



DISTRICT OF COLUMBIA  
COURT SERVICES AND OFFENDER SUPERVISION AGENCY &  
PRETRIAL SERVICES AGENCY  
RESEARCH REVIEW COMMITTEE

## RECOMMENDATION STATEMENT

**DATE:** September 27, 2011

### I. RESEARCH PROPOSAL SUMMARY

**Principal Researcher:** John Roman, Ph.D.; Akiva Liberman, Ph.D.; and Mitchell Downey; The Urban Institute.

**Title:** A Bayesian Meta-Analytic Engine to Predict Costs and Benefits to the District of Columbia.

**Institution:** The Urban Institute, Washington, DC, funded by the DC Crime Policy Institute.

**Description:** The purpose of the study is to show the probabilities that an arrest will progress to various stages of the criminal justice system in the District of Columbia (e.g., prosecution, conviction, prison). This will be used to estimate the criminal justice case processing that would be rendered unnecessary by effective programs that prevent some offending and arrests.

This study pertains to PSA only.

**Subjects, Type of Data and Analysis:** Researchers are requesting aggregated case flow and outcome data (11 case processing outcomes) for all cases initiated (at arrest or as initiated in the PSA data) during the two-year period from January 2008 through December 2009; differentiated by cases with different charges; as well as aggregate data for five subpopulations of PSA clients readily identifiable through PSA data.

For our cost-benefit purposes, the researchers will distinguish among major crime types (See Appendix A of the proposal) and also examine several types of defendants based on their criminal histories, which can affect criminal justice case processing outcomes (e.g., pretrial detention; sentencing), and also may affect eligibility for programs. These data would be examined for all arrestees

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REVIEW RECOMMENDATION STATEMENT**

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and also for four types of criminal histories at the time of arrest, including (not mutually exclusive):

- Prior violent conviction at time of arrest
- Presence of a substance abuse problem (as assessed by PSA)
- On probation at time of arrest
- Prior incarceration

**II. RECOMMENDATION**

The RRC recommendation for this study:

- Support**                       Support with Conditions                       Do Not Support

The RRC considers the proposed study to be non-agency research as defined in Research and Evaluation Policy Statement 1201. The RRC recommends support of this request as described in the researcher's proposal.

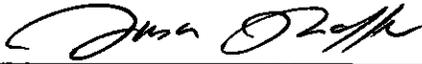
**III. SUPPORTING INFORMATION**

**Regulatory:**

- The proposed research shows no evidence of non-compliance with Agency policies pertaining to research.

**Other Considerations:**

- The proposed research requires non-identifiable data that readily can be extracted with minimal PSA resources. PSA's RAD can provide the data requested with the following conditions: probation, jail and prison data will be provided as the exact sentence given, not the actual terms served; and detention data will exclude the small number of cash bonds due to the quality of the release/detention data available for this category.

I <b>ACCEPT</b> the RRC Recommendation 	I <b>DO NOT ACCEPT</b> the RRC Recommendation
<b>Susan W. Shaffer, Director, Pretrial Services Agency for the District of Columbia</b>	
Comments:	

**Akiva M. Liberman, Ph.D.**  
Senior Fellow, Justice Policy Center

202-261-5704  
aliberman@urban.org

Claire Fay, Committee Chair  
Research and Review Committee  
DC Pretrial Services Agency  
633 Indiana Ave, NW  
Washington, DC 20004-2908

ARC-11-03

July 22, 2011

Dear Ms. Fay,

Please find attached a request to PSA for aggregate statistics concerning case-flow through the criminal justice system in DC, from the point of arrest through sentencing, for the work of the DC Crime Policy Institute (DCPI), which is a partnership of the Urban Institute and the Brookings Institution. The attached request provides all of the information required for Non-Agency Research, as detailed in Appendix B, section B, of the CSOSA Policy Statement 1201 on Research and Evaluation.

Understanding case-flow is important for a cost-benefit model that DCPI is developing. In our cost-benefit model, the benefits for many possible programs derive largely from their effects in reducing crime. (We derive estimates of those expected crime-reduction benefits from meta-analyses of prior evaluations.)

The financial benefit to government from preventing those crimes accrues from associated criminal justice costs that are averted. Once someone is arrested for a crime, the associated criminal justice costs depend on case processing. For example, among those arrested, how many are detained pretrial? How many are tried, and how many convicted? How many convictions generate jail sentences? Prison sentences?

#### DETAILED AGGREGATE DATA REQUESTED

We are requesting aggregate statistics about the case-flow and outcomes of all cases initiated (arrested, or initiated in PSA data) during the two-year period from January 2008 through December 2009. We expect that all those cases will have been disposed, with sufficient time for data to have been cleaned.

Offense Type. Criminal justice costs vary considerably by crime type. Thus, for our cost-benefit purposes, we would like to distinguish among major crime types (as top charge). The attached table (Appendix A) shows the various crime types as rows and the outcomes of interest as columns. I have tried to make the table as explicit as possible, so that the statistics we are requesting would essentially fill in the table.

Criminal History. We would also like to look more carefully at several types of offenders based on their criminal histories, which can affect eligibility for programs we may examine as well as criminal justice case processing outcomes (e.g., pretrial detention; sentencing).

Essentially, this means that we would like to produce the attached table once for all arrestees, and then duplicate the table for offenders who have the following four types of criminal histories at the time of arrest. These are not mutually exclusive.

- Prior violent conviction at time of arrest
- Presence of a substance abuse problem (as assessed by PSA)
- On probation at time of arrest
- Prior incarceration

We appreciate your consideration in this matter.

Sincerely,

A handwritten signature in cursive script, appearing to read "Akiva Liberman".

Akiva Liberman

July 22, 2011

Urban Institute Research Request for Aggregate Case Processing Statistics

Please find below all of the information required for Non-Agency Research by CSOSA Policy Statement 1201 on Research and Evaluation, and detailed in Appendix B, section B.

This request concerns statistics describing case-flow through the criminal justice system in DC, from the point of arrest through sentencing.

1. Summary

*(a) Research Team:*

John Roman, Ph.D., The Urban Institute  
Akiva Liberman, Ph.D., The Urban Institute  
Mitchell Downey, M.A., The Urban Institute

*(b) Title:* A Bayesian Meta-Analytic Engine to Predict Costs and Benefits to the District of Columbia

*(c) Purpose of Study:*

Under a grant from the Justice Grants Administration of the Executive Office of the Mayor of the District of Columbia, we are developing a meta-analytic cost-benefit "engine" to predict the costs and benefits of various criminal justice programs, in D.C. The method uses meta-analytic methods to summarize past research on a program's effectiveness. The primary benefits of effective program derive from reductions in (re)offending. We then assess the possible implications of these offending reductions for case processing through criminal justice system (e.g., through pretrial-supervision, trials, and incarceration that would be avoided). To reasonably estimate these DC-specific criminal justice processing impacts of averted crimes, we need to understand aggregate case-flow in the District.

We are requesting aggregate statistics about the case-flow and outcomes of all cases initiated (arrested, or initiated in PSA data) during the two-year period from January 2008 through December 2009. (We expect that all those cases will have been disposed, with sufficient time for data to have been cleaned.)

*(d) Location of the project:* The Urban Institute, 2100 M St, NW, Washington, DC

*(e) Duration of the project:*

We are requesting these aggregate case-processing statistics for cases initiated in 2008-2009. The cost-benefit project is part of the DC Crime Policy Institute, which is funded through Sept. 2012.

*(f) Research methods:*

We are requesting statistics showing the probabilities that an arrest will progress to various stages of the criminal justice system in the District of Columbia (e.g., prosecution, conviction, prison). This will be used to estimate the criminal justice case processing that would be rendered unnecessary by effective programs that prevent some offending and arrests.

*(g) Sample type and size:*

We are requesting aggregated case flow and outcome statistics (11 case processing outcomes) for all cases initiated (arrested, or initiated in the PSA data) during the two-year period from January 2008 through December 2009.

We are requesting these outcomes to be differentiated by cases with different top charges. And we are requesting that the aggregate statistics for five subpopulations of PSA clients readily identifiable through PSA data.

*(h) Agency staff and/or resources:*

We are requesting aggregate case-flow statistics. Based on discussions with Research Director Spurgeon Kennedy, we believe that assembling these aggregate statistics will take minimal time or effort.

*(i) Risk to subjects:*

Because we are requesting only aggregate statistics, there are no risks to human subjects.

*(j) Anticipated Results:*

Our cost-benefit project will help identify a number of programs, focused on particular subgroups of the criminally involved population, which could yield significant net benefits to criminal justice agencies operating in the District of Columbia by reducing arrests and subsequent outcomes.

*(k) Deliverables:*

The statistics, properly cited, will be used in a number of analyses and reports concerning the costs and benefits of various programs that might be used to reduce offending in the District.

## 2. Detailed Statement

*(a) Review of the literature:*

Similar cost-benefit work has been conducted by the Washington State Institute for Public Policy (WSIPP), for specific costs and benefits in Washington State. To produce similar analyses for D.C. requires specific statistics concerning D.C. criminal justice case processing. For example, WSIPP has Washington State data that allow the estimation of the number of incarceration-years prevented as a result of prevent one arrest of a given type.

We are using somewhat different analytic methods than WSIPP, but their substantive goal is very similar.

*(b) Detailed description of the method:*

Our cost-benefit engine use Bayesian methods, which can generate a more accurate predictive interval for complex, multi-stage processes such as the flow of cases through the criminal justice system. Our methods will be simulation-based. Following the meta-analysis (using a three-level hierarchical model to account for heterogeneous study quality) we will have a distribution of possible impacts of each given program. For each possible outcome from this distribution, we will simulate the number of arrests prevented. For each prevented arrest, we will simulate the extent that this case would have gone through the criminal justice system. It is this element where the PSA data will be indispensable. Each stage of the criminal justice process has an associated cost, so by aggregating across each outcome, and conducting a large number of simulations (e.g., 1,000), it is possible to create an empirical distribution of the expected benefits accrued to various local and federal criminal justice agencies from the arrests prevented by the program under consideration.

### DETAILED AGGREGATE STATISTICS REQUESTED

We request aggregate statistics about the case-flow and outcomes of all cases initiated (arrested, or initiated in PSA data) during the two-year period from January 2008 through December

2009. We expect that all those cases will have been disposed, with sufficient time for data to have been cleaned.

Offense Type. Criminal justice costs vary considerably by crime type. Thus, for our cost-benefit purposes, we would like to distinguish among major crime types (as top charge). The attached table (Appendix A) shows the various crime types as rows and the outcomes of interest as columns. I have tried to make the table as explicit as possible, so that the statistics we are requesting would essentially fill in the table.

Criminal History. We would also like to look more carefully at several types of offenders based on their criminal histories, which can affect criminal justice case processing outcomes (e.g., pretrial detention; sentencing), and also may affect eligibility for programs we may examine.

Essentially, this means that we would like to produce the attached table once for all arrestees, and then duplicate the table for offenders who have the following four types of criminal histories at the time of arrest. (These are not mutually exclusive.)

- Prior violent conviction at time of arrest
- Presence of a substance abuse problem (as assessed by PSA)
- On probation at time of arrest
- Prior incarceration

*(c) Significance of anticipated results and contribution to knowledge:*

Our results will have two key contributions. First, substantively, they will help the District of Columbia identify criminal justice programs which can cost-effectively reduce crime. Second, methodologically, they will demonstrate the possibilities and advantages of using Bayesian methods for this type of modeling.

*(d) Benefits of research to CSOSA/PSA:*

Among the criminal justice functions considered in the research are probation, and pretrial detention and supervision, which are the responsibilities of CSOSA and PSA. Thus, our calculations will include estimates of the savings expected to accrue to each of these agencies as a result of a variety of criminal justice programs.

*(e) Specific Agency resources required:*

Based on our discussions with Spurgeon Kennedy, Director of the Office of Research Analysis and Development, we anticipate that the Agency staff time involved in producing the requested aggregate statistics will be minimal.

*(f) Description of all risks to the subjects:*

Because we are not requesting any individual-level data, there are no risks to any study subjects.

*(g) Steps taken to minimize risks: Not applicable.*

*(h) Data security measures:*

The aggregate statistics that we are requesting do not warrant special security protections, and we intend to use them in reports that will be made publicly available.

*(i) Anticipated effects of research on Agency programs and operations:*

We anticipate that the cost-benefit research will identify a number of programs which have the potential to yield large savings to the District of Columbia and federal government, generally, and to the CSOSA and PSA, specifically. In addition, some of these programs may fall within the operations of the Agency (e.g., treatment programs for pretrial or probation populations), and may be useful to the Agency.

*(j) Relevant research materials:*

Appendix B contains the CVs of the primary project staff named in Section 1 of this submission.

In Appendix C, we have also attached two reports (one published, another preliminary) which use non-District data to estimate the probabilities of moving through various stages of the criminal justice system. However, these reports are inaccurate in describing implication for the District, because they use case-processing data which do not refer specifically to the District of Columbia. However, the reports are good examples of our methods and results.

*(k) Assurance of Agency access to deliverables:*

All reports resulting from this project will be shared with CSOSA/PSA, and will be publicly available.

*(l) Statement that copies of any dataset will be provided to CSOSA/PSA at the conclusion of the project.*

Since we are not requesting any individual-level data, or any data that will not be made public in our reports, there is no dataset to return to CSOSA/PSA.

**3. Institutional Review Board Approval**

Because the request does not involve any individual-level data, this study does not raise human subjects issues that require IRB review.

Appendix A

Top Charge among arrestees from Jan 2008 through Dec 2009

All

		Murder	Rape	Robbery	Assault	Burglary	Theft	MVT	Arson	Drug	Weapon	All arrestees
<b>Arrest</b>	Number arrested											

Case Processing Among those arrested Jan 2008 through Dec 2009

<b>Pretrial Services</b>	Number Detained Pretrial											
	Average days in Pretrial Detention (among those detained)											
	Number Supervised in the High Intensity Supervision Program											
<b>Disposition</b>	Number who Pled Guilty											
	Number who Went to Trial											
	Number who were Convicted											
<b>Sentence</b>	Number Sentenced to Probation											
	Average Probation Sentence* (among those sentenced to probation)											
	Number Sentenced to Jail											
	Average Jail Sentence* (among those sentenced to jail)											
	Number Sentenced to Prison											
	Average Prison Sentence* (among those sentenced to prison)											

\* We are requesting here information on average time sentenced, while understanding that that is different from time served.