Using Data Analytics to Improve New Mexico’s Criminal Justice Outcomes

Presentation to the New Mexico Criminal Justice Reform Subcommittee
August 10, 2018

Dr. M. Murat Ozer, Ph.D.
Dr. Jamie Newsome, Ph.D.
Daniel W. Gerard, M.S.
University of Cincinnati School of Criminal Justice
What Do We Want From The CJ System?

Most generally, the public, politicians, and other stakeholders want (and expect) 3 things from the Criminal Justice System:

1. Effectiveness
2. Efficiency
3. Equity

How do we get there??
Traditional Government and Criminal Justice Analysis

- Government and other researchers traditionally measure and analyze data from census tracts, cities, counties, zip codes or neighborhoods
Traditional Criminal Justice Analysis

• Police agencies routinely deploy their officers in: precincts, districts, zones, sectors or beats

• Court, Prosecution and Correctional systems are: city, county, state, regionally or nationally based
Traditional Criminal Justice Analysis

• All of these measurement areas are geographically large and therefore more difficult to precisely analyze.

• Makes identifying the specific underlying causative factors of increased criminal justice system activity far more challenging.
Involvement in “The System”

Crime is **not** randomly distributed:

- Hot spot study in Minneapolis – 3% of city addresses generated 50% of crime calls for service
- Small number of serious chronic offenders — Account for an overwhelming majority of crime and violence
- Repeats: repeat offenders, repeat victims, repeat crimes, repeat addresses, repeat mental health consumers, repeat substance abusers populate the CJ system
Identify Those Chronic Offenders Most Likely to Engage in Criminal Activities

• The most crime-involved 10% of US males account for nearly 66% of all the crime committed by males.

• 10% of the most crime-involved US females account for 59% of crime committed by females.

Source: Martinez, Lee, Eck and Oh 2017
Gang Members Disproportionately Involved in Cincinnati Homicides: June 06 - June 07

- Non Group Members: 0.5%
- Violent Group Member: 99.5%

- Non Group Members: 26.5%
- Violent Group Member: 73.5%
# Criminal History of Identified Violent Gang Members

<table>
<thead>
<tr>
<th></th>
<th>Average #</th>
<th>1 or more</th>
<th>5 or more</th>
<th>10 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Misdemeanor arrest charges</td>
<td>14.4</td>
<td>89.7%</td>
<td>72.3%</td>
<td>56.8%</td>
</tr>
<tr>
<td>2. Misdemeanor charge convictions</td>
<td>10.1</td>
<td>86.2%</td>
<td>66.0%</td>
<td>42.1%</td>
</tr>
<tr>
<td>3. Felony arrest charges</td>
<td><strong>7.4</strong></td>
<td><strong>84.4%</strong></td>
<td><strong>59.4%</strong></td>
<td><strong>32.3%</strong></td>
</tr>
<tr>
<td>4. Felony charge convictions</td>
<td>3.0</td>
<td>74.5%</td>
<td>27.1%</td>
<td>3.0%</td>
</tr>
<tr>
<td>5. Delinquent arrest charges</td>
<td>12.7</td>
<td>81.5%</td>
<td>68.3%</td>
<td>52.7%</td>
</tr>
<tr>
<td>6. Delinquent charge adjudications</td>
<td>8.5</td>
<td>80.3%</td>
<td>60.6%</td>
<td>37.8%</td>
</tr>
<tr>
<td>7. Approach w/ caution</td>
<td></td>
<td>71.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Violent arrest</td>
<td></td>
<td><strong>91.0%</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Drug arrest</td>
<td></td>
<td>91.0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
US Shooting Victims /Suspects

Characteristics:

- Low education
- Poor social skills
- No significant job, credit, banking history
- Inferior housing
- Fractured family / Poor parenting
- Prior Criminal history

Effects of street life compound over time for both individuals and their offspring
Violent Places

In 2015, 50% of the gun homicides in the United States occurred in just 127 cities and towns, even though they collectively contain less than 25% of the US population.
Violent Places

The individual neighborhoods where these homicides occurred make up an area only 42 miles wide by 42 miles long.

The contiguous United States in total is 2802 miles wide by 1650 miles long.
Cincinnati 2006 Homicide Rates (per 100,000)

- Cinci - All: 29.4
- Cinci - YBM: 102.7
- Avondale - YBM: 387.6
- Walnut Hills - YBM: 473
- OTR - YBM: 576.1

Comparisons:
- Cinci - All: 3.5x Cinci - YBM
- Avondale - YBM: 13.2x Cinci - All
- Walnut Hills - YBM: 16.1x Cinci - All
- OTR - YBM: 19.6x Cinci - YBM
UC Analytics

• A narrow, offender focused, place-based methodology, that focuses on smaller geographic units of analysis, such as: particular people or places that serve as the primary criminal justice system drivers for an entire area.
A smaller analytical focus allows for:

- Easier measurement of criminal/behavioral activity patterns
- Timely identification of underlying criminal causative factors so either criminal justice or social service interventions can occur
• Easier measurement and more timely identification of underlying causative factors allows for quicker action plan development and strategy implementation

• Also faster modification of the plan if evaluation shows it is needed
Turning Criminal Justice Data into Actionable Intelligence
Data

• Data collected from different sources is raw and only exists in agency computers or in official documents.

• Often, these various sources are not linked which means the information on offenders is neither complete nor actionable.
Individual Entity Data Examples

Police
- Criminal Offense Data
- Arrest Data
- Traffic Stop Data
- Field Interview Data

Prosecutors
- File charges or petitions for adjudication
- Seek indictments
- Drop cases
- Reduce charges
Individual Entity Data Examples

Judges or Magistrates

- Set bail or conditions for release
- Accept pleas
- Determine delinquency
- Dismiss charges
- Impose sentence
- Revoke probation
Individual Entity Data Examples

Correctional Officials

• Assign Inmate Classifications/Risk
• Assign to type of correctional facility
• Record all individual activity within the institution

Post Release Authorities

• Determine date and conditions of release and Revoke parole
Current CJ Data Visualization

• Government data is traditionally housed in many individual databases

• Often requires purchase of a bridging software to link them

• Limits ability of users to access and use their data both internally and across agencies
ICS/UCCI Data Visualization

• Builds upon the work UC School of Criminal Justice has done with police departments, courts and correctional systems across the world

• Started with database development and Co-offending network analysis

• Now incorporates those features in one comprehensive analytics and visualization package
ICS/UCCI Data Visualization

• Has the ability to link people and places using information from a variety of sources

• Clearly displays analyzed information in an easily actionable format

• Can process an unlimited amount of records
Agency Items Needed

• Data

• Data Access/MOU

• Process for UC ICS and UCCI to remotely acquire agency data at regular intervals
ICS/UCCI
Analytics Demonstration
Questions?
Contact Information

Dr. M. Murat Ozer
ozermmm@ucmail.uc.edu

Dr. Jamie Newsome
Jamie.Newsome@uc.edu

Daniel Gerard
daniel.gerard@uc.edu