A New Framework for Addressing Adverse Childhood and Community Experiences: The Building Community Resilience Model

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ABSTRACT

OBJECTIVE: We propose a transformative approach to foster collaboration across child health, public health, and community-based agencies to address the root causes of toxic stress and childhood adversity and to build community resilience.

METHODS: Physicians, members of social service agencies, and experts in toxic stress and adverse childhood experiences (ACEs) were interviewed to inform development of the Building Community Resilience (BCR) model. Through a series of key informant interviews and focus groups, we sought to understand the role of BCR for child health systems and their partners to reduce toxic stress and build community resilience to improve child health outcomes.

RESULTS: Key informants indicated the intentional approach to ACEs and toxic stress through continuous quality improvement (data-driven decisions and program development, partners testing and adapting to changes to their needs, and iterative development and testing) which provides a mechanism by which social determinants or a population health approach could be introduced to physicians and community partners as part of a larger effort to build community resilience. Structured interviews also reveal a need for a framework that provides guidance, structure, and support for child health systems and community partners to develop collective goals, shared work plans, and a means for data-sharing to reinforce the components that will contribute to community resilience.

CONCLUSIONS: Key informant interviews and focus group dialogues revealed a deep understanding of the factors related to toxic stress and ACEs. Respondents endorsed the BCR approach as a means to explore capacity issues, reduce fragmented health care delivery, and facilitate integrated systems across partners in efforts to build community resilience. Current financing models are seen as a potential barrier, because they often do not support restructured roles, partnership development, and the work to sustain upstream efforts to address toxic stress and community resilience.

KEYWORDS: adverse childhood experiences; child health services; community resilience; integrated clinical and community care; toxic stress

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THE BUILDING COMMUNITY Resilience (BCR) model is an innovative, transformative approach that will foster collaboration across child health systems, community-based agencies, and cross-sector partners to address the root causes of toxic stress and childhood adversity, and build community resilience. A growing body of science connects the exposure of young children to toxic stress with the emergence of serious emotional and behavioral disorders in childhood and the development of chronic disease across the life course.[1] Persistent exposure to adversity in childhood without adequate family and other social supports results in toxic stress.[2] A graded relationship between adverse childhood experiences (ACEs) and subsequent health problems in adults has been established—the more stresses endured in childhood, the greater likelihood of heart disease, obesity, depression, and other chronic conditions later in life.[3–5] Adverse childhood events vary in severity and are often chronic occurrences in a child's family or social environment that cause harm or distress and disrupt a child's physical or psychological health and development.[6] With this evidence in mind, it is imperative that clinicians extend their focus and reach beyond the clinical environment to address social determinants that lead to adverse childhood and community experiences that affect early childhood development.

STATEMENT OF THE PROBLEM

Recent data from the National Survey of Children's Health indicate that nearly 50% of all American children have experienced at least 1 ACE, with children of color at highest risk. ACEs are distributed across a relatively steep social gradient. Children in the poorest families and

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communities show the greatest risk, but children at all levels of the income ladder experience exceptionally high levels of stress and trauma. Compounding their risk of exposure to ACEs, African American, American Indian, and Hispanic children are also more likely to live in high-poverty areas (30%, 28%, and 23%, respectively).[7] Poverty and household stressors, like unemployment, housing instability, and food insecurity combine to create an environment in which a child's home, school, and community are sources of stress.[8] A higher prevalence of poverty, unemployment, and food insecurity indicate higher levels of social vulnerability and lower levels of community resilience.[9] When families live in communities in which food insecurity, domestic violence, challenges to parenting, unemployment, inadequate educational systems, crime, and social justice issues are common, the result is an environment in which ACEs abound, needed social supports are scarce, and toxic stress results.

These data point to the need for child health systems to take a life course, transgenerational approach that coordinates care for children in the context of their family and community.[10,11] By joining with parents, families, and community partners to create strategically coordinated supports and services, child health systems can play a critical role in improving the long-term health and well-being of the communities they serve.

We define community resilience as the capacity to anticipate risk, limit effects, and recover rapidly through survival, adaptability, evolution, and growth in the face of turbulent change and stress.[12] In effect, resiliency is the capability to endure and thrive despite adversity. Although we cannot prevent all adverse exposures, we can reinforce social supports for vulnerable children, families, and communities so that together they may thrive. Community resilience is a measurable quality that is increasingly recognized as an important ingredient in preventing childhood adversity and building stronger communities to support child health and well-being.[13] Building community resilience is a crucial task that merges a need for disaster preparedness with population health promotion. Community resilience is based on 4 sets of adaptive capacities—the ability to sustain economic development within the community, the degree to which residents possess social capital (social networks and supports that include family and other community members), the effective bidirectional transfer of information and communication between residents and the social services agencies that serve them, and the community competence to support civic engagement (eg, voting and advocacy), self-management (health and social needs) and collective empowerment for community advocacy and engagement. Ultimately, children can become resilient when the communities in which they live are home to resilient adults.

A FRAMEWORK FOR ACTION

The BCR approach aims to provide a seamless continuum of cross-sector cooperation and services to build the 'social scaffolding' that will support children and families and contribute to community resilience. BCR will create an integrated network of partners across several sectors to engage community members in a collaborative effort to promote health, create stronger community and organizational linkages, and increase social supports for families and individuals. BCR is framed within the Collective Impact model, which includes development of a common agenda, mutually reinforcing activities across a diverse set of partners, continuous communication across stakeholder groups, leveraging a backbone organization, and creation of a shared measurement system.[14]

Child health providers have largely operated within the clinical domain, but the BCR approach recognizes the importance of putting health care at the table with agency and community partners to work strategically in addressing the root causes of toxic stress. This collective and deliberate approach will build a framework for resilience. Building this framework requires the merger of diverse disciplines to create stronger community linkages between clinicians, providers, health systems, community members, social services, and government organizations. However, currently there exists no systematic process to provide guidance on how to create networked systems of cross-sectors partners. As one pediatrician we interviewed noted, "[Despite] what know we about ACEs, we still don't know what to do with them or who to call for help. We need partners." The process described in this report is innovative in its explicit aim to address the root causes of toxic stress and ACEs and build community resilience through a community-integrated approach.

The BCR approach aims to address gaps and strengthen assets in child health and community systems (including clinical, public health, social welfare, education, human services, juvenile justice, public safety, etc) through a phased strategic readiness and implementation process that will enable clinicians, providers, social service, and community-based partners to align services and resources to coordinate efforts aimed at addressing the health, emotional, and social needs of children and their families (Fig). Collectively these partners will work to inform a community-based plan to reduce and prevent trauma and toxic stress, improve mental and physical health, and build capacities that influence resilience in the near as well as long term.

The components of the model are applied as a continuous quality improvement (CQI) model to help child health systems and their community partners create a shared understanding of childhood adversity, assess system readiness to respond and build supports, develop a cross-sector community-based network and engage parents, families, and community residents. The BCR approach is guided by central components of CQI, including systematic data-guided activities, design with local conditions in mind, and iterative development and testing (Plan, Do, Study, Act cycles) as programs are implemented and new partners join the local effort.[15] In phase 1 the components are used to focus on enabling child health systems and their partners to assess readiness and strategically operationalize

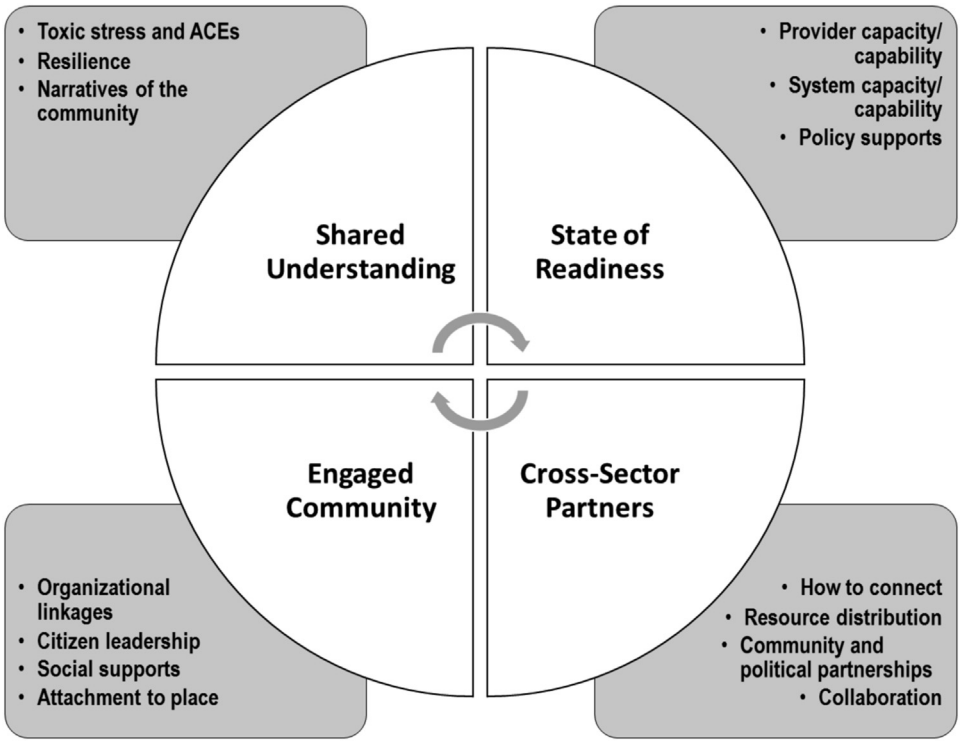

Figure. *Building Community Resilience: process of assessment and readiness. ACE indicates adverse childhood experience.*

the components of community resilience as described by Norris et al using health system, partner, and community data.[12] This systematic approach is designed to create agency networks and community-based partnerships to support data and community-driven programs and interventions aimed at preventing and/or mitigating toxic stress and ACEs while at the same time putting in place an infrastructure for collaboration across sectors, which is necessary for long-term community resilience.

In phase 2 local networks use the framework to select and implement targeted upstream programs aimed at addressing social determinants associated with toxic stress. This strategy is aimed at preventing or reducing stressors within the family or community that contribute to childhood adversity. Each partner will play a role in addressing social determinant factors and building the components of resilience by leveraging their agency or programmatic expertise. Here CQI is applied to assess the effectiveness of information (data)-sharing across health care and community partners, resource allocation, and the ability to produce positive health and social outcomes in the targeted population.[16] The role of each partner will reflect their specific 'touch point' in a community and can be expected to differ widely depending upon the venue. Interventions or targeted programs in schools, churches, or community centers might appear to have different stakeholders or approaches but it is expected that by working together these efforts will complement and build upon—not duplicate—efforts that might take place in a public health clinic, pediatric practice, or day care center. Therefore, this community-based network, which includes the child health system, will take a strategic approach in selecting programs and interventions that might be separately led, but collectively coordinated to comprehensively address the needs of their targeted population.

DEVELOPMENT OF THE BCR APPROACH

The BCR focus on health and community system readiness, capacity building across partners, and the creation of linkages and alignment to address social determinants applies a systematic approach through the lens of the child health system. The design of BCR grew out of qualitative analyses of key informant interviews and focus groups conducted over 2 years to understand barriers and gaps that hinder the ability of the child health system to address the social determinants that result in toxic stress and ACEs and the strengths that could be leveraged to address these issues in communities. These interviews revealed the need for a strategy that would assist physicians and clinical staff in redesigning practice and workflow to accommodate an approach that takes into account the social determinants of health. It was also clear that although there exists a number of sources for training and technical assistance in toxic stress and ACEs prevention and screening, selecting the 'right' program was perceived as daunting without the buy-in from others within the practice or agency partners to address nonmedical needs. Many physicians believed that screening alone would be tantamount to opening a "Pandora's box" without a process or partners that can effectively address the issues that come to light. This finding is consistent with previous work that indicated that behavioral health providers serving our most vulnerable children often operate in parallel to primary care with little connection to social and family supports, resulting in critical gaps in service as well as unmet need.[17,18]

The BCR framework addresses these gaps through an integrated approach to enable health systems and their community partners to assess readiness, adopt practices, and implement program and policies aimed at preventing ACEs, reducing toxic stress by building community resilience in a target population.

METHODS

Development of the BCR model was on the basis of key informant interviews and focus groups that were conducted by the first author over 2 years with sources in 10 urban centers including Boston, Cincinnati, Washington (DC), Dallas, Atlanta, Portland (OR), Philadelphia, Milwaukee, Chicago, and Wilmington (Del). All interviews were conducted and recorded with informed consent and approved by the George Washington University institutional review board. A total of 3 focus groups and 26 interviews were conducted.

Additional study subjects were identified using a snowball technique on the basis of their activities in pediatric primary care and behavioral health care delivery. After development of the model, subject matter experts in early childhood development, toxic stress, and ACEs, community organizations, clinical and community representatives were selected to provide feedback on the model and its potential for implementation. Pediatric providers and health system representatives identified active community organizations with which they had partnered to address issues related to child health and well-being. The subjects were selected using the following criteria:

- Providers who worked within the health system and participated in clinic or program activities at least 4 half days per week.
- Interview subjects included pediatricians, behavioral health specialists, and health paraprofessionals, including community health workers (CHWs), navigators, care coordinators, social and human service agency managers, and community volunteers involved with health promotion activities, nurses affiliated or employed by child health systems, or public health agencies, federally qualified health centers, community health centers, and state or federal grantee programs focused on addressing social determinants of health within an identified population.
- Key leaders of community- and school-based agency partners of a child health system who are actively engaged in health promotion or community improvement activities.

VETTING THE BCR MODEL

To understand factors associated with child health system readiness for addressing toxic stress and building community resilience, we explained the 4 components of resilience and the BCR model and its application. We asked subjects to tell us whether further modifications were needed for the BCR model to be useful in practice. Additional questions sought to clarify program and policy supports that are in place and barriers that the BCR approach might encounter or need to address upon implementation. We used a semistructured interview process with the key informants and focus groups to understand how behavioral health and social services were coordinated for children and families. The interviews were conducted, audio recorded, and transcribed by the first author.

In development and vetting of the BCR model, informants were asked about the following topics: their personal understanding of ACEs, toxic stress, and community resilience; colleague and system capabilities in responding to these issues; types and prevalence of social issues that affect the health and well-being of children in their community; policy and practice barriers to addressing social determinants of health; community outreach efforts; access and barriers to care for children and families with social and emotional needs; and population characteristics.

ANALYTIC APPROACH

After explaining the 4 components of the BCR model and how they would be applied in practice, we asked subjects to tell us how they might apply BCR or if further modifications were needed before testing. The key informant guide and focus group discussion questions were designed to elicit specific responses to the model. Using a descriptive coding technique, we used open coding to discover themes. Using NVivo for Mac 11 (QSR International, Burlington, Mass), key word in context analysis was applied to further understand the context in which respondents referred to specific components of the BCR model. In these interviews, the conceptual model is the first level of coding (shared understanding, state of readiness, cross-sector partners, and engaged community). In the final phase of analysis, a second reader analyzed the interviews with the objective of writing individual short interview summaries. These summaries were then used to analyze themes in the interviews and maintain context for the quotes that are used as examples in writing up the research. The second reviewer paired up the clinical perspectives with community perspectives as viewed by the first author to compare and contrast findings. Disagreement was resolved by discussing the analyses with interview subjects.

In the BCR development process, interview transcripts were converted to a Microsoft Word (Microsoft Corp, Redmond, Wash) document and entered in Atlas.ti version 6.2 qualitative software (ATLAS.ti Scientific Software Development GmbH, Berlin, Germany), in which we used Open Coding and Word Count Analysis features to identify potential codes. These codes were then evaluated and grouped into core themes pertaining to the BCR model. We used Microsoft Word's Key Words in Context analysis tool to better understand what the respondents meant by the terms childhood adversity, ACEs, toxic stress, and resilience. These thematic analyses identified common factors with the key informant interview data to explain further variation among interviewee responses. Finally, we conducted 5 subsequent interviews to allow additional study participants to review the ranked list of domains, comment on the accuracy of the domains, clarify the meaning of

specific responses, and refine the language used to describe childhood adversity, community resilience, and the process of assessment and readiness.

Limitations

We relied on a snowball technique to speak with pediatricians, CHWs, other allied health professionals, and their community partners. There is a possibility that hospital administrators might use some bias in selecting individuals and partners who might reflect more favorably on the current system, understanding of practice challenges, and community partner performance. Therefore, we tried to offset this bias by recruiting agencies and pediatricians to participate in focus groups.

There is also potential that the voices identified to represent community partners might not be representative of the community which these programs serve. Therefore we supplemented our key informant interviews with an environmental scan of key national organizations working in the areas of toxic stress and ACEs to better understand the dynamics that might affect partner and community voices in efforts to build a network of integrated care.

Results

Shared Understanding

The BCR model posits that establishing shared understanding of the connection between toxic stress, ACEs, and community resilience is necessary within a health system as well as across a partner network. Following this analytic framework, the respondents found that understanding the link between social determinants, and physical and behavioral health issues might motivate providers to identify and address social need. Interview subjects reacted to the Shared Understanding component by discussing how BCR could be leveraged as a tool to "peel back the layers on community level toxic stress" (Table 1). Others thought that the intentional approach to ACEs and toxic stress using a CQI model (data-driven decisions and program development, partners testing and adapting to changes to their needs, and iterative development and testing) provided a systematic approach by which social determinants or a population health approach could be introduced into clinical practice and across community partners.

In our interviews, many clinicians reported that although they understood the connection between ACEs and health, they did not know what to do to prevent or treat a family after an ACE or toxic stress-related issue was identified. In interviews, they expressed a need to systematically identify and educate cross-sector partners before they can begin to work 'upstream' on this issue.

State of Readiness

The focus group dialogues revealed a deep understanding of the factors related to toxic stress and ACEs, but there was less agreement about how to increase capacity to tackle the issues in a clinical environment. Several pediatricians voiced concern that doctors and the next generation of medical residents have not been trained for a population health or 'upstream orientation,' yet they increasingly feel obligated to practice this way. As one pediatrician remarked, "It's like telling me I now have to pull teeth—that's a dentist's job. I'm not qualified to do that."

Care coordinators and CHWs find potential for the BCR strategy in establishing an infrastructure to help pediatricians understand their role in addressing social determinants As one CHW put it, "It's not so much that they [pediatricians] have to do the social work, it's enough that they understand who to call when they recognize that's what the family needs." This response was a common theme among all interview subjects with regard to assessment of system capacity (Table 2). They believed that the system readiness process could inventory talents and resources but more importantly, provide an opportunity for pediatricians and child health systems to think about their care team more broadly. Interview subjects consistently indicated that assessment of capacity could be leveraged for meaningful practice change and provide a platform for a transgenerational approach to child health and well-being. A common enabling tactic discussed by interview subjects included the ability to use the assessment process as a means to create a larger multidisciplinary, multisector care team that would facilitate "warm hand-offs" from clinical to social services within the pediatric office. Increasingly, CHWs have effectively bridged clinical and community practice by delivering public health prevention, care, and treatment.[19]

Although these descriptions were aspirational, several respondents recognized that a number of practice and policy barriers remain to fully leverage CHWs. How would CHWs and care coordinators be incorporated into a larger care team? How would information flow between care team members and partnering agencies? How will cross-sector partners share data? What mechanism would assure reimbursement and financial sustainability for these efforts?

Cross-Sector Partners

Financial sustainability of the BCR approach to health system capacity and an integrated community network was a common theme. Reducing fragmented health care delivery and facilitating integrated systems across partners was recognized as tremendously important for public

Table 1. Key Informant Interviews: Creating Shared Understanding

Selected quote
• "BCR will help us communicate the need to change the environments of neighborhoods, change social systems for families that live in that neighborhood."
• "Doctors have not seen housing and food insecurity as something they need to be mindful of…so BCR helps us change the dialogue as we think about adversities as barriers to health and well-being."

BCR indicates Building Community Resilience.

Table 2. Key Informant Interviews: State of Readiness

Selected quote
• "Breaking down the fragmentation and facilitating better integrated systems is another tremendously important need in the field."
• "It's not just how do we help families get there, but how we help our health system get there?"
• "Trying to build community collaborations that build the medical community is not something that's happened. Medicine has an awful lot to contribute to [understanding] toxic stress and resilience but they don't have the tools to identify it and the partners to do something about it."

health promotion and community health improvement. However, current financing models often do not support restructured roles or partnership development and the work required to sustain them. The sites interested in implementing BCR will have to pursue financial support for any new roles created (ie, CHWs, care coordinators, navigators, etc) through institutional mechanisms, grants, or Medicaid managed care contracts. As one pediatrician noted, "Families cannot wait 10 years for us to figure out how to pay for it. We need to work on this now. Maybe we'll bring the system along with us."

Perhaps most promising with regard to financial sustainability, many interviewees indicated that by taking a systematic approach to partnering they would be in a better position to create a value statement to support the work of BCR. Having a greater buy-in at the community level with multiple stakeholders would increase effectiveness in addressing the root causes of toxic stress, and this community-based approach would reinforce the imperative to invest in an upstream approach to health promotion, disease prevention, and building resilience.

Subjects shared the opinion that any multisector, multiagency response will require a clear understanding of shared goals around mutually agreed upon strategies. Shared goals will need to be measurable, and will require a level of accountability that might go well beyond the degree of partnering and cooperation that currently exists across community-based agencies. Many interview subjects expressed concern about how they will be able to share data, with whom, and to what degree. Respondents recognized that to secure long-term financing for these efforts, partners would need to be able to measure success in a manner that is meaningful to stakeholders and the community.

Creating a wider partner network to support toxic stress reduction and community resilience is seen as a necessary step. However, the focus groups expressed strong reservations about a "health system's ability to play well with others." Past experiences with hospital initiatives were described as "one-directional," leaving a number of communities and potential partners suspicious of working with child health systems. These interviews reveal a real need for health systems to leverage BCR to listen to their partner's needs, create open dialogue, and respect each other's areas of expertise.

Focus groups with community members reveal a cultural divide between potential partners and health systems. Health care providers characterized partnering as a means to address the needs of the system whereas community-level health care workers and agencies characterized partnering as a means to better serve their residents. These differences point to the need to establish shared goals in partnering—an explicit goal of BCR.

BRIDGING THE CLINICAL AND COMMUNITY DIVIDE

The goal of BCR is to redesign and align health and social service delivery systems to improve the fabric of communities where our most vulnerable children live, learn, and play. An important tactic is to actively engage and empower adults and parents to buffer children from the toxic stressors that exist in communities. As noted in the discussion of partnering, suspicion divides health systems and their communities, particularly communities of color. Lack of understanding the day-to-day pressures of families living in poverty is viewed as a major barrier to being effective in engaging and empowering parents and community members (Table 3).

The clinical relationships described by pediatricians and community members reveal a great divide. Pediatricians express discomfort in pursuing conversations that might reveal "personal and potentially criminal matters" whereas community members describe their roles as similar to that of ambassadors—sent on a mission representing the health system to improve the lives of a family in a "land far, far, away from home." Some practices thought that the BCR approach might help them design cultural exchanges in which medical residents could become immersed in neighborhoods—a "walk a day in my shoes" type of training. This experience would help them become better acquainted with neighborhood culture and environment by identifying physical activities, healthy foods, and positive outlets for families in the places where their patients live.

Across the board, health care providers and their community-level partners believe that parent and family engagement is a key area for BCR. Not only are families struggling with social determinants that culminate in toxic stress, but also there is a transgenerational component to this struggle. To unwind several generations of poverty

Table 3. Key Informant Interviews: Engaged and Empowered Community

Selected quote
• "I think what we are struggling with is how do we engage [on toxic stress] the families that do come to see us. And who will reach the ones that don't?"
• "We need a maven from the community! Someone our families will trust."
• "They [parents] don't know developmentally what is appropriate for kids and they grew up where their parents didn't know that either."

that culminate in toxic stress and negative health outcomes to improve child health outcomes will require work at the community level. However, many child health systems and community agencies feel overwhelmed by this seemingly insurmountable complex of issues.

Rather than concentrate on the entire mountain, many interviewees focused on an incremental approach expressing, "we can't solve it all, so perhaps we can use BCR to go for the lowest hanging fruit first to build a strategic plan." Across all respondents, parents of children in pediatric practices were identified as the 'lowest hanging fruit.' One promising approach seemed to be that if practices can engage those parents or caretakers who are already "trying to do the right thing" by bringing their child in for well visits and episodic care, then as health partners, providers can be doing more to engage these families across the spectrum of social service needs.

Discussion

We are introducing the BCR framework at a time when the nation is facing a critical juncture in health care and social justice. Reorganization in how health care is delivered, financed, and incentivized is necessary to produce better health outcomes at lower costs. However, recent civil unrest in our nation's cities because of the ever-widening disparities in poverty, the application of criminal justice, access to education, health outcomes, and access to economic opportunity highlights a pressing need to close the gaps and build more resilient communities. For example, the recent riots in Baltimore brought to light a tragic set of circumstances that are all too common in our cities. Adverse experiences in communities including violence, long-term exposure to toxins (ie, lead paint and other environmental pollutants),[20] disproportionate rates of incarceration,[21] substance abuse, and other stressors in the absence of family support results in limited system and individual capacity to buffer children and, ultimately, in toxic stress.

Conversations about the implications of implementing BCR point to the approach as a means of facilitating practice change in pursuit of social change through collective advocacy at the systems level. Although it is recognized that individuals alone cannot change policy, systems acting together can inform policy that might improve community conditions for individuals. CHWs, care practice managers, and pediatricians alike indicate the need to identify strategies to staff the "backbone" that will support BCR strategies and partnerships. This extended care team is seen as a critical part of the success in implementing BCR. Test sites are already considering the skill sets and supports needed for "community organizing and social change." As one pediatrician noted, applying BCR will "start a revolution in our hospital and the ripples will be felt well outside our walls. That's a good thing."

Final interviews for this study were conducted in January through April of 2015—on the heels of several high-profile deaths of African American men at the hands of police officers that resulted in rioting and protests across the country. This national level conversation might have influenced some of the focus group dialogue but even national experts in ACEs point to a longstanding web of poverty, racism, violence, and economic disadvantage as a 'wake up call' for the health care environment to move out of its 'clinical bubble' and become more actively engaged with public health and the surrounding community to understand the role of social determinants in the development of toxic stress and the severe threat to health and well-being that toxic stress poses.

The development of mechanisms by which health systems and community-based organizations can share data, measure success, and create financing and payment reforms that will enable reimbursement for the new roles and resources to support community resilience remain important challenges. In the process of testing BCR, sites will encounter practice and policy barriers to this work. Many respondents recognized these challenges but emphasized that these efforts will provide much needed evidence to support reforms in care delivery and financing with the ultimate goals to improve health and well-being for children.

Next Steps in Research

The BCR collaborative began testing the approach in 5 US cities in June 2015. Through this process they are testing the components, sharing data, developing metrics to measure community resilience and cross-sector collaboration, and developing lessons learned to inform the development of a strategic planning process guide, resources, and tools. These resources will be made widely available to enable other sites to adopt the BCR approach in addressing the social determinants associated with ACEs and toxic stress to build community resilience.

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