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Empirically Supported Family-Based Treatments for Conduct Disorder and Delinquency in Adolescents

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Abstract

Several family-based treatments of conduct disorder and delinquency in adolescents have emerged as evidence-based and, in recent years, have been transported to more than 800 community practice settings. These models include multisystemic therapy, functional family therapy, multidimensional treatment foster care, and, to a lesser extent, brief strategic family therapy. In addition to summarizing the theoretical and clinical bases of these treatments, their results in efficacy and effectiveness trials are examined with particular emphasis on any demonstrated capacity to achieve favorable outcomes when implemented by real world practitioners in community practice settings. Special attention is also devoted to research on purported mechanisms of change as well as the long-term sustainability of outcomes achieved by these treatment models. Importantly, we note that the developers of each of the models have developed quality assurance systems to support treatment fidelity and youth and family outcomes; and the developers have formed purveyor organizations to facilitate the large scale transport of their respective treatments to community settings nationally and internationally.

The overriding purpose of this review is to examine empirically supported family-based treatments for conduct disorder and delinquency in adolescents within the context of policy priorities and research that have emerged during the past decade. On the policy level, several state, federal, and international initiatives have combined to support (i.e., fund) the large-scale transport of evidence-based treatments of antisocial behavior in adolescents (Schoenwald, 2010). Such transport requires both the identification of efficacious services and the means to effectively replicate these services in community practice settings. Regarding research, investigators have begun to focus more on understanding mechanisms of change (Kazdin, 2007), the role of diversity (La Greca, Silverman, & Lochman, 2009), and factors that influence the implementation of evidence-based treatments (Fixsen, Blase, Duda, Naom, & Van Dyke, 2010).

The present review focuses on family-based treatments that address serious antisocial behavior in adolescents. The term *serious antisocial behavior*, as used here, subsumes the types of significant problems that result in referral to mental health clinics (i.e., conduct disorder), juvenile justice authorities (i.e., criminal behavior), and substance abuse treatment systems (i.e., substance abuse or dependence). These problems are often highly interrelated, and it is largely chance that determines to which of these treatment systems youth with serious antisocial behavior are referred. As such, and as described in the outcome reviews,

the effectiveness of the family-based treatments reviewed here have been examined for youth presenting a variety of antisocial behaviors and referred from various service systems. We should note however, that family-based approaches that have focused primarily on adolescent substance abuse are not reviewed here, but are examined in a companion article in this issue.

In light of the aforementioned policy and research trends during the past decade, the present review emphasizes several issues that are central to the development, validation, and transport of psychosocial treatments, including those that are family based: outcomes and the sustainability of change, mechanisms of change, applicability to real world clinical settings, and amenability for large scale transport.

Outcomes and Their Sustainability

Perhaps the most obvious issue is the capacity of the treatment to effectively attenuate emotional and behavioral problems targeted by family members and other stakeholders (e.g., funders of the service, referral agents). In the case of conduct disorder and delinquency, treatment almost always aims to decrease specific problem behaviors that have led to clinical referrals (e.g., fighting with family members, skipping school, staying out at night) or arrest (e.g., stealing cars, assaulting a teacher). In addition, treatment often addresses common co-occurring problems (e.g., internalizing problems, academic deficits, substance abuse) and difficulties presented by family members (e.g., caregiver substance abuse and mental illness) that serve as barriers to effective treatment. A related concern pertains to the capacity of a treatment to help guide the family toward a positive developmental trajectory. In theory, if family relations can be effectively restructured during treatment, then, favorable outcomes are more likely to be sustained. The viability of this perspective can be examined through long-term follow-up research.

Mechanisms of Change

Assuming that a treatment has proven effective, an important conceptual and pragmatic issue pertains to the mechanism by which the treatment works (Kazdin, 2007). Conceptually, what is the fit of the model's theory of change with the observed mechanism of change? Pragmatically, understanding mechanisms of change are critical to the efficient use of a treatment. Perhaps, for example, clinical change is driven primarily by improved family affective relations. Such would suggest that therapeutic emphases on improving affective relations might be more efficient at promoting outcomes than emphases in areas not directly associated with family affect.

Applicability to Real World Clinical Settings

As Weisz and Kazdin (2010) have noted, most research findings on evidence-based child psychotherapies are *efficacy* in nature. Efficacy studies aim to determine whether a treatment *can* work. Thus, efficacy studies are typically conducted under optimal circumstances. For example, youth with co-occurring problems might be excluded, interventions are supervised closely by the treatment developer, therapists (often graduate students) are highly trained, and services are delivered from a university clinic to reduce the many organizational barriers (Schoenwald & Hoagwood, 2001) to effective treatment implementation. On the other hand, *effectiveness* studies aim to determine whether a treatment is successful when delivered in real world clinical settings. Here, for example, the treatment developer likely does not provide direct clinical supervision, treatment is implemented by practitioners from the community, clients with co-occurring problems are included, and therapists are employed by community-based provider organizations.

Amenability and Challenges for Large Scale Transport

A treatment might be effective in an efficacy context and even transported successfully to several community-based settings. Such work, however, is a long way from the type of large scale transport necessary to impact public health. Unfortunately, most family-based treatments are not highly amenable to large scale transport. For example, in comparison with treatments such as cognitive behavioral therapy, family-based approaches have characteristics that discourage diffusion (see Rogers, 2003). Family-based treatments are complex, are difficult to try on a limited basis (i.e., much training is needed), and their results (e.g., changes in family relations) are not readily observable.

Moreover, as detailed by Fixsen et al. (2005), the effective transport (i.e., transport that achieves client outcomes similar to those obtained in clinical trials) of evidence-based treatments to real world settings faces many substantive barriers. For example, on the treatment intervention side, all aspects of the intervention (e.g., treatment, supervision, administration) must be well specified, effective training materials and resources must be developed, a cadre of training experts must be organized and funded, and a quality assurance system must be validated (i.e., showing that the training actually promotes fidelity of treatment implementation). On the provider side, compatible therapists (e.g., bright, hard-working clinicians who are comfortable with families and amenable to intensive training and oversight of their work), supervisors, and administrative support must be hired; staff must commit to extensive training and ongoing quality assurance; and administrative structures must often be modified (e.g., facilitating the use of cars for home-based services, cell phones, comp time, and school visits). At the community level, a steady flow of appropriate referrals (i.e., clients similar to those served in the successful clinical trials), sufficient funding (e.g., some aspects of most evidence-based family therapies do not fit with extant funding structures), and stakeholder support and political will (e.g., judges; school officials; mental health, juvenile justice, and social welfare authorities) are essential to program success. These are only a subset of the many challenges to transporting evidence-based treatments to community settings.

Nevertheless, likely due to their ability to attenuate very challenging and costly clinical problems, the evidence supported family-based treatments discussed subsequently are among the most widely transported evidence-based treatments in the field. As noted subsequently, the development and use of purveyor organizations has been critical to the success that these treatment models have achieved in overcoming barriers to their large-scale transport. A purveyor is a group of individuals representing a program who actively work to implement that program with fidelity and good effect (Fixsen et al., 2005). Purveyor organizations possess the knowledge and skills needed to train others in the program and sustain the fidelity of implementation, they are dedicated to that one mission – transporting the program with integrity, and they are experienced in addressing the wide variety of barriers that can emerge when transporting evidence-based treatments. Indeed, Fixsen et al. (2010) have concluded that large scale transport requires purveyor organizations as well as supportive funding structures and political will among stakeholders (Fixsen et al., 2010). The services provided by the purveyor organizations representing each of the evidence supported family-based treatments are discussed in this article.

Epidemiology and Etiology

A brief synopsis of trends since the previous AAMFT publication (i.e., Henggeler & Sheidow, 2003) and a summary of identified risk factors are presented.

Prevalence Estimates

Compared to data available for the 2003 article, there appears to be a downward trend in adolescents engaging in criminal behavior (Howell, 2008). The Office of Juvenile Justice and Delinquency Programs estimated that there were 2.11 million arrests of juveniles in the U.S. during 2008 (Puzzanchera, 2009), down from an estimated 2.6 million in 1998 (Stahl, 2001). While the number of cases handled by juvenile courts rose dramatically in the 1980s and 1990s, the number has been level in more recent years (Sickmund, 2009). Regarding conduct disorder, findings from a nationally representative sample indicate a lifetime prevalence of 9.5% with a median age of onset between 11 and 12 years. Notably, conduct problems are significantly more prevalent for males than females (12% vs. 7%) and in urban areas (Nock, Kazdin, Hiripi, & Kessler, 2006).

Race, Gender, and Age Trends in Criminal Activity

Some noteworthy disparities and trends in juvenile offending have been identified. Substantial racial disparities in juvenile justice involvement continue to persist. For example, the rate of violent crime arrests in 2005 for African-American juveniles was more than 5 times the rate for white youth (i.e., 926 per 100,000 African-American youth vs. 178 per 100,000 white youth; Puzzanchera, 2009). It is not clear, however, whether such discrepancies are a product of racial differences in perpetration rates or aspects of the criminal justice system (Snyder & Sickmund, 2006). Recent emphasis has also been placed on changes in the rate of females in the juvenile justice system. The proportion of juvenile offenders who are female has increased from one-fifth of juvenile offenders in 1989, to one-quarter in 1998, to one-third in 2008 (Puzzanchera, 2009; Stahl, 2001). Similarly, one-tenth of juvenile arrests for violent offenses were for females in 1980, but 30% of such arrests were for females by 2004 (Zane et al., 2010). Research also continues to highlight age trends for delinquency. Early longitudinal studies revealed trajectories of antisocial behavior, and recent statistical methodologies have contributed to the advancement of this research (see summary in Piquero, 2008). Typically identified trajectories for individuals include those that initiate serious conduct problems in childhood and sustain such behaviors through adolescence, those that escalate from minor behaviors to serious antisocial behaviors, and those that engage in minor levels of antisocial behaviors throughout adolescence. Trajectory research shows that the majority of youth desist as they transition into adulthood, although a small, "life-course persistent" subset has been observed, as has a late-onset group. It cannot be determined which trajectories the youth in the treatment studies described subsequently would have followed, but many of the studies focused on the highest risk cases (e.g., chronic offenders, violent offenders, offenders with co-occurring substance use problems, offenders with repeat out-of-home placements) which would increase the likelihood of the more severe trajectories.

Determinants of Antisocial Behavior in Adolescents

Research findings continue to build a strong case for a multidetermined ecological conceptualization of adolescent antisocial behavior. Several comprehensive reviews (e.g., Howell, 2008; Liberman, 2008; Loeber, Burke, & Pardini, 2009) have summarized findings across cross-sectional and longitudinal studies that support a relatively consistent array of individual, family, peer, school, and neighborhood constructs as risk factors for antisocial behavior. Within each of these domains, several key variables have been identified. For example, the individual domain includes beliefs (e.g., attitudes, cognitions), teratogenic effects (e.g., prenatal complications, drug exposure), cognitive functioning (e.g., social information processing, verbal ability), and biological processes (e.g., autonomic arousal, neurotransmitters) as risk factors for antisocial behavior. Family parenting practices such as discipline and supervision are consistently identified as risk factors, and caregiver factors such as maternal age, drug use, and mental health also are related to the development of

antisocial behavior. Outside of the family, factors such as deviant peer involvement, lack of prosocial activities, low academic functioning and involvement, and community disadvantage influence the development of antisocial behavior. In addition to risk factors, “promotive factors” are important to consider. Such phenomena as positive peer relationships, family involvement, low parental stress, and good housing quality have been related to refraining from delinquency (cf. Stouthamer-Loeber, Wei, Loeber, & Masten, 2004). Together, this body of work has clear implications for the design of therapeutic interventions aimed at decreasing antisocial behavior. Indeed, the evidence-based treatments discussed subsequently take full advantage of this research – focusing their interventions on key aspects of the youth's social ecology, such as building more effective family functioning, disengaging youth from deviant peer networks, and enhancing youth school performance.

Selection Criteria for Model Inclusion

In recent years, numerous guild, state, and federal organizations have developed criteria for evidence-supported or evidence-based psychosocial interventions. The present review integrates criteria from two of the most respected standards – those developed by the American Psychological Association Task Force on the Promotion and Dissemination of Psychological Procedures (Chambless et al., 1998) and the Office of Juvenile Justice and Delinquency Prevention Blueprints for Violence Prevention (Elliott, 1998). Specifically, for inclusion in the present review, treatment models had to demonstrate (a) favorable decreases in antisocial behavior in randomized clinical trials among conduct disordered or delinquent adolescents, (b) replication across at least two research teams, and (c) sustained treatment effects for at least a year. Further, in light of the considerable gap between science and practice (Institute of Medicine, 2001), the treatment model must have also demonstrated effectiveness in real world community treatment settings. These criteria were met by two family-based treatments: multisystemic therapy (MST; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 2009) and multidimensional treatment foster care (MTFC; Chamberlain, 2003). A third model, functional family therapy (FFT; Alexander & Parsons, 1982), met all except the latter criteria. A fourth treatment, brief strategic family therapy (BSFT; Szapocznik, Hervis, & Schwartz, 2003) can be viewed as an emerging model for conduct disordered or delinquent adolescents based on sustained clinical outcomes and real world demonstration of effectiveness.

Multisystemic Therapy

MST focuses on youth with serious clinical problems (e.g., violent juvenile offenders, juvenile sexual offenders, substance abusing juvenile offenders, youth with serious emotional disturbance and so forth) and their families. With 20 published outcome studies (18 randomized trials and two quasi-experimental studies) and delivery to more than 17,000 youth and families annually, MST is one of the most extensively validated and widely transported evidence-based psychosocial treatments. After providing an overview of the theoretical and clinical foundations of MST, this section describes the 35-year progression of MST from small scale efficacy studies conducted through university psychology departments to multi-site clinical trials and large-scale transport.

Theoretical Bases

Bronfenbrenner's theory of social ecology (1979) provides an excellent framework for the aforementioned research on the determinants of antisocial behavior in adolescents and serves as the conceptual foundation of MST. Youth are viewed as nested within multiple systems (e.g., family, peer, school, neighborhood) that have direct (e.g., parenting practices) and indirect (e.g., neighborhood context affects parenting practices) influences on behavior,

and interactions among individuals are reciprocal in nature. Thus, consistent with research on the development of conduct problems, antisocial behavior is viewed as multidetermined – with pertinent factors at the individual (e.g., cognitive biases), family (e.g., affective and instrumental relations), peer (e.g., prosocial versus antisocial nature of peer associations), school (e.g., academic performance), and community (e.g., criminal subculture in neighborhood, availability of prosocial activities for youth) levels.

On a clinical level, several relatively compatible theoretical perspectives have influenced the development of interventions used in MST. These include Minuchin's (1974) structural formulations (e.g., attention to boundaries and repeated patterns of interaction that regulate family members' behaviors); Haley's (1987) strategic formulations (e.g., importance of understanding recursive sequences of behavior and family hierarchy); social learning theory (e.g., importance of modeling and reinforcement in influencing behavior); and cognitive behavioral theory (e.g., problem solving skills). As indicated next, interventions derived from these approaches are integrated into the broader social ecological framework that underlies MST.

Clinical Overview

MST is specified in several clinical volumes (e.g., Henggeler et al., 2009; Henggeler, Schoenwald, Rowland, & Cunningham, 2002), and such specification is a critical component of the reliable transport of the model. For present purposes, several key aspects of the clinical approach are described.

MST programs and model of service delivery—MST is conducted by a team of 2–4 masters' level therapists and a half time doctoral level or advanced masters' level supervisor. Therapists carry caseloads ranging from four to six families to allow intensive services, and treatment duration typically ranges from 3 to 5 months. To remove barriers to service access for challenging clinical populations, therapists have flexible work hours, and treatment is delivered in settings convenient to the family (i.e., home, community). In addition, therapists rotate an on-call schedule to respond to crises 24 hours per day, 7 days per week. This model of service delivery has been extremely effective at reducing treatment dropout (e.g., Henggeler, Pickrel, Brondino, & Crouch, 1996).

Standardized and recursive process of treatment conceptualization, design, and implementation—Treatment decisions are guided by an ecologically valid assessment process that aims to understand the determinants of key problems identified by the family and other stakeholders (e.g., juvenile justice authorities). In general, the most commonly observed contributors to youth antisocial behavior have been found to be ineffective parenting practices, association with deviant peers, and poor school performance. Such contributors are often targeted in treatment, but all interventions are individualized and implemented based on the assessment process, with the family viewed as critical to all decision making and intervention implementation. The design of interventions is guided by several considerations including the nine treatment principles that operationalize MST (Henggeler et al., 2009) and the evidence base for intervention techniques for the particular problem being addressed (e.g., behavior therapy interventions are commonly used to address youth noncompliance, and cognitive behavioral interventions are often used to develop drug avoidance skills). Particular attention is devoted to the identification and treatment of caregiver barriers (e.g., low motivation, substance abuse) to treatment success. As interventions are implemented, their effects are monitored continuously. If successful, plans are employed to sustain the favorable outcomes (e.g., helping family build an indigenous support system, engaging youth in prosocial activities the family can sustain). If not fully successful, the MST team aims to understand the basis of failure and then redesigns and

implements new interventions accordingly. This recursive loop is followed until treatment goals are achieved or further gains seem unlikely.

Efficacy Trials

Initial efficacy trials established the viability of MST in decreasing youth behavior problems and improving the family relations of juvenile offenders (Henggeler et al., 1986) and maltreating families (Brunk, Henggeler, & Whelan, 1987), and for reducing recidivism of juvenile sex offenders (Borduin, Henggeler, Blaske, & Stein, 1990). These studies were conducted under university auspices, with doctoral students as therapists and either Henggeler or Borduin as direct clinical supervisors. Subsequent efficacy trials have been methodologically rigorous, including random assignment, intent to treat analyses, and long-term follow-up. In a sample of chronic and violent juvenile offenders, Borduin and colleagues (Borduin et al., 1995; Schaeffer & Borduin, 2005) demonstrated the capacity of MST to improve family relations, decrease caregiver and youth psychiatric symptoms, and decrease rearrests and incarceration by more than 50% through a 14-year follow-up (see Table 1). Similarly, Borduin, Schaeffer, and Heiblum (2009) recently replicated the effectiveness of MST with juvenile sex offenders – MST reduced sex offender recidivism by 83% and decreased days incarcerated by 80% at a 9-year follow-up. Together, this body of research clearly shows that MST can be effective with youth presenting serious antisocial behavior and their families.

Effectiveness Trials

The early success of MST led to several federally- or foundation-funded randomized effectiveness trials, with treatment implemented by community-based practitioners working in real world provider organizations. The first of these was conducted with a sample of violent and chronic juvenile offenders at imminent risk of incarceration (Henggeler, Melton, & Smith, 1992; Henggeler, Melton, Smith, Schoenwald, & Hanley, 1993), and findings demonstrated the effectiveness of MST at improving family and peer relations and decreasing recidivism and out-of-home placement. A subsequent two-site effectiveness trial with serious juvenile offenders (Henggeler et al., 1997) demonstrated the critical importance of treatment fidelity in achieving favorable youth outcomes. Rowland et al. (1995) compared MST with Hawaii's intensive continuum of care in the treatment of youth with serious emotional and behavioral disturbances and demonstrated greater effectiveness for MST for achieving outcomes such as decreased symptoms and days in out-of-home placement. More recently, an effectiveness trial with juvenile sex offenders (Letourneau et al., 2009) provided further support for the capacity of MST to decrease sexual behavior problems, externalizing problems, and out-of-home placements. These studies demonstrated the capacity of MST to be transported effectively, at least on a small scale, to community settings.

Hybrid Efficacy-Effectiveness Trials

These studies are part efficacy trial (e.g., conducted under the auspices of the university, therapists hired off grants) and part effectiveness trial (e.g., no clinical involvement of a treatment developer, minimal participant exclusion criteria). As reviewed by Henggeler, Schoenwald et al. (2009) several of these randomized trials have been conducted with youth with chronic health care condition such as type 1 diabetes and obesity. Also included in the hybrid category are two trials with juvenile offenders with substance use disorders and one trial with youth with serious emotional disturbance. In the first, Henggeler, Pickrel, and Brondino (1999) showed that MST was effective at reducing youth substance use and out-of-home placements in the short term, and violent offending and marijuana use at a 4-year follow-up (Henggeler, Clingempeel, Brondino, & Pickrel, 2002). In the second (Henggeler et al., 2006), MST enhanced the drug related outcomes of juvenile drug court, but did not

improve criminal or placement outcomes. A third hybrid trial demonstrated the capacity of MST to decrease the externalizing symptoms (Henggeler, Rowland et al., 1999) and out-of-home placements (Schoenwald, Ward, Henggeler, & Rowland, 2000) of youth in psychiatric crisis, in comparison with emergency psychiatric hospitalization.

Independent Replications

With the established success of MST in efficacy, effectiveness, and hybrid trials, several groups of investigators not affiliated with MST developers examined whether effectiveness findings could be replicated independently. In each of these studies, MST quality assurance was provided by a purveyor organization – an organization licensed for the transport of MST technology and intellectual property (discussed subsequently). The first independent replication, a four-site randomized trial with a 2-year follow-up, was conducted by Ogden and colleagues (Ogden & Halliday-Boykins, 2004; Ogden & Hagen, 2006) in Norway (Norway does not have a juvenile justice system). Findings supported the capacity of MST to reduce youth externalizing and internalizing problems and out-of-home placements. Successful independent replications have also been conducted in the U.S. In a sample of juvenile felons and their families, Timmons-Mitchell, Bender, Kishna, and Mitchell (2006) found that MST produced a 37% decrease in rearrests at 2-year follow-up. Similarly, results of a quasi-experimental study of youth with serious emotional disturbance at risk for out-of-home placement (Stambaugh et al., 2007) showed that MST was more effective at decreasing youth symptoms, improving youth functioning, and decreasing out-of-home placement than was Wraparound services (Burns & Goldman, 1999). On the other hand, favorable MST outcomes were not replicated in a four-site study conducted in Sweden with conduct disordered youth (Sundell et al., 2008). The authors noted that the failure to replicate might be explained by the very low therapist fidelity observed in their study. Though not uniformly favorable, results from independent replications demonstrate the capacity of MST to be effectively transported by purveyor organizations to distal sites.

Mechanisms of Change Research

Consistent with the social ecological model and research on the determinants of antisocial behavior in adolescents, the MST theory of change posits that (a) antisocial behavior is multidetermined, associated with risk factors across the youth's social ecology (i.e., peer, school, neighborhood); and (b) the family is the primary conduit of change. Thus, MST aims primarily to empower caregivers to make strategic changes in the youth's social ecology (e.g., disengagement from deviant peers, improved school performance). The MST theory of change has been tested directly in two studies that encompassed three clinical trials. Huey, Henggeler, Brondino, and Pickrel (2000) showed in separate clinical trials with serious juvenile offenders (Henggeler et al., 1997) and substance abusing juvenile offenders (Henggeler et al., 1999) that high therapist fidelity improved family relations and decreased association with deviant peers, which, in turn, reduced subsequent delinquent behavior. Similarly, in a meditational study with juvenile sex offenders, Henggeler, Letourneau et al. (2009) showed that decreased antisocial behavior was linked with improved caregiver discipline and decreased caregiver concern about the youth's deviant peers. Thus, across studies, findings support the importance of improved family functioning and decreased association with deviant peers in producing favorable outcomes for juvenile offenders.

Case Mix and Cultural Competence

As indicated throughout the preceding review, MST clinical trials have focused on youth presenting very serious clinical problems and their families. Importantly, MST developers and researchers have emphasized external validity in the recruitment of participants. With few exceptions (e.g., severe developmental delay, autism, active suicidality), research participants have reflected the extensive co-occurrence of mental health, behavioral, and

psychosocial problems that arises in community practice settings. As such, MST samples have had high rates of economically impoverished families, single parent families, and minority families. Importantly, moderator analyses have shown MST to be equally effective with these different types of families. Indeed, a recent review assessing the effects of evidence-based psychotherapies with ethnic minority youth (Huey & Polo, 2010) concluded that MST had demonstrated efficacy with African American and multiracial Hawaiian youth.

In addition, several MST studies have examined the effects of client-therapist ethnic matching on youth outcomes. Halliday-Boykins et al. (2005) found that ethnic match (i.e., Black caregiver with Black therapist, white caregiver with white therapist) was linked with greater decreases in youth symptoms, longer treatment duration, and more favorable case terminations. More favorable outcomes for ethnic match, however, have not held for longer term criminal outcomes (Chapman & Schoenwald, 2011) or favorable in-session behavior (Foster et al., 2009). Thus, it is not yet clear how similarity between clients and therapists affects MST outcomes.

Transport to Community Settings

With the establishment of MST viability in real world clinical settings and the clear public health need for effective services for serious juvenile offenders and their families, organizations in North America began to request the development of MST programs in the mid 1990s. A purveyor organization, MST Services <mstservices.com>, was developed to meet these needs. MST Services is licensed through the Medical University of South Carolina for the transport of MST technology and intellectual property. MST Services and its network partners (i.e., purveyor organizations trained by MST Services to carry out all aspects of program development and implementation and monitored for program fidelity and outcomes) currently provide the ongoing quality assurance for the more than 500 MST programs worldwide – in more than 30 states and 11 nations.

To sustain program standards and treatment fidelity as well as achieve desired youth and family outcomes, MST has an intensive quality assurance and improvement system. Importantly, numerous aspects of this system have been validated (Schoenwald, 2008) – especially the link between therapist adherence to MST treatment principles and favorable youth outcomes (e.g., Henggeler, Melton et al., 1997). Training components of the system include specification of treatment, supervisor, expert consultant, and program manuals; an initial 5-day orientation; quarterly booster training; weekly case supervision; weekly case consultation; and supervisor and consultant training. Organizational support for MST programs includes a program operations manual, extensive support for program development (e.g., needs assessment, site readiness review, staff recruitment and orientation training), ongoing reviews (e.g., problem solving organizational and stakeholder barriers to implementation), and support for program and agency leadership. Implementation measurement and reporting are ongoing and include validated measures of therapist, supervisor, and consultant adherence to their respective protocols; and a web-based system that tracks critical aspects of site performance and youth outcomes.

Functional Family Therapy

With the first efficacy trial published almost 40 years ago (Alexander & Parsons, 1973), FFT was one of the first evidence-based treatments (before the term evidence-based was used) developed in the field of family therapy. Six FFT outcome studies have been published (in English, two others have been published in Swedish), with participants ranging in clinical severity from status offenders to youth presenting serious antisocial behavior. Significantly, during the past decade, FFT has become one of the most widely transported

evidence-based family therapies, with 270 programs in the world, treating 12,000 youth and their families annually (<fftinc.com>).

Theoretical Bases

FFT has a strong relational focus, with the presenting problem viewed as a symptom of dysfunctional family relations. Interventions, therefore, aim to establish and maintain new patterns of family behavior to replace the dysfunctional ones. In addition, FFT integrates behavioral (e.g., communication training) and cognitive behavioral interventions (e.g., assertiveness training, anger management) into treatment protocols – though always maintaining a relational focus.

Clinical Overview

The most extensive clinical descriptions of FFT are provided by Alexander and Parsons (1982) and Alexander et al. (1998). Central to the implementation of FFT is the phase-based nature of intervention protocols, with initial emphases on engaging and motivating family members, followed by extensive efforts at individual- and family-level behavior change, and concluding with interventions to sustain such behavior change.

FFT programs and model of service delivery—As transported to community practice settings, FFT programs typically include a team of 3 to 8 therapists. Therapists carry caseloads of 12 to 15 families, and treatment usually involves an average of 12 sessions over an approximately 3-4 month duration. Services are delivered primarily in clinic and home settings, but sessions can also be provided in schools, probation offices, and other community locations.

Phase 1: Engagement and motivation—As described most recently by Waldron and Brody (2010), the process of engagement aims to engender hope and create positive expectations. To facilitate engagement, therapists avoid confrontation and maintain an optimistic and nonblaming approach. Importantly, and in contrast with many other evidence-based approaches, the therapist steers the family away from discussions of the youth's presenting behavior problems and focuses, instead, on relational aspects of behavior. Reframing is an especially important core technique used to shift the family's focus from the problem behavior to a more positive relationship emphasis. Similarly, therapists actively interrupt aversive family interactions to disrupt cycles of negativity with, for example, reframes that have positive meanings for family relationships.

Phase 2: Behavior change—The primary aim of this phase is to change the problem behavior by establishing new patterns of family interaction that replace the old patterns and are more adaptive. Based on an understanding of the relational aspects of the problem behavior identified during the engagement and motivation phase, the therapist draws from a menu of treatment techniques to accomplish relationship change. As with MST, these techniques are not necessarily unique to the FFT model, but draw on evidence-based behavioral and cognitive-behavioral approaches. Thus, for example, the therapist might use problem-solving skills training, cognitive behavioral interventions for depression, and pragmatic techniques to increase positive family communication.

Phase 3: Generalization—The aim of this phase is to extend and sustain behavior change to the broader environment. Therapist contacts become less frequent as termination nears, and the therapist might interact with school and juvenile justice authorities to create linkages that support the sustainability of change. The therapist also helps the family anticipate future problems and develop plans to address such problems if they emerge.

Ideally, treatment is terminated when the family has the motivation, skills, and resources to maintain a positive clinical trajectory (Waldron & Brody, 2010).

Efficacy Trials

In a landmark efficacy study (i.e., one of the first randomized trials to ever show favorable outcomes for youth in the juvenile justice system), Alexander and Parsons (1973; Parsons & Alexander, 1973) examined the effectiveness of FFT with juvenile status offenders. Graduate students were therapists, and treatment developers provided supervision (see Table 2). Results showed that FFT was more effective than three other comparison conditions in improving family interactions and decreasing recidivism for status offenses, but not for criminal offenses. In addition, a 3-year follow-up (Klein, Alexander, & Parsons, 1977) showed that siblings of youth in the FFT condition had less court involvement than siblings of youth in the comparison conditions. In a subsequent quasi-experimental efficacy study (Barton, Alexander, Waldron, Turner, & Warburton, 1985), these promising results were extended to serious juvenile offenders. At a 15-month follow-up, youth in the FFT condition evidenced a 57% decrease in criminal activity relative to a matched comparison sample. More recently, favorable FFT effects on externalizing problems were not replicated in a randomized efficacy study with substance-abusing youth (Waldron, Slesnick, Turner, Brody, & Peterson, 2001). FFT was not more effective than the comparison conditions in decreasing youth externalizing problems, and favorable FFT outcomes for marijuana use at post treatment dissipated by a 3-month follow-up. Together, the efficacy findings for FFT are mixed, but certainly suggest promise in treating both status offenders and more serious juvenile offenders.

Independent Efficacy Study

Gordon, Arbuthnot, Gustafson, and McGreen (1988) conducted an independent efficacy trial (i.e., graduate student therapists, first author as supervisor) of FFT using a home-based model of service delivery. In a quasi-experimental design, a small sample of juvenile offenders (half status offenders, half criminal offenders) was compared with an unmatched sample of youth on probation. At a 2.5-year follow-up, FFT evidenced an 84% reduction in recidivism. A subsequent follow-up (Gordon, Graves, & Arbuthnot, 1995) conducted 32 months after the original follow-up showed considerably fewer new arrests for participants who had been in the FFT condition than for counterparts in the comparison condition. These findings support the transportability of FFT to supervisors other than the treatment developers, though still within an efficacy context.

Independent Effectiveness and Transportability Trials

FFT is also unique in providing one of the first independent effectiveness trials of an evidence-based treatment as well as one of the largest transportability trials conducted with a family-based treatment. In a randomized trial, Friedman (1989) compared the effectiveness of FFT with a parent group intervention for drug abusing adolescents admitted to outpatient treatment programs. Although FFT had higher rates of family engagement, it was not more effective than the parent group in decreasing youth externalizing problems or substance use. Similarly, in one of the largest randomized trials ever conducted in the field of juvenile justice (N = 917 juvenile offenders, 14 different counties participating; Sexton & Turner, 2010), the effectiveness of FFT using a home-based model of service delivery was compared with traditional probation services. FFT Inc., a purveyor organization, provided the training and quality assurance for FFT therapists. At a 12-month post treatment follow-up, rearrest rates were 22% in both intervention conditions. Consistent with findings described previously for MST, however, subsequent analyses showed that youth recidivism was significantly associated with therapist adherence to FFT intervention protocols. Finally, it should be noted that two additional independent evaluations of FFT with juvenile

offenders have been conducted in Sweden by Hansson and colleagues (Hansson, Cederland, & Hook, 2000; Hansson, Johansson, Drott-Englen, & Benderix, 2004) and published in Swedish journals. Brief summaries of these studies in English report outcomes favoring the FFT condition, but we were not able to review the manuscript (e.g., sample size, design, measurement methods, data analyses) because English translations were not available. In conclusion, although FFT efficacy results and findings in Sweden are promising, such results have not been demonstrated for FFT in North American community-based settings when treatment developers were distal to the programs.

Mechanisms of Change Research

More than three decades ago, Alexander and colleagues (Alexander, Barton, Schiavo, & Parsons, 1976) conducted one of the first studies linking changes in family relations with improved outcomes. Increased supportive communication in families that received FFT was associated with decreased youth recidivism. Additional results showed that therapist structuring and relationship skills were linked with higher rates of treatment completion. Although several process studies with undergraduate students (Morris, Alexander, & Turner, 1991) and graduate student therapists (Alexander, Waldron, Barton, & Mas, 1989; Robbins, Alexander, Newell, & Turner, 1996; Robbins, Alexander, & Turner, 2000) published during the next 30 years showed that reframing, a central component of FFT, was associated with decreased youth and family blaming and defensiveness, the investigators did not attempt to link process variables (e.g., family defensiveness) with youth outcomes such as recidivism. Hence, the ultimate value of reframing remains unknown. More recently, however, Robbins, Turner, Alexander, and Perez (2003) showed that unbalanced therapeutic alliances (i.e., therapist is not equally aligned with the youth and parents) predicted therapy dropout. Although this body of work is suggestive, mechanisms of change have not been demonstrated for FFT.

Case Mix and Cultural Competence

FFT studies have focused on juvenile status offenders, mixed minor offenders and serious offenders, and youth with substance use problems. With the exception of Waldron et al. (2001), which included almost 50% Hispanic families, the vast majority of families participating in FFT studies have been Caucasian. As a consequence, investigators have not used moderator analyses to examine whether FFT is differentially effective with youth and families of color. A recent study, however, showed that Hispanic therapists were more effective with Hispanic families than were white families when delivering FFT (Flicker, Waldron, Turner, Brody, & Hops, 2008).

Transport to Community Settings

The national and international transport of FFT has been led by FFT Inc., a purveyor organization formed specifically for that purpose. This organization oversees a three phase process for the development and certification of new FFT sites. The object of the first phase, 12 to 18 months in duration, is to train the group of clinicians to high levels of adherence and competence. Such training occurs through didactic interactions, weekly consultations, and feedback between FFT Inc. personnel and site therapists. The goal of the second phase, about 12 months in duration, is to develop greater site self-sufficiency, and this is accomplished primarily by developing a competent on-site supervisor. The supervisor receives additional training and is supported by FFT Inc. through monthly phone consultation and other interventions as needed. Importantly, program fidelity and outcomes are monitored through a website database. During the third phase, the involvement of FFT Inc. focuses on maintaining program standards by monitoring the website database for therapist adherence, service delivery trends, and client outcomes. Additional training is provided as needed.

Multidimensional Treatment Foster Care

MTFC (Chamberlain, 2003; referred to as Oregon Treatment Foster Care in the 2003 Henggeler & Sheidow review) was developed in the early 1980s to provide a community-based foster care alternative to state detention and group care facilities, particularly for cases in which other intensive in-home and out-of-home services have failed. Four research trials (two randomized and two quasi-experimental) have evaluated MTFC for serious, chronic juvenile offenders (aged 12-17 years) who cannot be maintained in their home, and several adaptations have been examined for youth presenting other types of challenging clinical problems. MTFC programs have been transported to more than 50 sites in the U.S. and internationally (www.mtfc.com).

Theoretical Bases

MTFC is based on the principles of social learning theory, which include behavioral principles (i.e., learning through overt reward and punishment) and the impact of the natural social context on learning (i.e., learning through inadvertent reinforcement of imitation and observational learning). As with MST and FFT, many of the specific intervention techniques used in MTFC are derived from behavior therapy (e.g., development of behavioral management plans) and cognitive behavioral approaches (e.g., problem solving skills training). Moreover, these interventions are implemented within a social ecological framework that emphasizes the critical role of foster parent supervision and monitoring in engaging the youth in prosocial peer activities, disengaging him or her from deviant peers, and promoting positive school performance.

Clinical Overview

Procedures for implementing MTFC are described most extensively in Chamberlain (2003). The ultimate goal of MTFC is to reunite youth with their biological or aftercare families, hence the program is comprehensive and intensive. In addition to the trained foster parents, MTFC includes a team of specialized professionals (i.e., program supervisor, family therapist, individual therapist, skills trainer, recruiter/trainer) focused on providing services for the youth and the youth's family. The centerpiece of these services is a comprehensive and individualized behavioral plan that attends to key aspects of the youth's social ecology. Significant training and support is provided for team members throughout treatment -- while the youth is placed with the foster family, during the transition between foster family and home (i.e., the duration and frequency of home visits increases throughout treatment), and following the transition back to home.

MTFC program parameters—The MTFC team typically has a caseload of no more than 10 youth and is led by a full-time master's level program supervisor (described subsequently). The program supervisor is viewed as the hub of the treatment team, directing all treatment planning and providing 24-hour crisis intervention for foster parents. Only one youth is placed with each foster family, and the placement usually lasts 6-9 months. Family therapy, individual therapy, and skills training are also provided and can continue for up to 3 months following reunification to support a successful transition back home. Services are delivered in multiple community-based settings, including the foster home, the family home, school, and other neighborhood contexts.

Multiple interrelated services—The nature of the services provided by MTFC can be understood by describing the roles played by the members of the MTFC team.

MTFC program supervisor: The program supervisor monitors and coordinates all interventions provided for the youth. This individual makes contact with foster families on a

daily basis to review the youth's behavior, provide support, and monitor the implementation of the behavior plan. The program supervisor also provides crisis management (24 hours per day, 7 days per week availability) and case management services. On a weekly basis, he or she reviews the home and school behavior data and conducts separate meetings with foster parents, the clinical team, and probation/parole officers.

Foster parents: MTFC relies heavily on engaged and dependable foster families. Certification for an MTFC parent includes approximately 20 hours of initial training, and foster parents participate in weekly foster parent support meetings led by the program supervisor. MTFC foster parents are trained to provide close supervision and to implement the highly structured point-and-level behavior management plan that is directed by the program supervisor. Foster parents also are trained to provide frequent recognition and reinforcement of the youth's positive behaviors and to build on the youth's strengths.

Foster family recruiter/trainer: The recruiter/trainer recruits and provides initial training to foster parents and attends the weekly foster parent support meetings. In addition, he or she completes daily calls throughout the week to the foster parents to assess youth progress on a Parent Daily Report, which is used by the program supervisor in treatment planning.

Individual therapist: Youth are provided with weekly individual therapy that targets problem solving, emotion management, social skill development, and educational/vocational planning. The individual therapists also are on-call to the youth for support between sessions and participate in weekly clinical team meetings led by the program supervisor.

Skills trainer: The skills trainer is usually an undergraduate student or bachelor's level individual working part time. He or she acts as a coach, meeting one to two times each week with the youth in the community (e.g., restaurants, community center, school) to model and teach appropriate prosocial behaviors. Skills trainers also attend the weekly clinical team meetings, where the program supervisor determines which skills the trainer will emphasize with the youth during the coming week.

Family therapist: The family therapist works weekly with the biological (or aftercare) family to prepare for the youth's return home. Initially, the family therapist meets alone with the parents to provide parent management training. After a few sessions, when parents are prepared to present rules to the youth, the family therapist begins meeting with the parents and youth together. Often, the youth's individual therapist attends sessions to provide support and behavioral coaching for the youth. Family therapists are on-call during the youth's home visits to assist the parents in problem-solving, and they participate in the weekly clinical team meetings.

The behavioral management plan—MTFC temporarily places a youth in a foster family setting to teach the youth to engage in positive behaviors, while simultaneously preparing the youth's family to maintain his or her successes. The MTFC behavioral management plan is the centerpiece of this intervention. The overriding purposes of this plan are: to surround the youth with positive, encouraging adults who provide a highly structured and supervised context; reduce or eliminate exposure to other antisocial peers who encourage negative behaviors; increase exposure to prosocial contacts; support and enhance school performance; and set clear rules with frequent reinforcement of positive behaviors and consistent consequences for negative behaviors. For example, a point-and-level system is implemented in which a core set of behavioral expectations (e.g., getting up on time in the morning, attending school, completing chores) are rewarded by points that the youth can use to purchase activities and privileges. Verbal praise is also a crucial part of modifying the

youth's behavior, and every member of the MTFC program is trained to use clear, specific praise in addition to the tangible reward system.

Hybrid Efficacy-Effectiveness Studies

Chamberlain and her colleagues have conducted three hybrid efficacy-effectiveness studies – using real world practitioners, but under the management of their research center (see Table 3). An initial quasi-experimental study (Chamberlain, 1990) was conducted to evaluate MTFC for 32 juvenile offenders recommended for placement in state training schools (i.e., incarceration), 75% of who had previous incarcerations. Compared with matched counterparts treated in residential group care placements, youth in MTFC had significantly lower rates of incarceration (50% vs. 94%) during a 2-year follow-up. These promising findings led to a randomized clinical trial focused on male youth who were serious and chronic juvenile offenders (Chamberlain & Reid, 1998). Seventy-nine boys referred by the juvenile justice system were randomized to either MTFC or a community-based group care setting. Youth in the MTFC condition demonstrated significantly greater decreases in criminal charges at 1-year post discharge and self-reported criminal behavior 1-year post baseline. Further, youth randomized to MTFC spent 60% fewer days incarcerated during the year post entry than did their group care counterparts. Importantly, a 2-year follow-up evaluation (Eddy, Whaley, & Chamberlain, 2004) supported the sustainability of MTFC treatment effects for criminal behavior. A third study focused on adolescent female chronic offenders (Chamberlain, Leve, & DeGarmo, 2007; Leve, Chamberlain, & Reid, 2005). Participants had been court mandated to out-of-home care and were randomized to MTFC or residential group care. Compared with girls in the group care condition, MTFC counterparts demonstrated less offending at 12- and 24-month follow-ups and averaged 100 fewer days of incarceration. Moreover, based on the Chamberlain et al. (2007) sample and an additional sample of adolescent female chronic offenders, Kerr, Leve, and Chamberlain (2009) showed that MTFC significantly reduced pregnancies at a 24-month follow-up. In sum, MTFC has consistently demonstrated favorable outcomes with serious juvenile offenders in studies managed by MTFC developers.

Independent Effectiveness Research

The first independent randomized evaluation of MTFC has recently been published by researchers in Sweden (Westermarck, Hansson, & Vinnerljung, 2011). Thirty-five adolescents with conduct disorder and at risk of immediate out-of-home placement were randomized to MTFC or treatment as usual. At a 25-month follow-up, MTFC was significantly more effective than usual services at reducing youth externalizing symptoms, depressive symptoms, and psychiatric distress. In an earlier quasi-experimental study, the subsample of youth that received MTFC in this same Swedish study was compared with a large sample of youth that received usual services (Westermarck, Hansson, & Vinnerljung, 2008). The 12-month placement data showed that youth who received usual care had three times the likelihood of placement disruptions (e.g., 34% versus 13%) than counterparts who received MTFC. Together, these results demonstrate that favorable outcomes observed in MTFC hybrid efficacy-effectiveness research can be replicated by independent investigators – supporting the transportability of the model.

Evaluations of MTFC Adaptations

Several other successful randomized trials of MTFC have been conducted with challenging clinical populations other than youth presenting serious conduct problems. These studies evaluated the effectiveness of MTFC with youth returning from psychiatric hospitalization (Chamberlain & Reid, 1991), children placed in foster care following child abuse or neglect (Chamberlain, Moreland, & Reid, 1992; Chamberlain, Price et al., 2008; Price et al., 2008), and preschool-aged children in the foster care system (Fisher, Burraston, & Pears, 2005;

Fisher, Kim, & Pears, 2009; Tininenko, Fisher, Bruce, & Pears, 2010). These latter studies were independent trials. Overall, the body of MTFC outcome research is very compelling.

Mechanisms of Change Research

Mediation studies have been conducted for MTFC, and these have supported key components of the MTFC theory of change (and clinical emphases). Based on data from Chamberlain and Reid (1998), Eddy and Chamberlain (2000) showed that MTFC effects on youth antisocial behavior were mediated by improved foster parent supervision, discipline, and relations with the youth as well as decreased association with deviant peers. Similarly, based on data from Leve et al. (2005), Leve and Chamberlain (2007) showed that the effectiveness of MTFC was mediated by increased completion of school work. These findings are consistent with those reported previously for MST and with the vast amount of aforementioned research showing that adolescent antisocial behavior is multidetermined – with key factors pertaining to family, peer, and school functioning.

Case Mix and Cultural Competence

MTFC programs, by their nature, focus on youth who are being placed out of the home due, in part, to serious behavioral or emotional problems. Given the severity of youth psychosocial problems, the prevalence of co-occurring conditions has been substantial in research samples. Regarding cultural competence, MTFC originated in the Pacific Northwest of the U.S., with the research drawing from communities in this region. Thus, MTFC studies on juvenile justice samples have primarily included Caucasian participants, making it impossible to evaluate differential effectiveness for youth of color.

Transport to Community Settings

TFC Consultants, Inc., was founded in 2002 to lead the transport of MTFC programs nationally and internationally. By providing consultation and technical assistance, TFC Consultants, Inc., ensures MTFC programs are model-adherent. The initial process is similar to that of MST and FFT. A site visit is initially conducted to present the MTFC program and engage community stakeholders in the procedures necessary for implementing MTFC. During this visit, plans are put into place for recruiting and training members of the MTFC treatment team, including foster parents. Agency staff then attend an off-site 4-day training (5 days for the program supervisor), and an on-site 2-day training is held for foster parents. Weekly telephone consultation is conducted with the program supervisor, implementation data are reviewed and reported on regularly, and quarterly review of videotaped foster parent and clinical treatment team meetings is completed. Some on-site booster training is provided during the initial year of operations. Following this first year, most programs are prepared to apply for MTFC program certification, which allows for the program to implement MTFC without the involvement of TFC Consultants, Inc. The initial certification is valid for 2 years, and subsequent re-certifications are valid for 3 years.

Importantly, MTFC investigators are currently conducting research on the transport of their model. Chamberlain and colleagues (Chamberlain, Brown et al., 2008; Chamberlain et al., 2010) are engaged in a large implementation research study spanning the state of California. The aim of this experimental study is to evaluate two different methods of transporting MTFC. The standard procedure of relying on the purveyor organization to conduct the implementation protocol is being compared to a community-driven method that includes peer-to-peer support and technical support. The findings will have significant implications for the transport of evidence-based practices to community settings.

Brief Strategic Family Therapy: A Promising Model

An emerging model for treating adolescent conduct problems, Brief Strategic Family Therapy (BSFT, Szapocznik et al., 2003) was developed during the 1970s in Miami to address the needs of Hispanic families. Szapocznik and his colleagues initially investigated the effectiveness of BSFT to engage and retain children with conduct problems and their families in treatment. Later studies focused on treating adolescent substance abuse and included both Hispanic and African-American families. Through the BSFT Training Institute, the model has been disseminated to approximately 100 sites in the U.S. and other countries, and these sites have treated more than 2,500 families.

Briefly, BSFT is based on structural (e.g., Minuchin, 1974) and strategic (e.g., Haley, 1987) family theories and uses family therapy techniques to modify interactions within the family system that are maintaining the youth's problem behavior. A therapeutic alliance is developed through joining with family members and the family unit, a strength-focused approach guides assessment and treatment planning, and restructuring (e.g., modifying alliances, adjusting boundaries, reframing problems) is used to alter the identified maladaptive interaction patterns in the family. The treatment interventions also include practical problem-solving through a prescribed format, and all services are individualized to the strengths and needs of each family. BSFT is delivered through weekly sessions in a clinic or the family's home; and the duration of treatment is typically 4 months, including 8 to 24 sessions based on family need (12-16 sessions is most typical). A quality assurance system emphasizing review of videotaped therapy sessions is used to support treatment fidelity.

The treatment developers have conducted two randomized trials with clinical samples of adolescents (i.e., those referred for treatment) as well as several nonexperimental studies and randomized trials focused on problems other than conduct disorder. In an effectiveness study conducted in a community practice setting, Coatsworth, Santisteban, McBride, and Szapocznik (2001) found more reduction in conduct symptoms at post treatment among youth who completed BSFT compared with youth who completed the control condition. Similarly, in a subsequent efficacy study (i.e., BSFT trainees, conducted in university setting), Santisteban et al. (2003) found that youth in the BSFT condition had greater improvement in behavior problems at post treatment than did counterparts in a participatory-learning condition. Together, these findings support the short-term effectiveness of BSFT when directed by the treatment developers. Importantly, a rigorous, multisite, and independent evaluation of BSFT has recently been completed, and findings will greatly inform BSFT effectiveness and the viability of its transport to community settings.

Implications for Independent Practice

As noted throughout this article, the best validated family-based treatment for conduct disorder and delinquency in adolescents are transported to community settings almost exclusively through purveyor organizations. Indeed, these treatments are provided as "programs," rather than through traditional mental health training approaches (e.g., workshops, attending training sessions at a developer's facility). The developer groups have learned that ongoing training, oversight, and quality assurance are essential for sustaining treatment fidelity.

Where does this leave small organizations that do not have the resources to import one of the program models as well as individual practitioners that want to adopt one of these evidence-based practices? Importantly, as cited throughout this article, extensive descriptions, including treatment manuals, of these treatment models have been published

and are available for close review. Organizations and individual clinicians are free to borrow from these manuals, and to adopt and adapt the concepts and clinical procedures they view as most useful for their purposes. The only caveat is that clinicians or organizations are not free to conclude that they are, for example, implementing MST in the absence of validated verification of such.

Research Agenda

By definition, the family-based treatments reviewed here are at relatively advanced stages of development (i.e., numerous evaluations have been conducted, and they are being widely transported to community settings). As such, the recommendations for research focus primarily on key issues pertaining to their validation for real world implementation.

Validation with Ethnic Minorities

As described by Huey and Polo (2010), ethnic minority children and adolescents comprise 45% of the youth population in the U.S. and are disproportionately represented in the mental health, juvenile justice, and social welfare service systems. As risk factors for antisocial behavior are similar across cultures (McCart, Ogden, & Henggeler, in press) and family relations are critical to youth functioning across cultures as well, there is no reason, a priori, to expect that the family-based treatments discussed here should be any less effective with ethnic minority families. The treatment models are flexible, strength focused, pragmatic, and individualized – all qualities that support cultural effectiveness. Nevertheless, the effectiveness of family-based models with ethnic minority children and families should be validated, especially in light of the fact that these models are delivered primarily to youth and families in public sector settings.

Validation of Theories of Change

The family-based models each have slightly different theories of change. Understanding the mechanisms of change is critical to the efficient use of the respective models and can inform adaptations that might improve outcomes. Although methodologies for conducting mediational research have been well articulated (Kazdin, 2007), such work has clearly lagged behind tests of effectiveness.

Validation of Quality Assurance Systems

The overriding purposes of the quality assurance and training systems used by the family-based treatments are to support program development and enhance intervention fidelity, all in the service of optimizing youth and family outcomes. Research is needed to show that the respective quality assurance systems actually enhance treatment fidelity, which, in turn, is associated with improved outcomes. In the absence of such demonstrated links, the value of the various training and quality assurance protocols is unknown.

Validation in Community Settings with Community Practitioners

It is one thing to obtain successful outcomes in efficacy trials with treatment developers overseeing clinical interventions, but quite another to obtain favorable outcomes in distal sites with purveyor organizations providing the quality assurance (Schoenwald & Hoagwood, 2001; Weisz & Kazdin, 2010). The viability of efforts to transport evidence-based treatments to community settings using community practitioners must be clearly demonstrated through clinical trials or benchmarking studies that replicate, at least in part, efficacy findings. Moreover, such validation by researchers independent of the developer group provides even more credibility to transport efforts.

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Table 1
Published MST Outcome Studies Addressing Serious Antisocial Behavior in Adolescents

Study, Sample Size, and Design	Population	Comparison	Follow-up	MST Outcomes	Therapists	Provider Organization
Henggeler et al. (1986) <i>N</i> = 80 ^a Quasi-experimental	Delinquents	Diversion services	Post treatment	improved family relations decreased behavioral and emotional problems decreased association with deviant peers	Graduate students	University
Borduin, Henggeler, Blaske, & Stein (1990) <i>N</i> = 16 RCT	adolescent sexual offenders	Individual counseling	3 years	reduced sexual offending (93%) reduced other criminal offending (72%)	Graduate students	University
Henggeler, Melton, & Smith (1992) <i>N</i> = 84 RCT	violent and chronic juvenile offenders	Usual community services – high rates of incarceration	59 weeks	improved family relations improved peer relations decreased recidivism (43%) decreased out-of-home placement (64%) decreased recidivism (24%) (doubled survival rate)	Community therapists	Community provider
Henggeler et al. (1993)	same sample		2.4 years			
Borduin et al. (1995) <i>N</i> = 176 RCT	violent and chronic juvenile offenders	Individual counseling	4 years	improved family relations decreased psychiatric symptomatology for parents decreased youth behavior problems decreased recidivism (63%) decreased rearrests (54%) decreased days incarcerated (57%)	Graduate students	University
Schaeffer & Borduin (2005)	same sample		13.7 years			
Henggeler, Melton et al. (1997) <i>N</i> = 155 RCT	violent and chronic juvenile offenders	Juvenile probation services – high rates of incarceration	1.7 years	decreased youth psychiatric symptomatology decreased incarceration (53%)	Community therapists	Community providers – two sites

Study, Sample Size, and Design	Population	Comparison	Follow-up	MST Outcomes	Therapists	Provider Organization
Henggeler, Rowland et al. (1999) N = 116 (Final sample = 156) RCT	youth presenting psychiatric emergencies	Psychiatric hospitalization	4 months post recruitment	decreased externalizing problems (CBCL) improved family relations increased school attendance higher consumer satisfaction	Community therapists	University
	same sample		4 months post recruitment	73% reduction in days hospitalized 49% reduction in days in other out-of-home placements		
Schoenwald et al. (2000)	same sample					
Henggeler, Pickrel, & Brondino (1999) N = 118 RCT	substance abusing and dependent delinquents	Usual community services	11 months post recruitment	decreased drug use at post-treatment decreased days in out-of-home placement (50%) decreased criminal arrests (25%, nonsignificant) treatment adherence linked with decreased drug use and other outcomes	Community therapists	University
Henggeler, Clingempeel et al. (2002)	same sample		4 years	decreased violent crime (74%) increased marijuana abstinence		
Ogden & Halliday-Boykins (2004) N = 100 RCT - Independent	Norwegian youth with serious antisocial behavior	Usual Child Welfare Services	6 months post recruitment	decreased externalizing and internalizing symptoms decreased out-of-home placements (78%) increased social competence increased consumer satisfaction differential site effects	Community therapists	Community providers – four sites
Ogden & Hagen (2006)	Sample from three sites with fidelity		24 months post recruitment	decreased internalizing symptoms		

Study, Sample Size, and Design	Population	Comparison	Follow-up	MST Outcomes	Therapists	Provider Organization
Rowland et al. (2005) <i>N</i> = 31 RCT	youth with serious emotional and behavioral disturbances at risk for out-of-home placement	Hawaii's intensive Continuum of Care	6 months post recruitment	decreased out-of-home placements (56%) decreased symptoms decreased arrests (34%, nonsignificant) increased days in regular school (42%, marginally significant) increased social support (marginally significant) decreased days in out-of-home placement (68%)	Community therapists	Community provider
Timmons-Mitchell et al. (2006) <i>N</i> = 93 RCT - Independent	juvenile offenders (felons) at imminent risk of placement	Usual community services	18-month post-treatment follow-up	improved youth functioning decreased substance use problems improved school functioning decreased rearrests (37%)	Community therapists	Community provider
Henggeler et al., (2006) <i>N</i> = 161 RCT	substance abusing and dependent juvenile offenders in drug court	Four treatment conditions, including Family Court with usual services and Drug Court with usual services	12 months post recruitment	MST enhanced substance use outcomes for alcohol and marijuana drug court was more effective than Family Court at decreasing self-reported substance use and criminal activity	Community therapists	University
Stambaugh et al. (2007) ^a <i>N</i> = 267 Quasi-experimental - Independent	youth with serious emotional disturbance and antisocial behavior at risk for out-of-home placement	Wraparound	18-month follow-up	decreased symptoms improved functioning decreased out-of-home placements (54%)	Community therapists	Community provider
Sundell et al. (2008) <i>N</i> = 156 RCT - Independent	youth met diagnostic criteria for conduct disorder	Usual child welfare services in Sweden	7 months post recruitment	no outcomes favoring either treatment condition low treatment fidelity treatment fidelity associated with arrest	Community therapists	Community providers – four sites
Borduin, Schaeffer &	juvenile sexual offenders	Usual community services	9 years	decreased behavior problems and symptoms	Graduate students	University

Study, Sample Size, and Design	Population	Comparison	Follow-up	MST Outcomes	Therapists	Provider Organization
Heblum (2009) N = 48 RCT				improved family relations, peer relations, and academic performance decreased caregiver distress decreased sex offender recidivism (83%) decreased recidivism for other crimes (50%) decreased days incarcerated (80%)		
Letourneau et al. (2009) N = 127 RCT	juvenile sexual offenders	Usual sex offender-specific treatment	12 months post-recruitment	decreased sexual behavior problems decreased delinquency, substance use, and externalizing symptoms reduced out-of-home placements	Community therapists	Community provider

MST = Multisystemic Therapy
RCT = randomized clinical trial.

Table 2
Published FFT Outcome Studies Addressing Antisocial Behavior in Adolescents

Study, Sample Size, and Design	Population	Comparison	Follow-up	FFT Outcomes	Therapists	Provider Organization
Alexander & Parsons (1973) <i>N</i> = 86 RCT	Juvenile status offenders	Three control conditions: client-centered family groups, psychodynamic family treatment, and no treatment	6-18 months post treatment	Improved family communication Decreased status offending (53%) Decreased criminal offending (29%, nonsignificant)	Graduate students	University
Barton et al. (1985) <i>N</i> = 74 Quasi-experimental	Serious juvenile offenders released from incarceration	Primarily youth in group homes and other placements	15 months post treatment	Decreased criminal offending (57%)	Not described in publication	University
Gordon et al. (1988) <i>N</i> = 54 Quasi-experimental – Independent	Status offenders and juvenile offenders	Lower risk delinquents receiving probation	2.5 years post recruitment	Decreased recidivism (84%)	Graduate students	University
Gordon et al. (1995)	Same sample		5 years post recruitment	Decreased adult criminal offenses (78%)		
Friedman (1989) <i>N</i> = 121 RCT - Independent	Substance abusing adolescents	Parent group treatment	15 months post recruitment	No treatment effects	Community therapists	Community providers
Waldron et al. (2001) <i>N</i> = 114 RCT	Substance-abusing adolescents	Four treatment conditions: FFT, CBT, FFT and CBT combined, and group therapy	3 months post treatment	Favorable outcomes for marijuana use at post treatment dissipated at 3-month follow-up	Graduate students	University
Sexton & Turner (2010) <i>N</i> = 917 RCT - Independent	Juvenile offenders	Probation services as usual	12 months post treatment	No treatment effects treatment adherence linked with recidivism outcomes	Community therapists	Community providers – 14 counties

FFT = functional family therapy

RCT = randomized clinical trial.

Table 3
Published MTFC Outcome Studies Addressing Serious Antisocial Behavior in Adolescents

Study, Sample Size, and Design	Population	Comparison	Follow-up	MTFC Outcomes	Therapists	Provider Organization
Chamberlain (1990) <i>N</i> = 32 Quasi-experimental	Delinquents	Group care placements	2 years	decreased incarceration (47%) increased successful program completion (64%)	Community therapists	Research Center
Chamberlain & Reid (1998) <i>N</i> = 79 RCT	male chronic and serious juvenile offenders	Group care placements	1 year post-entry	60% fewer days incarcerated decreased self-reported delinquency (56%)	Community therapists	Research Center
Eddy, Whaley, & Chamberlain (2004)	same sample		1 year post-discharge 2 years	decreased criminal charges (52%) decreased violent recidivism (45%) decreased repeat violent recidivism (79%) decreased delinquency		
Leve, Chamberlain, & Reid (2005) <i>N</i> = 81 RCT	female chronic juvenile offenders	Group care placements	1 year	62% fewer days incarcerated decreased criminal charges (42%, nonsignificant)	Community therapists	Research Center
Chamberlain, Leve, & DeGarmo (2007)	same sample		2 years	decreased incarceration (67%) decreased criminal charges (41%, marginally significant)		
Kerr, Leve, & Chamberlain (2009)	same sample plus 85 additional female offenders randomized to intervention conditions		2 years	decreased pregnancies (43%)		
Westermarck, Hansson, & Olsson (2011) <i>N</i> = 35 RCT - Independent	youth with antisocial behavior	Residential, foster care, or home-based treatment	2 years	decreased externalizing symptoms decreased depression decreased psychiatric distress	Community therapists	Community provider
Westermarck, Hansson, & Vinnerljung (2008) <i>N</i> = 306 Quasi-experimental - Independent	same MTFC sample, large community sample		1 year	decreased placement disruptions (62%)		

MTFC = Multidimensional Treatment Foster Care.

RCT = randomized clinical trial.