

Evidence-Based Practices in  
Adolescent Treatment:  
Multisystemic Therapy (MST)  
and Contingency Management (CM)

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**Disclaimer**

Dr. Henggeler is a shareholder in MST Services,  
which is a purveyor organization licensed by  
the Medical University of South Carolina for the  
transport of MST technology and intellectual  
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### Aim of Presentation

To overview clinical features and research outcomes for two evidence-based treatments of substance abuse in adolescents

1. MST - intensive, comprehensive, program based
2. CM/Family engagement - less intensive, focused, capable of being integrated into existing substance abuse or mental health programs

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### Where is MST Being Used?

- Over 30 states in the U.S. and in 12 countries
- Treating more than 18,000 youth and families annually
- Statewide infrastructures in Connecticut, Georgia, Hawaii, New Mexico, Ohio, and South Carolina
- Nationwide program in Norway (20+ teams)
- Other international replications: Australia, Canada, Denmark, Iceland, Northern Ireland, England, Scotland, Sweden, Switzerland, the Netherlands, and New Zealand.

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### Where MST Began



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### What is MST?

- Community-based, family-driven treatment for antisocial/delinquent/substance abuse behavior in youth
- Focus is on “Empowering” caregivers (parents) to solve current and future problems
- MST “client” is the entire ecology of the youth - family, peers, school, neighborhood
- Highly structured clinical supervision and quality assurance processes

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### Who is MST for?

- Targeted are adolescents between the ages of 12 and 17 years, who have serious criminal arrest histories, and are at risk for out-of-home placements or incarceration
- Adolescents presenting with serious clinical problems like drug abuse, violence, or emotional disturbance

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### Families as the Solution

- MST focuses on families as the solution
- Families are full collaborators in treatment planning and delivery with a focus on family members as the long-term change agents
- Giving up on families, or labeling them as “resistant” or “unmotivated” is not an option
- MST has a strong track record of client engagement, retention, and satisfaction

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### How is MST Implemented?

- Single therapist working intensively with 4 to 6 families at a time
- “Team” of 2 to 4 therapists plus a supervisor
- 24 hr/ 7 day/ week team availability
- 3 to 5 months is the typical treatment time (4 months on average across cases)
- Work is done in the community: home, school, neighborhood, etc.

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### How is MST Implemented? (continued)

- MST staff deliver all treatment - typically no services are brokered/referred outside the MST team
- Never-ending focus on engagement and alignment with the primary caregiver and other key stakeholders (e.g., probation, child welfare, etc.)
- MST staff must be able to have a “lead” role in clinical decision making for each case
- Highly structured weekly clinical supervision and Quality Assurance (QA) processes

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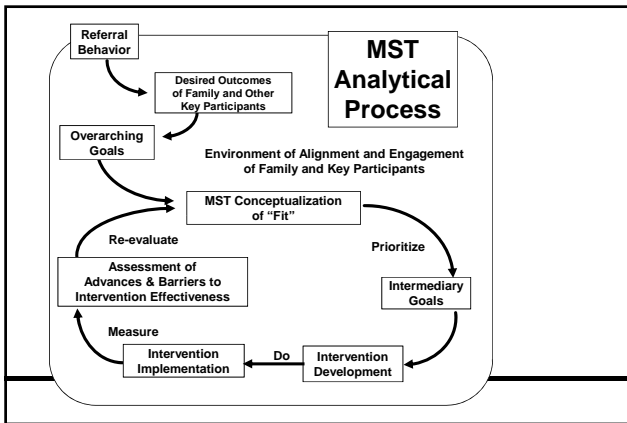
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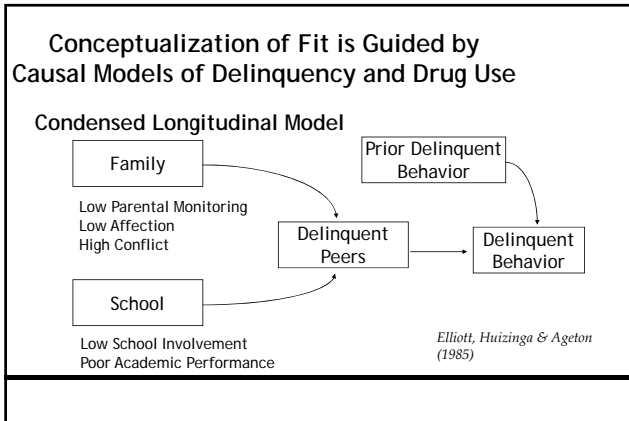
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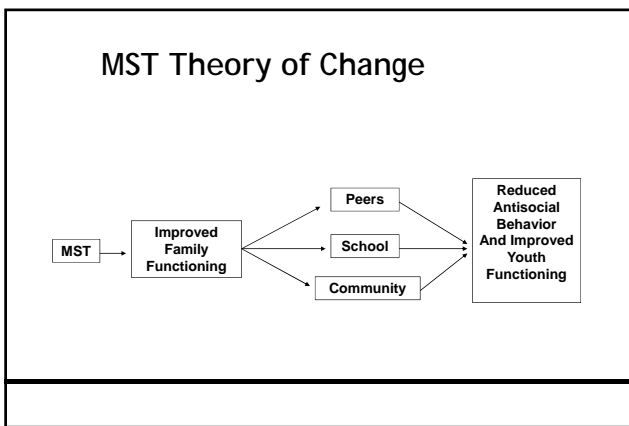
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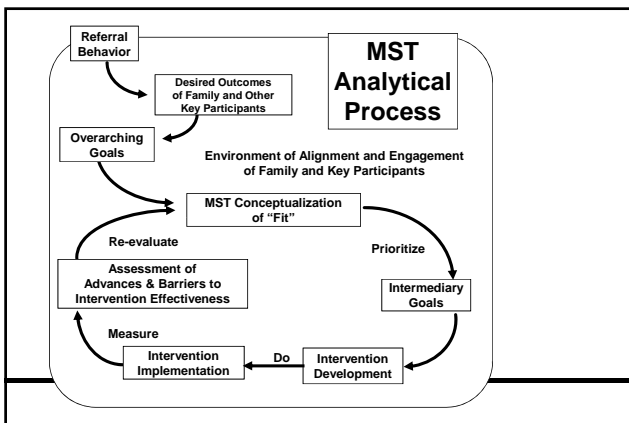
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### Intervention Development

Based on 9 MST treatment principles -  
operationalize MST treatment fidelity  
Draws from research-based treatment techniques

- Behavior therapy
- Parent management training
- Cognitive behavior therapy
- Pragmatic family therapies
  - Structural Family Therapy
  - Strategic Family Therapy
- Pharmacological interventions (e.g., for ADHD)

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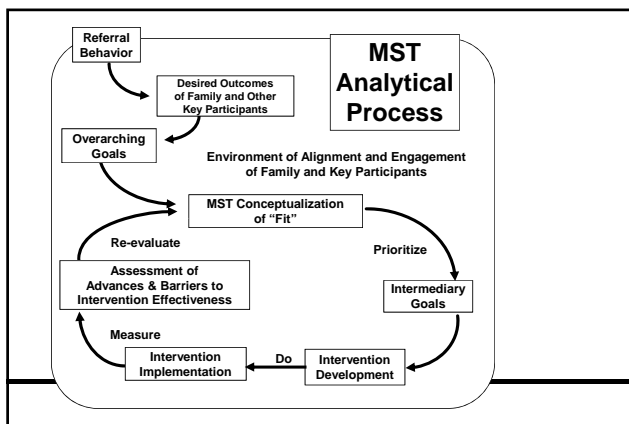
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### Treatment Process Supported by MST Quality Assurance System

Elements of the MST Quality Assurance system:

- Research-validated adherence technologies
- Development planning for all professionals
- Structured training (orientation and booster)
- On-the-job training (on-going, weekly expert case review and consultation)
- Weekly clinical supervision

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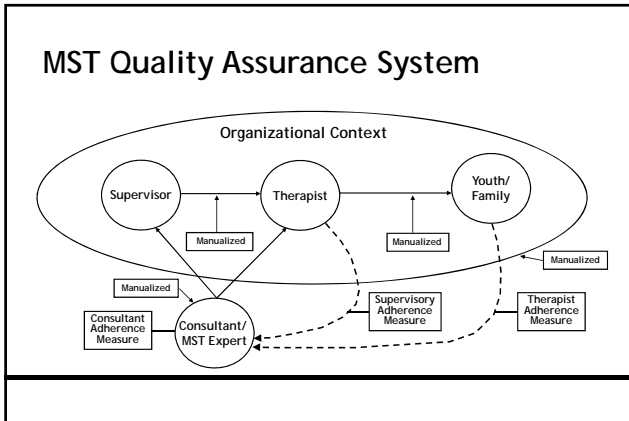
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### Why the Emphasis on Quality Assurance?

Research-based adherence measures:

- Youth criminal charges 36% lower for families with high adherence scores than for families with low adherence scores
- Youth criminal charges 53% lower for families with high supervisor adherence scores than for families with low supervisor adherence scores
- Consultant/MST expert adherence predicts improved therapist adherence and improved youth outcomes

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### MST's Research Heritage: 30+ Years of Science

**18 Randomized Trials and 2 Quasi-Experimental Trials Published (>2000 families participating)**

- 8 with serious juvenile offenders
  - 3 independent randomized trials
- 2 with substance abusing or dependent juvenile offenders
- 3 with juvenile sexual offenders
- 3 with youths presenting serious emotional disturbance
  - 1 independent quasi-experimental trial
- 1 with maltreating families
- 3 with adolescents with chronic health care conditions
  - all independent (diabetes, obesity, HIV, asthma)

**Other randomized trials are in progress**

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### Consistent Outcomes

**In Comparison with Control Groups, MST:**

- Decreased long-term rates of rearrest 25% to 70%
- 47% to 64% decreases in long-term rates of days in out-of-home placements
- Improved family relations and functioning
- Increased mainstream school attendance
- Decreased adolescent psychiatric symptoms
- Decreased adolescent substance use
- Higher consumer satisfaction

**But, none of this happens without adherence to MST**

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### Case Mix and Diversity

- Youth with serious clinical problems and their families
- High rates of economically impoverished families, single parent families, and minority families
- Demonstrated effectiveness with African American and multiracial Hawaiian youth (Huey & Polo, 2010 review)
- Outcomes for Hispanic youth same as for African American and Caucasian youth in 2,000 family MST transportability study (Schoenwald)

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### Randomized Trial 118 Substance Abusing/Dependent Offenders

MST vs. Community Treatment (Henggeler et al., 1999)

**Substance Use**

- Greater post-treatment reductions for MST

**Favorable Treatment Effects at 4-Year Follow-Up**

- violent criminal behavior (.15 versus .57 arrests per year)
- higher rates of marijuana abstinence (55% versus 28% [based on urine screens])

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### Juvenile Drug Court Study (2006)

161 juvenile offenders meeting DSM-IV criteria for substance abuse or dependence

Randomized to:

- Family court and treatment as usual (TAU)
- Drug court and TAU
- Drug court and MST
- Drug court and MST with contingency management

12 month follow-up outcomes

<sup>12</sup>Henggeler et al., 2006

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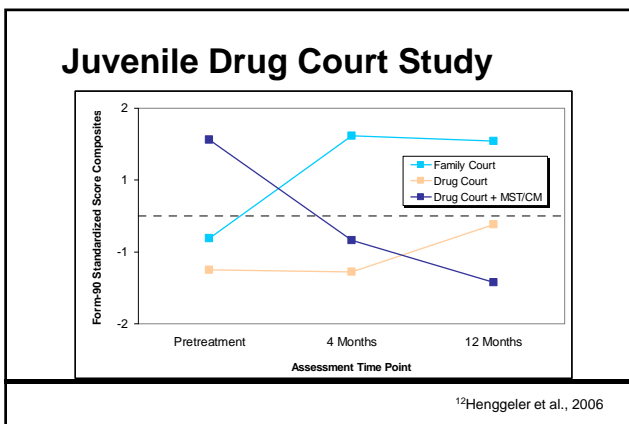
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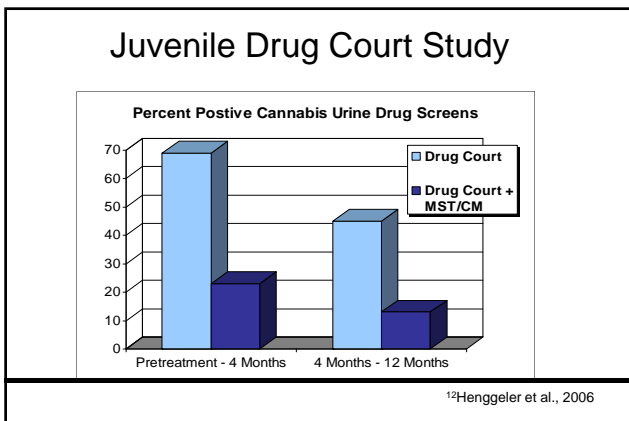
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The Missouri Delinquency Project  
Long-term (14 year) Follow-up Study

Schaeffer, C.M., and Borduin, C.M. (2005)

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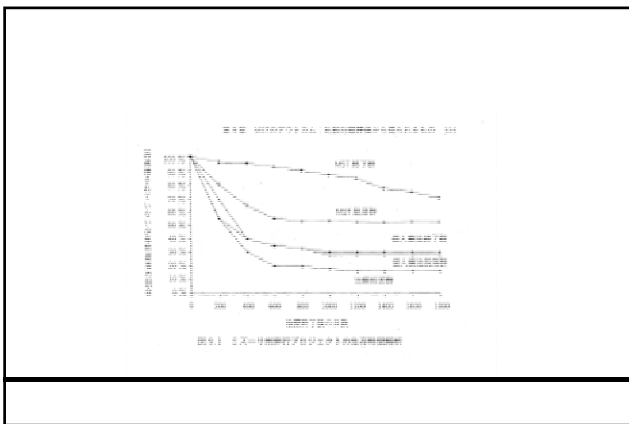
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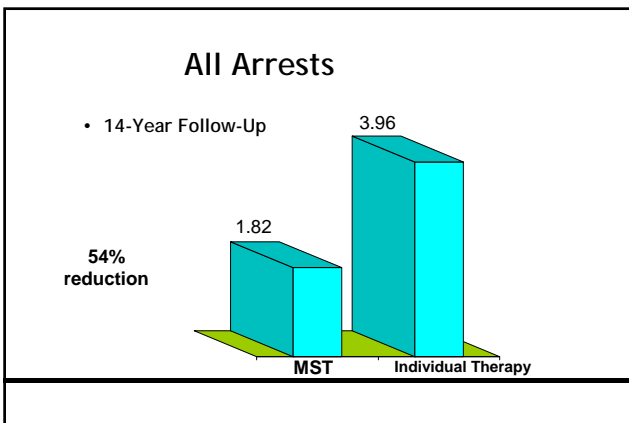
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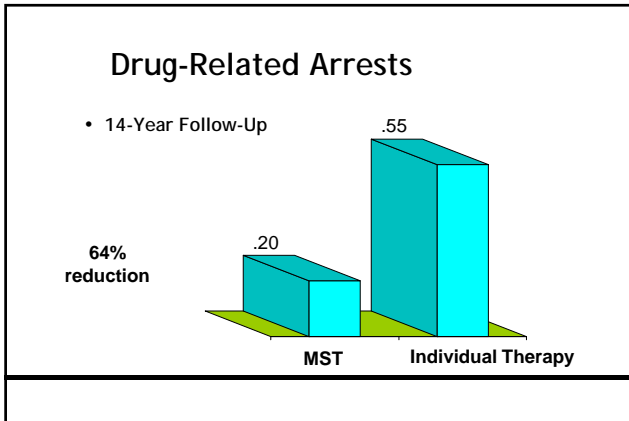
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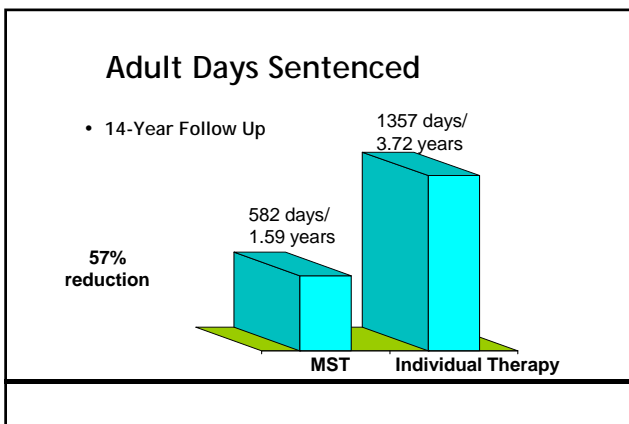
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- ### MST "Champions" & Advocates
- U.S. Surgeon General: Reports on Mental Health and Youth Violence
  - National Institutes on Health (NIH)
  - U.S. Department of Justice - OJJDP
  - National Institute on Drug Abuse (NIDA), Center for Substance Abuse Treatment (CSAT), and Center for Substance Abuse Prevention (CSAP)
  - Washington State Institute for Public Policy (WSIPP)
  - "Blueprints for Violence Prevention"

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**Bottom Line:  
Why is MST Successful?**

- Treatment targets known causes of delinquency: family relations, peer relations, school performance, community factors
- Treatment is family driven and occurs in the youths' natural environment
- Providers are accountable for outcomes
- Staff are well trained and supported
- Significant energies are devoted to developing positive interagency relations

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**Contingency Management**

One of the most extensively validated interventions for substance abusing individuals

For example:

Lussier et al. (2006) meta analysis

Higgins, Silverman, & Heil (2008)

Azrin and Donohue's work

Petry (2000) and Roozen et al. (2004) reviews

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**CM as Used by FSRC**

- Family based (e.g., caregivers test for drugs and apply contingencies)
- Frequent urine drug screens with consequences
- CBT - functional analyses of substance use, self-management planning, drug refusal skills
- Much less intensive than MST
- Applicable to broad array of treatment providers

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### As Used in Multi-Site Juvenile Drug Court Study

- Six JDCs randomized to intervention conditions:  
CM/Family Engagement vs. Treatment as Usual (TAU)
- CM/Family Engagement Intervention
  - Contingency Management
    - Cognitive-behavioral strategies aimed at identifying and managing triggers for substance use
    - Frequent urine drug screens with vouchers tied to the results of those screens
  - Family Engagement
    - Synthesis of engagement strategies used by evidence-based family treatments for juvenile offenders (e.g., MST, FFT)

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### Preliminary Analyses

- Participants to date
  - 102 youth (aged 12-17 years) and their families
  - 126 juvenile drug court team members
    - 51 clinicians
    - 75 drug court professionals (e.g., judges, coordinators, public defenders)
- Year 2 of study recently ended and preliminary analyses examined between-groups (CM/Family Engagement vs. TAU) effects on youth substance use and self-reported delinquent behavior

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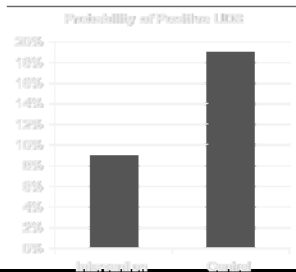
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### Preliminary Results (Substance Use)

- UDS: Binomial trial examined whether the probability of a positive UDS differed by condition, after accounting for the number of screens administered to each youth
  - Results revealed a significant between-groups effect ( $p < .001$ )
- TLEB: Multilevel modeling tested for change in self-reported substance use over time by condition
  - Results revealed significant decreases in self-reported substance use for both conditions ( $p < .001$ ), but no between-groups effect ( $p > .05$ ).



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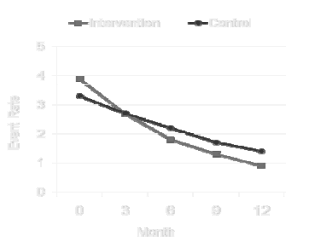
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### Preliminary Results (Delinquency)

- SRD: Multilevel modeling tested for change in self-reported delinquency over time by condition
- Results revealed significant decreases in delinquency for both conditions ( $p < .001$ )
- Results also revealed a significant between-groups effect ( $p < .01$ ), indicating more rapid reductions in delinquency among youth in the intervention v. control condition



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### Conclusions

- MST - family driven; aimed comprehensively for most serious clinical problems; intensive; pragmatic; not easily adopted, but widely transported
- CM - family-based; aimed specifically at adolescent substance abuse; pragmatic; more easily adopted and transportable

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### Today's Word: Thanks for Coming



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**For More Information**

- FSRC Substance-Related Research:  
<[musc.edu/fsrc](http://musc.edu/fsrc)>

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