TURNAROUND FOR CHILDREN

POVERTY, STRESS, SCHOOLS: IMPLICATIONS FOR RESEARCH, PRACTICE, AND ASSESSMENT

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Contents

I.   Background

Today, one in four children in the United States grows up in poverty. These children do not leave the circumstances of their upbringing at the schoolhouse door. They often bring adverse childhood experiences into schools and classrooms in the form of significant traumatic stress. This type of stress, especially in its severe forms, has unique and often profound effects on a child's developing brain. Individually, this stress can cause children to be tuned out, preoccupied, impulsive, unable to concentrate, distrustful, and nervous. These outward signs vary from distraction to dysfunction but inevitably interfere with children's ability to focus, interact with others, and progress in school successfully. Now imagine a whole classroom filled with children who experience severe stress, or even a whole school. The profound impact of extreme stress on a child's developing brain can have huge implications for the way children learn, the design of classrooms, the preparation of teachers and school leaders, and what is measured as part of the school improvement effort as a whole. This issue has been under-recognized in education reform thus far but has been Turnaround for Children's focus since it was founded more than a decade ago.

Turnaround for Children believes that many children growing up in poverty face profound but predictable cognitive, social, and emotional challenges that stem directly from the effects of stress and trauma in their lives. These stresses impact the development of the brain centers involved in learning. It is because these challenges are knowable and predictable that it is possible to design an intervention to address them. Collectively, they represent a pattern of risk—risk to student development, risk to classroom instruction, and risk to school-wide culture—each of which is capable of derailing academic achievement. Until high-poverty schools have universal practices and supports that specifically address these risks, they will continue to underperform and millions of children will never reach their full academic and personal potential.

Turnaround's work is grounded in years of academic and scientific research on the effects of stress and trauma on student development. In addition, the organization has over a decade of experience developing principles and implementing practices through work with 84 high-poverty schools. Turnaround was founded by Pamela Cantor, M.D., whose nearly two decades of experience as a physician practicing child psychiatry has infused the organization's work with a focus and an awareness of the effects of stress and trauma on the development of children growing up in poverty.

Today, the organization's goals are to continue to develop and refine proof of this work in individual schools and school districts, and to capitalize on growing research and policy opportunities to bring Turnaround's approach to teaching and learning to more schools, more districts, and the broader education reform movement. There are few organizations that know the science around chronic stress, trauma, and child brain development while also putting the science to practice in the field in high-poverty schools. This knowledge lends essential credibility to the organization's efforts to inform, debate, and ultimately convince, federal, state, and district decision makers to consider these issues central to the improvement of America's struggling schools, most of which are concentrated in high-poverty communities. Turnaround seeks to influence the design and practices of every school serving high concentrations of students growing up in poverty so that schools establish ***fortified*** teaching and

learning environments that are able to address these challenges, provide rigorous content, and promote achievement as national standards become more demanding. Without this, genuine equity and opportunity in our education system will not happen for all of our nation's children.

A Perspective on America's Struggling Schools

There is a tremendous concern that the historic investment that is being made to fix America's failing schools has missed something. Reformers do not want poverty to be an excuse for school failure, yet all observers realize that the reality of poverty is a tremendous challenge to children and the adults who strive to educate them successfully. Tens of thousands of schools continue to underperform despite enormous effort and significant investment, and generations of America's most vulnerable students fail to reap the benefits promised by the public education system. Although many children growing up in poverty are resilient in the face of adverse circumstances, many are not and go on to develop toxic stress responses.

One likely explanation for this failure is emerging from a scientific understanding of toxic stress and its effects on children's neurological development and behavior. Recent literature on allostatic load, such as *How Children Succeed* by Paul Tough (2012), has brought the science of toxic stress to mainstream audiences. A growing body of literature is demonstrating that exposure to Adverse Childhood Experiences (ACEs) such as chronic insecurity, sudden unexpected loss of a loved one, or exposure to violence, can affect the physiological development of critical brain structures that house attention, working memory, and ultimately the learning process itself. Children's brains undergo a steep, complex trajectory of development that continues through adolescence with much of the cortex shaped in response to interpersonal and environmental factors. Children growing up in poverty are vulnerable to a variety of adverse experiences that can negatively impact their development especially if buffering caretaking relationships are not available (Shonkoff et al., 2012):

- *Traumatic stress:* Stress activates the release of stress hormones, particularly cortisol, triggering a "fight or flight" response to perceived threats. Temporary increases in stress hormones are protective and even helpful, but frequent and prolonged stress—from abuse, neglect, or other significant hardships—can produce a toxic stress response, one that can impact the developing architecture of critical brain structures including those that house executive functioning, impulse control, and working memory. Individuals may more readily experience fear and anxiety, and may find it difficult to regulate their responses[1].
- *Unstable adult attachment:* Children can moderate and adapt their stress reactions with the consistent support of a caring, responsive adult who fosters a sense of protection, coping, and control enabling the child to return to a state of calm. This is how children develop resilience in the

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[1]Author's Note: The authors recognize that stress for children growing up in poverty exists on a continuum with toxic stress representing the most extreme response. Further, the authors believe that much more research needs to be done to better understand the categories along this continuum and correlate those with educational functioning. With this knowledge, the possibility exists for greater and greater definition of "fortified educational environments," deeper integration of trauma informed practice and SEL that includes the specific knowledge and skills that these environments must have to mitigate risk and build resilience on behalf of learning.

face of adversity. Without this type of buffering connection to an adult, adverse experiences can generate prolonged stress, or potentially a toxic stress response compounding the negative impacts on social, emotional, and cognitive development.

- *Environmental challenges:* Children growing up in poverty are more likely to experience environmental factors such as lead poisoning, poor nutrition, higher incidence of infections, and prenatal drug/alcohol exposure. These factors can further contribute to the body's dysregulation of stress hormones such as cortisol.

A growing number of studies on ACEs have attempted to determine the long-term medical, cognitive, social, and emotional impact of these events into adulthood (Hillis et al., 2010; Chapman et al., 2007; Anda et al., 2006; Dong et al., 2005; Felitti et al., 1998; Foege, 1998; Weiss & Wagner, 1998). One recent study showed that children experiencing four or more ACEs were at exponentially higher risk of learning and behavioral problems—51% likelihood vs. 3% for children with no ACEs (Burke et al., 2011). The picture that emerges is one of children facing negative life-shaping experiences, often without reassuring adult support, that hinder the development of their capacity for attention, working memory, impulse control, and other attributes critical to learning. The result is a repetitive cycle of disappointment and failure that undermines motivation, will, and persistence. The impact of these realities affects a child's set of beliefs concerning his or her potential and the value of education itself.

The developing brain is exquisitely sensitive. Ultimately, its fully expressed potential is a complex interaction among genetics, environmental factors, and interpersonal experience. All of these issues, which are central to who and what children become, have been seriously under-recognized in the education debate thus far.

The good news—also emerging in scientific literature and practice—is that children's stress levels can be mitigated by positive, caring environments where strong, trusting bonds between adults and children are not only possible but are deliberately created through knowledge, skills, and practices. Academic growth mindsets, self-regulation, and many other learning attributes are both highly malleable and responsive to practices targeting these and other resilience building traits, especially when accompanied by meaningful, supportive connections to adults (Farrington et al., 2012; Durlak et al., 2011; Patrick et al., 2007; Kaplan & Maehr, 1999; Dweck et al., 2011; Pintrich & DeGroot, 1990). Research from a number of groups demonstrates the power of intentionally designed approaches to "brain centered teaching," "growth mindsets," and social and emotional learning that reduce the impact of stress on children, classrooms, and schools (Hardiman, 2012; Duckworth et al., 2005; Farrington et al., 2012). Environments designed with care can indeed shape and influence the functioning of the brain. Herein lies both a cautionary tale about managing critical periods of development (Johnson et al., 2013) as well as reason for optimism about the promise of creating developmentally oriented learning environments.

The implication for the education reform debate is that high-poverty schools have the potential to serve as critical, constructive environments for the development of children. With the right structures and practices in place, schools can identify and address intense social and emotional risk factors while mitigating stress for all students by creating safe, supportive, engaging, and effective classrooms embedded in a rigorous culture for learning and growth. **With the right skills in place, schools, leaders, and teachers can mitigate prior negative impacts, promote readiness for learning, and unlock**

children's curiosity, willingness to take risks, and belief in a future through education. Struggling schools can become high-performing teaching and learning environments, providing real opportunity for academic growth and equity for all children.

II.   Turnaround's Approach to Struggling High-Poverty Schools

Rather than search for a silver bullet that will turn failing schools into successful schools, Turnaround has developed a school-wide intervention grounded in its knowledge of child development and targeting the most important factors driving stress and chronic failure. Turnaround's intervention is aimed at key challenges observed in every school with which the organization has worked over the course of more than a decade:

- Adverse childhood experiences and stresses stemming from poverty result in a small but significant number of students—typically 15% of the population—who are disruptive and often charismatic such that they absorb the lion's share of staff time and derail the learning environment for everyone. If schools do not get real help to this group—a group that systematically eludes help due to behavior, absenteeism, and lack of family engagement—schools and classrooms become so chaotic that teaching and learning are all but impossible. Consequently, student support and mental health systems must not only provide high quality services, they must also overcome barriers including stigma, consent, and use of Medicaid that prevent high-risk students and families from accessing the supports that could help them.
- An additional 40-50% of students require more than what a regular classroom provides them to be successful. These students often come to school with concerns and needs that can easily escalate into more serious problems if day after day they are exposed to a negative classroom and school environment.

In this context, Turnaround views each school's classroom as more than an instructional environment—it is also an important and ongoing source of reinforcing experiences that have the potential to enhance each child's development and performance. Children growing up in poverty must have a very different kind of classroom—a *fortified* environment that reduces stress, fosters positive connections with adults and peers, and promotes noncognitive attributes, such as academic mindsets, motivation, self-regulation, and social efficacy (Farrington et al., 2012). Such classrooms can truly change the course of children's cognitive, social, and emotional development, laying the foundation for rigorous, productive, and successful learning.

The Specifics of Turnaround's Intervention

Turnaround works simultaneously at the student, classroom, and school levels to: 1) build systems of direct support for the highest need students, 2) strengthen skills for managing student behavior, instructional capabilities, and developmental understanding of all teachers, and 3) support school leaders in driving the creation of an optimized culture for learning and growth. This multi-year work (3-5 years) establishes the enabling conditions for successful teaching, productive engagement and learning, and positive youth development. These conditions serve as the foundation for core elements of

education reform targeting college and career readiness, the use of personalized and blended learning strategies, and, perhaps most of all, the successful implementation of the new Common Core State Standards (CCSS)—content that will demand much more motivation, risk-taking, and persistence in students' approach to learning.

Model Element 1: A High-Capacity Student Support System

Turnaround creates a high-capacity system, operating inside and outside the school, designed to address the volume and diversity of student needs in a high-poverty setting. Students with the most intense needs receive rapid treatment from community mental health partners, while those with more moderate needs are triaged towards appropriate in-school trauma-informed services and ongoing monitoring. The core components of this system include:

- A school-based social worker trained by Turnaround's Social Work Consultant;
- Interdisciplinary Student Intervention Teams in each school that are trained and coached by Turnaround's Social Work Consultant to guide and track interventions for high-need students;
- Linkage to a nearby mental health provider (Community Mental Health Agency Partner) put in place and monitored by Turnaround; and
- Structures for ongoing collaboration with juvenile justice, child protective services, and/or other available social services.

The school-based social worker coordinates the interdisciplinary teams that meet regularly to triage student cases. These regular case discussions of students who are struggling behaviorally or academically lead to action plans and intensive follow-up for each child. The established linkage with a local mental health provider ensures that students with the most urgent or intense needs receive prompt care; intake occurs within 72 hours, instead of the typical waiting period of weeks or months.

Model Element 2: Teacher Capacity to Engage and Motivate All Students

Turnaround supports every teacher in every partner school to build a set of specific behavioral and instructional skills with demonstrated effectiveness in confronting the classroom challenges (e.g., inattention, impulsive behavior) that arise from the stress of poverty. These practices, which are often deployed separately in schools, are combined into a powerful, integrated teacher development curriculum that targets dramatic improvements in culture, effectiveness of classrooms, and student connection by building proficiency in:

- Constructive approaches to disruptive behavior as an alternative to punitive discipline;
- Practices and routines that foster a safe, supportive, predictable classroom environment with high behavioral expectations, caring student-teacher relationships, and improved time-on-task;
- Learning structures that promote interaction and engagement of students at widely varying levels of academic achievement focusing on continuous improvement (i.e. mastery versus performance relating to content); and the development of key noncognitive attributes such as motivation and self-regulation; and

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- Student-centered exercises that promote student agency, social efficacy, and goal orientation.

Turnaround's Instructional Coaches—each a seasoned master teacher—train all teachers in all schools through weekly, small group learning sessions, followed by ongoing classroom observation, coaching, and facilitated self-reflection to drive learning and change in teachers. Turnaround's teacher development curriculum is also closely aligned with a number of key reform initiatives. It is explicitly mapped to the Charlotte Danielson Framework for Teaching and lays the groundwork for the implementation demands of the CCSS. The components of Turnaround's teacher training curriculum include:

- *Developing and Using Classroom Rules and Procedures:* Teachers develop the capacity to create, implement, and sustain behavioral expectations in their classroom, ensuring learning environments for children that are predictable, safe, and enable engagement in more rigorous content;
- *Defusing Disruptive Behavior:* Teachers develop proficiency in strategies to defuse and manage a range of behaviors, from mild rule infractions and limit-testing to severe disruptions, keeping the lesson on track and maintaining time-on-task;
- *Cooperative Learning Structures:* Turnaround collaborates with Kagan Publishing and Professional Development on instructional strategies that enliven the interaction between students and teachers, promote continuous use of language and engagement with lesson content, and enhance student self-esteem and identity; all aimed at continuous skill-building and growth in confidence; and
- *Student-Involved Assessment:* Teachers engage students in assessing their own progress emphasizing learning as a process toward explicit goals, with mastery over time. This approach enables students to tackle more challenging content and has been shown to build resilience, persistence, and increased will to learn.

All of these practices are contextualized to intentionally support and potentiate a buffering, trustful relationship between teachers and students.

Model Element 3: Leadership Capacity to Drive Improvement

Turnaround works with school leaders to build and maintain a high-performing culture that engages every adult in the school building and encourages parents to participate actively as partners. A Program Director manages the partnership with each school and works directly with school leadership to ensure quality implementation of the Turnaround model. Turnaround also works with school leadership to develop a well-defined improvement plan that makes extensive use of data, including leading indicators on school culture and classroom efficacy, to drive progress towards academic achievement. Turnaround is also experienced in aligning leadership improvement plans with district requirements previously mentioned such as the CCSS, the Charlotte Danielson Framework for Teaching, and other district guidelines and mandates.

III.   Research Evidence

Turnaround's work and beliefs are grounded in over two decades of academic and scientific research on child development and learning in the context of poverty. Over time, the organization has drawn upon knowledge from varied disciplines—neuroscience, child development, and high-performing education practice—to lend insight to its perspective on struggling schools. Increasing awareness of this research is driving a belief among education stakeholders that although the problems of high-poverty schools are often reflected in low test scores, they are deeply rooted in the impact that stress has on learning. Truly effective education reform efforts must recognize and address these basic underlying challenges.

Research on the **impact of poverty-related stress on child development, neural functioning, and behavior** includes:

- How emotional and physical stressors that are more prevalent among children living in poverty impact the brain's HPA axis and stress hormone regulation, leading to overreliance on and default pathways to reactive, impulsive areas of the brain (e.g., the amygdala), and less usage of calm, learning-oriented areas (the hippocampus and prefrontal cortex). Studies[2] provide important overviews on the impact of toxic stress during childhood (Johnson et al., 2013; Shonkoff et al., 2012), while others discuss how the traumatic experience of abuse and neglect profoundly alters brain development (Perry, 2008);
- Extensive research indicates the importance of secure adult attachment and its role in the development of self-control, self-esteem, self-efficacy, and other elements necessary for children's healthy growth and success (Ainsworth & Bowlby, 1991); and
- Demonstration and quantification of the link between poverty's high incidence of ACEs and subsequent risk of behavior and learning problems. As previously noted, research efforts from Nadine Burke Harris, M.D. are at the vanguard of this effort, a recent study noting that 12% of students in a low-income community sample had experienced four or more ACEs, and that this group had 51% likelihood of learning/behavior problems versus 3% for students with no ACEs (Burke et al., 2011). Further research has highlighted similarly dramatic findings (Blodgett et al., 2012; Matsuura et al., 2013), with some having identified a link between ACEs and negative health outcomes (Felitti et al., 1998).

The **consequences of children's exposure to severe stress associated with poverty** are also well-documented:

- Relationships between low socioeconomic status and negative life outcomes (Evans et al., 2011; Brooks-Gunn and Duncan, 1997; Hackman et al., 2010);
- How stress and trauma drive numerous mental health issues, including attention deficit hyperactive disorder (ADHD) (Famularo et al., 1996; Malmberg et al., 2011), depression (Ford et al., 2009), and obsessive compulsive disorder (OCD) (Mathews, 2008). Upwards of 20% of students in high-poverty schools present significant mental health needs and social/emotional issues and exhibit behaviors that can be confused with ADHD (Howell, 2004; Keenan et al., 1997; Hoven et al., 2005);

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[2] See Appendix

- Stress and anxiety's impact on students' executive functioning, including attention, problem solving, working memory, and other processes essential for learning (Raver et al., 2013; Blair et al., 2012; DePrince et al., 2009); and
- Links between poverty and chronic absenteeism (Balfanz & Bynes 2012; Applied Survey Research, 2011) and poverty and negative school culture (Hopson et al., 2011; Chen et al., 2008).

At its most basic level, **Turnaround's model is an integrated set of practices and supports designed to reestablish what the stress of poverty has interrupted in the form of a *fortified environment for teaching and learning:***

- *Efficient and effective treatment for high-need students:* Turnaround's student support systems are designed to drive dramatic improvements in what is typically poor delivery—over 80% of high-need students do not receive appropriate services or treatment—and low persistence of mental health treatment in high-poverty schools (Kataoka et al., 2002; Kazdin et al., 1996; Yeh et al., 2003). In addition to addressing intense student needs, Turnaround recognizes that getting treatment to the most disruptive students is critical to establishing a positive learning culture in classrooms for the benefit of all students.
- *Enhanced teacher practice leading to more effective classrooms:* Turnaround's teacher training curriculum begins by laying the groundwork of classroom management strategies that enable teachers to provide a steady routine of safe, supportive interactions, leading students towards strong buffering connection and attachment with teachers and pro-social behavior with peers. Numerous studies have demonstrated the value of this approach in improving student behavior, motivation, achievement, and even reduced levels of cortisol (Hatfield et al., 2013; Bryant et al., 2002; Weinstein & Magnano, 2003; Lew et al., 1986; Woolfolk et al., 2006; Brophy, 1988; Doyle, 2006). Other portions of Turnaround's teacher training curriculum build upon improved classroom environments with practices that cultivate academic mindsets and learning behaviors in students. This content includes Cooperative Learning Strategies that drive improved behavior and achievement (Caprara et al., 2000; Slavin, 1995; Johnson & Johnson, 1999; Kagan & Kagan, 2009) and Student Involved Assessment that promotes student engagement, agency in learning, mastery, and achievement (Stiggins & Chapuis, 2005; Black, 1998; Crooks, 1988; Koch & Shulasmith, 1991). Like the Gates Foundation's Measures of Effective Teaching project, Turnaround's evaluation framework on teacher and classroom efficacy relies on two dimensions for observation: 1) observations using the CLASS (Classroom Assessment Scoring System) rubric and 2) student surveys that include measurement of noncognitive attributes but also include students' perception of classroom and teacher efficacy (Measures of Effective Teaching Project, 2013).
- *Leadership engagement to oversee execution of and drive improvement:* A Turnaround Program Director partners with school leadership to ensure quality implementation of the Turnaround model, integration with other improvement initiatives, and alignment with district, state, and federal mandates. Turnaround also works with school leadership to develop a well-defined improvement plan that makes extensive use of data, including leading indicators on school culture, classroom efficacy, and student support to drive progress towards academic achievement.

Turnaround's Research & Metrics team collects and analyzes **data that track progress towards positive school culture, effective classrooms, and noncognitive learner attribute development**. This formative evaluation framework captures a much richer picture of factors that support and drive improved academic achievement and student development:

- Indicators of improved school culture, such as reduced absenteeism, improved student-teacher relationships, and positive attitudes towards school contribute significantly to academic achievement (Voigt, WestEd et al., 2013, Battistich et al., 1997, Applied Survey Research, 2011) as well as better health/life outcomes (Hawkins et al., 2001);
- Systematic measures of classroom efficacy in areas such as emotional support, student engagement, classroom management, and instructional support are strong predictors of improved achievement (Howes, Burchinal, Pianta et al., 2008; Mashburn, Pianta et al., 2008); and
- Noncognitive learner attributes such as motivation, self-regulation, and social efficacy have been linked to improved learning and achievement (Duckworth et al., 2005; Dweck et al., 2011).

Turnaround has developed and refined its approach to school improvement around this body of proven research about the damaging effects of severe stress and the practices and supports that can address them. Recovery from the impact of prolonged and severe stress requires a supportive learning environment and trustful, positive relationships with teachers and peers, adult and peer academic and social support, goal orientation, and high academic expectations. Taken together, these provide a foundation for academic growth and restore children's belief in themselves, their future, and the value of learning**.**

IV.   Conclusion

Turnaround for Children's work is pioneering a child development-centered perspective on and solution to persistent underperformance in high-poverty schools. Turnaround's principles and approach are grounded in several extremely important and emerging threads of knowledge and practices, drawn from neuroscience, child development, and high-performing schools that have beaten the odds, all of which are highly relevant to the education reform debate as a whole. Turnaround defines the principles and approach to its work as follows:
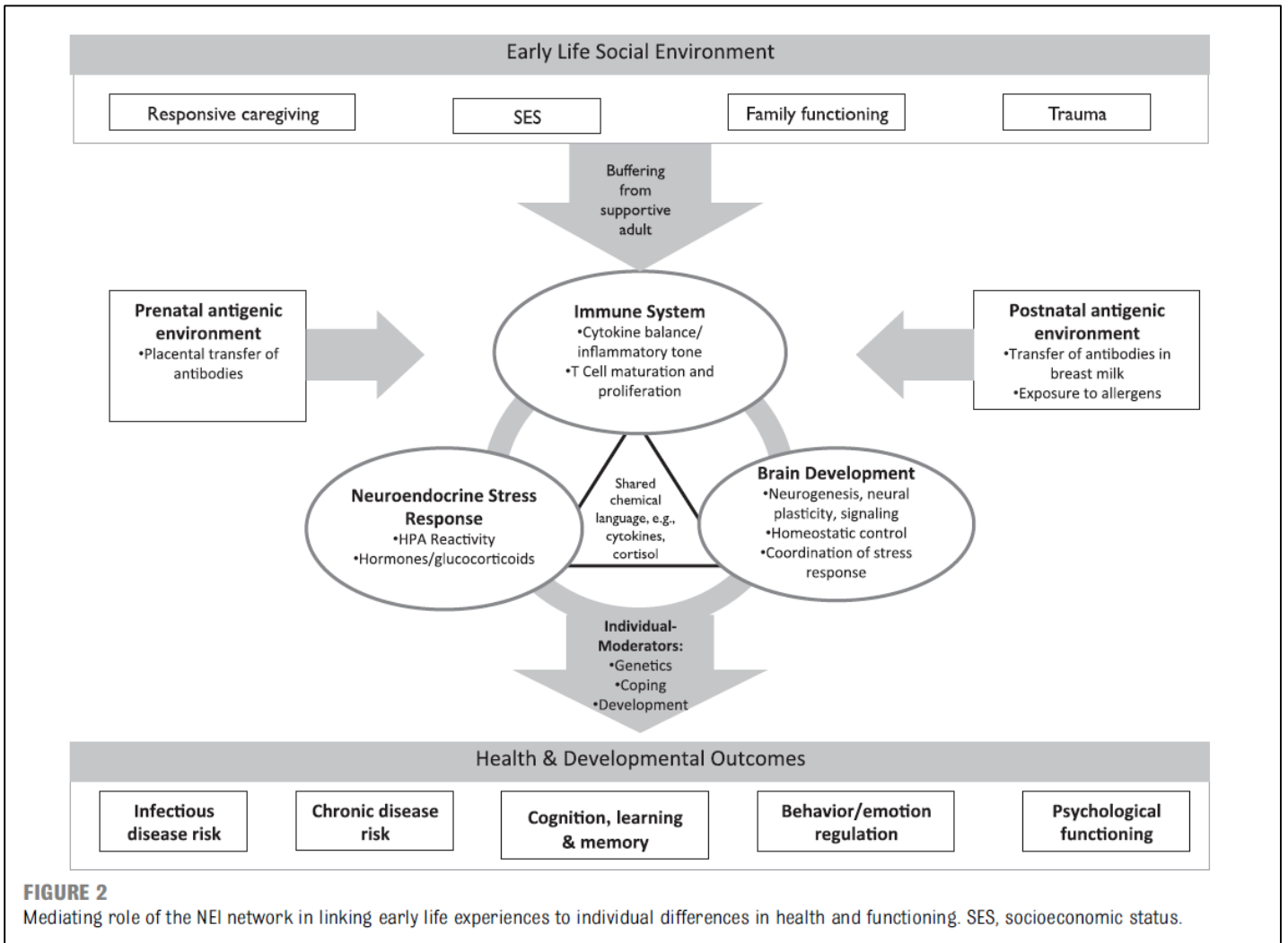
- Poverty is more than just a context for underperforming schools. A growing body of research is documenting and quantifying how the disproportionate exposure to stress and trauma among children living in poverty directly damage a child's development, leading to significant learning and behavioral problems as well as academic underachievement.
- As many underperforming schools continue to struggle, standards for content and achievement are rising nationwide, and educators face the challenge of bringing students from all backgrounds and levels of knowledge and skills to higher standards of learning. For these more academically demanding content standards to be successful, students will require greater engagement, persistence, and sense of academic identity, while schools will need a positive culture, classroom strategies, and measurement tools to bring this about.
- Educators and students in high-poverty schools cannot reach these standards without reshaping the public education system to provide students with a safe, supportive, and highly skilled environment

where children can experience consistent, positive interactions with adults and peers, can develop positive learning attributes, and can reestablish their belief in their own value and the value of learning.

- With appropriate capacities, practices, and supports in place **inside** schools integrated with services, community-based supports, and families **outside** schools in high-poverty neighborhoods can become caring, constructive, and challenging environments where deep attachments are formed, development is nurtured, and lasting student academic growth is possible.

With the knowledge Turnaround has today, it is easier to understand why there are so few successful high-poverty schools in the United States. Now this knowledge can be put to good use, to help those committed to improving public schools recognize what has been missing, and to build it into the system with urgency, clarity, and precision. Turnaround's voice is a vital one in this effort because the organization has synthesized the knowledge of many researchers into practices that address the very real stress that poverty inflicts upon schools, classrooms and the development—social, emotional, and cognitive—of children. Turnaround and many others understand that such practices are not only beneficial, they are a necessary prerequisite to effective teaching, successful learning, and overall student growth.

V. APPENDIX

FIGURE 2
Mediating role of the NEI network in linking early life experiences to individual differences in health and functioning. SES, socioeconomic status.

Johnson, S. (2013). The science of early life toxic stress for pediatric practice and advocacy. *Pediatrics*,*131*(2), 319-327. Retrieved from http://pediatrics.aappublications.org/content/131/2/319.full.html.