

**The Massachusetts Transition Age Youth Arrest Study  
MATAYA**

Maryann Davis, Ph.D.  
Principal Investigator  
Center for Mental Health Services Research  
Department of Psychiatry  
University of Massachusetts Medical School

**Research Team**

Maryann Davis, Ph.D., Psychologist  
Steven Banks, Ph.D. Statistician/Methodologist  
William Fisher, Ph.D. Sociologist  
Albert Grudzinskas, Jr., J.D. Attorney  
Bernice Gershenson, M.P.H. Project Coordinator


Michael Pullmann, M.A. Psychologist

Edward Mulvey, Ph.D. Psychologist  
Daniel Nagin, Ph.D. Statistician/Methodologist  
Robert Jones, Ph.D. Statistician/Methodologist

**Justice System Involvement of Youths  
in Mental Health Systems**


- High Arrest Rates in adolescence and young adulthood in general population
- High rates of mental health conditions in those in juvenile and criminal justice system
- High arrest rates at these ages in adolescent and adult mental health system users and special education students
- Mental health system has an opportunity to prevent and reduce juvenile and criminal justice system involvement

**Gender Differences in Offending Abound**



- Offending rates are lower in females
- Females may require more aversive experience to engage in antisocial behavior
- Members of the opposite, not same sex encourage female criminal behavior
- Incarcerated juvenile girls are almost 1.5 times more likely than boys to have a non conduct psychiatric disorder with impairment

(e.g. Silver, Smith, & Banks, 2000; Herrera, & McCloskey, 2001; Pettway, 1987; Teplin, et al. 2002)



**GOAL: Develop Knowledge to Help Prevent or Minimize Adolescent and Young Adult Justice System Involvement of Youths in MH Services**

- What are the various within-individual longitudinal arrest patterns among intensive public adolescent mental health system users?
- What is the relationship between mental health services and arrest patterns at these ages?
- How do offending patterns differ between the mental health and general offender population?

*ALL QUESTIONS ASKED WITHIN GENDER*

*Funded by National Institute of Mental Health R01-MH67862 03*

**Used Two Massachusetts Statewide Administrative Databases**

Criminal Offender Record Information

**CORI Records**

Name  
Birthdate  
All Arraignments;  
Date  
Specific Charge

Department of Mental Health

**DMH Records**

Name  
Birthdate

CORI records pulled as of July '05      DMH records pulled as of March '06

### DMH DATA

- All individuals were born between 1976-1979
- DMH individuals received adolescent case management services between 1994-1996
- Not arrested DMH individuals have no CORI record
- Non-DMH arrestees have no DMH record

### System Overlap; DMH and Justice System

CORI records,  
non DMH  
Born '76-'79  
N=130,570

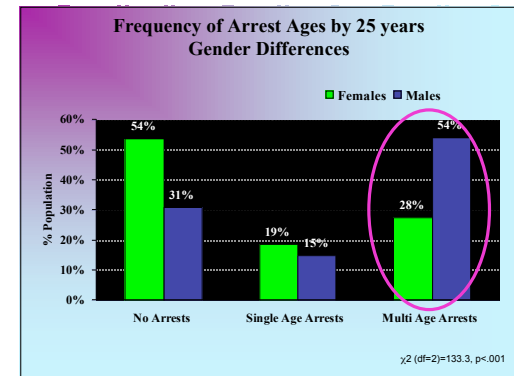
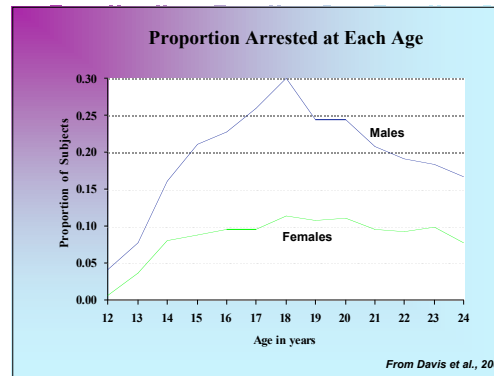
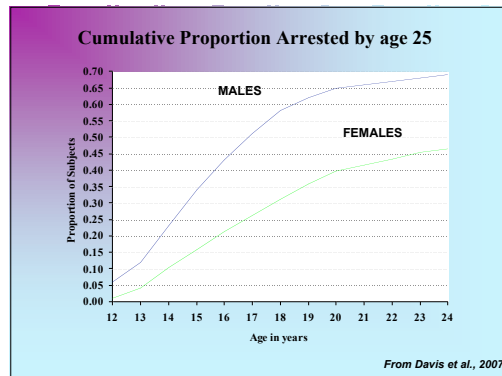
DMH Population  
Non Arrested  
N=639  
38% Male

Arrested  
N=880  
(57.9% of DMH Sample)  
61% Male

### Gender Differences in Transition Age Arrests

Maryann Davis  
Steven Banks  
William Fisher  
Bernice Gershenson  
Albert Grudzinskas

*Center for Mental Health Services Research  
Department of Psychiatry  
University of Massachusetts Medical School*



### Developmental Trajectory Modeling *Nagin & Land, 1993*

- Identifies groups (clusters) of individuals with similar longitudinal patterns over time
- Describes those arraignment patterns
- Statistical analysis optimizes explanation of the greatest amount of variance using the fewest number of clusters

### Trajectory Dataset

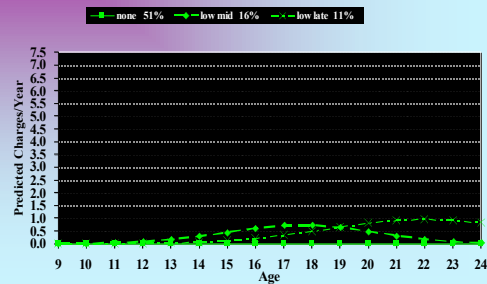
- DMH individuals whose first charge was at age 9.
- Deleted one outlier with 124 charges at age 24.

| Population  | Multiple Charge Ages | Zero Charges |
|-------------|----------------------|--------------|
| DMH Males   | 421                  | 243          |
| DMH Females | 204                  | 396          |

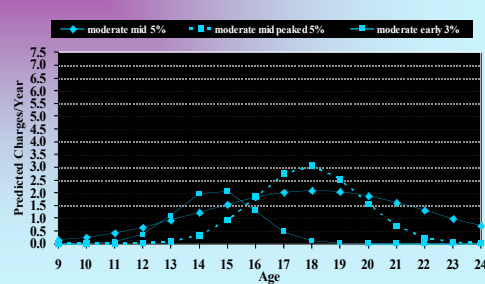
### Comparative Trajectory Approach

- Analyze males and females separately
- Determine ideal number of groups and pattern within those groups
- Combined the populations, used starting values
- Determined ideal number of groups and pattern within those groups

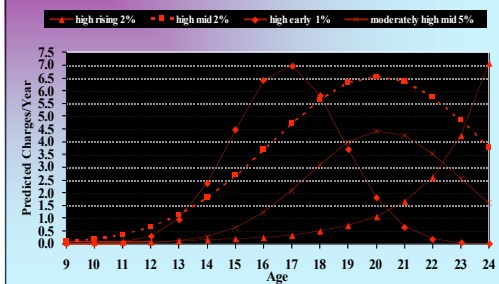
### Trajectory Groups; Predicted Charges/Year (Females, N=204; Males, N=421)

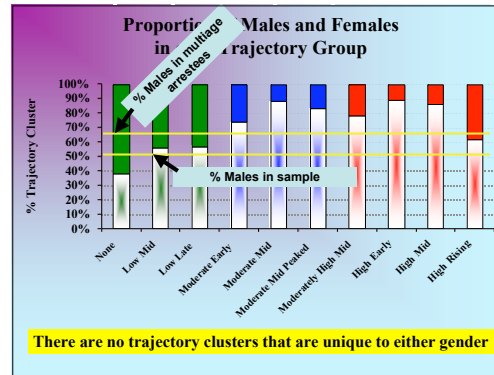
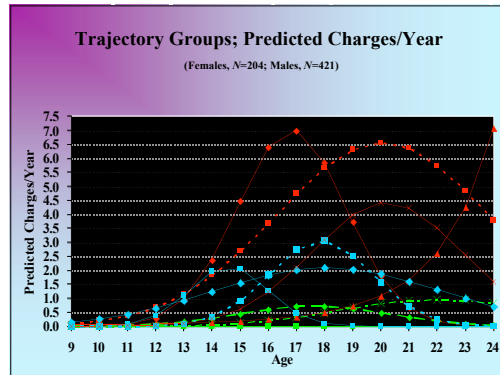


### Trajectory Groups; Predicted Charges/Year (Females, N=204; Males, N=421)



### Trajectory Groups; Predicted Charges/Year (Females, N=204; Males, N=421)





- ### Conclusions
- The biggest differences between DMH males and females are in the proportion never arrested and with multiple arrest years
  - Males tend to be overrepresented in moderate and high frequency groups
  - Different trajectories have different prevention timing implications; take advantage of their presence in treatment and prevent future offending
  - Several clusters had peaks and high charge rates at ages 18 and older; adult mental health systems need to help
  - Future question; how to identify high risk before it happens

### The Relationship between Transition-Aged Mental Health Services and the Risk of Adult Arrest

Michael Pullmann  
Vanderbilt University  
Maryann Davis, Ph.D.  
University of Massachusetts Medical School

- ### Criminological Theory
- Aberrant behavior is socially determined
  - Criminology is the study of particular aberrant behavior in violation of law
  - Laws are codified proscriptions sanctioning particular aberrant behavior
  - Integrative models of delinquency propose a variety of factors that contribute to longitudinal criminal behavior, including biological (*individual*), *social*, and *structural* factors
    - Even the best integrative models predict only 25-49% of the variance in long-term offence patterns<sup>1</sup>

- ### Mental Health and Criminal Justice
- The Mental Health and Criminal Justice systems are *structures* designed to address aberrant behavior
  - High rate of youth with MH problems in the justice system<sup>2-4</sup>
    - 50-80% of youth in detention are estimated to have a diagnosable disorder
    - 20% of youth in detention are estimated to have a serious MH disorder
  - Increased probability of justice contact for youth receiving MH services
    - One study found that 20% of youth receiving public mental health services were arrested over the course of 38 months<sup>5</sup>

### Transition to Adulthood

- The transition to adulthood is a particularly sensitive time, especially for people involved in institutions such as mental health and the justice system<sup>6</sup>
  - Changing *individuals* (brain maturation, hormones, moral development)
  - Changing *social* networks (peers, mentors, authority)
  - Changing *structures*: differing MH eligibility requirements, differing laws and sanctions

### Hypotheses

- People who offend in adolescence will be more likely to offend in adulthood
- People who are diagnosed with externalizing mental health disorders during adolescence will be more likely to offend in adulthood
- Mental health system contact during the transition to adulthood will be related to justice system contact in adulthood, such that those who received restrictive MH services (inpatient hospitalization and residential treatment) will be more likely to offend in adulthood.

### Methods

- Subsample of previous presentation; people born in 1978 or 1979
- N = 806
- For this analysis:
  - “Juvenile”: ages 7-18
  - “Adult”: ages 19-25
  - “Transition years”: ages 16-18

| Variable                  | n   | Valid % |
|---------------------------|-----|---------|
| Male                      | 413 | 51%     |
| Female                    | 393 | 49%     |
| Race/ethnicity            |     |         |
| White                     | 584 | 73%     |
| African American          | 72  | 9%      |
| Hispanic                  | 63  | 8%      |
| Asian                     | 11  | 1%      |
| Other                     | 60  | 8%      |
| Missing/unknown           | 16  | 2%      |
| 16 through 18 years old*  |     |         |
| Outpatient services       | 366 | 45%     |
| Residential tx            | 202 | 25%     |
| Inpatient hospitalization | 212 | 26%     |
| 19 through 25 years old*  |     |         |
| Outpatient services       | 223 | 29%     |
| Residential tx            | 140 | 17%     |
| Inpatient hospitalization | 114 | 14%     |

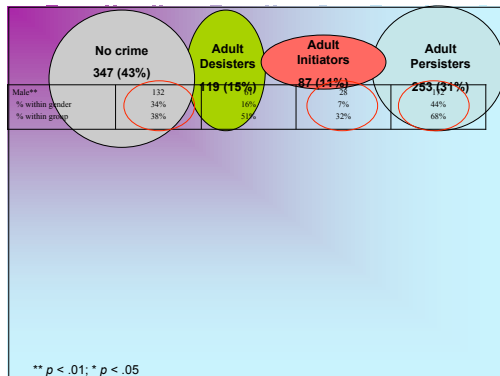
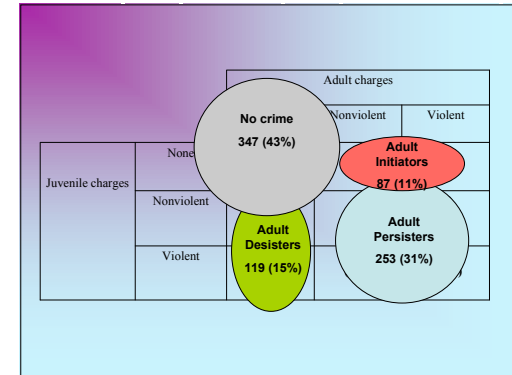
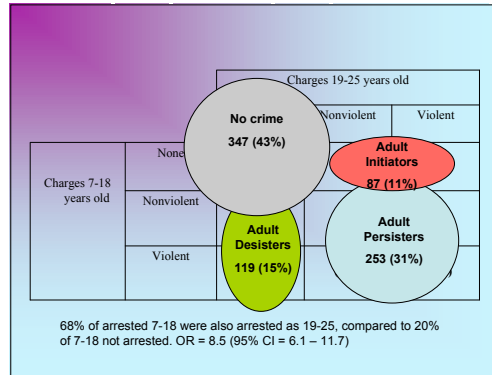
\* Categories are not mutually exclusive

| Variable                   | 7-18 years |         | 19-25 years |         |
|----------------------------|------------|---------|-------------|---------|
|                            | n          | Valid % | n           | Valid % |
| Any MH diagnosis           | 367        | 46%     | 161         | 20%     |
| Of those with a diagnosis: |            |         |             |         |
| Mood Disorder              | 256        | 70%     | 102         | 63%     |
| PTSD                       | 136        | 37%     | 55          | 34%     |
| Thought Disorder           | 68         | 19%     | 62          | 39%     |
| Conduct Disorder/ODD       | 64         | 17%     | 12          | 8%      |
| ADD/ADHD                   | 61         | 17%     | 19          | 12%     |
| Substance Abuse Disorder   | 49         | 13%     | 46          | 29%     |
| Impulse Control Disorder   | 28         | 7%      | 2           | 1%      |
| Personality Disorder       | 27         | 7%      | 41          | 26%     |
| Anxiety Disorder           | 25         | 7%      | 13          | 8%      |
| Developmental Disorder     | 20         | 5%      | 14          | 9%      |
| Adjustment Disorder        | 16         | 4%      | 8           | 5%      |
| Learning Disorder          | 9          | 3%      | 1           | 1%      |
| Eating Disorder            | 8          | 2%      | 3           | 2%      |

| Variable                             | n   | Valid % |
|--------------------------------------|-----|---------|
| Any MH diagnosis before 19 years old | 367 | 46%     |
| Of those with a diagnosis:           |     |         |
| Mood Disorder                        | 256 | 70%     |
| PTSD                                 | 136 | 37%     |
| Thought Disorder                     | 68  | 19%     |
| Conduct Disorder/ODD                 | 64  | 17%     |
| ADD/ADHD                             | 61  | 17%     |
| Substance Abuse Disorder             | 49  | 13%     |
| Impulse Control Disorder             | 28  | 7%      |
| Personality Disorder                 | 27  | 7%      |
| Anxiety Disorder                     | 25  | 7%      |
| Developmental Disorder               | 20  | 5%      |
| Adjustment Disorder                  | 16  | 4%      |
| Learning Disorder                    | 9   | 3%      |
| Eating Disorder                      | 8   | 2%      |

21st Annual RTC Conference  
Presented in Tampa, February 2008

| Variable                              | n   | Valid % |
|---------------------------------------|-----|---------|
| Before 19 years old                   |     |         |
| Any charge                            | 372 | 46      |
| Any serious property or person charge | 210 | 26      |
| 19 to 25 years old                    |     |         |
| Any charge                            | 340 | 42      |
| Any serious property or person charge | 156 | 19      |



Note: this is the subgroup of people with a diagnosis prior to 19 years old

|                      | No crime (149, 41%) | Adult Desisters (57, 12%) | Adult Initiators (45, 16%) | Adult Persisters (116, 32%) |
|----------------------|---------------------|---------------------------|----------------------------|-----------------------------|
| ODD/CD**             | 12                  | 12                        | 6                          | 34                          |
| % within DX          | 19%                 | 19%                       | 9%                         | 53%                         |
| % within group       | 8%                  | 21%                       | 13%                        | 29%                         |
| Substance use*       | 13                  | 8                         | 3                          | 25                          |
| % within DX          | 27%                 | 16%                       | 6%                         | 51%                         |
| % within group       | 9%                  | 14%                       | 7%                         | 2%                          |
| PTSD*                | 56                  | 19                        | 25                         | 36                          |
| % within DX          | 41%                 | 14%                       | 18%                        | 27%                         |
| % within group       | 38%                 | 33%                       | 56%                        | 31%                         |
| Anxiety*             | 18                  | 1                         | 2                          | 4                           |
| % within DX          | 72%                 | 4%                        | 8%                         | 16%                         |
| % within group       | 12%                 | 2%                        | 4%                         | 3%                          |
| Impulse control (NS) | 6                   | 6                         | 3                          | 13                          |
| % within DX          | 21%                 | 21%                       | 11%                        | 46%                         |
| % within group       | 4%                  | 11%                       | 7%                         | 11%                         |
| Personality**        | 10                  | 9                         | 6                          | 2                           |
| % within DX          | 27%                 | 33%                       | 22%                        | 7%                          |
| % within group       | 7%                  | 13%                       | 16%                        | 2%                          |

\*\* p < .01; \* p < .05

- ### Summary of Diagnosis – Criminal Justice Involvement
- People diagnosed with ODD/CD or substance use disorders were more likely to initiate criminal behavior in childhood and persist into adulthood
  - People diagnosed with PTSD were more likely to initiate criminal behavior in adulthood
  - People diagnosed with anxiety disorders were less likely to engage in criminal behaviors at any time
  - Surprisingly, people diagnosed with impulse control disorders were not significantly more likely to engage in criminal behaviors
  - No other class of disorders was significant, including thought disorders, learning disorders, adjustment disorders, or ADD/ADHD

21st Annual RTC Conference  
Presented in Tampa, February 2008

|                                      | No crime<br>347 (43%) | Adult<br>Desisters<br>119 (15%) | Adult<br>Initiators<br>87 (11%) | Adult<br>Persisters<br>253 (31%) |
|--------------------------------------|-----------------------|---------------------------------|---------------------------------|----------------------------------|
| Community based services<br>16-19*   | 164                   | 57                              | 47                              | 98                               |
| % within services                    | 45%                   | 16%                             | 13%                             | 27%                              |
| % within group                       | 47%                   | 48%                             | 54%                             | 39%                              |
| Residential treatment, 16-19<br>(NS) | 74                    | 36                              | 28                              | 64                               |
| % within services                    | 37%                   | 18%                             | 14%                             | 32%                              |
| % within group                       | 21%                   | 30%                             | 32%                             | 33%                              |
| Inpatient hospitalization<br>(NS)    | 88                    | 33                              | 27                              | 64                               |
| % within services                    | 42%                   | 16%                             | 13%                             | 30%                              |
| % within group                       | 25%                   | 28%                             | 31%                             | 25%                              |

\*\* p < .01; \* p < .05

|   |           | Any charge<br>before 19<br>years | Any violent<br>charge<br>before 19<br>years | Any<br>charge<br>19-25<br>years | Any<br>violent<br>charge 19-<br>25 years |
|---|-----------|----------------------------------|---|---------------------------------|--|
| Community based treatment<br>16-18 years  | No<br>Yes | OR=1.33<br>(1.00-1.75)           | OR=1.76<br>(1.28-2.44)                      | 44%<br>40%                      | 21%<br>17%                               |
| Residential treatment 16-18<br>years      | No<br>Yes | 45%<br>50%                       | 27%<br>24%                                  | 41%<br>46%                      | 19%<br>21%                               |
| Inpatient hospitalization 16-<br>18 years | No<br>Yes | 46%<br>46%                       | 27%<br>24%                                  | 42%<br>43%                      | 19%<br>20%                               |

\*p < .05

- Specific forms of treatment during the transition to adulthood do not seem to be related to adult criminal behavior
- This is also true when examining only those people with substance use disorders or CD/ODD in adolescence (data not shown).

- ### Overall Summary
- The strongest predictor of adult offense is offending as a juvenile. Juveniles who were arrested were 8.5 times more likely to be arrested than juveniles who were not arrested.
  - Males were more likely to offend at any time. Females were more likely to initiate offending in adulthood
  - People diagnosed with ODD/CD or substance use disorders were more likely to initiate criminal behavior in childhood and persist into adulthood
  - Specific forms of treatment during the transition years, including residential treatment and inpatient hospitalization, do not seem to be related to offending in this group of mental health service receivers

### References

1. Kelley, T. M. (1994). Crime and psychology of mind: A neo-cognitive view of delinquency. In G. Barak (Ed.), *Varieties of criminology: Readings from a dynamic discipline* (pp. 15-28). Westport, Praeger.
2. Cocozza, J. J., & Skowrya, K. R. (2000). Youth with mental health disorders: Issues and emerging responses. *Juvenile Justice*, 7(1), 3-13.
3. Teplin, L. A., Abram, K. M., McClelland, G. M., Dulcan, M. K., & Mericle, A. A. (2002). Psychiatric disorders in youth in juvenile detention. *Archives of General Psychiatry*, 59(12), 1133-1143.
4. Goldstrom, I., Jaiquan, F., Henderson, M., Male, A., & Mandersheid, R. W. (2000). The availability of mental health services to young people in juvenile justice facilities: A national survey. In R. W. Mandersheid & M. J. Henderson (Eds.), *Mental health, United States, 2000*. Washington, DC: Substance Abuse and Mental Health Services Administration.
5. Rosenblatt, J. A., Rosenblatt, A., & Biggs, E. E. (2000). Criminal behavior and emotional disorder: Comparing youth served by the mental health and juvenile justice systems. *Journal of Behavioral Health Services and Research*, 27(2), 227-237.
6. Davis, M. (2003). Addressing the needs of youth in transition to adulthood. *Administration and Policy in Mental Health*, 30(6), 495-509.