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**The Economic Benefits of  
Multisystemic Therapy in a  
Community Setting:  
Use of Cost-Benefit Analysis for  
Program Evaluation and Advocacy**

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**Learning Objectives**

- Attendees will be able to describe the overall evaluation approach, methods and results for New Mexico's statewide MST program.
- Attendees will be able to describe the economic benefits of MST and the methodology used to conduct a cost-benefit analysis for an evidence-based program such as MST.
- Attendees will be able to discuss how they could engage in cost-benefit analysis as part of their own program evaluation efforts, and how they might use cost-benefit data to engage in advocacy for evidence-based programs

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### Today's Discussion

- Background
- Description of New Mexico's MST Outcome Tracking Project (OTP)
- The Cost-Benefit Analysis
- Summary and Next Steps

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### The Center for Effective Interventions

- Started in 2000 by several Colorado agency administrators to promote the development of Evidence-Based Practices (EBPs)
- Part of Metropolitan State University of Denver, Department of Human Services

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### Evolving Mission of Center for Effective Interventions (CEI)

- Originally (2000) to develop Multisystemic Therapy (MST) teams throughout Colorado
- Development of MST teams in AZ & NM (2002-Present)
- Expanded menu of EBPs (2005)
- Incorporated promotion of implementation science in 2010

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### Current Status of CEI

- Supporting 25 MST teams in 5 states
- Ongoing fidelity and outcome monitoring
- EBP assistance to communities and agencies
- Support for statewide policies to encourage EBP's and utilization of implementation science

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### Rationale for Evaluation

- Desire for local data
- Funders and supporters need more information about youths who receive services
  - Sociodemographic
  - Severity at admission
  - Short- and long-term outcomes

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### Outcomes Tracking Project

- Started in Colorado
  - Feasibility Study - 2003
- New Mexico joined – 2005
- Unique Opportunities in NM
  - Legislative requirement Recidivism
  - Behavioral Healthcare Claims - 2011

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## Outcomes Tracking Project Partners

- Center for Effective Interventions
- New Mexico Children, Youth and Families Department
- Ten New Mexico Providers
- Focus Research & Evaluation
- MST Institute (MSTI)
- Advanced Behavioral Health (ABH)

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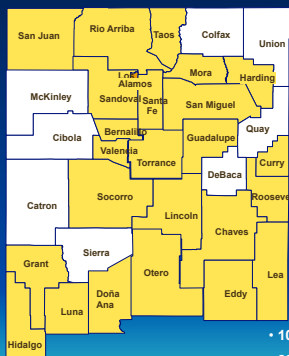
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## Penetration of MST in New Mexico (December 2012)



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## New Mexico OTP: Elements

- Enhanced MSTI Website
  - Secure access
  - Enhanced admission, discharge forms
  - Custom follow-up forms (6, 12, 18, 24 mos. capacity)
  - Standard and customized reports
  - Download utility (including TAM, SAM)

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## New Mexico OTP: Elements

- **Independent program evaluator**
  - Focus Research & Evaluation
  - Overall management
  - Annual Outcomes Tracking Reports; statewide and provider-based

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## New Mexico OTP: Elements

- **Data**
  - **Admission and Discharge**
    - Completed by MST therapist
  - **Post-Discharge**
    - 6 and 12 months (\$10 stipend for caregiver)
    - Outside contractor: Advanced Behavioral Health
    - Phone attempt with six-week window

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## New Mexico OTP: Elements

- **Behavioral Health Claims**
  - Inpatient Psychiatric Services
  - Intensive Outpatient
  - Residential
  - Outpatient
  - Recovery
  - Value Added Services
- **Juvenile Justice Database**
  - Recidivism
  - Opportunity to expand

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## New Mexico OTP: Elements

- **OnDemand Outcomes Reporting**
  - Customized reports (user/access-defined population)
    - Project-wide
    - Site, Team, Therapist
  - Outcomes
    - Admission to Discharge
    - Discharge to 6 months Post-Discharge
    - Discharge to 12 months Post-Discharge
  - Domains
    - Out-of-Home, At Home, School, Productivity, Arrests, Improved Mental Health and Substance Abuse Probs.

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## Dimensions of Interest

- Sociodemographic
- Severity and Functioning
  - Out of Home Services/Placement
  - Legal
  - Mental Health & Substance Abuse Symptoms
  - Productivity (School, Work)
  - Instrumental Domains
  - Service Utilization and Cost

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## Outcome Project Findings with Statewide Averages Ranges across Organizations

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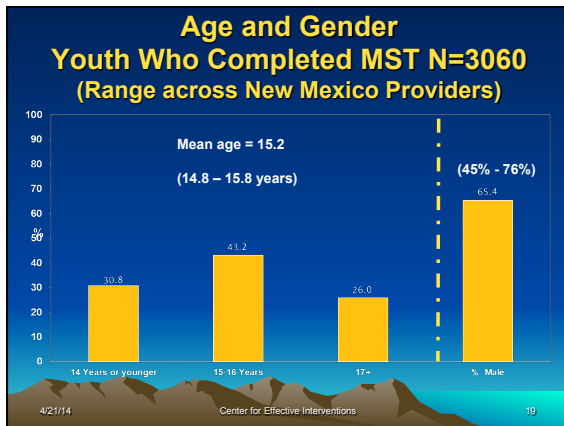
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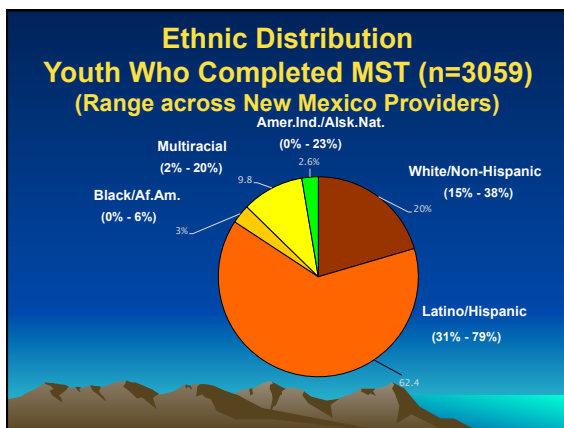
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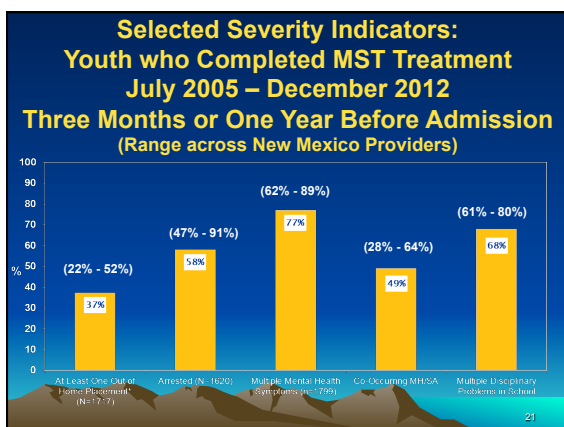
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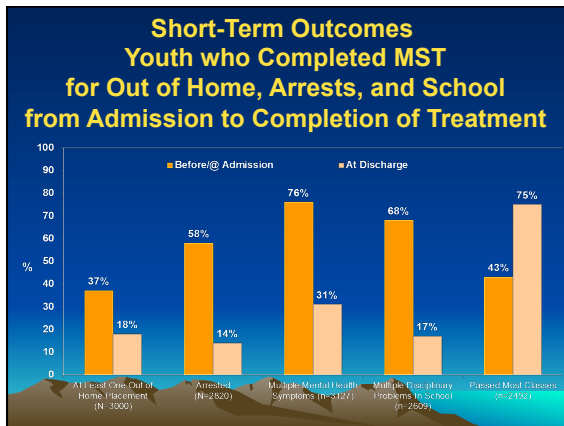
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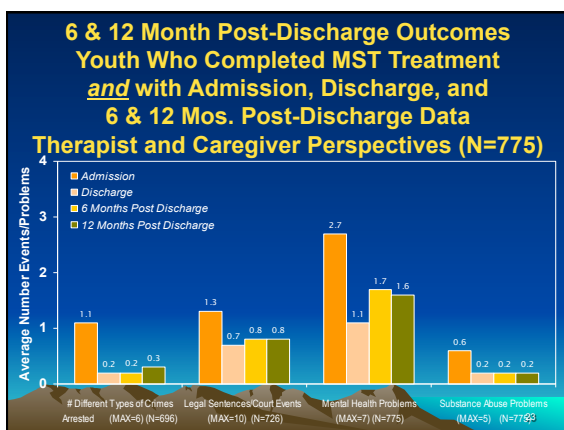
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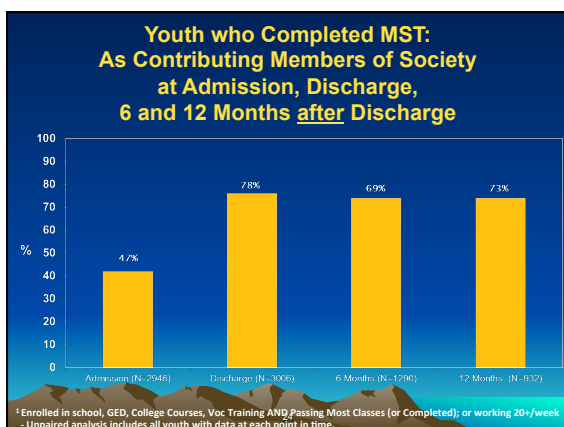
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## Recidivism

- CYFD Juvenile Justice Services Database
  - Family Automated Client Tracking System
  - **2,635** youth completed MST July 2005 – Dec. 2012
- **Survival Analysis Results**
  - 68% likelihood of youth NOT having charges filed within first year after discharge from MST
  - 61% likelihood of youth NOT having charges filed within two years after discharge from MST

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## Cost-Benefit Analysis

Do effects of MST  
translate into cost savings?

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## Cost-Benefit Analysis

- 5 steps
  - Identify relevant costs and benefits
  - Value costs and benefits
  - Compare costs vs. benefits
  - Adjust dollar values to baseline year
  - Apply discount rate to future benefits
- Not included in most outcome studies

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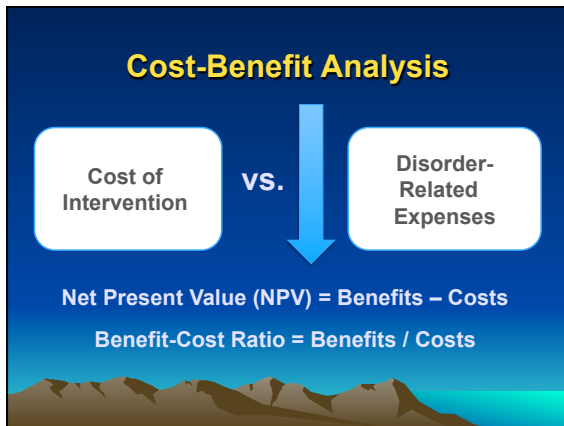
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### Current Study

- Should NM invest Medicaid dollars in MST?
  - Perspective of NM Medicaid program
  - Expenditures on MST vs. other mental health services
- Data source: service utilization records from insurance provider claims database

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### Sample

- $n = 1,623$  juvenile offenders who received MST in New Mexico (7/2005 – 12/2011)
- Age at admission:  $M = 15.2$
- 65% male
- 61.1% Hispanic, 20.5% White, 3.6% Black, 2.3% American Indian, 10.6% multiracial, 1.9% other
- 35.9% two-parent household; 11.1% single-parent household; 11.1% other

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### MST Costs

- Medicaid charges per youth = \$11,499
- Costs related to:
  - Personnel (e.g., salaries, health insurance)
  - Non-personnel expenditures (e.g., supplies, rent, utilities)
  - MST training and licensing
  - Cell phone service contracts
  - Mileage reimbursement for travel

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### MST Benefits

- Monthly charges for mental health services
  - 6 months pre treatment
  - During treatment ( $M = 4.5$  months)
  - 24 months post treatment
- Reduced charges = benefits

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### MST Benefits

<u>Category</u>	<u>Per unit charge</u>
Inpatient	\$1194
Intensive Outpatient	\$27
Residential	\$289
Outpatient	\$51
Recovery	\$10
Valued Added Services	\$13

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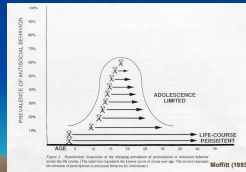
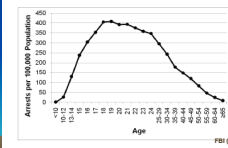
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## MST Benefits

- Expect that service use would have continued without intervention
  - Crime-age curve
  - Life-course persistent offenders

Figure. Arrest rates for violent crime (murder, rape, robbery, aggravated assault) by age, United States, 2011




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## Analysis Parameters

- Baseline year: 2014
- Discount rate: 3% per year

Today



VS.

In One Year




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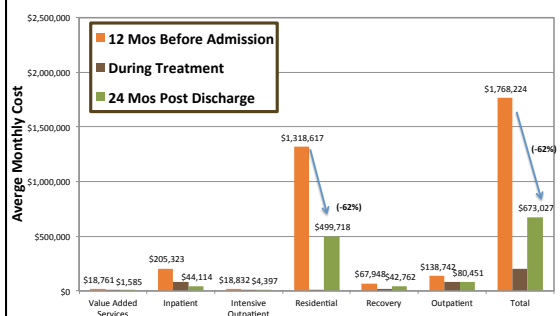
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## Reductions in Average Monthly Medicaid Charges




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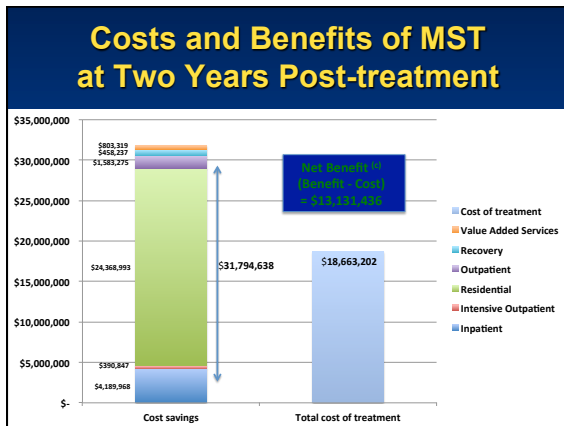
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### Findings

- MST is cost-beneficial for NM Medicaid program

NPV	Benefit-cost ratio
\$13,131,436	1.70

- \$1.70 recovered for each dollar spent
- Investment recovered within 2 years
- Largely driven by reductions in residential

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### Randomized Trials Also Show Economic Benefits of MST

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## Randomized Trials

- Sawyer & Borduin (2011): 22-year follow-up ( $N = 176$ )
- Wagner, Borduin, Sawyer, & Dopp (2014): 25-year follow-up of siblings ( $N = 129$ )
- Borduin, Schaeffer, & Heiblum (2009): 9-year follow-up ( $N = 48$ )

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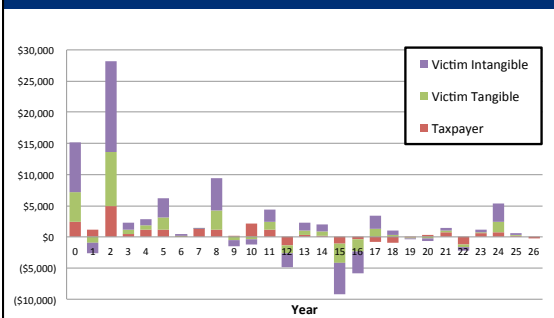
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## Annual Benefits of MST Over IT for Sibling Pairs




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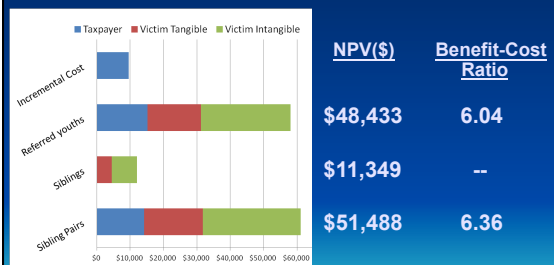
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## Costs and Cumulative Benefits of MST per Case




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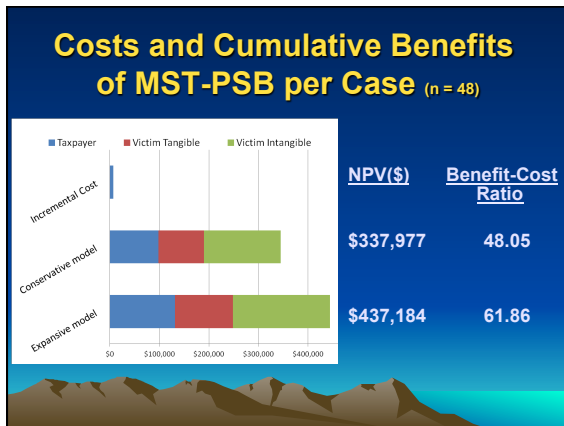
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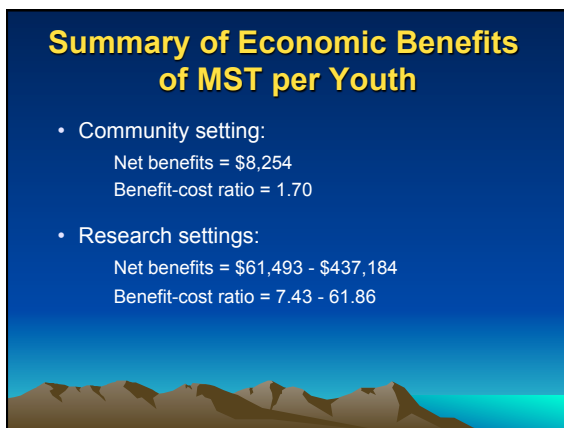
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## Implications of Cost-Benefits

- Integration of criminal justice, mental health services data would capture more savings
- Necessary to disseminate economic findings to policymakers and administrators
- Other comprehensive, family-based treatments may produce similar benefits

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## Impact - National

CO/NM OTP database recognized as one of the most comprehensive collection systems available nationally due to clinical, cost and sustainability information collected over 7.5 years

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## Impact -State

- Colorado
  - Less than hoped for
  - Possibility of effecting emerging state infrastructure
- New Mexico
  - Part of institutionalized continuum of care
  - Program sustainability through a number of MCO iterations
  - Effect when tsunami came ashore in 2013 forcing change in 11 out of 23 MST teams

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## Impact - Local

- Individual provider utilization
  - With provider Boards and critical decision makers
  - With community stakeholders

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## Questions

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## Contact Information

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