adverse experiences (age 0 - 5), parenting practices, and whether ACEs negatively impacted child well-being. The authors propose that FMI could help identify and mitigate/address exposure to ACEs as it occurs.
23.	Beyond Cumulative Risk: A Dimensional Approach to Childhood Adversity	McLaughlin, K. A. and Sheridan, M. A.	2016	The authors posit that the cumulative risk approach for summing the number of distinct adverse experiences could miss important nuances about the severity of adversity. They instead propose an approach

#	Name	Author	Year	Summary
				which separates dimensions of adversity into “threat” and “deprivation” to better understand ACEs impact on child development and learning.
24.	Benevolent Childhood Experiences (BCEs) in homeless parents: A validation and replication study	Merrick, J. S. et al.	2019	This study compares the validity of the Benevolent Childhood Experiences (BCEs) scale, a 10-item checklist instrument for adults who have experienced childhood adversity, against the ACEs scale to predict psychological distress, sociodemographic risk, and parenting stress.
25.	Group attachment-based intervention: trauma-informed care for families with adverse childhood experiences	Murphy, A. et al.	2015	This publication outlines the demographics of recipients of a trauma-informed intervention called Group Attachment-Based Intervention (GABI).
26.	Promoting trauma-informed parenting of children in out-of-home care: An effectiveness study of the resource parent curriculum	Murray, K. J. et al.	2019	This study examines the Resource Parent Curriculum, a program that promotes "trauma-informed parenting" among nontraditional parents including foster parents, adoptive parents and kinship caregivers.
27.	Two-Generation Approaches to Addressing Poverty: A Toolkit for State Legislators	National Conference of State Legislatures	2018	This brief provided a guide for legislators to address multigenerational poverty and adversity, including descriptions of policies that have been implemented in various states.
28.	Review of Tools for Measuring Exposure to Adversity in Children and Adolescents	Oh D.L. et al.	2018	This review identified 32 tools that measure cumulative adversity in children and adolescents. Based on their findings, the authors recommended 14 measures that were free or low cost, had short administration time, and required no or minimal training for implementation.
29.	2019 State Policy Update Report	Ounce of Prevention Fund National Policy Team	2019	This brief provides an overview of different state policies and strategies focused on addressing issues of early childhood. Their analysis found that the majority of the states that submitted responses had made major legislative, administrative and budgetary changes to improve the lives of young children.
30.	Developing a Community-Wide Initiative to Address Childhood Adversity and Toxic Stress: A Case Study of The Philadelphia ACE Task Force	Pachter, L. M. et al.	2017	This publication describes the formation and work of the Philadelphia ACE Task Force (PATF). Key lessons learned include the importance of local qualitative and quantitative data, the need for trauma-informed professional training for all family-serving sectors, the need for funding

#	Name	Author	Year	Summary
				and personnel time for sustainability, and the benefits of a neutral convener of these activities.
31.	Current state of screening high-ACE youth and emerging adults in primary care	Pardee, M. et al.	2017	This study evaluated current adversity screening tools used in clinical settings for youth and adolescents. The authors concluded that an event history calendar (EHC) tool might be the best way to identify risk behavior and ongoing ACEs if administered annually.
32.	Healing through Parenting: An Intervention Delivery and Process of Change Model Developed with Low-Income Latina/o Immigrant Families	Parra-Cardona, J. R. et al.	2019	This paper serves as a resource to family therapists and mental health practitioners providing "preventative" parenting interventions to underserved Latinx immigrant populations via a variation of GenerationPMTO, CAPAS: Criando con Amor, Promoviendo Armonía y Superación.
33.	Ameliorating the biological impacts of childhood adversity: A review of intervention programs	Purewal Boparai, S. K. et al.	2018	The purpose of this literature review is to analyze the effectiveness of inventions that use biological markers and physical outcomes as measures on their impact on childhood adversity. The authors identified intervention components related to success, including earlier timing of intervention, nurturing parenting traits, and higher engagement in the intervention.
34.	Health Status of Children Enrolled in a Family Navigator Program to Eliminate Intergenerational Poverty	Schilling, S. et al.	2019	This study examined the impacts of the Family Success Alliance (FSA), an initiative that aims to address poverty among children living in Orange County, North Carolina.
35.	Randomized control trial report on the effectiveness of Group Attachment-Based Intervention (GABI(c)): Improvements in the parent-child relationship not seen in the control group	Steele, H. et al.	2019	This study reports the results of an RCT of GABI in low-income, high ACEs burden mothers in an urban area. GABI was shown to increase maternal supportive presence and decrease maternal hostility compared to the control treatment, however it was not as effective for high ACEs burdened mothers in improving parent–child interactions.
36.	Financing Mechanisms for Reducing Adversity and Enhancing Resilience Through Implementation of Primary Prevention	Steverman, S. M. and Shern, D. L.	2017	This publication provides an overview of key aspects for financing of prevention-focused interventions for childhood adversity. Recommendations include supporting a national coordinating entity to manage an inventory of outcomes and standardized evaluation frameworks; development of metrics for prevention and treatment interventions, and dissemination of innovative policies.

#	Name	Author	Year	Summary
37.	Factors Associated with Whether Pediatricians Inquire About Parents' Adverse Childhood Experiences	Szilagyi, M. et al.	2015	This study examined data from the 2013 American Academy of Pediatrics Periodic Survey, which found that most of the pediatricians surveyed agreed that parents who experienced significant childhood adversity have more difficulty forming supportive and stable relationships with their children, and that supportive and stable adult relationships can mitigate the effects of persistent childhood stress.
38.	Transforming Young Child Primary Health Care Practice: Building Upon Evidence and Innovation	The Learning Collaborative on Health Equity and Young Children	2017	This paper provided and overview of several clinical/primary care interventions and provides an overarching framework for child primary care transformation. The authors posit that successful interventions use medical/pediatric offices as the first contact point, include a "warm handoff" to a care coordinator or family engagement specialist, and continually build a network of resources for families.
39.	Community-level Adverse Experiences and Emotional Regulation in Children and Adolescents	Thurston, H. et al.	2018	The study aimed to test the expansion of ACEs to include adversity at the community level such as neighborhood violence, poverty, and discrimination which low-income communities and communities of color experienced at a higher rate.
40.	Modifiable Resilience Factors to Childhood Adversity for Clinical Pediatric Practice	Traub, F. et al.	2016	The review examines 5 modifiable resilience factors and makes recommendations for pediatric practitioners to create "trauma-informed" medical homes.
41.	Early Childhood Mental Health Consultation: An Evaluation of Effectiveness in a Rural Community	Vuyk, M. A. et al.	2016	This mixed methods study examined the effectiveness of a preventative mental health service, the early childhood mental health consultation (ECMHC), in rural settings.
42.	Development, Feasibility, and Refinement of a Toxic Stress Prevention Research Program	Woods-Jaeger, B. A. et al.	2018	This publication describes the iterative development of a community-based intervention, 2Gen Thrive, that used the Dialectical Behavior Therapy Skills Training for Parents (DBT4P) as one of their interventions.
43.	Promoting Resilience: Breaking the Intergenerational Cycle of Adverse Childhood Experiences	Woods-Jaeger, B. A. et al.	2018	This study examined parents' experiences with ACEs, its perceived impact on parenting, protective factors, and what supports are needed for children aged 0-5 exposed to adversity.
44.	Positive Parenting Matters in the Face of Early Adversity	Yamaoka, Y. and Bard, D. E.	2018	This study examined the impacts of positive parenting practices (PPPs) and adverse childhood experiences on child development.

APPENDIX B: SAMPLE TOOLS COMMON IN THE LITERATURE

	Intervention	Description	Measurement Setting
1.	Age & Stages Questionnaires: Social–Emotional (ASQ:SE)	Parent completed questionnaire designed to measure age-based emotional development across 7 areas: self-regulation, compliance, communication, adaptive functioning, autonomy, affective functioning, and interaction with others. This tool helps home visiting and other early childhood intervention programs determine if children 3-66 months would benefit from additional evaluation services.	Home visit
2.	Child Behavior Checklist (CBCL)	A parent self-report based screening tool to assess behavioral and developmental issues for children ages 1½-5 as part of the Achenbach System of Empirically Based Assessment (ASEBA).	Varied (Clinical, Community, Home Visit, Research, etc.)
3.	Child Opportunity Index	Assesses child opportunity via neighborhood in 100 large metropolitan areas in the US. Areas were selected based on census population, opportunity is compared within a metropolitan area through the categories of health, education, and social and economic opportunity.	Policy
4.	Child Trauma Questionnaire (CTQ)	A self-report based trauma-screening tool for adults measuring emotional and physical neglect and abuse, and sexual abuse retrospectively in childhood.	Varied (Clinical, Community, Home Visit, Research, etc.)
5.	CYW Adverse Childhood Experiences Questionnaire (ACE-Q) - Child	A parent self-reported tool for screening for ACEs for children aged 0-12 in a pediatric setting. It is designed to help clinicians identify families at risk of harmful stress exposure.	Clinical
6.	Parent Stress Index	Screening tool used to evaluate parent's strengths and weaknesses that may later result in problematic behavior in their child. The shortened tool with 36 items, focusing in the domains of parent characteristics, environmental distress, and child characteristics.	Clinical
7.	Pediatric ACEs and Related Life-events Screener (PEARLS)	A 17-item parent-self reported questionnaire developed to screen for potential adverse experiences in young children. Although an initial evaluation found the survey is acceptable, further validation is needed.	Clinical

	Intervention	Description	Measurement Setting
8.	Things I Have Seen and Heard	Interviews developed for assessing children's exposure to community-based violence. The tool has been used to identify the prevalence of violence exposure in seven categories: shootings, stabbings, muggings, arrests, drug deals, exposure to dead bodies, and serious accidents.	Varied (Clinical, Community, Home Visit, Research, etc.)
9.	Trauma Checklist for Young Children	Caretaker reported assessment of trauma symptoms for children exposed to traumatic events. The 90-item tool measures possible impacts of trauma, posttraumatic stress, dissociation.	Varied (Clinical, Community, Home Visit, Research, etc.)
10.	Trauma Events Screening Inventory (TESI-C)	Clinical and research-oriented tool to help interviewers screen for a history of traumatic events including witnessing of severe accidents, family or community violence, and sexual molestation. It uses a hierarchal system of domains that divides the responses into the interviewer's and child's assessment of impact of events.	Varied (Clinical, Community, Home Visit, Research, etc.)
11.	Trauma Symptom Checklist (TSC-C)	A 90-item assessment tool for caretakers of children ages 3-12 years to measure the impact of traumatic events such as child abuse, peer assault, and community violence. It is designed to assess both acute and chronic posttraumatic symptoms.	Varied (Clinical, Community, Home Visit, Research, etc.)
12.	Young Child PTSD Screen (YCPS)	A six-item scale filled by caregivers to help screen young children for PTSD by identifying five symptoms after a recent traumatic experience.	Clinical
13.	Zero to Three Psychological and Environmental Checklist	Checklist tool used by child mental health providers to evaluate life stressors for children 0-3 years in 10 domains: child's primary support group, the social environment, educational and child care, housing, economics, occupational, health care access, health of child, legal/criminal justice, and other. The tool measures multiple sources of child or family stress and its duration and severity.	Clinical