The Role of Medicaid Enrollment and Outpatient Service Use in Jail Recidivism Among Persons With Severe Mental Illness

A presentation based on the work of James P. Morrissey, Gary S. Cuddeback, Alison Evans Cuellar, Henry J. Steadman

Prepared by Adrienne Rooks
UNC School of Social Work
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Introduction

This presentation is based on study that explores whether Medicaid enrollment and receiving behavioral health services are associated with reduced reincarceration for jail detainees with severe mental illness.
8% of jail detainees have a severe mental illness (SMI) (Teplin, 1990; Teplin, Abram, & McClelland, 1996; DHHS, 2004)
- One million jail bookings/year of persons with SMI

Efforts to enhance collaboration between jails and mental health providers (Council of State Governments, 2004; Messaro, 2004)
- Developed primers to educate on how each system operates and on ways to enhance partnerships
- Technical assistance centers provide guidance to the justice community (TAPA, 2004)
  - Co-occurring substance abuse disorders
  - Mental disorders
  - Programs for jail diversion
- Programs to ease transition from prison to the community (Lattimore, Brumbaugh, Visher, et al, 2004)

However, most jails and mental health providers work independently of each other
Jails get up to $400/case to report inmates receiving SSI

Subsequently, benefits are suspended or ended to prevent inappropriate income assistance (Bazelon, 2001)

- Medicaid benefits linked to disability payments
- Without insurance, inmates with SMI may be deterred from seeking services or have problems finding a provider (Morrissey, Steadman, Dalton et al, 2006).
Previous Research

- Of detainees booked into 2 large urban jails over 5 years, 97% were fully released with Medicaid benefits intact (Morrissey et al, 2006)
  - The 3% without benefits had significantly longer incarcerations
  - At release, those with benefits obtained services quicker and more often in the 90 days after release (Morrissey, Dalton, Steadman, et al, 2006)

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Research Questions

1. Does the combination of having Medicaid at jail release and receiving community-based mental health services after release reduce recidivism in a 12-month postrelease period for persons with SMI?

2. Does this combination lead to more time in the community for persons with SMI before subsequent arrest?

3. Does this combination lead to less serious subsequent crimes for persons with SMI?
Purpose

- To determine the relationship between Medicaid enrollment and utilization of behavioral health services on recidivism of jail detainees with SMI.
Study Design

- Quasi-experimental study design using linked administrative data

- Unit of analysis
  - Jail detentions, not unique person because Medicaid status can fluctuate on a monthly basis
Study Sites

- King County (Seattle)
  - 34\textsuperscript{th} largest jail jurisdiction in US
- Pinellas County (Clearwater-St. Petersburg, FL)
  - 33\textsuperscript{rd} largest jail jurisdiction in US
- Sites selected because administrative data could be connected across Medicaid, prison, and mental health agency records
Participants

- King County
  - 5,189 jail releases involving 2,095 with SMI

- Pinellas County
  - 2,149 releases involving 1,210 persons with SMI
Data Sources

- Common sample logic used to identify study participants in each county
- Pinellas County
  - Medicaid claims files used to locate individuals with SMI
  - These individuals were linked to a detention file from the jail

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Data Sources Cont.

- King County
  - County mental health files used to locate individuals with SMI
  - This list was linked with Medicaid enrollment records and then the detention file from the jail
  - To identify substance dependence diagnosis, data linked to the State of WA’s Division of Alcohol and Substance Abuse Treatment and Report Generation Tool data information system
DM-SIV Codes

- Codes used to identify individuals with SMI
  - Schizophrenia (295)
  - Affective disorders (296, excluding 296.2)
  - Delusional Disorder (297.10)
  - Psychotic disorder NOS (298.9)

- Substance dependence (codes 303.90, 204.0 and 305.0)
  - Used instead of substance abuse to identify individuals with severe and chronic substance use
Participant Characteristics

- Enrolled in Medicaid at some point during the two-year study period
- Detained in jail at least once

Medicaid status determined at time of release and assigned to Medicaid or non-Medicaid groups

- Non-Medicaid inmates either lost enrollment or had not yet been enrolled at time of release
Study Period

- King County
  - January 1, 1996 through December 31, 1997

- Pinellas County
  - October 1, 1998 through September 30, 2000

- Inmates followed prospectively for an additional year following release to identify later detentions

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Measures: Medicaid Status

- Medicaid enrollment changes regardless of whether in jail or in the community

- Two methods used to determine Medicaid status
  - Dichotomously at time of release
    - Medicaid or Non-Medicaid
  - Rate variable
    - # of postrelease Medicaid-enrolled days
    - # of postrelease Medicaid-eligible days until next detention or end of study period
Measures: Mental Health Service Rates

- Outpatient mental health service rates
  - \# postrelease outpatient service days received
  - \# number of days eligible for outpatient services
- Days hospitalized subtracted from the eligible days
- Service days: Any day that direct or indirect health service was received
  - E.g., telephone contacts, advocacy and linkage, individual or group therapy, medication checks

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Measures: Mental Health Service Rates Cont.

- Outpatient mental health service rate
  - Categorized into low-, medium-, and high-use based on frequency distributions for services in each county
  - Multivariate results from preliminary analyses indicated no significant difference from a uniform rate categorization
- Therefore, county-specific scoring was used in final analysis

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Data Analysis

- Analyses done with detentions as the unit of analysis
- Analyzed by county
- Bivariate analyses using dichotomous Medicaid measure
  - Dichotomous variable created because of low substance abuse service use
- Multivariate analyses using Medicaid and outpatient mental health and substance abuse service rates
Bivariate Analyses

- Research question 1: How many?
  - Chi square test conducted
    - Independent variable: group status
    - Dependent variable: number of subsequent detentions

- Research question 2: How soon?
  - Independent-groups t test conducted
    - Independent variable: group status
    - Continuous dependent variable: days to next detention

- Research question 3: How serious?
  - Chi square test conducted
    - Independent variable: group status
    - Dependent variable: crime intensity and violence
Results: Bivariate Analysis

Subsequent Detentions of Persons With SMI released from King County (N=5,189), by Medicaid Status at Time of Release

<table>
<thead>
<tr>
<th>Subsequent Detentions</th>
<th>Medicaid</th>
<th>No Medicaid</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>32.3%</td>
<td>28.8%</td>
</tr>
<tr>
<td>1 or 2</td>
<td>40.1%</td>
<td>38.3%</td>
</tr>
<tr>
<td>3 or more</td>
<td>27.7%</td>
<td>32.9%</td>
</tr>
</tbody>
</table>

Subsequent Detentions
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Results: Bivariate Analysis Cont.

Subsequent Detentions of Persons With SMI released from Pinellas County (N=2,419), by Medicaid Status at Time of Release

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Results: Bivariate Analysis Cont.

Time to Next Detention of Persons With SMI released from King County (N=5,189), by Medicaid Status at Time of Release

<table>
<thead>
<tr>
<th>Time to Next Detention</th>
<th>Medicaid</th>
<th>No Medicaid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 30 Days</td>
<td>15.5%</td>
<td>17.2%</td>
</tr>
<tr>
<td>Within 60 Days</td>
<td>25.3%</td>
<td>25.2%</td>
</tr>
<tr>
<td>Within 90 Days</td>
<td>31.9%</td>
<td>32.7%</td>
</tr>
<tr>
<td>Within 365 Days</td>
<td>57.3%</td>
<td>59.6%</td>
</tr>
</tbody>
</table>

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Results: Bivariate Analysis Cont.

Time to Next Detention of Persons With SMI released from Pinellas County (N=2,419), by Medicaid Status at Time of Release

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Results: Bivariate Analysis Cont.

Seriousness of Subsequent Crime of Persons With SMI released from King County (N=5,189), by Medicaid Status at Time of Release

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Seriousness of Subsequent Crime of Persons With SMI released from Pinellas County (N=2,419), by Medicaid Status at Time of Release

Results: Bivariate Analysis Cont.
Multivariate Analyses

- Research question 1: How many?
  - Negative binomial regression model used to determine correlation between the number of subsequent detentions after a prior detention and the Medicaid and service utilization rate variables
  - Controlled for race, gender, age, dual substance dependence and mental health diagnosis, and SSI-SSDI
  - Generalized estimating equations (GEEs) used to account for correlations among repeated measures (Liang & Zeger, 1989)
Multivariate Analyses Cont.

Research question 2: How soon?
- Cox proportional hazards model was estimated to determine the correlation among days until next detention and the Medicaid and service utilization rate variables
- Controlled for race, gender, age, dual substance dependence and mental health diagnosis, and SSI-SSDI
- Special hazards model used to create variance estimates for dependent observations, coefficient estimates, and adjusted standard errors (Solomon & Draine, 1995)
Multivariate Analyses Cont.

Research question 3: How serious?
- Separate logistic regression modes used to determine the correlations among crime intensity and violence and the Medicaid and service utilization rate variables
- Controlled for race, gender, age, dual substance dependence and mental health diagnosis, and SSI-SSDI
- GEEs used to account for correlations among repeated measures
Multivariate Analyses Cont.

- Policy Variables
  - Medicaid and outpatient mental health and substance abuse service use rates
- Association between policy variables and subsequent detentions
  - Covariates and policy variables were modeled hierarchically in each analysis
    1. Model 1: Demographic variables and clinical variables
    2. Model 2: SSI-SSDI indicator
    3. Model 3: Medicaid rate variable
    4. Model 4: Outpatient mental health and substance abuse service rate variables

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## Multivariate Results

### Predictors of Frequency of Subsequent Detentions within 365 Days after Jail Release of Persons with SMI in King County

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 3</th>
<th></th>
<th></th>
<th>Model 4</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
<td>OR</td>
<td>B</td>
<td>SE</td>
<td>OR</td>
</tr>
<tr>
<td>Medicaid rate</td>
<td>-.41</td>
<td>.09</td>
<td>.66*</td>
<td>-.43</td>
<td>.09</td>
<td>.65*</td>
</tr>
<tr>
<td>Outpatient SA</td>
<td></td>
<td></td>
<td></td>
<td>-.17</td>
<td>.11</td>
<td>.84</td>
</tr>
<tr>
<td>Outpatient MH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate use</td>
<td>-.01</td>
<td>.07</td>
<td>.99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High use</td>
<td></td>
<td>.14</td>
<td>.10</td>
<td></td>
<td></td>
<td>1.15</td>
</tr>
</tbody>
</table>

*aAll odds ratios control for race, gender, age, dual mental health and substance abuse diagnosis and for receipt of SSI and SSDI. Multinomial logit models with GEE were used in these analyses.  
*p<.001, for differences from 1.0 (no effect) for each predictor variable

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## Multivariate Results Cont.

### Predictors of Frequency of Subsequent Detentions within 365 Days after Jail Release of Persons with SMI in Pinellas County

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pinellas County (N=2,419)</th>
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</tr>
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<tbody>
<tr>
<td></td>
<td>Model 3</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
<td>OR</td>
</tr>
<tr>
<td>Medicaid rate</td>
<td>.20</td>
<td>.16</td>
<td>1.22</td>
</tr>
<tr>
<td>Outpatient SA</td>
<td>.11</td>
<td>.13</td>
<td>1.12</td>
</tr>
<tr>
<td>Outpatient MH</td>
<td>.16</td>
<td>.11</td>
<td>1.17</td>
</tr>
<tr>
<td>Moderate use</td>
<td>.18</td>
<td>.16</td>
<td>1.20</td>
</tr>
<tr>
<td>High use</td>
<td></td>
<td></td>
<td></td>
</tr>
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*aAll odds ratios control for race, gender, age, dual mental health and substance abuse diagnosis and for receipt of SSI and SSDI. Multinomial logit models with GEE were used in these analyses. *p*<.001, for differences from 1.0 (no effect) for each predictor variable

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## Multivariate Results Cont.

Predictors of Time to Subsequent Detentions for Persons with SMI Released from Jails in King County

<table>
<thead>
<tr>
<th>Variable</th>
<th>King County (N=5,189)</th>
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</tr>
<tr>
<td>Outpatient MH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate use</td>
<td></td>
<td>.88</td>
<td>.95</td>
</tr>
<tr>
<td>High use</td>
<td></td>
<td>.43</td>
<td>.65**</td>
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*p<.05, testing differences from 1.0 (no effect) for each predictor variable

**p<.001, testing differences from 1.0 (no effect) for each predictor variable

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# Multivariate Results

Predictors of Time to Subsequent Detentions for Persons with SMI Released from Jails in Pinellas County\(^a\)

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<tr>
<td></td>
<td>B</td>
<td>SE</td>
<td>OR</td>
</tr>
<tr>
<td>Medicaid rate</td>
<td>-.23</td>
<td>.10</td>
<td>.79*</td>
</tr>
<tr>
<td>Outpatient SA</td>
<td>-.08</td>
<td>.10</td>
<td>.92</td>
</tr>
<tr>
<td>Outpatient MH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate use</td>
<td></td>
<td></td>
<td></td>
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\(^a\)All odds ratios control for race, gender, age, dual mental health and substance abuse diagnosis and for receipt of SSI and SSDI. A WLW (Wei, Lin, And Weissfeld) survival model was used for this analysis.

\(^*\)p<.05, testing differences from 1.0 (no effect) for each predictor variable

\(^**\)p<.001, testing differences from 1.0 (no effect) for each predictor variable

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Findings

- For persons with SMI, Medicaid enrollment and behavioral health service use is associated with some improvement in criminal justice outcomes.

- Persons with SMI and Medicaid benefits at release:
  - 16% fewer detentions
  - On average, reduced jail recidivism

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Unexpected Findings

In Pinellas County, higher levels of outpatient mental health service use were linked with reduced time spent in the community before a subsequent detention.

- Possible explanation: Those at highest risk were targeted to receive more services.
- Without adequately controlling for severity, services can appear to be harmful – the current study had weak controls for severity.
In King County, higher rates of mental health service use was related to increased likelihood of having a violent next offense

- Possible explanations
  - Service providers with regular contact with judicial system often use the leverage of rearrest for technical violations to promote treatment adherence (Solomon & Draine, 1995)
  - Propensity of providers to target services to those whom they suspect as having increased chance for violent behavior
Limitations

- Extent of generalizability is unknown
- Sample population had already been detained, so arrest and detention rates are not generalizable to whole SMI population
- Sample relied on administrative data from two counties – thereby limiting the number and range of control variables
  - No independent measure of mental health status or severity for participants
  - Unknown whether service use rates reflect accurate levels for this population
Mental illness and criminal behavior research shows the influence of other variables on criminal behavior (Draine, Salver, Colane et al, 2002; Bonta, Law, & Hanson, 1998; Link, Monahan, Stueve et al., 1999, Monhan & Steadman, 1984)

- Symptom severity
- Social functioning
- Education
- Social connectedness

These unmeasured variables could explain the associations this study attributes to Medicaid status.
Limitations Cont.

- Medicaid status as a related variable for something that influences Medicaid enrollment (e.g., having a fixed address or family support)

- Medicaid often accompanies SSI, so findings could be driven by income support
  - However, insurance status rather than income likely influences mental health service utilization
Limitations Cont.

- Data only refers to jails, not prisons
- Currently, no published data exists on recidivism of released prisoners with SMI
Discussion

- Medicaid facilitates access to behavioral health services
- Combination of benefits and services keeps individuals in functioning in the community for longer
- 68-69% of detentions were reincarcerated during the 1 year follow up
  - Highlights the revolving-door experience many persons with SMI experience with jails

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What Can Be Done?

- Legislation prohibiting the detention of people with SMI for misdemeanors
  - The majority of people with SMI are jailed on misdemeanor charges
    - Over 65% of the charges in King and Pinellas county were misdemeanors
- Increase community-based treatment services

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Current Legislation

- Senate Bill 5533 (Drake, Mueser, Brunette et al, 2004)
  - Goal: stop criminalization of mental illness by sending offenders to alternative mental health treatments
  - Supported by WA Association of Sheriffs and Police Chiefs and the state chapter of the NAMI

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Policy Implications

- Availability and effectiveness of treatment services to which people with SMI are diverted would be crucial to the success of a legislative ban.
  - Diversion to “usual care” services has been shown ineffective for many people with SMI (Steadman & Naples, 2005).
Intensive, evidence based interventions have not been shown to be sufficient in preventing jail recidivism for people with SMI (Bond, Drake, Mueser, et al, 2001).

Research on assertive community and integrated dual diagnosis treatment suggest that something is needed in addition to intensive community-based treatment (Calsyn, Yonker, Lemming, et al, 2005; Chandler & Spicer, 2006; Drake, Morrissey, & Muser, 2006, Fisher, Silver, & Wolff, 2006).
Comprehensive Jail Diversion: A Layered Approach

- Less intensive care management and treatment programs to target those with less severe disorders.
- More intensive and costly services (e.g., assertive community treatment) to target those with the most severe disorders who are at highest risk for recidivism and hospitalization.
- Research is needed to show the cost-effectiveness of this approach.

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Conclusions

- Having Medicaid at jail release was related to reduced recidivism and decreased jail days
- Previous studies found an association between Medicaid and increased access to community-based services
- However, these advantages were small
- Routine mental health services are not adequate to prevent recidivism among persons with SMI
- Additional research is needed to determine appropriate care for people with SMI in the criminal justice system

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Drake RE, Morrissey JP, Mueser KT: The challenge of treating forensic dual
severe mental illnesses and co-occurring substance use disorders.
Finding the Key to Successful Transition From Jail to Community. Washington, DC,
Fisher WA, Silver E, Wolff N: Beyond criminalization: toward a criminologically
informed framework for mental health policy and services research.
Administration and Policy in Mental Health and Mental Health Services
Violent Offender Re-Entry Initiative. Research Triangle Park, NC, RTI
International, 2004
Biometrics 73:13–22, 1986


Monahan J, Steadman HJ: Crime and Mental Disorder. Washington, DC, National Institute of Justice, 1984


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