



Achieving successful evidence-based practice implementation in juvenile justice: The importance of diagnostic and evaluative capacity



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ABSTRACT

Evidence-based programs (EBPs) are an increasingly visible aspect of the treatment landscape in juvenile justice. Research demonstrates that such programs yield positive returns on investment and are replacing more expensive, less effective options. However, programs are unlikely to produce expected benefits when they are not well-matched to community needs, not sustained and do not reach sufficient reach and scale. We argue that achieving these benchmarks for successful implementation will require states and county governments to invest in data-driven decision infrastructure in order to respond in a rigorous and flexible way to shifting political and funding climates. We conceptualize this infrastructure as diagnostic capacity and evaluative capacity: Diagnostic capacity is defined as the process of selecting appropriate programing and evaluative capacity is defined as the ability to monitor and evaluate progress. Policy analyses of Washington State, Pennsylvania and Louisiana's program implementation successes are used to illustrate the benefits of diagnostic and evaluate capacity as a critical element of EBP implementation.

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1. Introduction

The focus on evidence-based programing within juvenile treatment and corrections is growing (Greenwood & Welsh, 2012). Supported by foundation funding, federal policy and state mandates (Chambers, 2005), specific manualized interventions with demonstrated evidence of effectiveness are becoming a more visible element of the services landscape. These evidence-based programs are supported and promoted because they are good investments, yielding significant cost-benefit to taxpayers (Barnoski, 2004). Further, the most well studied and disseminated programs are supported by quality assurance mechanisms that encourage standardization of practice (Chamberlain et al., 2012; Schoenwald, Henggeler, Brondino, & Rowland, 2000). Despite some gains in implementation, however, the overall penetration of evidence-based services within juvenile justice programing remains quite low (Lipsey, Wilson, & Cothorn, 2000). This is a

research-to-practice failure mirrored by similar challenges across other child-serving systems (e.g., prevention, mental health and child welfare; Landsverk, Garland, Rolls Reutz, & Davis, 2011; Weisz et al., 2012). Increasingly, the research and policy literature indicates that an emphasis on evidence-based practice dissemination alone is unlikely to lead to successful implementation or outcomes when programs are not well matched to community needs, not sustained, or do not extend sufficient reach and scale (Backer, Liberman, & Kuehnel, 1986; Emshoff, 2008; Hoagwood, Atkins, & Ialongo, 2013; Rhoades, Bumbarger, & Moore, 2012; Wandersman et al., 2008).

The justice system is particularly vulnerable to funding instability due to high profile cases (e.g., egregious juvenile crimes) which impact whether funds are allocated to long-term corrections or community services. While the number of youth in juvenile corrections nationally has dropped 58% in the last decade (Sickmund, Sladky, Kang, & Puzanchara, 2013), this trend is not observed across all states (<http://www.pewtrusts.org>) and may increase if jurisdictions are not concurrently investing in effective community-based alternatives (Grisso, 2007). As noted above, this will require more than identifying which programs work; state and local governments must invest in increasing their capacity to support dissemination and implementation efforts. In this paper,

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we argue that effective programing will require improved diagnostic and evaluative capacity to respond dynamically to shifts in client needs, local conditions and innovations in treatment development. This will involve supporting data systems and analytic strategies for program selection and continuous quality improvement. We present a policy analysis of three different states, Washington, Louisiana and Pennsylvania, to illustrate the application of such diagnostic and evaluative capacity and its subsequent impact on improving outcomes in juvenile recidivism and delinquency prevention.

1.1. Implementation capacity

The difficulty of implementing new programs in human service environments is well-documented (Glisson & Schoenwald, 2005; Michie, Fixsen, Grimshaw, & Eccles, 2009; Schoenwald & Hoagwood, 2001) and has resulted in a number of different frameworks designed to capture the essential elements that play a role in successful implementation (Elliot & Mihalic, 2004; Tabak, Khoong, Brownson, & Chambers, 2012). Taken together, these elements describe an agency's (or system's) overall capacity. Capacity describes a broad range of characteristics related to organizational structure and leadership, staff competencies and community collaborations that affect the agency's likelihood of adopting and sustaining new practices (Damschroder et al., 2009; Durlak & DuPre, 2008; Flaspohler, Duffy, Wandersman, Stillman, & Maras, 2008; Greenhalgh, Robert, Bate, Macfarlane, & Kyriakidou, 2004).

Evaluation capacity is one such element that is only occasionally included in implementation frameworks. Given the potential benefits of evaluation capacity, this area is arguably underrepresented in the general implementation literature. In a systematic review of experimental studies that tested the effectiveness of program implementation strategies, only four of the eleven studies reviewed examined evaluation activities as an integral strategy (Powell, Proctor, & Glass, 2014). Similarly, only four of the studies in this review used client data to inform the selection of the target program. This is in contrast to a quickly growing call to action from the evaluation field to develop evaluation capacity-building (ECB) models and tools to promote research-integrated practice (Clinton, 2014; Preskill, 2014). This interest in evaluation capacity building is largely a response to the recognition that the need for evaluation is outpacing the availability of outside research consultants in addition to the demonstrated benefits of internal evaluation capacity for program quality and sustainability (Clinton, 2014).

Evaluation capacity is useful because it can multiply the gains of a specific program or strategy by increasing (1) the ability to take on campaigns to address other areas of concern; (2) objective criteria to prioritize competing initiatives; and (3) a unifying set of priorities to promote coordination and collaboration (Hawe, Noort, King, & Jordens, 1997; Rhew, Brown, Hawkins, & Briney, 2013; Wandersman et al., 2008). Evaluation capacity also allows for agency flexibility as technologies (i.e., programs) become outdated and need to be updated and replaced over time (Sanders & Kirby, 2014).

We are using the term evaluation capacity as the most commonly used term in the literature to describe data-driven processes; however, in the implementation literature, evaluation often connotes an activity occurring only at the end of program implementation (Damschroder & Hagedorn, 2011; Greenhalgh et al., 2004). As we will argue below, the use of data to inform implementation processes is beneficial at every phase of implementation. Consequently, we use the term *Diagnostic and Evaluative Capacity* to describe the integration of data throughout the needs assessment, program selection, and active implementation phases of innovation. Diagnostic and Evaluative capacity reflects the very specific ability to (1) gather and analyze data to more clearly define the problem to be addressed and (2) to provide

ongoing feedback about the quality and impact of interventions. Essentially, *Diagnostic* asks "what should we do?" and *Evaluative* asks "how are we doing?" It describes the ability of a community, agency, or system to assess ongoing client and administrative needs, monitor ongoing progress of programs for clients, providers and community and inform, through data, efforts to adopt and adapt strategies to improve practice. In this paper, we particularly focus on diagnostic and evaluative capacity at a community or agency (organizational) level rather than a clinical level, although both are likely important to support effective practice. Consequently, we focus on tools and strategies state and local agencies can use to support the implementation and monitoring of programs for effectiveness.

1.2. Diagnostic capacity

Activities falling within the purview of diagnostic capacity have shown significant promise in assisting program implementation at community and agency levels. Community-level models of decision-making that begin with needs and gaps analyses, such as Communities that Care (Oesterle, Hawkins, Fagan, Abbott, & Catalano, 2014), Partnerships for Success (Julian, 2006), and Getting to Outcomes (Chinman et al., 2008), improve program sustainability (Moore, Bumbarger, & Cooper, 2013) and community health goals (Feinberg, Bontempo, & Greenberg, 2008; Oesterle et al., 2014; Wiseman et al., 2007). These models often involve a trained facilitator who guides the community through a series of data activities to identify the areas of most urgent need and where services gaps exist. The facilitator then presents a number of evidence-based programs to fill this need and the community selects an option from the list, based on considerations of evidence, fit, and feasibility.

At the agency-level, diagnostic planning can occur on a smaller scale with the same set of tools. The National Implementation Research Network (NIRN) suggests using the Hexagon Tool for Assessing Readiness as a strategy for identifying local needs and existing services to guide program implementation (<http://nirn.fgp.unc.edu>). Further, the Availability, Responsiveness and Continuity (ARC) framework, a participatory decision-making model, has demonstrated strong success in improving outcomes when used to implement services (Glisson & Schoenwald, 2005). ARC is based on evidence that organizational and social contexts govern expectations about how things are done and create shared beliefs about the cause, prevention and treatment of mental/behavioral health problems. It is a 10-component program which focuses on relationship and team building, information and data management, conflict resolution and self-regulation (Glisson & Schoenwald, 2005; Glisson, Schoenwald, Hemmelgarn, Green, & Dukes, 2010). Among other activities, an ARC facilitator works with an agency to define sources of data/information to guide decision-making and helps to develop processes that integrate the use of this data for ongoing program improvement. The focus of ARC is on supporting organizational infrastructure (personal as well as technological) that encourages ongoing program implementation and ongoing quality improvement. A two-way randomized trial found that adding ARC to EBP program implementation reduced out of home placement more effectively than implementing EBPs alone (Glisson & Schoenwald, 2005).

1.3. Evaluative capacity

In models that integrate data-driven decision-making throughout the implementation process, evaluative activities begin immediately after diagnosing the needs of the community and selecting a program (Wiseman et al., 2007). Sometimes programs struggle with sustaining programs, not because there is a concern

about the fit of the program, but because the “receptacle” approach to implementation treats providers as technicians rather than experts (Hawe et al., 1997). Sites are not often supported to develop their own capacity to answer the question, “how are we doing?” Often, in the EBP implementation approach, providers and sites are insufficiently engaged in monitoring the success and outcomes of programs, with these activities being outsourced to consultants and trainers employed by the program developer (Greenhalgh et al., 2004). This can lead to a lack of buy-in as the programs do not feel “owned” by the local sites (Fagan & Mihalic, 2003) or sites decide the investment in external consultation and support are not feasible given the costs.

This challenge is beginning to be addressed through implementation support models which not only emphasize the importance of community and organizational buy-in for implementation (Aarons et al., 2012; Walker & Trupin, 2011) but the value of participatory decision-making to guide continuous quality improvement activities (Glisson & Schoenwald, 2005; Nadeem, Olin, Hill, Hoagwood, & Horwitz, 2013). Participatory decision-making is a well-known organizational development principle that encourages constructive, problem-solving environments, resulting in higher staff morale and better practice (Nadeem et al., 2013). In a systematic review of capacity elements related to sustained innovation, Greenhalgh et al. (2004) found that having the capacity to monitor and evaluate the impact of an innovation was strongly related to program assimilation and sustainability.

The literature suggests that data-driven decision-making is strongly related to program success. However, this remains relatively underemphasized compared to other capacities noted in the implementation literature. Following calls to provide more description of real world implementation efforts (Adams & Dickinson, 2010; Boyd, Cole, Cho, Aslanyan, & Bates, 2013), we present examples of diagnostic and evaluative capacity in three states that have achieved significant successes in widespread evidence-based program implementation within the fields of juvenile justice and violence prevention. These states demonstrate the variety of ways in which diagnostic and evaluative capacity activities are critical elements of planning and successful program implementation.

2. State policy analyses

Pennsylvania, Washington State and Louisiana were chosen for review because of their significant successes in implementing evidence-based programs for juvenile offending prevention and intervention over the last two decades. Pennsylvania is a leader in the implementation of evidence-based practices for violence prevention. In the 1990s, Pennsylvania partnered with the Colorado Division of Criminal Justice and the Centers for Disease Control and Prevention to conduct a systematic review of programs that led to the Blueprints for Violence Prevention (www.blueprintsprograms.com). Subsequent investment from the state has supported nearly 300 replications of these EBPs in over 100 communities across Pennsylvania (Meyer-Chilenski, Bumbarger, Kyler, & Greenberg, 2007). In Washington State, of 33 juvenile court jurisdictions, 29 (88%) have implemented one of five available evidence-based programs (Barnoski, 2004) and the cost-benefit estimates of the Washington State Institute of Evidence-Based Practice are widely cited figures in the field. Finally, Louisiana is one of five leading states in EBP availability per million youth (Greenwood & Welsh, 2012). Louisiana has had the most rapid expansion of EBPs in any state in the last decade, growing services by approximately 95%. The following review is organized by stages of implementation in order to compare the efforts of each state's investment in diagnostic and evaluative

capacity at each stage: Exploration, Installation, Active Implementation and Continuous Quality Improvement.

2.1. Exploration

The tasks of the exploration stage involve identifying a need, acquiring information about potential programs, assessing fit and preparing the identified implementation sites (Aarons, Hurlburt, & Horwitz, 2011; Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). At the state level, assessing needs for each community is arguably more complex than an agency or even community assessing internal needs. This process worked differently in each of the reviewed states.

The foundation for the initiative in Pennsylvania began with the statewide rollout of the Communities That Care (CTC) strategic prevention planning process (Hawkins, Catalano, & Arthur, 2002). CTC is a diagnostic process that uses local data on the prevalence of risk and protective factors to inform the selection of prevention priorities within a given community. In this staged model, a coalition of diverse community stakeholders determines which risk factors are most prevalent and which protective factors are lacking, and uses this information to select proven-effective prevention programs that target those factors. CTC uses a school-based survey that produces a comprehensive summary of youth risk and protective factors as the foundation for developing a community-specific diagnostic profile of youth needs (see Fig. 1).

Following an examination of needs with a trained facilitator, communities also review the array of existing services in order to identify areas of unmet need. Over one hundred communities in Pennsylvania have been trained to undertake this diagnostic decision-making model, resulting in the adoption and implementation of over 300 replications of Blueprints programs since 1998 (Meyer-Chilenski, Bumbarger, Kyler, & Greenberg, 2007). In the initial phase of this process, over 100 programs with varying degrees of evidence were available for selection; however, as the need for technical assistance for implementation and ongoing monitoring became apparent, the list was shortened to reflect a more stringent definition of “sufficient evidence of effectiveness” and to make mastery more feasible for the state's technical assistance provider. As noted by Greenwood and Welsh (2012), a short list of accessible EBPs is a common feature of many states with high EBP utilization. Pennsylvania's endorsed list of EBPs has recently been examined through a thorough state-level gap analysis, resulting in several additional programs being endorsed (for details, see www.episcenter.psu.edu/gaps).

In 1997, the Washington State Legislature changed the manner in which local court programs were funded by requiring that only programs shown to reduce recidivism cost-effectively be implemented with state support (Barnoski, 1999). This was the first national instance of a state requiring evidence-based practice for juvenile justice services at this level. Part of this act (Community Juvenile Accountability Act, CJAA) also established an oversight body made up of representatives from the state and local juvenile justice systems who were responsible for identifying the programs eligible for funding. This essentially became and remains the diagnostic team. Five programs were initially selected from a review of national research conducted by the Washington State Institute of Public Policy (WSIPP). Each juvenile court jurisdiction in the state can then choose to implement programs from this shortened list. New programs are added to the list after a comprehensive review by the CJAA committee that includes an evaluation of how many youth would be eligible for the new proposed program using data from the court risk assessment administered statewide. Using data, applications need to demonstrate that programs fill a treatment need not already met by the existing service array (Redman, 2014, personal communication).

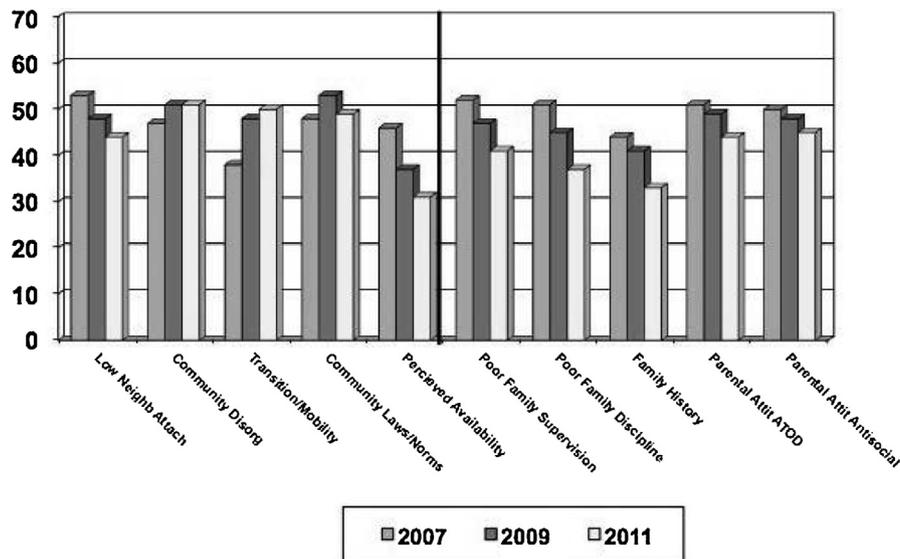


Fig. 1. Sample community diagnostic profile used in Pennsylvania.

Louisiana faced large scale deinstitutionalization of youth in its juvenile justice system between 2000 and 2004; however, it lacked the community programing capacity to support this large scale shift to community-based care. In a 2006 statewide survey of community-based programs serving juvenile justice involved youth, only 11% of programs were found to be associated with nationally known evidence-based practices. Further, the programs in existence only reached about 19% of Louisiana's justice involved youth (Cocozza, Shufelt, & Phillippi, 2007). This was consistent with national findings that suggest only 5% to 10% of juvenile offenders are afforded the benefit of evidence-based community programs (Greenwood, 2008; Greenwood, Welsh, & Rocque, 2012; Hennigan et al., 2007).

Louisiana established early on that its reform efforts to improve the outcomes for justice involved youth were to be data-driven. To this end, facilitators assisted teams at the parish level to identify key decision points where the implementation of effective programing could improve outcomes through a data mapping activity (e.g., arrest rates, diversion rates, probation rates, placement rates). This process helped to increase buy-in among multiple stakeholders around the potential benefits of EBP implementation. In order to guide program selection for each parish, Louisiana used the Juvenile Justice System Screening, Assessment and Treatment Services Inventory, a locally developed survey that gathered information about available services (similar to the resource assessment conducted as the second step of the gap analysis in Pennsylvania). Based on the findings of this survey, parishes typically implemented either MultiSystemic Therapy (MST) or Functional Family Therapy (FFT).

In each of the three states, data guided the identification of needs and the selection of programing from a list of EBPs. Washington State's approach focused on identifying needs at the state level through a review of program cost-benefit. Both Pennsylvania and Louisiana approached program selection locally, using community level surveys to guide program selection. In all the states, however, the use of data encouraged local buy-in and site preparation, subsequently increasing the likelihood of implementation quality and sustainability.

2.2. Installation

The installation phase of implementation involves the active preparation of sites to run selected programs. Key tasks include

ensuring adequate funding and human capital, as well as establishing referral mechanisms and outcome expectations (Aarons et al., 2011; Fixsen et al., 2005). In Pennsylvania, data informed this process by establishing the process whereby site adherence is "approved." Sites are provided with the tools and support to gather their own data about practitioner functioning (e.g., number of sessions conducted per client, participant engagement, and adherence data given existing rating tools) and then submit this data to the program developer after two years of implementation. The developer then provides an assurance to the state funding agency that the program is being delivered with sufficient quality, and funding for the program site is continued.

In Washington State, data guides funding to individual court jurisdictions based on the number of youth who fall within low, medium and high risk categories. Each category reimburses at a different rate. Typically, youth eligible for diversion fall into low risk and youth who are adjudicated fall within all three categories depending on their score in the court risk assessment. The jurisdiction can then pull down funding from a block grant based on the total number of youth in each level (Drake, 2010). This funding scheme directly reflects the cost of programing for ascending levels of offending risk seriousness. The court jurisdictions are responsible for collating this information and presenting it to the state for funding. As will be described in more detail below, outcome-based expectations were established after evidence-based programs were already well-established in the state. Currently, some evidence-based programs are directly monitored through the state and court system while others are monitored through the developer organizations.

In Louisiana, data gathered during the exploration phase informs a list of EBPs choices selected to fit the identified needs of the community. These need areas are prioritized through a strategic planning process with community stakeholders. Providers are selected for EBP adoption based on an assessment of capacity; those who have sufficient capacity are guided through a series of questions to increase the likelihood of both implementation and sustainability. Several of the factors explored with the potential provider to ensure a good fit with the EBP include funding availability, level of collaboration with community systems, expected youth outcomes to be achieved, workforce requirements for fidelity, organizational readiness and experience with EBPs, leadership, and more (Phillippi, Cocozza, & DePrato, 2013).

During the installation phase, each state uses data to guide implementation planning. In Pennsylvania, local sites are provided data monitoring tools to gather program information and communicate it back to the state technical assistance center and the program developer organizations. In Washington State, data on the number of low, medium and high risk youth informs the funding levels allocated to local jurisdictions. In Louisiana, site selection is guided by stakeholder interviews and a quantitative capacity tool. In each state, the use of data during the installation phase supports program certification, funding and site selection, respectively.

2.3. Active implementation/continuous quality improvement

Active implementation involves the training and monitoring of practitioners in the real world. Possibly more than any other stage, this phase is the most critical in achieving the long-term adoption of new programs (Labin, Duffy, Meyers, Wandersman, & Lesesne, 2012). Data plays a role in this phase by bringing diverse stakeholders together to monitor the success of the program, evaluate fit and examine outcomes. Ongoing data monitoring is a routine part of the violence prevention programing in Pennsylvania. Beyond the diagnostic capacity to inform program selection and adoption, Pennsylvania's model also promotes the use of ongoing evaluative capacity to assess implementation quality and fidelity and promote continuous quality improvement (CQI). First, communities engaged in implementing the CTC participate in an annual guided coalition self-assessment that identifies strengths and challenges in coalition functioning. The data, collected through web-based self-reports of coalition members, is presented at a coalition strategic planning meeting as a catalyst for identifying and prioritizing goals for increasing the organizational health of the coalition over the following year. The implementation of the coalition improvement plan is guided by a technical assistance provider using monthly milestones and benchmarks to keep the coalition focused on self-improvement.

Second, providers who are delivering the EBPs selected by the community coalitions also utilize their evaluative capacity for monitoring implementation quality on an ongoing basis, and engaging in CQI. The EBP providers have carefully selected Performance Measures specific to the model they are implementing. They collect data on these PMs to continuously monitor implementation quality and client impact (both proximal indicators such as short-term changes in knowledge, attitudes, intentions, and skills, as well as more distal behavioral changes). With proactive support from an assigned technical assistance provider, the data is aggregated quarterly and used to provide timely feedback to the provider to inform ongoing program delivery improvements. As described above, in the second year of funding the provider must present their cumulative implementation monitoring data to the program's developer and seek a letter of assurance from the developer to the state funding agency certifying that the program is being delivered with sufficient quality and fidelity. Any shortcomings are addressed in a mutually-developed plan of corrective action. Prior to the end of grant funding, the provider is also required to develop a final outcomes narrative summary, which translates the wealth of data collected over the course of the grant-funded program implementation into a comprehensive "story" of the adoption, implementation, and impact of the program. These outcomes summaries are intended to (1) reinforce the practical relevance and usefulness of data collection and monitoring as tools for program improvement (rather than simply bureaucratic accountability hoops), and (2) aid the provider in forming a compelling narrative to present to local stakeholders to secure support and continued funding (Cooper, Bumbarger, & Moore, 2013).

As noted above, program monitoring activities in Washington State were instituted approximately five years after the initial

implementation of EBPs. The research literature on the probable benefits of fidelity measurement at this time was small and early implementation was focused more on dissemination than ongoing quality assurance. Subsequently, the [Washington State Institute of Public Policy \(WSIPP\)](#) evaluated these programs and found that programs implemented with fidelity were successfully reducing recidivism while those not adhering to fidelity were worsening outcomes (Barnoski, 2004). As a result, the CJAA committee advocated for and established a statewide quality assurance monitoring system for both Aggression Replacement Training (Glick & Goldstein, 1987) and Functional Family Therapy (Sexton & Turner, 2011). Prior to this, ART did not have an established quality assurance and monitoring protocol. Consequently, the rating forms and processes were developed by the state. Ongoing review of program effectiveness through this quality assurance structure has led to ongoing program improvement strategies for better training, consultation and program materials.

In the Active Implementation/Continuous Quality Improvement stage, Louisiana has focused on evaluating recidivism outcomes versus direct program monitoring. Most of the programs implemented in Louisiana come from developer organizations with strong fidelity monitoring activities (e.g., MST). Consequently, Louisiana has not had to develop strategies to either ensure programs are approved by developers (e.g. Pennsylvania) or directly monitor program quality (e.g., Washington State). Rather, subsequent efforts have focused on measuring trends in recidivism. For example, in a span of approximately five years, Louisiana was able to emerge as second in the nation for the number of MST and FFT programs employed per capita while also realizing a 46% drop in juvenile arrests (Greenwood et al., 2012; Phillippi et al., 2013). The successes of local jurisdictions in improving arrest rates enhanced the uptake of EBPs around the state. As of 2011, 58% of programs servicing juvenile justice involved youth were evidence-based, reaching 46% of the total justice-involved population (Phillippi & Arteaga, 2011; Fig. 2).

2.4. Next steps

Pennsylvania's approach, combining CTC and EBPs supported through the diagnostic and evaluative capacity described above, has been evaluated in several large studies. Results show communities that have adopted this model have lower prevalence of risk factors; better school engagement and academic achievement; and lower rates of youth substance use and delinquency than similar comparison communities (Feinberg, Jones, Greenberg, Osgood, & Bontempo, 2010). Further, counties that have adopted evidence-based intervention programs through this initiative have shown lower rates of costly out-of-home delinquency placements than comparison counties (Moore, Bumbarger, & Campbell, 2011). Pennsylvania is also now applying these concepts of diagnostic and evaluative capacity to the improvement of juvenile service models that are in widespread use but which have not yet demonstrated evidence of effectiveness through rigorous evaluation. First, through the adoption of a standardized youth risk screening instrument (the Youth Level of Service Inventory, or YLS-I) Pennsylvania seeks to use diagnostic data to better inform service planning for delinquent youth. Second, to improve the potential effectiveness of the many non-evidence-based services in widespread use by juvenile courts, Pennsylvania is piloting the utilization of the Standardized Program Evaluation Protocol (SPEP), using program characteristics identified through meta-analysis as being indicative of effectiveness to assess juvenile services and recommend specific improvements (Lipsey, 2008, 2010; Lipsey & Howell, 2012). As these two data-informed innovations become established and standardized (beyond the pilot stage) they will be evaluated to assess their impact on recidivism and service utilization.

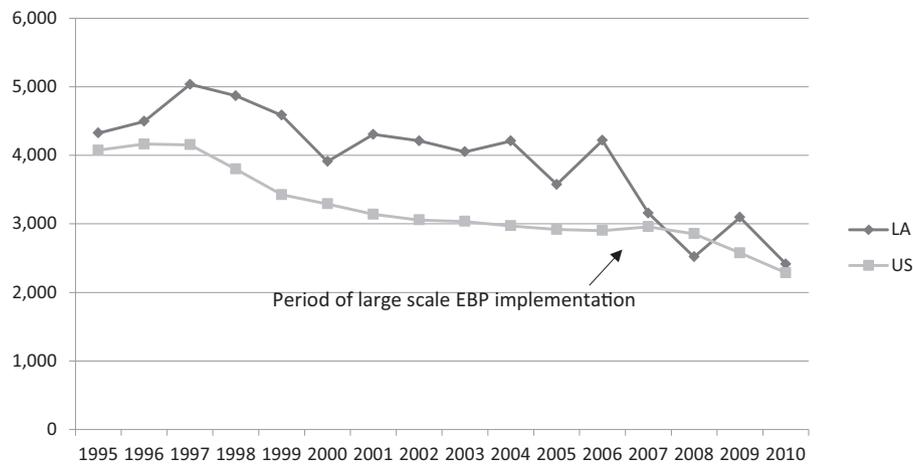


Fig. 2. Outcomes-based program monitoring in Louisiana focused on recidivism rates.

Lessons from Washington State indicate how a focus on data-driven decision-making can result in an impressive roll out of practices across the state that are connected through standardized quality assurance practices controlled by local sites (through the multi-agency committee). This was accomplished by a mandate for evidence-based programs that was initiated by the juvenile courts and the state in collaboration. Further, Washington State courts, state agencies and legislature have only grown in their commitment to ongoing evaluation and program improvement, as evidenced by the development of a state-level court service database.

Louisiana continues to look for ways to develop a sustainable financial capacity as service providers have become heavily reliant on Medicaid funding and their business models struggle to find a fit between the cost of implementing evidence-based practice and reimbursable rates. The evolving evaluative capacity of both organizations and the state have been a critical, persuasive motivator to find financial solutions as demonstrable outcomes continue to be observed at higher rates with evidence-based programs than generic practice (Childs, Ryals, Frick, & Phillippi, 2011).

3. Discussion

The case examples from Washington State, Pennsylvania and Louisiana demonstrate how diverse forms of diagnostic and evaluative capacity can strengthen states' abilities to disseminate, implement and refine evidence-based programs. All three states had different drivers for EBP funding and evolved different forms of oversight for implementation but the critical importance of data-driven inquiry in each state for ensuring program quality is apparent. Washington and Pennsylvania's processes to identify the most effective and cost-effective practices were pioneering efforts during that time and have significantly influenced EBP dissemination in other jurisdictions since. In both cases, the states' first focused on identifying programs and subsequently evolved structures and processes to evaluate and improve implementation efforts as the need for technical assistance became clear. As a more recent effort, Louisiana was able to benefit from knowledge about EBPs from these (and other sites') earlier activities. Consequently, Louisiana was able to use this information to start working directly with local sites to determine the best EBP for local conditions. Despite different oversight bodies and approaches, all sites relied on data to identify suitable programs and evaluate outcomes which has led to sustained and higher quality practice.

In their Interactive Systems Framework (ISF) describing the essential elements needed for successful program implementation,

Wandersman et al. (2008), assert the need for different "systems" to support information synthesis and translation (what works), program support (training/coaching) and program delivery. While not specifically identified in the ISF, the importance of data capacity for ensuring fit and ongoing program quality cut across all these levels in the highlighted case studies. Data is one of the connecting threads providing a feedback loop from top (what works) to down (program delivery) and back up again. For example, in Washington State, the CJAA committee with WSIPP identified the short list of cost-effective programs. Subsequently, counties implemented the programs and WSIPP conducted an evaluation of effectiveness. Data demonstrating that programs lower in fidelity were not effective prompted a delivery system to program support feedback loop that resulted in statewide quality assurance assistance (top to bottom to top). Similarly, in Pennsylvania, evaluation of program adaptations (Moore et al., 2013) indicated some adaptations had positive valence; consequently, technical assistance providers (support level) are examining ways to work with sites (delivery level) to ensure adaptations are consistent with program theory and logic. In Louisiana, the work between support and delivery level is even further integrated as the technical assistance provider (support level) works closely with the delivery system to identify what programs will best support the sites' goals (delivery level) for improving local data indicators.

Similarities among the three state case studies suggest that diagnostic and evaluative capacity requires three points at which data feedback loops can be used for refining implementation: (1) selection, (2) fit, and (3) impact. In selecting a program, the goals for client and system improvement should be specified first (does the jurisdiction primarily need to reduce detention stays, particular crimes, violence, out of home placement, etc.) followed by site characteristics (funding availability, capacity for supervision, staff level expertise and readiness) and client characteristics (age, gender, race, culture, language). In all three states, program selection was constrained by a pre-identified list selected to cover the majority of likely presenting issues for juvenile recidivism and violence prevention. Consequently, the process of deciding what programs to implement was two-tiered: first, the state filtered programs based on key characteristics, second, local sites selected programs from this list to best match local needs. In Pennsylvania and Louisiana, local decisions about what programing to implement was driven by data from site specific needs assessments.

The second point at which data should inform implementation is in assessing local fit. Within boundaries, most programs can withstand adaptations to surface or cosmetic enhancements to

increase engagement and credibility. Pennsylvania is a good example of how collecting data on provider adaptations is leading a process to better understand what enhancements are beneficial or not. In Louisiana, modifications were made to accommodate the workforce needs and capacity in rural settings with data suggesting no adverse effect on outcomes. In Washington State, a number of sites have made slight modifications to EBPs to enhance cultural credibility, engage parents and increase access to services. Preliminary evidence of the impact of some of these enhancements supports the feasibility of being able to use data to guide and evaluate these adjustments (Walker & Trupin, 2011).

The third data feedback point occurs when assessing program quality and effectiveness (impact). This may overlap in time and intent with assessing local fit, but is distinct in its broader view of whether the program is achieving the original aims of the sites based on identified needs. In Washington State, evaluation occurred through a traditional, controlled trial of programs across the state. In Pennsylvania, evaluation occurs through reports submitted by sites on indicators of progress. In Louisiana, program success are evaluated through youth-level reductions in recidivism (Childs et al., 2011). As mentioned above, in Washington State this capacity was essential in developing quality assurance systems without which programing could very likely be harming youth rather than improving outcomes. Continuous monitoring of quality and outcomes is further being developed through a state database system linking evidence-based program completion data to youth characteristics and court contacts. These three points of data-driven inquiry are central for ensuring fit, quality implementation and outcomes.

Another common theme across sites is the value of a technical assistance provider outside of the delivery system to support diagnosis and evaluation. As delivery systems continue to evolve, the language and concepts of evidence-based programing and data-driven inquiry may become a more routine aspect of practice. However, in the highlighted case studies, the delivery systems benefitted from outside support to guide them through this process. The local sites in each state relied on and had access to technical assistance through an institute or center of excellence. In reality, public systems manage multiple demands, and evidence-based programing is only one area of focus among other pressing concerns. While funding incentives are a powerful catalyst for EBP implementation, funding alone is unlikely to ensure understanding or buy-in regarding the need for research to inform practice (and vice versa). Consequently, technologies (e.g., EBPs) can be implemented without the requisite support for ensuring quality or fit. For juvenile justice and court administrations, operating a timely court calendar, reducing racial bias in contact and processing, ensuring quality indigent defense, monitoring compliance with court conditions, maintaining facility safety, negotiating contracts and complying with ethical practice are only some of the competing demands for administrative attention. Similar operational demands exist in systems implementing violence prevention initiatives such as schools, non-profits or mental health agencies. When internal data analysts even exist, they are often deployed to meet basic information needs regarding client, court or facility flow and function. Expanding diagnostic and evaluative capacity for EBPs is likely to require technical assistance from other organizations or designated technical assistant staff as sites build internal feedback systems and incorporate language and values of evidence-based programing over a period of time. One of the benefits of building diagnostic and evaluative infrastructure for courts and communities is that this kind of infrastructure will withstand changes in programs and technologies. All of the processes used by the three highlighted states are adaptable to any array of evidence-based practices or locally-developed innovations. As strategies for ongoing process improvement, these

approaches can guide general community strategic planning and monitoring.

4. Lessons learned

Lessons learned from over a decade of EBP implementation efforts in juvenile justice clearly indicate the need for continuous data gathering and monitoring to ensure program fit and effectiveness. Diagnostic and evaluative capacity describes the two primary functions of data-driven inquiry in this process for selecting the right programs and evaluating their appropriateness and success. While much attention in EBP implementation focuses on supporting site capacity for readiness including staff and agency characteristics and providing program support, the importance of using data in these processes is a neglected area of study and emphasis. States which have experienced significant success in implementation, however, have relied heavily on data to inform and support the implementation process. Consequently, we urge researchers in this area to study models of diagnostic and evaluative capacity building to increase our understanding of what strategies best support sites to develop internal expertise and move toward independence in this type of decision-making.

Further, successes of the states highlighted in this paper have policy implications for EBP implementation efforts in juvenile justice. States should consider continuous quality improvement as a new way of doing business and allocate costs for these data-driven efforts in budgets associated with programing implementation. Further, site technical assistance for implementation, including structured guidance for adaptations, is likely to improve program fidelity and quality.

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Further reading

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