Paperwork Reduction Act Submission
Supporting Statement—B

Agency: Office of Juvenile Justice and Delinquency Prevention (OJJDP)
Title: National Youth Gang Survey (NYGS)
Form: N/A
OMB No.:   1121-0224

B. COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS

1. **Potential Respondent Universe**—There are 28,594 cities, towns/townships, and counties in the United States. Many of these towns and townships, although incorporated, have no active, local governing bodies and of those that do, only 15,564 have law enforcement agencies. Since law enforcement agencies could be expected to be the most authoritative sources for information about gang activity, the universe from which the sample was selected was reduced to those cities, towns, and counties that had local police or sheriffs' departments. Based on previous survey experience showing little gang activity in very small communities, towns with populations below 2,500 were excluded.

   The final sampling frame is the list of all local law enforcement agencies in the United States with the above characteristics known to the FBI. The current survey sample was selected in 2002, is longitudinal and descriptive in design (a type of panel study), and it optimizes methodological soundness.

   The resulting sample consists of 2,544 cities, towns, and counties. It is divided into four parts or area types.

   a. All police departments serving cities above 50,000 in population (large cities) (n = 622).

   b. All suburban county sheriffs' and police departments as defined in the FBI's annual report *Crime in the United States* (suburban counties) (n = 738).

   c. A representative sample, selected at random, of rural county sheriffs' departments, as defined in the FBI's annual report *Crime in the United States* (rural counties) (n = 492).

   d. A representative sample of police departments, selected at random, serving cities with populations between 2,500 and 49,999 (small cities) (n = 692).

   Population estimates are provided by the FBI's Uniform Crime Reports and the U.S. Census Bureau and update annually. Due to demographic and population changes over time, NGC annually examines the sample

structure's fidelity to the population of agencies from which is was originally drawn. The latest correspondence analysis, in 2011, yielded a value of .994. Furthermore, NGC routinely verifies the existence of eligible agencies (i.e., establishment of new agencies and the dissolution of agencies for local governemnts that contract out law enforcement services to the county sheriff). Given the stratified nature of the NYGS (i.e., all large cities and counties are surveyed) and observed about gang activity (i.e., occurring mostly in large, urban areas), it is highly probable NYGS captures the breadth of gang activity.

Table 1 depicts the survey sample, stratified by population served.

| Table 1. Survey Sample by Population and Counties Served ||
Population	No. of Agencies
250,000 and Above	70
100,000–249,999	164
50,000–99,999	388
25,000–49,999	234
10,000–24,999	138
2,500–9,999	320
Rural Counties	492
Suburban Counties	738
Total	**2,544**

Table 2 shows the survey sample by area type.

| Table 2. Survey Sample by Area Type ||
Area Type	No. of Agencies
Rural Counties	492
Suburban Counties	738
Smaller Cities	692
Larger Cities	622
Total	**2,544**

Expected Response Rates—Response rates were 86%, 85%, and 81% for 2009 to 2011, respectively. NGC expects a response rate of 80–85% over the next 3 years.

2.   **Statistical Methodology of Stratification and Sample Selection**

Municipalities were stratified by population size by the late Professor Walter Miller based on his prior surveys (Miller, 1975, 1982) and his analysis of surveys conducted by others (Miller, 1997). Professor Miller believed this breakdown by size to be a minimal one to yield the most needed information about the current spread and nature of youth gang problems as identified by law enforcement agencies.

The NYGS has been conducted for over 16 years and has consistently generated quality data and results. Independent evaluations have confirmed and demonstrated the validity and reliability of the NYGS data. Most recently, Katz et al. (2012) examined NYGS data in four ways: missing data analysis, test-retest reliability, internal consistency reliability, and inter-observer reliability, repeatedly noting throughout the report that NYGS data are "robust" and of a "high degree of reliability." The researchers recommended that "NYGS data obtained from law enforcement agencies across the United States…be used by policymakers and academics alike" (p. 121). In another examination of NYGS data, Decker and Pyrooz (2010) found identical results, concluding NYGS data is both reliable and valid and highly suitable for use in both cross-sectional and time series analysis. In the largest cities, both the number of gang members and number of gangs reported in the NYGS "are strong, positive, and significant" correlates of gang homicides. These researchers note substantial statistical evidence that NYGS measurements of gang membership and the number of gangs are "robust" when reported by law enforcement agencies. Most noteworthy, the study's authors also found that the quality of NGC data on gang-related homicides was superior to that obtained by the FBI in the UCR and Supplementary Homicide Reports.

Estimation Procedure—The estimated required sample size **n** was derived using the formula:

$$n = \frac{t^2 N P Q}{d^2 (N-1) + t^2 P Q}$$

Where—

t is the abscissa of the normal curve that cuts off an area of α at the tails.
N is the true population size.
P is the true proportion of the population with a specific characteristic.
Q is **(1-P)** or the true proportion of the population without a specific characteristic.
d is an acceptable error of size that can be incurred at probability α.

This computing formula is derived from the formula provided by William Cochran's *Sampling Techniques* (Wiley & Sons, 1977, p. 75) for sample size **n** required for producing an error of size **d** at a specific probability α. Cochran uses **t**, the abscissa of the normal curve that cuts off an area of α at the tails, to produce the formula:

$$n = \frac{\dfrac{t^2 PQ}{d^2}}{1 + \dfrac{1}{N}\left(\dfrac{t^2 PQ}{d^2} - 1\right)}$$

All the terms in the computing formula are presented in a form equivalent to that in Cochran's formula.

Degree of Accuracy Needed for the Purpose Described in the Justification—An error rate **d** was computed as 5 percent. The probability α of an estimated error being greater than **d** used in the computations above is .05. All computations are based on an estimated true population of **P=.5** and **Q=.5**, since this results in the most conservative and largest estimates for required samples for each stratum.

Unusual Problems Requiring Specialized Sampling Procedures— None.

Use of Periodic (Less Frequent Than Annual) Data Collection Cycles to Reduce Burden—Less frequent than annual collection is not proposed.

Certain survey items are repeated annually, including the presence of gang activity, the number of gangs and gang members, the number of gang-related homicides, other gang-crime trends, and factors influencing gang violence. Intermittent items (due to less variation annually) are demographic characteristics, departmental recordkeeping practices of gang information, operation of a gang unit, gang intelligence practices.

3. **Methods to Maximize Response Rates and to Deal With Issues of Nonresponse**

NGC maintains a database containing the names, addresses, and telephone numbers of representatives of law enforcement agencies that have furnished information on gang activity in previous surveys. Law enforcement agencies will be contacted by mail, telephone, and/or e-mail. Please see the documents titled *Survey Cover Letter* and *Initial E-Mail* (Attachment 6). Initial contact with respondents will be by mail. Respondents who also provided e-mail addresses will be sent e-mails too. Respondents will be encouraged to return the completed survey instrument by fax or Internet.

Per the Dillman Tailored Design method to maximize response rates, follow-up efforts to nonrespondents begin during week 3. This includes a reminder email of the approaching respond-by date and the first round of follow-up phone calls.

Steps are taken to assure that the most appropriate agency representative is the NYGS respondent. The survey is directed to the law enforcement

representative who responded the previous year, with the direction to forward it to the appropriate agency respondent if they are no longer in that position (e.g., transferred, retired). During follow-up phone calls, NGC staff inquires about, and are asked to be routed to, the appropriate agency respondent. Moreover, NGC screens survey responses as they arrive and provides follow-up as necessary pertaining to questionable survey responses —which provides further assurance the most appropriate agency respondent has been located.

Follow-up telephone calls will be initiated to all nonrespondents 30 days after the initial mailing of the survey instruments. Nonrespondents will be contacted by telephone and follow-up e-mails will be sent. In addition, repeated telephone attempts are completed until the end of the survey data collection period. These nonrespondents will be encouraged to complete the form and return it by fax, complete it on the Internet, or answer the survey questions during the telephone interview. If the contact for the survey is no longer available, follow-up callers will do the following to identify a new contact: identify an individual who can furnish information on behalf of his or her agency, an individual who is authoritatively empowered, and an individual who is knowledgeable about gangs in his or her jurisdiction (e.g., a gang unit officer). Please see the documents titled *Follow-Up Phone Calls for 2011 NYGS* and *Follow-Up E-Mail* (Attachment 7) for more information on follow-up phone call procedures.

Respondents are apprised "when exact numeric answers are not available, provide estimates." In the absence of an official records number, obtaining a point estimate for the agency is more preferable—for statistical reasons and comparative reasons—than no response. Requiring exact counts for all survey items would increase nonresponse/missing data. Correspondingly, respondents are permitted to leave items blank when they cannot provide estimates or otherwise do not know.

Further, NYGS specifically contains measures regarding gang homicide incidents, as homicide is the offense least underreported and contains the most complete information.

Additionally, nonresponse bias is examined for continuously by NGC. Consequent to the longitudinal design of the survey, previous responses on particular items are used to predict missing values. Within-agency analysis results are then compared with nonmissing values of similar agencies, thus enhancing validity. On occasion, missing values are imputed via SPSS' module and also compared. For the random sample groups, nonresponse bias is also addressed in the survey design itself by oversampling the necessary number of agencies needed to be representative by approximately 30 percent.

Based on the computations in section B2, the proposed data collection and sampling strategies should produce reliable data that can be generalized to the universe studied.

4. Tests of Procedures

Each year, the National Gang Center holds a survey advisory group meeting consisting of leading national gang researchers to assist in the development of the survey instrument. Most survey items have been tested for more than the ten years since the survey was initiated and are repeated annually, such as prevalence of gang activity; number of gangs, gang members, and gang homicides; and overall gang-problem assessment. Other items are asked intermittently, such as the demographic characteristics of documented gang members. Also, emerging issues and trends with gangs are explored, with special topic questions submitted and refined by the entire survey advisory group. Examples include the migration of gang members across jurisdictions and the impact on the local gang problem of gang members returning from secure confinement, as well as their department's response to the local gang problem (e.g., anti-gang statutes, creating a gang unit). All of the survey items are designed to be descriptive in nature to represent the information and data collected and maintained by law enforcement agencies across the United States. Extensive follow-up is conducted for incomplete or conflicting survey responses. Quality assurance is conducted by e-mails and/or telephone calls.

Exploratory analyses are performed on newly constructed items for nonrandom missing data and, if included in any findings released to the public, are explicitly discussed. Some items are then modified by the NGC Survey Advisory Group while others are dropped.

Concerning the gang definition—there is no universally or nationally agreed upon definition. At the present time, 40 states and the District of Columbia have legislation that defines a "gang" with considerable variation among them, and police departments can vary in their application of it. To assess and minimize this issue directly, NGC performs various validation checks, including (1) compiling and updating statewide legislation pertaining to gangs (http://www.nationalgangcenter.gov/Legislation/) and performing comparative analyses, (2) including particular items in the instrument to measure definitional variation, and (3) performing external validity examinations with other gang surveys at the state, regional, and local levels. All of these measures have provided solid evidence that the approach utilized by NGC is optimal.

Concerning gang-related crime, particularly gang homicide, the primary distinction practiced by law enforcement agencies—and thus the method by which data is most efficiently obtained—pertains to "member-based" and "motive-based" gang homicides. Futher distinction is not routinely practiced among agencies. Therefore, of highest importance methodologically is the measurement of the broader number of gang homicides ("member-based") and the subset of these ("motive-based ").

5a. Statistical Consultants

Arlen Egley, Jr., Ph.D., National Gang Center, (850) 385-0600

G. David Curry, Ph.D., University of Missouri at St. Louis, (314) 516-5042

Cheryl L. Maxson, Ph.D., University of California, (949) 824-5150

James C. Howell, Ph.D., National Gang Center, (910) 235-3708

Malcolm W. Klein, Ph.D., University of Southern California, (213) 740-4255

Dennis Mondoro, Office of Juvenile Justice and Delinquency Prevention, (202) 514-3913

Terrance J. Taylor, Ph.D., University of Missouri at St. Louis, (314) 516-4387

Charles M. Katz, Ph.D., Arizona State University, (602) 543-6618

b. Agency Contact:

Dennis Mondoro
Strategic Community Development Office
Office of Juvenile Justice and Delinquency Prevention
U.S. Department of Justice
810 Seventh Street, NW
Washington, DC 20531
(202) 514-3913

c. Contractor Contact:

Mr. John P. Moore
National Gang Center
Institute for Intergovernmental Research
Post Office Box 12729
Tallahassee, FL 32317
(850) 385-0600