MULTIDIMENSIONAL FAMILY THERAPY
Scope of Study

Summary of the Legislative Requirements of Public Act 14-217

Public Act 14-217 (Section 83), An Act Implementing Provisions of the State Budget for the Fiscal Year Ending June 30, 2015, requires the Institute for Municipal and Regional Policy (IMRP) at Central Connecticut State University (CCSU) to assess the effectiveness of the Multidimensional Family Therapy (MDFT) program for juveniles committed to the custody of the Department of Children and Families (DCF) and the Judicial Branch Court Support Services Division (CSSD.) (A committed juvenile convicted of an offense cannot be on probation under CSSD supervision and parole under DCF supervision simultaneously. The intent of the language was to include juveniles committed to the custody of DCF ***OR*** CSSD and that will be used in the definition of client eligibility for the purposes of this study.)

The Institute, DCF and CCSD are required to enter into a memorandum of agreement for the purpose of sharing juvenile client data, which is for the most part confidential due to the age of the children involved. In assessing the effectiveness of the MDFT program, the Institute is further required to consider the findings of the Pew-MacArthur Results First Initiative's cost-benefit analysis model that has been implemented in Connecticut since 2010. By June 30, 2015, the IMRP must issue a report to the Appropriations and Children's committees and the Results First Policy Oversight Committee (established by Public Act 13-247) that (1) describes the effectiveness of the MDFT program; (2) identifies any programmatic changes made by DCF and/or CSSD in response to the Institute's assessment; and (3) makes recommendations to improve the cost-effectiveness of the MDFT program.

Description of Multidimensional Family Therapy Program

The Multidimensional Family Therapy (MDFT) program is a family-based intensive outpatient treatment program developed for high-risk and drug-using adolescents. The MDFT program focuses on an adolescent's drug use, delinquency and other key areas of the adolescent's life. MDFT is a evidence-based program that has an organized structure, but allows for flexibility and customization to meet a client's and family's needs. It has been validated for use as a prevention model, an early intervention approach, outpatient substance abuse treatment, partial hospitalization and day treatment model and intensive alternative to residential treatment as well as a component of residential placement services. The MDFT model offers three key service elements by offering individual client counseling services, individual parent/guardian counseling and family counseling sessions. These MDFT sessions, when delivered with model fidelity, are geared to help restore healthy development and build positive relationships within the family dynamics and reduce substance abuse and negative behaviors.

MDFT aims to address the areas of adolescent and parent functioning that are known to create problems and to improve problem-solving skills, family and other relationships and to restore positive child development. MDFT interventions target known risk and protective factors and processes in the adolescent and parents, in the family and in the family's interactions with key systems such as school and juvenile justice. The overall treatment objectives are to:

- reduce drug use and behavioral problems;
- create positive changes within family relational patterns;
- promote involvement in pro-social activities;
- improve family communication and problem-solving skills;
- develop personally meaningful short- and long-term life goals; and
- promote educational and vocational success.

MDFT interventions are typically provided two or three times per week in the client's home for approximately three to six months.

History of MDFT in Connecticut

In 2000, DCF launched the Kid Care Initiative to develop and implement a comprehensive behavioral health system for children in Connecticut.

In 2002, DCF used the CSAT System of Care for Youth (SCY) Grant to develop a system of care utilizing evidenced-based models intended to increase family involvement, build collaborations with community-based programs, and provide culturally informed services for adolescents and their families. One of the programs purchased and implemented by DCF was the Multidimensional Family Therapy (MDFT) program. The first MDFT program served youth and their families living in Hartford and all referrals were made through the Hartford Youth Program.

In 2005, DCF funded three additional MDFT teams serving youth living mostly in the Waterbury and Hartford regions. DCF also contracted with Advanced Behavioral Health (ABH) to provide MDFT consultation, training, certification and monitoring of the Connecticut MDFT program system.

In 2006, DCF funded five more MDFT teams, called Family Substance Abuse Treatment Services (FSATS), that worked with youth designated by the juvenile court as Family with Service Needs (FWSN.) These youth were involved with the juvenile justice system for noncriminal activities such as truancy, running away, etc. During this year, the department also transferred the resources for one MST treatment team to a MDFT program.

Also in 2006, the MDFT program was further expanded through a memorandum of agreement (MOA) between DCF and the Judicial Branch's CCSD to purchase additional MDFT program slots as part of a pilot project to divert status-offending (delinquent) girls from further court involvement. The clients were referred from the Centers for Assessment, Respite, and Enrichment (CARE) in Waterbury.

In 2009, CSSD opened a second CARE program in New Haven. The Waterbury and New Haven CARE programs were providing statewide coverage, but it was difficult for the two centers to meet the geographical demand. As a result, DCF funded a MDFT team to prove post-discharge services to that same population in other areas.

Between 2003 and 2012, DCF established 14 MDFT teams throughout western Connecticut to provide intensive in-home clinical services to adolescents and their families and two residential

MDFT sites serving youth involved with the department. It should be noted the residential programs subsequently lost their funding due to poor performance.

In 2011, DCF agreed to continue to fund the Waterbury MDFT team with the understanding that 96 clients referred by CSSD could be served in the DCF statewide MDFT system. The clients were referred to providers in their geographical area. The department capped the number of MDFT slots for CSSD-referred clients at 48 rather than try to divide resources between the two agencies. However, DCF continued to served more than 96 clients. The clients for these new slots were referred by CSSD, but the MDFT program was administered by DCF. The remaining MDFT slots were used for referrals from other sources such as parents, schools, juvenile review boards.[1]RENUMBER FOOTNOTE

At the same time, DCF established Family Support Teams (FST) to support youth with severe mental health needs who were involved with the department. Family Support Teams provided all services deemed necessary by the youths' DCF social workers. Because DCF was not able to support with evidence that the FST program was successful, it then shifted to an evidence-based programming and committed further to the MDFT program. CSSD had already shifted to and was administering evidence-based programing for its adult and juvenile clients.

DCF then converted the resources for the 14 Family FST to MDFT teams and established statewide coverage. The department expanded from 14 to 28 service team offering statewide coverage. DCF obtained a federal Re-entry and Family Treatment (RAFT) grant and focused on providing the MDFT program to juvenile parolees.

Between FY 13 and FY 14, CSSD established contracts directly with three additional providers to serve the juvenile courts in the eastern part of Connecticut. Currently, CSSD has 24 MDFT program slots available in Waterford, 18 in Willimantic, and 12 in Vernon and Rockville. As a result of these new contracts, the 48 MDFT program slots purchased by CSSD from DCF shifted to the western part of the state and CSSD continues to refer clients to DCF-funded programs in the eastern half of the state. CSSD also funds two residential programs that offer the MDFT program model: the Connecticut Junior Republic Boys' Intermediate Residential Program that serves eight boys; and the NAFI Litchfield Girls' Intermediate Residential Program that serves six girls. Both facilities are located in Litchfield and the clients have an average length of stay of four months.

Raise the Age in Connecticut

Beginning in the mid-1990s, Connecticut initiated a series of juvenile justice system reforms. Connecticut, at that time, was one of three states that defined 16- and 17-year-olds as adults for the purposes of criminal justice jurisdiction. In 2007, Connecticut enacted the Raise The Age law (Public Act 07-4) that automatically shifted criminal jurisdiction of 16- and 17-year-olds from the adult system to the juvenile justice system. However, in 2009, as a result of the state budget crisis and continuing resistance from law enforcement administrators, the state legislature amended Public Act 07-4 to slow down the implementation. The new law authorized 16–year-olds to enter the

1 DCF and CSSD contract with a number of private providers throughout Connecticut to administer the MDFT model. The contract amount is set to support the negotiated number of slots. In addition, the provider may received payments from health insurance companies, including Medicaid, depending on the client's health insurance coverage.

juvenile justice system on January 1, 2010 as planned, but delayed the entry of 17-year-olds until July 1, 2012. To date, Raise the Age has been fully implemented.

Implementation of Raise the Age occurred at the time during which the cohort groups for this study were selected. It is, therefore, important to acknowledge and attempt to account for any impact this significant reform had on the administration and effectiveness of the MDFT program.

Client Eligibility

For the purpose of the study, there are two ways in which a child or adolescent can be committed to the custody of the state. The first is for child protection (abuse and neglect) custody purposes. Children and adolescents up to the age of 21 years can be committed to the custody of the DCF and placed in a variety of settings such as foster care and residential programs. The commitment period can range from an Order of Temporary Custody (OTC) to a termination of parental rights. The second is a juvenile delinquency commitment as a result of conviction of a criminal offense. Juvenile delinquents up to age 18 can be committed to probation supervision under the custody of CSSD or committed to DCF and placed at the Connecticut Juvenile Training School, in congregate residential care or on parole in various family settings in their communities. The commitment period is determined by the juvenile court during adjudication (sentencing). While all children and adolescents in Connecticut may participate in an MDFT program during the study timeframe, the primary focus will be on juvenile delinquents committed to CSSD under probation supervision or to DCF under parole supervision.

The inclusionary criteria for the MDFT program are different for CSSD and DCF. CSSD criteria are defined as adolescents aged 11 through 17 who are court-involved (delinquent) and may also be dealing with substance abuse, oppositional behaviors and family conflict. DCF criteria include adolescents aged 9 through 18.5 and are in any status including court-involved with the department. The non-delinquent adolescents involved with DCF are typically referred to the MDFT program by a therapist or DCF caseworker.

An adolescent referred by CSSD or DCF (1) must be or be at risk for: abuse or dependence to cannabis, alcohol or other substance; oppositional defiant disorder (ODD); conduct disorder (CD) or (2) does not meet the criteria for any of the disorders listed, but is sub-threshold for at least one of them (e.g., school problems, poor attendance, poor grades, discipline problem, fighting, withdrawn from family, out of control, etc.).

Both CSSD and DCF implement research-based risk assessment instruments that are used to further determine an adolescent's suitability for participation in an MDFT program. It should be noted for the purposes of this study that the risk assessment instruments used by CSSD and DCF will not be evaluated, but may be used to evaluate the MDFT program.

The MDFT program establishes exclusionary criteria by which referred adolescents are evaluated. An adolescent meeting any one of these criteria are not accepted into an MDFT in-home or residential program. The criteria exclude a youth who:

- is actively homicidal, suicidal or psychotic;
- is actively using cocaine/crack, heroin or inhalants dependent;
- is an active or has a history of fire-setting;

- is autistic or on the pervasive developmental disorder (PDD) spectrum;
- is significantly violent in the home;
- has no available parent or caregiver or;
- whose primary presenting problem is sexual offending.

While contracted program providers typically operate on a "no reject / no eject" paradigm, providers do have some authority to make decisions as to who enters the MDFT program. While CSSD and DCF strongly encourage providers to accept all referral clients, there are times when clients are screened and ultimately denied access to the MDFT program by the provider. An adolescent may be denied access to a MDFT program for one of many reasons including any of the exclusionary criteria above or they may require a higher-level of care.

MDFT Quality Assurance

Advanced Behavioral Health (ABH) is the only sanctioned MDFT consultant group authorized by the model developers, MDFT International Inc., to provide training and quality assurance services for the MDFT program in Connecticut. In 2004, ABH contracted and was jointly funded by DCF and CSSD to ensure MDFT providers adhered to the program model. There are currently more than 32 MDFT community-based teams providing in-home services and two residential programs in Connecticut. ABH is solely responsible for ensuring a high level of program fidelity to the MDFT model through the statewide management of all MDFT in-home service and residential placement teams and to provide quality assurance, clinical consultations and therapist training and oversight. ABH tracks data on therapist training and quality assurance, but not specifically on client outcomes. Both CSSD and DCF report having regular and positive working relationship with ABH, which is located in Middletown.

Preliminary Program Data

In 2008, DCF began to collect client count and length of stay data for the MDFT program. The DCF data include adolescents referred by CSSD and treated through the program slots contracted through the memorandum of agreement with DCF and funded by CSSD. It is not clear at this time if DCF can provide more descriptive client and program measure data. This will be an area for review in the study.

For the direct CSSD contracts with MDFT program providers, there is limited data readily available at this time. CSSD has not yet added MDFT program data to its Contractor Data Collection System. CSSD reported that monitoring of utilization data is conducted through a more antiquated data system and via on-site monitoring by contract staff.

For the purposes of this scope, DCF provided preliminary client count and length of stay data for the MDFT program, but not any client demographic data. During FY 14, DCF reported a total of 936 distinct clients served through an MDFT program statewide. This number includes all adolescents referred through DCF under any type of status (e.g., parole, abuse or neglect status, foster care, etc.) as well as all court-involved adolescents on probation referred by CSSD. There are a total of 73 MDFT-training therapists comprising 32 MDFT service teams statewide.

Proposed Evaluation Methodology

In accordance with Public Act 14-217, the purpose of this evaluation is to estimate the effectiveness of Multidimensional Treatment Family Therapy (MDFT) programs in Connecticut in reducing the recidivism rate of program participants. Furthermore, dependent on data availability, IMRP will estimate the marginal cost of delivering the program to an additional juvenile in Connecticut. The Pew-MacArthur Results First Initiative's cost-benefit model will then rely on our estimate of the program's marginal cost to estimate the cost-benefit of MDFT in Connecticut.

Measuring the effectiveness of MDFT

The DCF and CSSD will provide the IMRP with administrative data on juveniles who participated in these programs in FYs 10 and 11 or who are identified as participants of the comparison group (discussed in detail below). Then, IMRP will review any arrests or convictions acquired over the next three fiscal years (FYs 11 to 14, inclusive). Criminal history data will consist of:

- arrest date and offense type;
- arraignment date and offense type;
- disposition date and offence type; and
- sentence.[2]

Because the IMRP is interested in assessing the cost-effectiveness of MDFT, each return to court for a new charge will be reviewed. This includes charges that are dismissed, diverted to alternative sanctions or nolled. (A related discussion follows under "Use of arrests.")

Following the Pew-MacArthur Results First Initiative's suggestions through the Washington State Institute for Public Policy study, the treatment group must consist of both program completers and non-completers as a means to assess the intent to treat. If the IMRP only looked at the effect of the program on completers, the result would be bias in the direction of the outcome for program completers.

Members of the treatment group will be juvenile delinquents committed to CSSD under probation supervision or to DCF under parole supervision and who participated in MDFT in 2010 or 2011. Agencies and their contractors will provide program-level data for each juvenile in the treatment group including:

- whether the juvenile was committed to CSSD under probation supervision;
- whether the juvenile was committed to DCF under parole supervision;
- date and source of referral;
- program location;
- residential or outpatient program;
- name of therapists leading the team in which the juvenile participated;

[2] The offenses for which a juvenile offender is arrested may differ from those s/he is charged with at court and then subsequently convicted. Therefore, the offense type at each stage (arrest, arraignment and conviction) will be collected and analyzed.

- program start and discharge dates; and
- the reason for program discharge (successful completion or unsuccessful completion with specified reason).

Two outcome measures will be used to calculate a program's effect size: (1) any new arrest and (2) any new substance abuse arrest within 12 months of discharge from a MDFT program. For the comparison groups, recidivism patterns will be reviewed for the 12-month period following their initial arrest.

Use of arrests

This evaluation will measure the impact of MDFT on the recidivism rate of juveniles who participated in the program. This outcome is the focus of the Pew-MacArthur Results First Initiative, as a means to reduce government expenditures on future detention or incarceration. However, the IMRP recognizes that other outcomes, including cognitive behavior or school retention, may be of greater interest to program staff. These are important outcomes and the IMRP encourages agency staff to assess the impact of MDFT on these outcomes using a methodology similar to the one proposed here (i.e., include a comparison group, assess the outcomes of program completers and non-completers, etc).

Some arrest histories of juveniles may include charges that were not prosecuted (nolle) or diverted to alternative sanctions (e.g., juvenile review board). But, the event that resulted in an arrest is a relevant outcome for our evaluation as the government still incurs costs to arrest and prosecute the juvenile. In order to accurately assess the cost-benefit of MDFT, data should include all arrests for sample participants.

Comparison group

The best program evaluations assess the outcomes of program participants as compared to the outcomes of a similar group of people who did not participate in the program. For MDFT, the best comparison group would consist of all juveniles who were eligible to participate in the program but did not. Unfortunately data limitations do not permit us to collect data on all such juveniles. Administrative data, the data used for this analysis, only exist for juveniles who came in contact with CSSD or DCF. Moreover, our analysis would suffer from selection bias if there are systematic reasons why a juvenile who was eligible to participate in MDFT ultimately did not participate. For instance, some juveniles who were eligible may not have been referred to the program (for various reasons) or were not ordered by the court to attend. These limitations prevent IMRP from creating a pure comparison group for this evaluation.

In the absence of a pure comparison group, IMRP will use existing administrative data to create a nearly comparable group of juveniles who were eligible to participate in MDFT but did not. IMRP will rely on a quasi-experimental design to estimate the effectiveness of the program. Specifically, the Institute will use propensity score matching to create a comparison group for the treatment group. Individual observable characteristics including birthdate, sex, and race or ethnicity will be considered when establishing the comparison group.

Previous evaluations of MDFT programs that employ the highest level of methodological rigor (i.e., include a comparison group), compare the outcomes of juveniles in the MDFT program to those of juveniles enrolled in a general cognitive behavioral therapy program that does not have a substance abuse component (see Henderson et al. (2010); Liddle, et al. (2001); Liddle, et al. (2008); and Liddle, et al. (2009)). These studies however only measure the incremental effect of MDFT beyond the effect of a general cognitive behavioral therapy program. The IMRP study, in contrast, will evaluate the incremental effect of MDFT compared to no similar programming. That is, juveniles in the comparison group will not participate in a comparable cognitive behavioral program.

IMRP will construct a comparison group using the risk assessment instruments that are used to determine an adolescent's suitability for program participation. The instrument consists of 47 items (including family, antisocial behavior, substance abuse, and criminal history). Scores are then used to rank juveniles by risk: low, medium, high, and very high risk. Juveniles in a treatment group will have a medium- or high-risk level so juveniles in the comparison group should exhibit this same risk level.

Juveniles in the comparison group should be on probation or parole beginning in 2008 and never have participated in MDFT. Status offenders will be excluded from the comparison group as these offenses would not be considered crimes if the offender were an adult and are, therefore not comparable to more serious offenses that are the focus of the MDFT program.

Juveniles in the comparison group should be aged nine through 18 and charged with a substance abuse offense, sentenced, and discharged in 2008. If data are available, juveniles in the comparison group should not exhibit (or have a history of) any of the following:

- active homicidal, suicidal or psychotic behavior;
- activecocaine, crack, heroin or inhalants use or dependency;
- active or with a history of fire-setting;
- autistism or on the pervasive developmental disorder (PDD) spectrum;
- have significant violence in the home;
- have no available parent or caregiver; or
- sexual offending as a primary presenting problem .

Calculation of effect size

Following the Results First methodology, IMRP will estimate the effect of MDFT on recidivism using the D-cox transformation:

$$d = \ln\left(\frac{P_E(1-P_C)}{P_C(1-P_E)}\right) \Big/ 1.65$$

as determined by the percentage of MDFT clients who were not rearrested (P_E) and the percentage of juveniles in the comparison group who were not rearrested (P_C).

The standard error of the effect size (*SE*) will be calculated as:

$$SE = \sqrt{0.367\left(\frac{1}{J_{1E}} + \frac{1}{J_{2E}} + \frac{1}{J_{1C}} + \frac{1}{J_{2C}}\right)}$$

where J_{1E} and J_{1c} represent the number of juveniles who were not arrested in the treatment (E) and comparison (C) groups and J_{2E} and J_{2C} represent the number of juveniles who were rearrested.

Measuring the cost of MDFT

Ideally, a program's cost would be estimated as its marginal cost, or the cost to deliver the program to the next program participant. Presumably, fixed program costs such as utility expenses or rent for the program space have already been paid and no additional fixed costs are incurred if one more person joins the program. However, some variable costs, such as wages paid to workers to prepare for a program meeting, may increase if a new person joins the program. Incremental changes in the variable costs are used to estimate the marginal cost of providing the program to the next program participant.

Marginal costs are different from average costs. A program's average cost is estimated as the total cost to administer the program divided by the total number of program participants. While an average cost provides useful information about a program, this measure does not accurately reflect the cost of delivering the program to one more person as it assumes that additional fixed costs will be incurred once one more person joins the program.

If the capacity of an existing MDFT program were expanded to include more participants, fixed costs would not change over the short-run (though large expansions would require additional fixed cost expenditures in the long-run) but variable costs would change. The marginal cost, therefore, most precisely estimates short-run costs for capacity changes.

IMRP has requested data on all direct costs, indirect costs, and auxiliary costs incurred to deliver MDFT during the specified time frame. Direct costs include operating expenses that resulted in an outlay such as salaries and benefits paid to therapists, expenses for materials or supplies, or travel expenses for therapists. If program staff spend only part of their time delivering MDFT, the Institute will also require information about the time to prepare and deliver the program so we might estimate the direct cost of the program as weighted by the time spent on these tasks. Indirect costs often relate to supervisor or administrative staff salary and benefits, office supplies, or data collection for the program. Finally, auxiliary costs are those expenses incurred to ensure program fidelity including quality assurance and professional training.

IMRP also requested cost data on government funds transferred to community-providers to support MDFT programs. These cost data may include contracted dollars or Medicaid reimbursements for services rendered.

Costs may vary by agency so it will be important to separately estimate programmatic costs for CSSD and DCF. This said, these agencies may share costs (e.g., share a contract for service

provision in the community or for fidelity assurance). IMRP will estimate eachagency's portion of any shared cost based on the relative size of its MDFT program.

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