BRIEF 1

Change in Mind Overview, Findings, and Lessons Learned

Change in Mind: Applying Neurosciences to Revitalize Communities

Robert Wood Johnson Foundation

Alliance for Strong Families and Communities®

Alberta family wellness initiative

Palix Foundation

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Change in Mind Overview

Advances in Neuroscience

The past two decades have seen an explosion of new knowledge, research, and evidence on how the brain develops and how toxic stress can alter the brain's architecture. This has given us a window into the brain's neuroplasticity and how the skills and capacities we all need to be productive citizens and supportive and nurturing caregivers are developed. What we now know holds great promise for improving the effectiveness of how services are delivered to children, adults, families, and communities, and how we successfully engage and support our workforce. In fact, Mr. Kaku, a professor of theoretical physics and author of *The Future of the Mind*, said "the promise of this new revolution in neuroscience is profound, holding out the ability to someday alleviate suffering and enhance our true mental potential."[1] Nevertheless, this revolution in knowledge has yet to be fully integrated and aligned into the practices and policies of organizations and systems that provide social services, into government budgets, policies and regulations, and into the operations of the private business sector.

At the societal level, policies and interventions often run counter to the evidence that we know ensures the healthy development of young children. Aligning programs and policies with the core story of brain development[2] creates a solid foundation for later school achievement, economic productivity, responsible citizenship, and effective parenting. "This connection between early life experiences and the health of our nation underscores the importance of strategic investments" in our youngest citizens and their caregivers, that in turn, will benefit all of us socially and economically.[3]

Initiative Overview

In November 2014, the Alliance for Strong Families and Communities was awarded a $1.7 million grant from the Robert Wood Johnson Foundation, and with funding and collaboration from the Palix Foundation and it's Alberta Family Wellness Initiative launched Change in Mind: Applying Neuroscience to Revitalize Communities. The Center on the Developing Child at Harvard University also provided initial financial support as well as extensive consultation and guidance for the conceptualization of the initiative. Change in Mind is a learning laboratory for understanding how advances in neuroscience can be leveraged to create broader systems and policy change. Over the past two years, Change in Mind has demonstrated the impact of intentionally infusing brain science and evidence into programs and organizations, and identified new insights into the longer-term challenge of facilitating and accelerating change at the systems and policy levels.

Theory of Change

The initiative was designed to facilitate change in three distinct but mutually reinforcing spheres of influence. In the innermost sphere, the initiative engaged 15 social service organizations in the Change in Mind cohort; provided them with access to leading experts in neurosciences, communications, and evaluation; and helped them to accelerate their learning and translation of brain science concepts into action at program, organization, systems, and policy levels. In the next sphere, the initiative extended this learning beyond the 15 cohort members to over 450 organizations across the U.S. and Canada that are part of the Alliance strategic action network and Palix Foundation partners through access to Change in Mind webinars, videos, policy statements, and other materials. In the outermost sphere of influence, the initiative increased field-level awareness of brain science in many service sectors including but not limited to child welfare, education, mental and physical health, and housing, which over time will lead to broader systems and policy change as well as greater understanding of how to advance brain science-aligned policies and practices (see Appendix A: Change in Mind Theory of Change). The Change in Mind evaluation addresses the first sphere of the initiative's influence.

[1] Kaku,M. (August 21, 2014). The Golden Age of Neuroscience Has Arrived. Wall Street Journal, New York, NY.
[2] The National Scientific Council on the Developing Child synthesized decades of research relevant to neurodevelopment processes and translated it with help from the FrameWorks Institute into the core story of brain development (i.e. the Brain Story). http://developingchild.harvard.edu/wp-content/uploads/2015/09/A-Decade-of-Science-Informing-Policy.pdf
[3] Center on the Developing Child at Harvard University (2010). The Foundations of Lifelong Health Are Built in Early Childhood. http://www.developingchild.harvard.edu

Cohort Sites

In 2015, the Change in Mind initiative created a peer learning community or cohort of 10 sites from the United States and five sites from Alberta, Canada. The sites were selected by an independent selection committee based on knowledge of adverse childhood experiences (ACEs), experience providing trauma-informed care, willingness and capacity to participate in the initiative, and proposals for how they planned to change their organizations, influence local service systems, and advocate for financial, regulatory, and legislative policy change.

Diverse Sites

The Change in Mind sites are diverse, ranging in organizational size, population reach, prevention or treatment service orientation, sphere of influence (local, state or province, or regional), and geographic location. The sites encompass five organizational types:

A. Large health systems
B. Multi-site organizations with state/province-wide geographic reach
C. Regional treatment facilities with state/province-level influence
D. Local multiservice organizations with regional influence
E. Neighborhood service centers with local influence

See Exhibit 1, and Appendix B for site website and contact information). These characteristics are associated with the sites' organizational capacity to implement internal change and their external capacity to influence systems and policy change (see Exhibit 1).

Exhibit 1: Change in Mind Sites, by Organizational Type

Organization Type	Change in Mind Site
A. Large health systems	Children's Hospital of Wisconsin, Milwaukee, Wisconsin (CHW)
	KVC Health Systems based in Olathe, Kansas (KVC)
B. Multisite organizations with state/provincial geographic reach	Big Brothers, Big Sisters of Calgary and Area, Calgary, Alberta (BBBS)
	Children and Families First, Wilmington, Delaware (CFF)
	Children's Home Society of Washington, Seattle, Washington (CHSW)
C. Regional treatment facilities with state or provincial influence	CASA Child, Adolescent, and Family Mental Health, Edmonton, Alberta (CASA)
	LaSalle School, Albany, New York (LaSalle)
	Sheldon Kennedy Child Advocacy Centre, Calgary, Alberta (SKCAC)
	The Family Partnership, Minneapolis, Minnesota
D. Local multiservice organizations with regional influence	CUPS Health, Education, Housing, Calgary, Alberta (CUPS)
	Family Service Association of San Antonio, San Antonio, Texas (Family Service)
	Wellspring Family Services, Seattle, Washington (Wellspring)
E. Neighborhood service centers with local influence	Boyle McCauley Health Centre, Edmonton, Alberta (BMHC)
	East End House, Cambridge, Massachusetts (EEH)
	Martha O'Bryan Center, Nashville, Tennessee

Cohort Activities

Cohort Meetings

Through the initiative, the Change in Mind sites received grants of $25,000 per year for two years to support travel and other project-related expenses to participate in a series of six in-person meetings between September 2015 and May 2017. The first convening provided an orientation to the project, and extensive grounding in foundational brain science including advances in neuroscience-informed programs, practices, and tools. The second convening focused on the application of developmental evaluation methods to the initiative, the development of cohort- and site-level theories of change informed by complexity, systems, and implementation science, and the use of iterative cycles of rapid testing and evaluation for learning and improvement. The next two meetings were dedicated to strategic communications training provided by the FrameWorks Institute. The fifth convening returned to the topic of systems and policy change. The sixth and final convening provided an opportunity for the sites to reflect on what they had learned through their participation in the initiative, their most significant accomplishments, and how their multilevel theories of change had deepened or developed through the experience.

Cohort Webinars

The sites received additional training and technical assistance between the meetings. This included a series of 18 webinars on topics recommended for the cohort or requested by cohort members. Attendance averaged 42 per session. The webinars touched on a wide range of topics including neuroscience (e.g., "Neuroscience Supporting New Parents and Children," "Applying the Science of Child Development," and "Building Core Capabilities for Life"); ACEs data (e.g., "Using the ACE Survey in Your Organization," "The Philadelphia ACE Study," and "Balancing ACEs with HOPE"); and systems and policy change (e.g., "Aligning Policy Efforts with Brain Science," "How to Use Brain Science Research to Create Systems Change," and "Using Evaluation to Fully Support Innovation"). These webinars were also available to the broader Alliance network.

Technical Assistance

The FrameWorks Institute provided site consultations and review of site communications materials. Evaluation team liaisons were assigned to the sites, providing technical assistance on site evaluation tasks between meetings. In the spring of 2016, site visits combined evaluation data collection interviews, evaluation technical assistance sessions, and meetings between site leaders and stakeholders and the initiative's director to discuss system and policy change challenges and opportunities. In addition, the sites participated in smaller "community of practice" workgroups focused on policy, measurement, and communications. The policy and communications groups helped create the initiative's policy statement, "Using a Brain Science-Infused Lens on Policy Development." The measurement group created an inventory of the sites' ACEs, trauma, resilience, and child development measurement tools.

Additional Resources

Neuroscience researchers have developed and disseminated frameworks, models, tools, and techniques using neuroscience advances. A number of researchers trained the sites directly on these materials at the meetings through online webinars and hundreds of resources posted on the Change in Mind website. The sites were also encouraged to follow up individually with these experts, as needed, for further consultation or advice. Examples of these resources include:

- Videos: Alberta Family Wellness Initiative's "How Brains are Built: Core Story of Brain Development"
- Teaching tools: Dr. Judy Cameron's "Brain Architecture Game"
- Communications: FrameWorks Institute's "Brain Animations"
- ACEs studies: Dr. Roy Wade's "Philadelphia ACEs Study"
- Two-generation approaches: ASCEND—the Aspen Institute's "The Two-Generation Approach"
- Resilience research: Dr. Michael Ungar's Resilience Research Centre's "Pathways to Resilience"

- Trauma-informed organizational change: Dr. Sandra Bloom's Sanctuary Model
- Research briefs from the Center on the Developing Child at Harvard University

Two-Country Context

A unique feature of Change in Mind was the use of a two-country cohort of Albertan and American sites. There were differences in the geographic distribution of the sites, the communities in which the sites were located, the client populations served by the sites, structural differences in the service systems within which the sites operate, and the countries' political institutions. Although these contextual differences influenced the change strategies chosen by the sites, they did not disrupt the process or progress of the initiative. Rather, these differences enriched the interactions and exchanges among the sites, each group benefiting from the different experiences of the others.

Geographic Dispersion

A distinct difference between the two sets of sites was the geographic distance. The five sites in Alberta were clustered in Calgary (three sites) and Edmonton (two sites), located 175 miles (281 kilometers) apart. This proximity allowed the sites to meet periodically as a separate cohort for group technical assistance from their Canadian evaluation liaison, and to discuss and advocate for regional administrative and regulatory policy change. In contrast, with the exception of two sites in Seattle, the American sites were located in separate states, which limited opportunities for in-person group contact with their evaluation liaisons and with each other.

Community Demographics

The sites shared more similarities in their service populations and social challenges. All Change in Mind sites were located in urban metropolitan areas that included diverse ethnic and cultural populations and pockets of vulnerability resulting from structural racism in both countries, particularly among Indigenous groups in Alberta and African-Americans and Hispanics in the U.S. The social challenges of these communities linked to trauma and brain science were roughly similar in both countries; most of the communities have significant levels of poverty and violence.

Political Institutions

Differences in the Alberta and American service systems and political institutions provided a lively contrast for systems and policy discussions within the cohort. Politically, both countries have federal systems with strong state/provincial powers, though the countries have some differences. Unlike the U.S., the Canadian Federal government has little influence on education, but manages the country's employment insurance system and "tops up" provincial health care budgets. Another difference is that the political and public administration "machinery" is more decentralized in the U.S. and more concentrated in Canada's parliamentary democracy. This means that there are more entry points for legislative policy change discussions in the U.S., while Canadian policy change efforts tend to focus at the regulatory and administrative level within the civil service system.

As a result, there was a sense among the Alberta sites that the American sites were more policy change savvy than they were. However, because of the previous success of the Palix Foundation's Alberta Family Wellness Initiative, which was the precursor to the Change in Mind initiative in Alberta, some American sites felt the Alberta sites were more developed in their understanding and adoption of brain science research.

Change in Mind Evaluation

Evaluation Approach

The initiative used a developmental evaluation approach to understand how the Change in Mind sites addressed the challenges of:

- Infusing brain science research into their organizational cultures, programs, and practices
- Leveraging scientific advances in brain development to facilitate sector and systems change
- Accelerating systems change within a larger policy context
- Supporting peer learning through a peer-based learning community model

The evaluation was designed to monitor, track, and map the sites' development, identifying patterns of activity across organizational types and country contexts. Change in Mind's use of a developmental evaluation approach, rapid testing of program and practice innovations, and tracking of the evolution of the sites' theories of change distinguished Change in Mind from other ACEs and resilience initiatives. The evaluation used a mix of qualitative data collection methods (interviews, document reviews, and site visits) and quantitative data collection methods (review of site administrative data, cross-site feedback, and annual reporting surveys).

This approach was designed to enhance understanding of the sites' strategies to align their internal program and organizational practices, external community capacity building, and systems and policy change efforts with advances in neuroscience. The evaluation was not designed to determine best practices of the sites, but to uncover promising patterns of practice across the sites.

Evaluation Briefs

This brief is part of a series of four briefs of the evaluation's site-level findings. The project's final report will cover the effectiveness of the cohort model.

1. **Summary of Change in Mind evaluation findings and lessons learned:** To transform their programs, organizations, sectors, and communities, the sites designed and implemented multi-level theories of change. These pathways were often aligned with internal efforts leading to external action.

2. **Change in Mind sites' pathways of internal organizational change:** The sites worked to create internal organizational change by aligning brain-science informed organizational goals and resources, building organizational capacity, and adapting their programs and practices to incorporate neuroscience findings.

3. **Change in Mind sites' pathways of external systems and policy change:** The sites advanced systems and policy change by building networks of collaborators, educating their communities about brain science, facilitating sector-specific change, and advocating for larger cross-sector policy change.

4. **Enhancing Change in Mind sites' use of ACEs data through rapid testing:** The sites improved their collection and use of ACEs, and resilience data, using rapid feedback methods to improve their data and other science-aligned programs and practices.

Other briefs are available at alliance1.org/change-in-mind.

Site-Level Findings

Adoption of Brain Science Concepts

The sites were selected, in part, for their familiarity with the toxic stress of adverse childhood experiences (ACEs) and their experience providing trauma-informed services. Many, if not all, teams were also conversant in other related frameworks and concepts, including the social, economic, and environmental determinants of health and well-being, health-related risk and protective factors, and resilience. At the first cohort convening, the teams were introduced to the brain science "Core Story" narrative developed by the Palix Foundation's Alberta Family Wellness Initiative in conjunction with the FrameWorks Institute and Harvard's Center on the Developing Child.[4] The Alberta sites that had been part of the Alberta Family Wellness Initiative were familiar with these concepts, but they were new for some of the U.S. sites. These core concepts included:

Relationships with caring, responsive adults and early positive experiences build strong brain architecture for children.

Significant stress from ongoing hardship or threat, such as exposure to violence, extreme poverty, or child maltreatment disrupts the biological foundations of learning, behavior, and health, with life-long consequences.

Providing the right ingredients for healthy development—including protective factors that can counterbalance the effects of adversity—from the start produces better outcomes than trying to fix things later.

In the early years, it is critical to provide both the buffering protection of responsive relationships and safe and stable environments that help to reduce poverty, maltreatment, community violence, racism, and other threats to child well-being.

It is never too late to lessen the harmful effects of toxic stress and build resilience. Core capabilities needed for parenting and in the workplace are built in early childhood, but the full range of skills can continue to develop into adolescence and early adulthood.

[1]Palix Foundation. (Producer). (2013, October). How brains are built: Core story of brain development [Streaming video]. Retrieved from Alberta Family Wellness Initiative website, http://www.albertafamilywellness.org/resources/video/how-brains-are-built-core-story-of-brain-development

Translation Challenges

Although the sites embraced the new information, they faced two challenges translating these concepts into their own practices. The first challenge was conceptual; how would the sites reconcile, integrate, and embed these latest brain science concepts, tools, and program practices into their existing organizational goals, corporate identities, and conceptual frameworks? Many of the sites had already invested time and energy becoming "trauma-informed" organizations, or championing other concepts such as resilience or the social determinants of health. How did brain development research fit into this picture? The second challenge was operational and related to the Change in Mind project itself. Were the sites' Change in Mind projects separate, stand-alone activities that provided interesting information that contributed to existing organizational frameworks? Or, was brain science a "game changer" providing a new overarching paradigm that encompassed and superseded other concepts?

Adoption and Translation Strategies

After the first convening, the sites worked through these adoption and translation issues as they developed and started implementing their theories of change and evaluation designs. In the spring of 2016, the sites discussed these issues during their site visits with the evaluation and initiative staff.

Competing Frameworks

During the site visits, some sites reported confusion about the relationships between key concepts including the social and economic determinants or root causes of health, the impact of ACEs on physical and mental health outcomes, the prevention of ACEs, trauma-informed services, and resilience. For the sites, these concepts were related but not yet integrated into a comprehensive framework.

- The social determinants of health framework focused on the lack of availability of resources to meet daily needs, such as educational and job opportunities, living wages, or healthful foods; harmful social norms and attitudes, such as discrimination; exposure to crime and violence; socioeconomic conditions such as concentrated poverty and residential segregation; and environmental factors including "climate change, the built environment, and exposure to toxic substances and other physical hazards."[5]

- Toxic stress, associated with exposure to ACEs, disrupts neurodevelopment and leads to impaired decision making, lack of impulse control, and resistance to disease; increase in adoption of risky behaviors; and early onset of disease, disability, and death.[6]

- ACEs are recognized as a "preventable public health issue."[7] Proposed solutions include building individual capabilities through resiliency and recovery, the development of attachment and belonging through relationships with caring and competent people, and increasing protective community, faith, and cultural factors through community capacity building.[8]

[2] Office of Disease Prevention and Health Promotion. (2017). Determinants of health. Retrieved from HealthyPeople.gov website, https://www.healthypeople.gov/2020/about/foundation-health-measures/Determinants-of-Health

[3] National Scientific Council on the Developing Child. (2014). Excessive Stress Disrupts the Architecture of the Developing Brain: Working Paper 3. Updated Edition. Cambridge, MA: Author. Retrieved from Center on the Developing Child website at Harvard University: http://developingchild.harvard.edu/resources/wp3/

[4] Minnesota Department of Health. (2013, February). Adverse childhood experiences in Minnesota: Findings and recommendations based on the 2011 Minnesota behavioral risk factor surveillance system. Retrieved from Minnesota Department of Health website: http://www.health.state.mn.us/divs/cfh/program/ace/content/document/pdf/acereport.pdf

[5] L. Porter, personal communication, May 2016.

- Trauma-informed care is about shifting the mindsets of behavioral health providers from "what is wrong with you" to "what happened to you." Services focus on "patient empowerment, choice, collaboration, safety, and trust," implemented through "leadership, communications, training staff, and creating a safe environment and preventing secondary trauma among staff."[9]

- Resilience concepts are less about "bouncing back from adversity, but moving through adversity to recovery." Resilience is both the "capacity of individuals to navigate their way to the psychological, social, cultural, and physical resources that sustain their well-being, and their capacity individually and collectively to negotiate for these resources to be provided in culturally meaningful ways."[10]

Coherent Continuum

One of the evaluation feedback sessions in the fourth convening reflected on the sites' efforts to make sense of brain science concepts in relation to other frameworks. The presentation offered a continuum of concepts based on site visit discussions. The Change in Mind continuum placed brain science at the center as the key mechanism that supported the building of brain architecture to increase resilience, enabling children and families to thrive (see Exhibit 2). The sites were encouraged to review their plans and clarify which combinations of concepts they were using to frame their problem statements, project goals and intended outcomes, and theories of change.

Evolutionary Process

The sites' approaches to operationalizing brain science within their organizations evolved over the course of the initiative as they explored the meanings of the concepts within their contexts and the potential impact of the concepts on their organizations. Some sites, such as the BMHC, began by educating their staff on brain science concepts in relation to other frameworks. One manager noted, "We have questioned how 'brain science' and 'resilience' may look the same or different. We have asked ourselves how brain development in early childhood is the same and/or different for adults with psychopathology and addictions. We have also talked about how providing the social determinants for health is great, but may not be as useful as building a trusting relationship with a client."

"Using neuroscience brings us back to the fundamentals of human growth and achievement. Change in Mind changes how we conceptualize mental health and align our services to impact overall health and well-being." Jason Hooper, president and CEO of KVC.

KVC also assessed the impact of brain science on their organization. KVC's president reported, "I have seen the impact discussing brain science can have on our work. It helps us think beyond current roles and practices. Using neuroscience brings us back to the fundamentals of human growth and achievement. Change in Mind changes how we conceptualize mental health and align our services to impact overall health and well-being."

Beyond Single Projects

"As our work has evolved, the Change in Mind project's mindset has shifted from being an add-on to being an integrated approach and a change in agency philosophy," says Cynthia Wild, director, service delivery at BBBS.

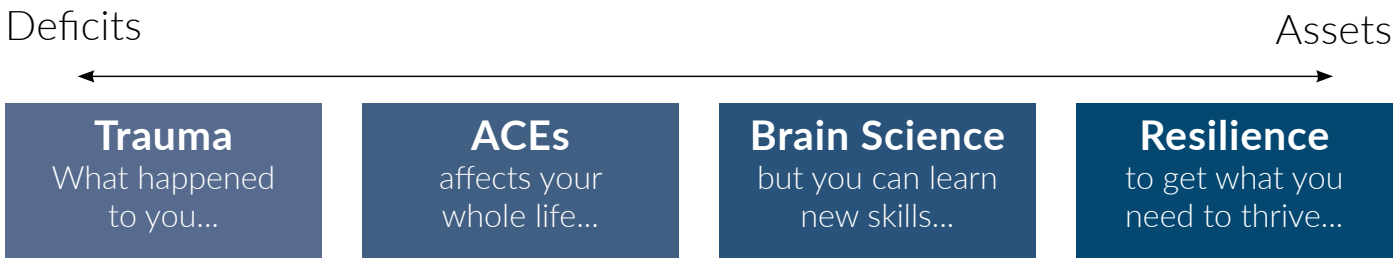
Some sites have expanded their Change in Mind activities beyond single projects to much larger initiatives. For example, BBBS is adapting a brain science-aligned approach in all its programs, particularly program practices related to conducting mentor/mentee match support through the national match support framework. "As our work has evolved, the Change in Mind project's mindset has shifted from being an add-on to being an integrated approach and a change in organization philosophy," says Cynthia Wild, Director, Service Delivery at BBBS. KVC's project lead agrees, "The Change in Mind project began as an adaptation to support our trauma-informed care initiatives.

[6] Menschner, C., & Maul, A. (2016, April). Key ingredients for successful trauma-informed care implementation. Hamilton, NJ: Center for Health Care Strategies, Inc. Retrieved from http://www.chcs.org/media/ATC_whitepaper_040616.pdf

[7] Resilience Research Centre. (n.d.). What is resilience? Retrieved August 29, 2017, from http://resilienceresearch.org/about-the-rrc/resilience/14-what-is-resilience

In many ways, this was the most difficult task our organization had to overcome. There was much fear that Change in Mind would be the 'next thing' and would confuse our employees about where to focus their limited available time toward learning new information and practices. Over the last 12 months, employees' feedback has been that the Change in Mind model complements our previous work. Specifically, it is filling gaps related to nonclinical interventions, social change targets, and policy change efforts."

Exhibit 2: Brain Science Concept Continuum



Pathways to Programmatic and Organizational Change

All sites, regardless of their size and reach, were engaged in multiple activities to bring their strategic objectives and organizational resources in alignment with their Change in Mind goals. They developed communications and workforce capacity to carry out their initiative plans, and used this capacity to adopt new programs and modify existing practices. Exhibit 3 shows the sites that were engaged in each strategy.

Exhibit 3: Organizational and Program Change Activities, by Site

Organization and Program Change Strategies	Change in Mind Sites
Aligning Goals and Resources	
1. Strategic leadership	BBBS, BMHC, CASA, CFF, CHW, CHSW, CUPS, EEH, Family Service, KVC, SKCAC, The Family Partnership, Wellspring
2. Adaptive structures and processes	BBBS, BMHC, CHW, CHSW, EEH, Family Service, KVC, LaSalle, SKCAC, The Family Partnership, Wellspring
3. Resource alignment	BBBS, CHW, CHSW, CUPS, EEH, Family Service, CHSW, SKCAC, Wellspring
Building Organizational Capacity	
4. Reframed communications	BBBS, BMHC, CASA, CFF, CHW, CHSW, CUPS, EEH, Family Service, LaSalle, KVC, SKCAC, The Family Partnership, Wellspring
5. Workforce development	BBBS, BMHC, CASA, CFF, CHW, CHSW, CUPS, EEH, Family Service, LaSalle, KVC, Martha O'Bryan Center, The Family Partnership, Wellspring
6. Staff support	KVC, CASA, Family Service, LaSalle, Martha O'Bryan Center, SKCAC, Wellspring
Adapting Programs and Practices	
7. Innovation design and evaluation	BBBS, CASA, CFF, CHW, CHSW, CUPS, EEH, Family Service, KVC, Martha O'Bryan Center, SKCAC, The Family Partnership, Wellspring
8. New program practices	CASA, CFF, CHW, CHSW, CUPS, EEH, KVC, Martha O'Bryan Center, SKCAC, The Family Partnership, Wellspring

In the next section, we describe these strategies and reference site examples. The examples are illustrative; they are not meant to be "best practices," but to show the range of site activity.

Aligning Goals and Resources

Strategic Leadership

The sites' executive teams formally recognized the importance of brain development by reorienting their organizations to focus more on supporting the healthy brain development of their clients. The sites' administrative teams used a range of leadership strategies to embed brain science research in their organizations. Strategies included revising organization mission and vision statements, setting new organization-wide objectives, updating business plans, and signaling these corporate changes through keynote speeches, corporate messages, and other communications. For example, KVC incorporated brain development concepts into the organizational vision of its 5 subsidiaries. CUPS in Calgary, Alberta developed a new organization-level theory of change that included a continuum of brain science-aligned prevention, early intervention, and treatment services for families and adults living in adverse conditions.

Adaptive Structures and Processes

Change in Mind sites made 2 kinds of structural changes to translate brain science concepts into their operations. One approach involved changing organizational structures to shift the functions of key personnel and programs. For example, Wellspring established a chief program development officer responsible for creating brain science-aligned programs, policies, and practices. The other strategy involved creating networks of managers and staff who championed the adoption and use of brain science throughout their organizations. For example, BMHC created a Change in Mind Champions Committee, comprised of 16 percent of the center's workforce who wanted to be directly involved in the implementation of the initiative.

Resource Alignment

These organizational changes required significant time and resources, which came from redirecting existing internal resources or leveraging new external funding sources. Larger sites had the resources to create workgroups, develop training materials, and enhance current programs. Smaller sites, such as EEH, were able to secure operating grants from local foundations to make these kinds of organizational changes.

Building Organizational Capacity

Reframed Communications

The sites were trained by the FrameWorks Institute to communicate neurological research findings to internal and external audiences using carefully framed messages such as the Core Story narrative. Most Change in Mind sites used these trainings to refine their communications messages. For example, CFF modified its brain science messaging for internal and external audiences including organization newsletters, fundraising events, its annual child abuse prevention month campaign, and social media.

Workforce Development

A number of sites had staff already trained in trauma-informed practices. To re-train their staff on brain science concepts, the sites used Change in Mind training materials, videos, and interactive games with their employees and other audiences including board members, volunteers, foster parents, and clients. Family Service developed 3 tiers of training for intake staff, program supervisors, and clinicians. Some sites went further and updated their employee job descriptions, modified their employee orientation sessions, and added professional development opportunities for staff to ensure that staff understood and made use of the new concepts.

Staff Self-Care

The sites raised their awareness of the potential for staff to experience secondary trauma or trigger their own trauma histories while working with clients. To increase staff awareness of their own trauma histories, some sites, such as LaSalle, provided opportunities for staff to take ACEs surveys anonymously. CASA started using some elements of its Workforce Pulse survey to monitor the level of stress of its employees. Other sites, such as the Martha O'Bryan Center and Wellspring, increased their counseling, mindfulness classes, and other supports to help staff manage their stress.

Adapting Programs and Practices

Innovative Design and Evaluation

Unlike other kinds of learning collaboratives that direct participating sites to select and implement specific program models, Change in Mind did not prescribe specific programs or practices for the sites to implement. Instead, the sites were encouraged to identify gaps in their programming and adopt more brain science-aligned policies and practices that fit their local circumstances and clients' needs. Some sites, such as CASA and CUPS, started by reviewing existing programs, surveying staff needs, or conducting retrospective analyses of past practices. Sites also experimented with developing and testing new program practices. The test results were used to refine and expand the use of these new activities.

New Programs and Practices

Change in Mind sites started modifying existing programs and developing new program practices along the prevention continuum of universal prevention, early intervention, and treatment services.

- Sites, such as CFF, added brain science content to evidence-based home visiting and parenting education programs that support the healthy development of infants and young children including Nurse Family Partnership, Healthy Families America, and Strengthening Families.

- Other sites, including CUPS, Wellspring, and The Family Partnership, incorporated brain science findings into early intervention programs for children, youth, and families. These include two-generation programs designed to help parents support their children in adverse conditions, build parents' social capital and relationships, improve stress-buffering capabilities, and improve their own coping skills while supporting the healthy development of their children.

- Some sites, such as KVC, CHSW, and CHW, scaled up their use of evidence-based counseling therapies that address mental and behavioral health issues as well as the executive functioning, self-regulation, and core capacities of program participants.

Pathways to Systems and Policy Change

The sites used two approaches to create brain science-aligned systems and policy change. They started by building their communities' knowledge, networks, and skills to work more effectively on neuroscience-aligned change. With this capacity, the sites were able to work with key partners to advocate for change in multiple service sectors including child welfare, early child development, K-12 education, housing, physical and mental health care, and family and juvenile justice. Exhibit 4 shows the sites that were engaged in each strategy.

Exhibit 4: Patterns of Systems and Policy Change Activities

Systems and Policy Change Strategies	Change in Mind Sites
Building Community Capacity	
Knowledge dissemination	BBBS, CASA, CFF, CHW, CHSW, CUPS, EEH, Family Service, LaSalle, KVC, BMHC, Martha O'Bryan Center, SKCAC, The Family Partnership, Wellspring
Ally networks	BBBS, CFF, EEH, KVC, LaSalle, Martha O'Bryan Center, The Family Partnership
Brain science messages	CASA, CFF, LaSalle, SKCAC, The Family Partnership, Wellspring
Training infrastructure	CASA, CFF, CHW, CHSW, KVC, LaSalle, SKCAC
Resource alignment	BMHC, CHW, CHSW, CUPS, EEH, Family Service, KVC, SKCAC
Research and evaluation	CASA, CFF, CHW, CHSW, EEH, BMHC, SKCAC, The Family Partnership
Advocating for Systems and Policy Change	
Child development and welfare	CUPS, CHSW, Family Service, KVC, Wellspring
K-12 Education	BBBS, CFF, CHW, EEH, KVC, LaSalle, SKCAC
Physical and mental health care	BMHC, CUPS, KVC, LaSalle, The Family Partnership, Wellspring
Housing and homeless services	CHW, CUPS, BMHC, Martha O'Bryan Center, Wellspring
Family and juvenile justice services	CUPS, Family Service, LaSalle, SKCAC

In the next section, we describe these strategies and reference site examples. The examples are illustrative; they are not meant to be "best practices" but to show the range of site activity.

Building Community Capacity

Change in Mind sites developed system and policy change capacity in six areas:

- Disseminating information about brain development
- Developing networks of strategic allies to advocate for systems and policy change
- Working with other organizations to create shared narratives and messages
- Strengthening training infrastructure to increase the supply of service providers trained in brain science concepts
- Aligning funding and other resources to support brain science-aligned activities
- Conducting research and evaluation activities to improve the sites' understanding and ability to facilitate programmatic, organizational, systemic, and policy-level change

Knowledge Dissemination

The Change in Mind sites were introduced to a wealth of brain science research at the cohort's first convening in the fall of 2015. They listened to expert lectures and panel discussions, watched videos, and participated in interactive learning sessions on a range of topics related to brain architecture, the impact of toxic stress on brain development, and techniques to build and restore brain functioning and increase resiliency. One of the earliest and easiest opportunities for the sites to work externally on systems and policy change was to share this information with their communities. The sites used several dissemination strategies. Sites such as SKCAC, The Family Partnership, LaSalle, and the Martha O'Bryan Center, hosted or co-hosted special summits or symposia on brain science topics. Other sites, such as CASA, gave brain science-related presentations at other types of professional development conferences. Some sites, such as CUPS, used more informal settings to share brain-science information with colleagues and community partners. In addition, sites such as CHSW disseminated brain science information through media and other channels.

Ally Networks

In 2015, at the start of Change in Mind, sites such as KVC and CFF were already members of local or regional coalitions, task forces, or other networks working to address ACEs, increase resilience, or spread the use of trauma-informed services in their communities. This provided a ready audience for Change in Mind sites to disseminate brain development research. Some sites, including BBBS and EEH, were sharing this information in other task forces and workgroups that targeted other community needs such as child mentoring and mental health services. These sites found different ways to use neuroscience research to add value to the work of those external groups. The sites provided trainings, helped revise coalition goals and theories of change, updated communications materials, and developed policy statements. Some sites, such as CFF, also helped create new groups to work on brain science-aligned systems or policy change.

Brain Science Messaging

An important driver of community change is the use of a compelling narrative powerful enough to motivate key audiences to support systems- and policy-level change. The Change in Mind sites were trained by the FrameWorks Institute to reframe and incorporate brain science information into their messages. These stories included "How Brains are Built: Core Story of Brain Development," developed by the FrameWorks Institute for the Palix Foundation's Alberta Family Wellness Initiative, in partnership with the Center on the Developing Child at Harvard University.[11] The sites used their FrameWorks Institute training to create public messages targeting local service sectors or specific community problems. For example, Wellspring had an important op-ed piece published on the impact of homelessness on brain development. SKCAC was involved in the creation of a documentary on child abuse featuring its board director and hockey star, Sheldon Kennedy.

[8] Palix Foundation. (Producer). (2013, October). How brains are built: Core story of brain development [Streaming video]. Retrieved from Alberta Family Wellness Initiative website, http://www.albertafamilywellness.org/resources/video/how-brains-are-built-core-story-of-brain-development

Training Infrastructure

A number of Change in Mind sites gained reputations outside their organizations for their expertise providing training on brain development research and concepts. Some sites were asked to extend or adapt their internal training programs and curricula for external audiences including police departments, school districts, and child welfare organizations. One site, LaSalle, developed a special team to field and manage external requests. Sites have leveraged their training capacity in two ways. First, sites such as KVC, LaSalle, CFF, and CHW are "scaling out" their training services, providing brain science training and technical assistance to other organizations, sectors, and other communities, states, and countries.

Second, sites such as CFF and SKCAC have started working with universities and government partners to "scale up" or institutionalize their trainings, creating the infrastructure needed to expand the supply of service providers trained in brain development research. The sites developed online curricula and classroom materials to expand the reach of their trainings. The Palix Foundation also made a significant contribution in 2017 by creating the Brain Story Certification Course, a free online course that provides in-depth training on the science behind the "Core Story." The course provides videos of over 30 leading experts in neurobiology, mental health, and addiction; 30 hours of instruction time, including brain science architecture, executive functioning, "serve and return," brain development strategies; and the impact of ongoing stress on brain development culminating in a brain science certificate. [12]

Resource Alignment

An important element of sustainable systems change is aligning public and private resources to support system goals at sufficient scope and scale to sustain widespread implementation of new brain science-aligned programs and practices. Without the prioritization or authorization of funding to finance such activities, it is a challenge to maintain sufficient momentum for large-scale change. Some Change in Mind sites, such as CUPS, SKCAC, CHW, LaSalle, and CHSW, cultivated relationships with public sector administrators and policymakers to advocate for more funding. They also advocated for new philanthropic rules requiring that grant proposals include brain science-aligned strategies.

Research and Evaluation

Several Change in Mind sites sought to deepen their understanding of the impact of ACEs and adverse community conditions on the brain development of their own clients. The sites used different research and evaluation strategies depending on their research goals, internal research capacity, and access to outside experts. Several sites including SKCAC, CASA, and CHW analyzed administrative data linking client ACEs and/or resilience scores to program outcomes. Other sites, including The Family Partnership, EEH, and CFF, conducted interviews and focus groups with community members and clients to understand their brain science-related service needs. Other sites, such as CHSW and KVC, tested the effectiveness of new brain science-infused program models, tools, and practices.

[9] Brain story certification. (n.d.). Retrieved August 25, 2017, from Alberta Family Wellness Initiative website, https://www.albertafamilywellness.org/training

Advocating for Systems and Policy Change

This section reviews Change in Mind sites' external system and policy advocacy activities in five sectors:

1. Early Child Development and Child Welfare Services

In these service sectors, Change in Mind sites advocated for the spread of evidence-based parenting programs and expansion of eligibility or access to child care and early childhood programs for families involved in the child welfare system. For example, CHSW advocated for the statewide implementation of the Parents for Parents peer mentoring program and sought to stabilize child care subsidies for families involved the child welfare system. Family Service advocated for the expansion of access to prevention and early intervention services for families at risk of entering the child welfare system.

2. K-12 Education Services

In the area of K-12 education, Change in Mind sites advocated for the spread of brain science-aligned programs to new service settings and new student populations as well as educational services for adults. For example, CFF worked with the Delaware Office of Child Advocate to pilot the Compassionate Schools program model in Delaware. CHW advocated for the expansion of evidence-based school mental health services. The Martha O'Bryan Center's adult education program used a "flipped classroom" approach to provide wraparound services and supports to meet the executive functioning needs of GED students.

3. Mental and Physical Health Care

Change in Mind sites, like KVC, advocated for changes in state contracts and program regulations to expand access to trauma-informed health care services. Other sites, like LaSalle, advocated to make complex trauma a qualifying condition for enrollment in health homes, a model of coordinated care to individuals with multiple chronic health conditions as authorized under the Affordable Care Act. The Family Partnership worked with other organizations to develop a legislative agenda for the expansion of culturally responsive prenatal care through increased funding for doulas (childbirth workers), as a strategy to reduce racial/ethnic disparities in childbirth outcomes.

4. Housing

Homelessness and housing instability create ongoing stress that can hinder brain development. Change in Mind sites worked to address housing issues among their clients through a range of strategies. For example, CUPS participated in Calgary's Recovery Task Force, comprised of over 25 homeless-serving organizations, to identify ways to address the long-term needs of homeless individuals and families struggling with addiction and mental health issues. On a smaller scale, the Martha O'Bryan Center worked with Nashville's local housing authority to prevent evictions and connect residents to community services. Housing problems are especially acute in Seattle and Milwaukee, where Wellspring and CHW are providing brain science-aligned homeless services and addressing the structural causes of homelessness. CHW conducted a housing survey with child welfare clients in three neighborhoods about their barriers to housing stability. The results prompted the organization to begin working with city and county officials to improve housing assistance in the targeted neighborhoods.

5. Family and Juvenile Justice

Several Change in Mind sites serve children and families that are dually involved in local child welfare and juvenile justice systems. These sites have been using brain science research to advocate for new trauma-informed services that limit the re-traumatization of children and families involved in those systems. For example, in Alberta, SKCAC and CUPS are engaged in initiatives designed to ensure child abuse investigations address victims' trauma and mental health needs, and that the justice system "mitigates the toxic stress and negative outcomes for children and families brought on by chronic conflict."

Advancing ACEs Data Collection and Use through Rapid Testing and Experimentation

A focus on innovation was not an original emphasis of the Change in Mind project, but initiative sponsors and participating sites quickly embraced it as a necessity when it became apparent that while brain science concepts and findings were clear, and the case for the infusion of brain science into organizational practices was compelling, the manner in which these ideas manifested themselves in concrete practices had to be developed and tailored to suit the unique needs and context of each organization.

This gap between interest and implementation was particularly clear in the case of sites' collection and use of ACEs data. In the start of the initiative, all of the Change in Mind sites were interested in learning more about collecting and using ACEs to inform and improve their program practices. However, some sites had less capacity, expertise, or experience in collecting and using ACEs data than other sites, so they looked for new ways to increase or improve their ACEs data collection practices. The Change in Mind evaluation team responded by teaching and coaching the sites to develop collection methods and use ACEs data in their organizations through the use of rapid testing and evaluation methods.

Rapid Testing and Experimentation Overview

One of the best ways to innovate with new practices and policies is rapid testing and experimentation, an approach that emphasizes the development of small scale experiments to test the viability and feasibility of a new idea quickly and then decide whether the results warrant:

- A larger scale experiment
- Adoption and scaling up the idea
- Dropping the idea altogether and trying out another idea

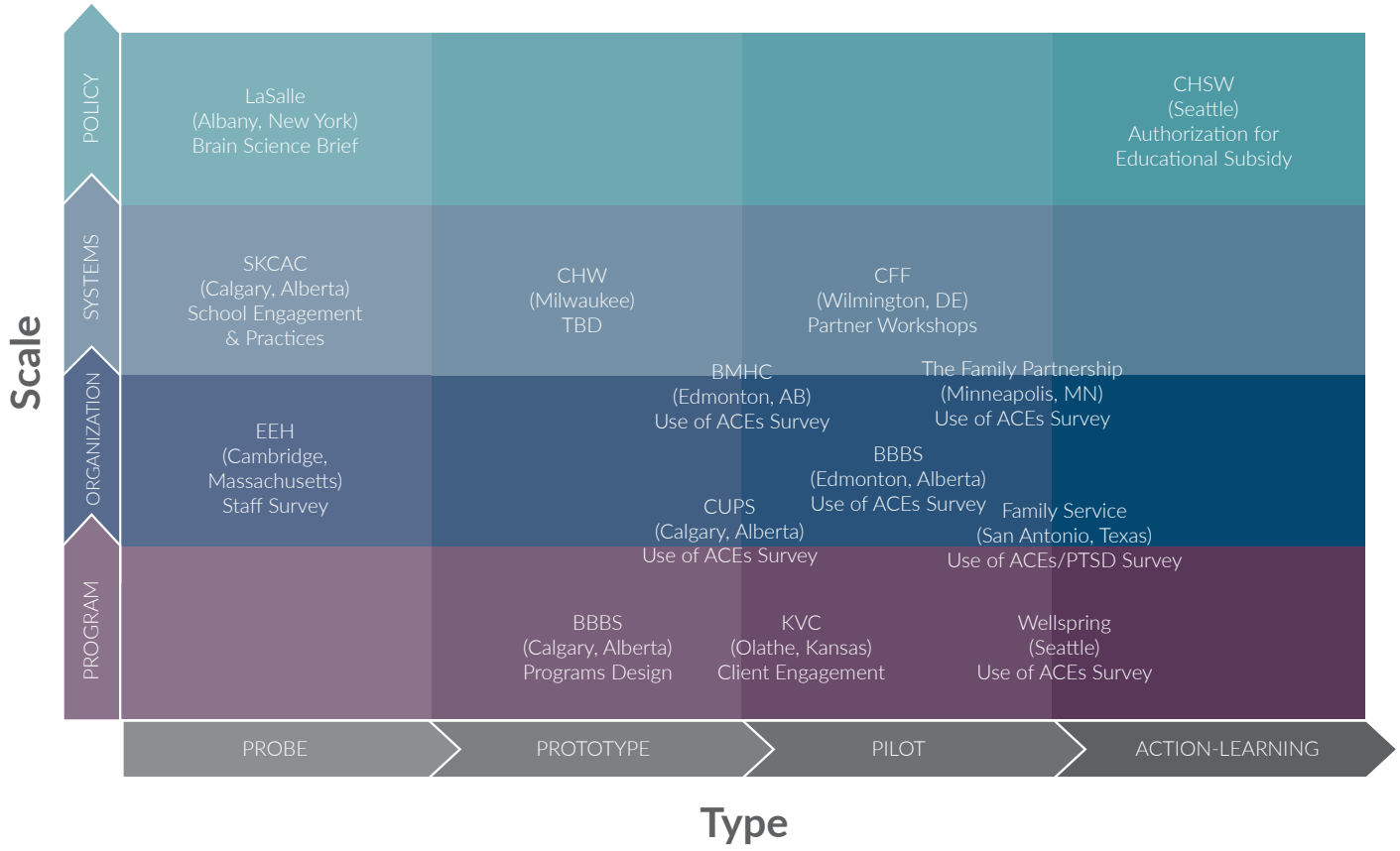
Rapid experimentation can reduce the risk of failure and costs of program development, offer an opportunity to engage stakeholders in the innovation process, and encourage them to be more creative in testing out new practices or ideas.

While the practices and methodologies of rapid experimentation have been around for some time, their use and sophistication has increased dramatically in the last 10 years due to the growth and popularity of human centered design, with its strong emphasis on prototyping; the adoption of lean start-up methods from the field of hi-tech, and its emphasis on "fail fast and fail smart"; and the wider spread of social innovation ideas and practices.

The Experimentation Continuum

The evaluation found that the sites have been using four types of methods or orientations to experimenting with new ideas: probes, prototypes, pilot projects, and action-learning. The sites used these approaches at four different scales—program, organization, system, and policy levels (see Exhibit 5).

Exhibit 5: Site Patterns of Rapid Testing and Experimentation



Probes are the earliest form of experimentation. They are designed to help innovators gain a better understanding of the challenge or system in which they are operating and to surface possible ideas that may be worth testing and experimenting with further. Three sites reported employing probe approaches at the organization, system, and policy levels.

Prototypes are small scale, rapid experiments to develop and test an idea before an organization invests in more time and energy developing and testing it in the field. While the methodology of prototyping emerged in the field of manufacturing and software design, social innovators are now adapting the process for human services. Two sites reported planning or implementing prototype approaches at the program and systems levels.

Pilot projects are the most traditional approach to experimentation in which innovators systematically test an idea in the field. The process of developing a testable model may be quick, done in a planning session in the board room, or, it can longer, involving several testing cycles until innovators feel that the idea is fully formed, at which point they stabilize the model's design and delivery to allow and carry out a more formal pre- and post-evaluation of the model's outcomes. Eight sites reported implementing pilot projects at the program, organization, and system levels.

Action learning or adaptive action is a problem-solving process based on experiential learning. The original action-learning approach—developed in the 1920s—involves a simple process of assessing a problem or opportunity that a group would like to address, planning a response, acting or implementing the plan, reflecting on the results, and repeating the results until the group feels it has made sufficient progress on the issue. One site reported using an action learning process at the policy level.

Patterns of Rapid Testing and Experimentation

Organization-level rapid testing and experimentation. At the organizational level, five sites reported using pilot projects to test the usefulness and feasibility of implementing the ACEs questionnaire in their sites. Here are three examples from CASA, The Family Partnership, and Family Service.

In Alberta, members of CASA's executive team were convinced of the value of the ACEs survey, but were unsure whether their clients would find it intrusive or difficult to fill out. They were also unsure whether their clinical staff were willing to use client-level ACEs data. To test this, the evaluation team met with selected clinicians to learn their views on the potential usefulness and feasibility of using the ACEs questionnaire. The evaluation team piloted its use in several different programs willing to administer the instrument. The results of these tests were mixed. While families did not express concerns with the ACEs questionnaire, clinicians had varying opinions of its value. While the results confirmed that clients had higher ACEs scores than the general population, and pointed out specific adverse events that deserved special attention in counseling, it did not offer sufficient direction on what the implications might be for program design and delivery. As a result, CASA continues to carefully expand its use of ACEs in selective programs, and to investigate how the data can be used to shift and improve clinical practices and outcomes.

In Minnesota, the The Family Partnership management team piloted the original 10-item ACEs questionnaire in three key service departments to see whether the survey results would offer additional insights into the characteristics and challenges of their clients. When they discovered that their clients had higher ACEs scores than the general population and that clients' ACEs scores were positively correlated with substance abuse relapse rates, the staff, board, and organizational stakeholders agreed that it was important to expand the use of ACEs across the organization. The Family Partnership has since expanded the rapid testing approach to other areas of the organization.

In Texas, in an effort to increase the utilization of ACEs and Post-Traumatic Stress Disorder (PTSD) screeners in their large organization, the Family Service leadership employed rapid testing procedures to explore different ways to encourage staff to adopt and use measures across the organization's 72 projects. To assess the effectiveness of their utilization push, the evaluation team staff compared the number of completed ACEs survey and PTSD screener to the number of new enrollments. By early 2017, their efforts had been successful: 95 percent of the organization's clients —with 5% opting out—had completed both instruments. The organization's management is now using the results to inform organization processes and policies.

Program-Level Rapid Testing and Experimentation

At the program level, three sites reported using a range of rapid testing methods to test the usefulness and feasibility of new program tools. Examples from BBBS and KVC include a staff driven campaign of developing and testing prototypes of brain-science informed programs across the organization, and testing new ways to engage young persons with high ACEs to become more actively involved in their own development.

In Alberta, in the summer of 2016, BBBS managers hosted a one-day meeting with front line staff to explore the question, "How might we as service delivery staff integrate brain science into existing practice to enhance mentoring relationships?" After reviewing the foundational ideas of brain science, the group was divided into five innovation teams, each asked to develop a prototype that they would further develop and test as part of a 90-day campaign of iterative experimentation. The process yielded five diverse prototypes. Each team participated in three 30-day "sprints" to further develop, test, and iterate their prototypes with diverse stakeholders, guided by their own unique sets of questions and metrics. After each 30-day "sprint", the teams met over a brown bag lunch session where they shared their activities, results, and lessons from their efforts.

In the reflection and decision-making session that capped the end of the 90-day campaign, the teams determined that:

- One of the five prototypes (a "Magical Match" process that matched mentors and mentees by their ACEs scores) was worth scaling up
- Participating staff felt that brain science had evolved from a "nice to have" element in their programs to a "must have" element that warranted further professional development
- The rapid prototyping methodology should be more fully integrated across the organization

In Kansas, KVC has used rapid experiments to test the hypothesis that educating their young consumers (clients) about the development and function of the brain would increase their understanding of their own mental health issues, engage them more fully in their treatment services, and eventually increase their ability to self-regulate their emotions. To test this, KVC selected two brain science education tools for youth, "Strengthening my Brain" and "Regulating my Brain" exercises, and tested their effects on youth participating youth in two sessions in the organization's Learning Lab. Using a combination of participant surveys, expert observation, and facilitator feedback, the evaluation staff documented increasingly positive scores on three measures: "self-reported learning about brain concepts", "skills for self-regulation" and "willingness to participate in more training". The team used this feedback, along with a list of lessons learned, to inform enhancements in the tools. For example, KVC staff are testing out a software application of the brain science tools to see how it might influence participants' experience with the tools and improve their effectiveness.

Systems and Policy-Level Rapid Testing and Experimentation

At the systems level, three sites are testing different ways to use information to increase community awareness and use of brain science concepts. Examples from SKCAC and CFF showcase efforts to shift the practices of educators at a systems level. An example from CHSW shows its efforts to use rapid testing to improve its legislative advocacy efforts.

In Alberta, in an effort to strengthen the capacity of local schools to recognize, respond to and report child abuse, SKCAC staff had a hunch that increasing teachers' and administrators' understanding of the impact of child abuse and trauma would prompt them to increase their rates of reporting and respond to students' behavioral challenges using a trauma-informed approach. In September 2015, SKCAC surveyed 388 staff in 22 schools to assess whether they suspected instances of child abuse, their pattern of reporting abuse, and factors that influenced their decisions to report abuse.

In early 2016, SKCAC staff shared the survey results with school superintendents, which showed that a high number of respondents reported that they suspected cases of abuse but were unsure of how to respond. In the resulting discussions, SKCAC staff and school partners agreed to implement three initiatives:

1. Working with post-secondary faculties to embed a curriculum of child abuse prevention, intervention and trauma-informed practice
2. Developing a Youth Champion model, designed to support student-led discussions on abuse and lead to school-based action plans to increase awareness of abuse
3. Producing a video resource for school staff about recognizing and reporting suspected child abuse. The SKCAC evaluation is tracking and assessing the development of each of these initiatives, and will conduct a follow-up survey to assess changes school staff awareness and referral practices

In Delaware, CFF's leadership team suspected that while college educators were familiar with trauma-informed care principles, they were less informed about the ACEs study, toxic stress and neuroscience, and implications for building resiliency in children and families. In February 2016, the organization developed and implemented a one-day pilot workshop designed to increase the awareness of college educators on these key topics. Graduate students tabulated a results of a pre- and post-training survey, including standard deviations, paired samples tests, and paired samples correlations—and found that participants' self-reported increases in knowledge on a five-point scale jumped in all topic areas. Results showed an increase in score from 2.84 to 4.16 on the use of ACES, and from 3.52 to 4.27 on the effects of trauma on the brain. On the basis of the positive results of the pilot, CFF has since dozens more trainings, each one workshop refined based on the feedback of the previous session.

In Washington, from the fall of 2014 to April 2015, CHSW sought to encourage state legislators to provide a 12-month authorization to children receiving child care subsidies through the child welfare system, which was already provided for families receiving child care subsidies to allow them to work or engage in education. In order to 'test' the willingness of state legislators and children's' advocates to seek support for filing and passing the authorization bill, CHSW created a draft case statement and met with state legislators and children's advocates to explore the following questions:

- Would our own organization and other powerful children's advocates support this policy change?
- What message would appeal to each political party?
- Would the organization and allies be able to acquire effective bill sponsors?
- If the bill does not pass, could the goal be achieved through a budget proviso?

In response to feedback from advocates and legislators, CHS adjusted and the case statement, and was partially rewarded for its efforts by having the bill filed in 2015. While the bill did not pass that year, another version has been submitted for the subsequent legislative session.

Lessons and Implications

The Change in Mind evaluation also identified several larger lessons about transformational systems and policy change. These lessons are highlighted here, with a discussion of their implications for the translation of brain science in other settings.

Substantive Changes in All Sites

Lesson

Change in Mind sites made substantial strides infusing brain science concepts into their operations. They used different strategies that were appropriate to their particular contexts and the needs of their clients. While larger sites had the internal resources to initiate change, smaller sites were able to leverage outside resources to support initiative efforts. All sites were resourceful enough to make important changes in their programs, organizations, and external advocacy activities.

Implication

Human-serving agencies of all types can contribute to systems and policy change, first by starting with small steps that are appropriate to their contexts and the needs of their clients, and then building on those initial successes. No organization is too large or too small to incorporate some aspects of brain science into their work and contribute to organizational, systems, and policy change.

Politics of Changing Paradigms

Lesson

Although the sites embraced the new brain science research, they faced conceptual and operational challenges translating these concepts into practice. The sites had to reconcile the brain science concepts with their existing organizational goals and corporate identities, especially sites that had already invested time and energy becoming "trauma-informed" organizations. The sites also had to decide whether their Change in Mind projects would remain as stand-alone activities that provided interesting information but had little overall impact, or that brain science would become a "game changer" for their organizations, providing a new comprehensive framework for integrating ACEs, trauma, and resilience concepts.

Implication

The politics of changing paradigms can slow the translation of research into practice. Brain science initiatives need to recognize and address the potential for such conflicts, finding pathways for reconciliation between competing frameworks. The sites that allowed this perspective to evolve over time seemed to make more progress than sites that moved too quickly to make change happen.

Mix of Technical and Adaptive Solutions

Lesson

Change in Mind sites saw their work as both a technical challenge to adopt and implement existing evidence-based programs and practices, and an adaptive challenge to forge new ways to incorporate brain science ideas into their corporate cultures. To meet these challenges, the sites used a combination of directive "top-down" strategies that signaled the importance of brain science to their organizations; staff-level "bottom-up" strategies that allowed new practices to emerge from program-level experimentation; and collaborative "inside-out" strategies that called for collective reflection and action motivated by shared values and goals.

Implication

Some problems, such as the impact of ACEs and adverse community conditions on healthy brain development, are too complex to attempt to solve only through technical solutions such as the replication of evidence-based, client-level programs. These health problems also require the collaborative action of allies across sectors and levels to identify and address the deeper structures, mindsets, and institutional "root causes" of these issues.

Mirrored Internal and External Strategies

Lesson

Although the sites did not explicitly plan to use the same kinds of strategies both inside and outside their organizations to create change, they did end up using similar strategies in both arenas. These mirrored strategies included: providing strategic leadership; cultivating networks of allies; developing a clear and compelling narrative to motivate change; building up workforce capacity in many sectors to support cross-sector collaboration; leveraging and aligning resources in support of goals; and using data to test and improve activities.

Implication

These strategies act as universal drivers of transformational change that can be scaled successfully across organization, system, and policy levels for greater impact.

Intertwined Pathways of Change

Lesson

Change in Mind sites originally designed their projects as complicated, multi-strand initiatives that were comprised of separate, linear sequences of activities operating at different (program, organizational, system, and policy) levels. Through experience, sites learned that their activities were more iterative and intertwined than originally predicted. For some sites, internal successes gave them the capacity to initiate external systems and policy change activities. External policy changes, in turn, enabled more change in internal program practices and policies. Based on these experiences, some sites modified their theories of change to reflect more adaptive, cross-level cycles of action and learning.

Implication

Program-, organization-, system-, and policy-level pathways of change are not necessarily separate, discrete spheres of activity. Complex, multisector, multilevel change processes often involve mutually reinforcing action across all levels.

Data-informed Learning Cycles

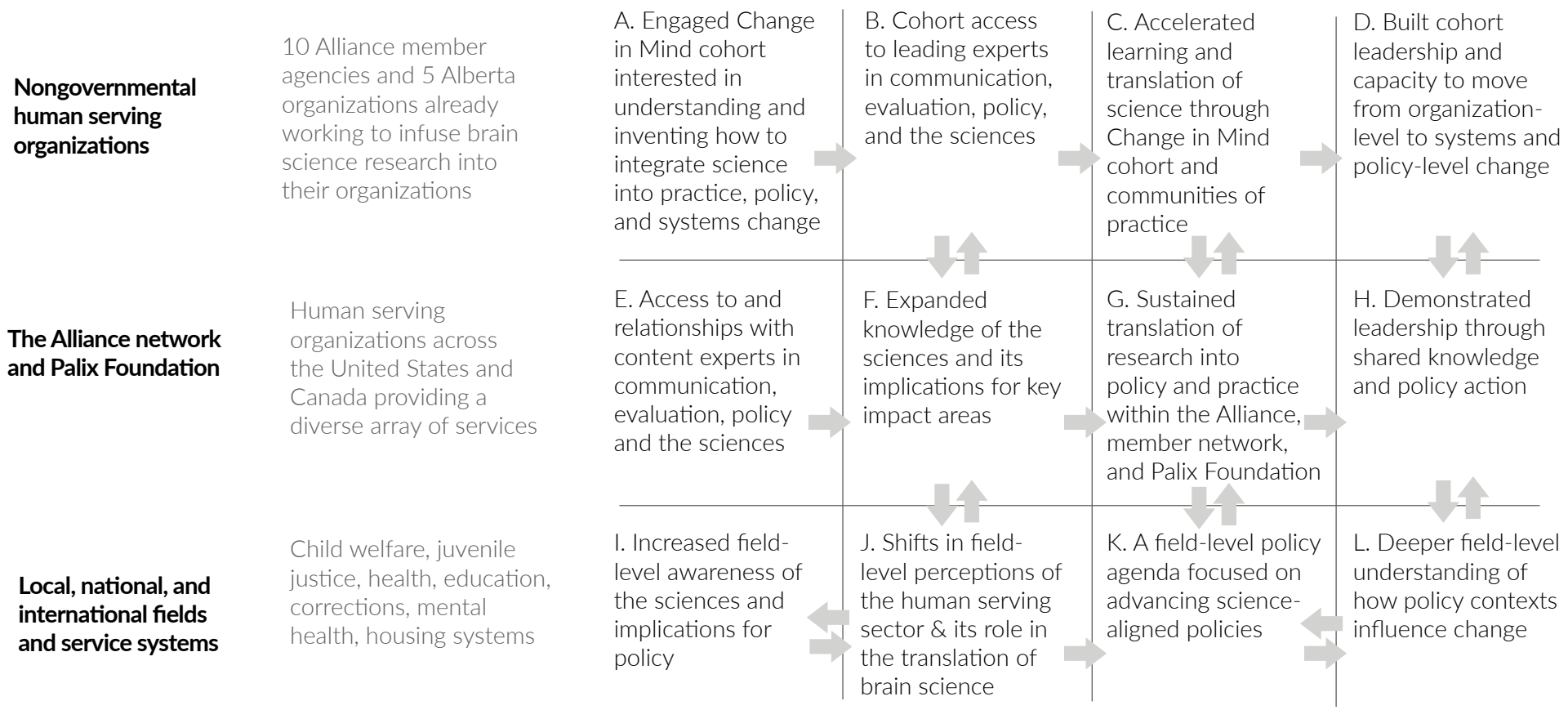
Lesson

Change in Mind sites adopted a data-informed approach to embed brain science concepts and findings into their change efforts. Many sites started with analyses of ACEs, adverse community conditions, resiliency factors, and vulnerabilities of their clients, using the information to determine where to focus change efforts. They then used rapid cycle and developmental evaluation methods to assess and accelerate progress. For example, Big Brothers, Big Sisters of Calgary and Area used its understanding of its clients' ACEs scores to develop a better mentoring matching process, which contributed to stronger relationships between adult mentors and their young mentees.

Implication

Data-informed planning, action, and assessment cycles may require both formative and developmental, rapid-cycle evaluation methods.

Appendix A: Change in Mind Theory of Change



These streams are distinct, but mutually reinforcing. Additional causal pathways or links will be uncovered as the initiative evolves and we will learn more about those pathways through developmental methods and systems change approaches.

Appendix B: Change in Mind Cohort Contacts

Change in Mind Site	Contact	Website
Big Brothers, Big Sisters of Calgary and Area in Calgary, Alberta (BBBS)	Karen Orser, Executive Director	http://bbbscalgary.ca/
Boyle McCauley Health Centre in Edmonton, Alberta (BMHC)	Tracy Mercier, Program Evaluation and Research Coordinator tracy@pathwaystohousingedm.ca	http://www.bmhc.net/
CASA Child, Adolescent, and Family Mental Health in Edmonton, Alberta (CASA)	Rebeccah Marsh, Director of Evaluation and Research rmarsh@casaservices.org	https://www.casaservices.org/
Children and Families First in Wilmington, Delaware (CFF)	Leslie Newman, President and CEO Leslie.newman@cffde.org	http://www.cffde.org/
Children's Home Society of Washington in Seattle, Washington (CHSW)	Nancy Ashley, Systems and Policy Analyst nancya@chs-wa.org	https://www.childrenshomesociety.org/
Children's Hospital of Wisconsin in Milwaukee, Wisconsin (CHW)	Gabriel McGaughey, Director of Child Well-Being and Co-Director, Institute for Child and Family Well-Being Gabriel.mcgaughey@cssw.org	https://www.chw.org/
CUPS Health, Education, Housing in Calgary, Alberta (CUPS)	Carlene Donnelly, Executive Director carlened@cupscalgary.com	http://cupscalgary.com/
East End House in Cambridge, Massachusetts (EEH)	Michael Delia, President and CEO michael@eastendhouse.org	http://eastendhouse.org/
The Family Partnership in Minneapolis, Minnesota	John Till, Senior Vice President of Program Strategy and Innovation jtill@thefamilypartnership.org	http://www.thefamilypartnership.org/
Family Service Association of San Antonio in San Antonio, Texas (Family Service)	Chris Rodriguez, Human Resources Manager crodriguez@family-service.org	https://family-service.org/
KVC Health Systems in Olathe, Kansas (KVC)	James Roberson, Vice President of Program Services jroberson@kvc.org	https://www.kvc.org/
LaSalle School in Albany, New York (LaSalle)	Bill Wolff, Executive Director bill@lasalle-school.org	http://www.lasalle-school.org/
Martha O'Bryan Center in Nashville, Tennessee	Ken Saefkow, Senior Director of Clinical and Community Services ksaefkow@marthaobryan.org	http://www.marthaobryan.org/
Sheldon Kennedy Child Advocacy Centre in Calgary, Alberta (SKCAC)	Sara Austin, CEO saustin@sheldonkennedycac.org	http://sheldonkennedycac.ca/
Wellspring Family Services in Seattle, Washington (Wellspring)	Sandy Lowe, Chief Program Development Officer slowe@wellspringfs.org	https://wellspringfs.org/