

## **Methodological Research to Support the Redesign of the National Crime Victimization Survey (NCVS)**

The Bureau of Justice Statistics (BJS) has initiated several research projects to support the redesign of the NCVS. Seven projects, in six subject areas began in fiscal years (FY) 2007, 2008, and 2009. A solicitation on sub-national estimates of criminal victimization was initiated in FY 2010.

The subject areas covered by these projects are—

1. Local area estimation
2. Interview mode
3. Sample design
4. Survey reference period
5. Non-response bias
6. Crime screener analysis
7. Sub-national Estimates of Criminal Victimization

## **Assessing the Feasibility of Local Area Estimates for the National Crime Victimization Survey (NCVS)**

Grantee: Westat, Inc.

Initiated: May 17, 2007

Expected completion date: Completed May 31, 2010

The goals of this project are to—

1. Examine the expected utility of area specific victimization estimates from the NCVS
2. Find options for redesigning or augmenting the existing NCVS sampling protocols and collection methodologies to produce area-specific estimates
3. Examine the potential costs of each option of changing the NCVS and complexities of implementation
4. Determine the future research that should be done on the development and testing of one or more designs of changing the NCVS to obtain area specific estimates.

This activity responds to Recommendation 4.5 of the National Research Council report, *Surveying Victims, Options for Conducting the National Crime Victimization Survey*, “BJS should investigate the use of modeling NCVS data to construct and disseminate subnational estimates of major crime and victimization rates.”

### Overview

Westat examined both direct estimation and model-based (or indirect) estimation methods for generating local area estimates. A review of surveys identified three programs that provide models for generating local area estimates for the NCVS: the British Crime Survey, the National Survey on Drug Use and Health, and the National Health Interview Survey/Behavior Risk Factor Surveillance System. Westat’s evaluation determined that many attributes of these surveys may carry over to the NCVS.

Westat analyzed area-identified NCVS data at the U.S. Census Bureau to assess the survey’s ability to produce local area estimates, and to identify variables that could (or should) be considered in constructing model-based estimates. The final report, [\*NCVS Task 4 Report: Summary of Options Relating to Local Area Estimation\*](#), describes the direct estimation and model-based estimation approaches for local area estimation with the NCVS. This report also provides information on areas for future research.

## **Examination of Data Collection Methods for the National Crime Victimization Survey (NCVS)**

Grantees: Westat, Inc. and Research Triangle Institute (RTI) International

Initiated: October 1, 2008

Expected completion date: May 31, 2011

The goal of these studies is to evaluate less expensive interview modes to reduce the cost per case for completing NCVS interviews. Currently, the NCVS is administered strictly in a computer-assisted personal interview (CAPI) environment. The first interview is a face-to-face interview; however, subsequent interviews can be completed over the telephone (e.g. from the interviewer's home).

This activity responds to Recommendation 4.8 of the National Research Council report, *Surveying Victims, Options for Conducting the National Crime Victimization Survey*, "BJS should investigate the introduction of mixed mode data collection (including self-administered modes) into the NCVS."

### Overview

The primary purpose of this research is to identify new survey methods that could lower the cost per case for completed NCVS interviews while minimizing the impact on standard errors.

Westat and RTI are testing different interview modes for conducting victimization surveys. The primary mode being tested by Westat is interactive voice response (IVR), an automated telephone self interview methodology. RTI is examining the feasibility of conducting victimization surveys via a web-based interview. Both projects include CAPI/CATI control groups to enable comparison across interview mode treatments. The primary research questions that both projects will address are the impact that self-administered modes have on response rates, and the degree of effort required to get respondents to complete interviews using these modes. Both projects include a detailed review of relevant survey literature, covering mixed mode data collection, self-administered methods, and the use of incentives.

## **Improving the Sample Design for the National Crime Victimization Survey (NCVS)**

Grantee: Westat, Inc.

Initiated: October 1, 2008

Expected completion date: September 30, 2010

The goals of this project are to—

1. Evaluate the variables on the sampling frame that could be used to reduce sample variance, while maintaining a representative sample
2. Determine the external variables that could be used to reduce standard errors
3. Evaluate over-sampling strategies, which could be implemented to improve estimate precision.

This activity responds to Recommendation 4.7 of the National Research Council report, *Surveying Victims, Options for Conducting the National Crime Victimization Survey*, “BJS should investigate the sample design to increase efficiency, thus allowing more precision for a given cost. Changes to investigate include:

- (i) Changing the number or nature of the first-stage sampling units
- (ii) Changing the stratification of the primary sampling units (PSU’s);
- (iii) Changing the stratification of housing units;
- (iv) Selecting housing units with unequal probabilities, so that probabilities are higher where victimization rates are higher; and
- (v) Alternative person-level sampling schemes (sampling or subsampling persons within housing units).”

### Overview

Tasks for this project include imposing the Uniform Crime Report (UCR) data at the county level onto a general county level data file. Previous work found reasonably strong statistical relationships between UCR variables and NCVS estimates for the largest metropolitan areas (MSAs). If the statistical relationships hold for smaller counties as well, some sampling efficiencies could be realized by appropriate use of UCR data. Additional tasks involve using the NCVS public use files to look at correlations at the household level across time, which will be used to make comparisons between design options.

The final report will include recommendations about the strengths and weaknesses of each of the designs considered. The report will cover all topics specified in Recommendation 4.7. It will also recommend one or more designs along with guidance for implementing them.

## **Continuation of Improving the Sampling Design for the National Crime Victimization Survey (NCVS)**

Start: June 2010

Estimated completion date: December 31, 2010

This project continues the Bureau of Justice Statistics' work with Westat, Inc. and the U.S. Census Bureau in improving the sample design for the National Crime Victimization Survey (NCVS). This NCVS redesign work is based on recommendations outlined by the National Research Council, National Academies of Science, report (Recommendation 4.7): "Bureau of Justice Statistics (BJS) should investigate changing the sample design to increase efficiency, thus allowing more precision for a given costs." The first phase of the research project supported the systematic study of sample design options for the NCVS. The focus was on improving the efficiency of national estimates of victimization, based on research directions broadly sketched by a 2008 report by the National Academy of Sciences.

This supplemental project applies the findings from the first phase and involves the construction of sampling requirements for the core NCVS survey based on the Census Bureau's 2010 decennial census schedule. Specifically, the project will—

- Review the Census Bureau's current plan to define NCVS primary sampling units (PSUs).
- Develop alternative preliminary stratification schemes for national and subnational estimation objectives using the preliminary set of PSUs, and consider estimation needs for special target groups, including tribal areas.
- Assist in drafting the specification to the Census Bureau of the procedures to select non-self-representing PSUs from the redesigned strata.
- Develop strategies to sample housing units within the sampled PSUs based on information from the Census Bureau concerning their general strategy to sample from the Master Address File (MAF), and continue investigating the possibility of increasing efficiency through within-household subsampling of respondents.
- Concurrent with the completion of the survey design tasks, consider the implications of Census Bureau disclosure rules on publishing subnational estimates.
- Prepare a review of the current method of nonresponse adjustment in NCVS, plus analysis of where it could be improved. Response to the NCVS has declined over time, but it remains enviably high relative to most surveys. Nonetheless, there is the possibility that current NCVS nonresponse adjustments could be improved to better compensate for nonresponse.

## **An Examination of a 12-Month Reference Period in the National Crime Victimization Survey (NCVS)**

Grantee: National Opinion Research Center (NORC)

Initiated: October 1, 2008

Expected completion date: June 30, 2011

The goal of this study is to complete a feasibility study that examines using a 12-month reference period in the NCVS. Currently, the survey asks about crimes that occurred in the 6 months prior to interview. An important component of this study is an exploration of methods for improving respondent recall of victimization experiences over a 12-month period.

This activity responds to Recommendation 4.2 of the National Research Council report, *Surveying Victims, Options for Conducting the National Crime Victimization Survey*, “Changing from a 6-month reference period to a 12-month reference period has the potential for improving the precision per-unit cost in the NCVS framework, but the extent of loss of measurement quality is not clear from existing research based on the post-1992-redesign NCVS instrument. BJS should sponsor additional research—involving both experimentation as well as analysis of the timing of events in extant data—to inform this trade-off.”

### Overview

The research addresses methods of improving event recall and assessing respondent burden with the 12-month reference period for telephone and web-interview modes. One task for this project is a review of the literature focusing on topics of specific relevance to this project: event history calendars, recall cues, interview mode, respondent burden, and question sensitivity. A second project task is to conduct two analyses of NCVS data to understand the characteristics of the data and inform the methods that would best facilitate respondent reporting.

A third project task entails developing and field testing two forms of memory aids, Enhanced Contextual Priming (ECP) and an Event History Calendar (EHC). The ECP version will build on the contextual priming (cues, prompts, and additional introductory material to promote recall) that is already inherent in the current screener format. The EHC will be included before the screener questions. To complete the calendar, respondents will be asked to recall events in their lives from the past 12 months. To aid the respondent in defining the boundary for the 12-month period, more of a focus may be placed on recalling the least recent month. Finally, a plan for transitioning the NCVS to a 12-month reference period will be developed and presented.

## **Analysis of Possible Non-Response Bias in the National Crime Victimization Survey (NCVS)**

Grantee: National Opinion Research Center (NORC)

Initiated: October 1, 2008

Expected completion date: completed September 30, 2009

The goal of this project was to conduct non-response bias studies for the NCVS, and to recommend methods for mitigating non-response bias in the survey estimates. This activity responded to Recommendation 4.9 of the National Research Council report, *Surveying Victims, Options for Conducting the National Crime Victimization Survey*, “The falling response rates of NCVS are likely to continue with attendant increasing field costs to avoid their decline. BJS should sponsor non-response bias studies, following OMB guidelines, to guide trade-off decisions among costs, response rates, and non-response error.”

### Overview

NORC intended to use four methods to evaluate nonresponse bias in the National Crime Victimization Survey (NCVS): (1) capture/recapture method, (2) early versus late responder comparisons, (3) differential response rates and dispositions by subgroup, and (4) variable comparison for respondents and nonrespondents. However, due to an insufficient availability of paradata, the variable comparison task was not completed. Based on the results of these methods, NORC recommended weight adjustments to help mitigate nonresponse bias effects in the NCVS. The weight adjustments included alternative methods of weighting, such as propensity to respond modeling versus nonresponse adjustment cells, or alternative variables in non-response adjustments and post-stratification. NORC also performed a sensitivity analysis of key population estimates for such weight adjustments.

At the completion of the project, NORC concluded that there was little evidence for nonresponse bias after the first round of the survey. NORC found some information suggestive of this at the household level. At the person level, logistic regression analyses showed some evidence of differential nonresponse that might be biasing, if not addressed. However, the person-level nonresponse is weight adjusted to age and race controls in the NCVS and these seem to be the categories that are the main drivers in any potential nonresponse bias.

NORC also made a number of recommendations for immediate action to help alleviate nonresponse bias in the NCVS. They suggested that since the most potential for nonresponse bias in panel surveys exists at the first wave, that the NCVS do more during the first wave, such as adding UCR or census data to the frame, examining the paradata associated with nonresponses during the first wave, and pairing cases in the same cluster before interviewing.

A second suggestion by NORC was to use the reinterview program to study a small sample of nonresponse cases from each wave of the NCVS. A third suggestion was to calculate nonresponse adjustments that were mixtures of reweighting and imputation.

### **Methodological Research to Support the Redesign of the National Crime Victimization Survey: Screening Questions**

Grantees: Research Triangle Institute (RTI) International

Initiated: October 1, 2009

Expected completion date: September 30, 2010

The crime screening protocol is one of the most important components of the NCVS Methodology. The crime screening questions now used were implemented in 1992 after an extensive redesign effort.

When the survey was implemented in 1972, the survey used a set of 19 questions to uncover crimes. These questions all had a similar format, asking whether anyone threatened, or attacked, or stole from the victim or from the victim's household during the survey's reference period. This strategy was based on the belief that there was only one way in which people remembered past events and therefore may have inadvertently underrepresented the extent of crime victimization.

The objective of this project is to undertake a comprehensive analysis of the current and pre-redesign crime screening questions. This analysis will inform future, questionnaire redesign efforts by providing an understanding of how the survey's crime screening process has operated.

The first phase of the project is a review of relevant survey literature associated with crime screening. The second component is an analysis of NCVS historical data to evaluate the effectiveness of both the original National Crime Survey and the redesigned NCVS screen questions. Additionally, RTI will examine interview paradata, data related to the survey process, to evaluate what effects the interviewer variation or the interview process has had on the screening for crimes. Lastly, RTI will conduct focus groups and interviews with current and former U.S. Census Bureau interviewers to obtain their assessments of how well the questions operate and where they perceive problems.



## **Sub-national Estimates of Criminal Victimization**

Grantees: To Be Determined

Initiated: on or after October 1, 2010

Expected completion date: To be determined

The primary goal of this project is to generate preliminary data at the MSA-level to test the feasibility of producing estimates of the annual incidence of victimization. Currently, the NCVS is designed to produce representative estimates of the level and characteristics of criminal victimization in the United States at the national level. The focus of this project will be to develop and evaluate a cost effective sub-national companion survey to augment the existing core-NCVS sample. This research will help BJS and our stakeholders to assess the level and frequency of the geographical estimates produced at the end of the NCVS redesign study for a given level of funding.

This activity responds to Recommendation 4.5 of the National Research Council report, *Surveying Victims, Options for Conducting the National Crime Victimization Survey*, “BJS should investigate the use of modeling NCVS data to construct and disseminate subnational estimates of major crime and victimization rates.”

The objective of this project is to blend the data from this survey with the core NCVS to produce reliable and valid sub-national estimates of the incidence of victimization at a reasonable cost. The key objectives for this study are to—

1. Develop a sub-national companion data collection to boost the core NCVS and to evaluate the companion collection for reliability, validity, cost-effectiveness, and sustainability
2. Evaluate the feasibility and utility of blending the sub-national companion data into the core NCVS, despite the markedly different sources and levels of coverage, response, and measurement error
3. Compare the trade-offs in response bias, cost, operational complexity, and estimation between the core NCVS and a lower-cost, sub-national component
4. Develop sufficiently reliable data at the sub-national level to develop and evaluate model-based estimation procedures that could serve as an additional component to the survey estimates.