



Bureau of Justice Statistics

Data Quality Guidelines

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BUREAU OF JUSTICE STATISTICS

DATA QUALITY GUIDELINES

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I. OVERVIEW: BJS AND THE OMB GUIDELINES TO ENSURE AND MAXIMIZE THE QUALITY, OBJECTIVITY, UTILITY, AND INTEGRITY OF INFORMATION DISSEMINATED BY FEDERAL AGENCIES

The Office of Management and Budget (OMB) has issued government-wide information quality guidelines under section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001. OMB's final version of the guidelines was published in the Federal Register on February 22, 2002 (67 FR 8452). The OMB guidelines direct each federal agency to issue its own guidelines to ensure and maximize the quality, utility, objectivity, and integrity of information disseminated by federal agencies.

As a component of the U.S. Department of Justice (DOJ), the Bureau of Justice Statistics (BJS) is governed by the DOJ Information Quality Guidelines, the OMB data quality guidelines (67 FR 8452), and the BJS data quality guidelines. As stated in the DOJ Information Quality Guidelines, the departmental guidelines provide "a foundation for more detailed procedures to be developed within DOJ." (Cite as soon as DOJ guidelines are finalized). Accordingly, BJS has formulated its own data quality guidelines to provide the public with additional information regarding the methods used by BJS to ensure the quality, utility, objectivity, and integrity of the statistics it publicly disseminates.

BJS is the statistical agency of the DOJ and is responsible for the collection, analysis, publication, and dissemination of statistical information on crime, criminal offenders, victims of crime, and the operations of justice systems at all levels of government. As the primary provider of civil and criminal justice statistics for the federal government, BJS recognizes that no commitment is more critical to the mission of BJS than the commitment to maintain public trust and confidence in BJS statistics.

The authorizing legislation of BJS (Title 42, United States Code § 3731) states in part that the agency's purpose is "to provide for and encourage the collection and analysis of statistical information concerning crime, juvenile delinquency, and the operation of the criminal justice system and related aspects of the civil justice system and to support the development of information and statistical systems at the Federal, State, and local levels to improve the efforts of these levels of government to measure and understand the levels of crime, juvenile delinquency, and the operation of the criminal justice system and related aspects of the civil justice system."

BJS is dedicated to developing, maintaining, and disseminating all of its statistics in accordance with the highest professional and statistical standards. BJS has long maintained the strongest commitment to integrity and objectivity while striving to produce impartial, timely, and accurate statistics in accordance with its authorizing legislation. For greater detail concerning BJS' performance standards and adherence to the OMB guidelines, see Section III, *OMB Guidelines to Ensure and Maximize the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies: BJS Performance Standards*.

II. THE FUNCTIONS OF BJS

As the primary source of justice statistics in the United States, the resources of BJS are primarily devoted to three functions; (1) maintaining statistical programs and data collection, (2) administering grant programs, and (3) ensuring the prompt and efficient dissemination of BJS statistics.

Complete information concerning all BJS statistics, statistical programs, grant programs, and dissemination methods may be found on the BJS website at <http://www.ojp.usdoj.gov/bjs/>. These functions are summarized briefly below.

A. Maintaining statistical programs and data collection

BJS maintains nearly three dozen major statistical series designed to cover each stage of the criminal justice system. A description of the various BJS data series can be found under the topical references on the BJS home page. BJS statistics are published annually on the following topics; criminal victimization, populations under correctional supervision, and federal criminal offenders and case processing.

In addition to its annual series, BJS maintains periodic data series which cover: the administration of law enforcement agencies and correctional facilities, prosecutorial practices and polices, state court case processing, felony convictions, characteristics of correctional populations, criminal justice expenditure and employment, civil case processing in state courts, and special studies on other criminal justice topics

For certain BJS statistical series, data are collected by the U.S. Department of Commerce, U.S. Bureau of the Census. In addition, BJS coordinates with other DOJ statistical programs, such as the FBI's Uniform Crime Reporting program and National Incident-Based Reporting System. The BJS Federal Justice Statistics Program includes data from other Federal agencies, including the Executive Office for U.S. Attorneys, the Administrative Office of the U.S. Courts, the U.S. Sentencing Commission, and the Federal Bureau of Prisons.

B. Administering grant programs

BJS supports several funding programs which promote research on critical criminal justice issues and enable state, local, and tribal governments to improve their criminal justice statistics, criminal records, and criminal history information systems.

In a partnership with BJS, the American Statistical Association (ASA), sponsors research projects designed to foster improvements in the methods used to obtain, analyze, and report national-level data on crime and criminal justice. Each year, new topics for methodological research are identified by BJS and ASA. Solicitations for new research projects are announced on an ongoing basis, with proposals accepted twice each year. For more information on the advisory role that the ASA serves for BJS, please see the "BJS Partnerships and Affiliations" section below.

BJS supports the State Justice Statistics Program for Statistical Analysis Centers (SACs), which offers technical and financial support to States to enable them to establish and maintain a State-level capacity to collect, analyze and report statistics on crime and justice. Through the creation of SACs, BJS encourages State agencies to analyze State-level criminal justice topics of interest using data gathered from State and local agencies. BJS also promotes statistical inquiries into improved measures of crime incidence and prevalence in the States.

BJS administers the National Criminal History Improvement Program (NCHIP), which provides financial and technical support to States to improve the accuracy, utility, and interstate accessibility of criminal history records. Through NCHIP, BJS assists the States in enhancing their records of protective orders involving stalking and domestic violence, sex offender records, automated identification systems, and other State systems supporting national records systems and their use for background checks.

Another BJS program, the National Incident-Based Reporting System (NIBRS) Implementation Program, assists States and local jurisdictions in improving their ability to measure crime and report crime information at the national level. The program provides financial and technical assistance to States in their efforts to convert to the FBI's new crime reporting system, which is a more sophisticated system of incident-based data detailing many of the elements of crime recorded at the scene by the investigating officer.

The Tribal Justice Statistics Assistance Center (TJSAC), sponsored by BJS and operated by the Justice Research and Statistics Association, works with Federally-recognized American Indian and Alaska Native tribes to develop or improve tribal justice agencies' abilities to generate and use criminal and civil justice statistics. TJSAC

will assist tribal jurisdictions to participate in national data collections such as the National Incident-Based Reporting System (NIBRS) and the Uniform Crime Reporting (UCR) program.

C. Ensuring the prompt and efficient dissemination of BJS statistics

BJS disseminates its data and statistics to the general public in paper and electronic format. There are five main dissemination programs that BJS utilizes to ensure that its statistics reach the widest audience possible in a convenient and useable format.

1. Bureau of Justice Statistics Clearinghouse. A component of the National Criminal Justice Reference Service, the BJS Clearinghouse provides copies of BJS reports and BJS mailing list information, criminal justice statistics and data assistance from information specialists, and referrals to other sources of crime data. There is toll-free access to the BJS Clearinghouse by contacting information specialists at 1-800-732-3277.

2. National Archive of Criminal Justice Data (NACJD). BJS archives its data files, documents them, and makes them available through the National Archive of Criminal Justice Data. Data files that are maintained by NACJD are available for downloading from the Internet at no charge.

The central mission of NACJD is to facilitate and encourage research in the field of criminal justice through the sharing of data resources. NACJD provides computer-readable data for the quantitative study of crime and the criminal justice system, technical assistance in selecting data collections and the computer hardware and software for analyzing data efficiently and effectively, and training in quantitative methods of social science research to facilitate secondary analysis of criminal justice data.

3. Federal Justice Statistics Resource Center (FJSRC). The Federal Justice Statistics Resource Center maintains the BJS Federal Justice Statistics Program database which contains information about suspects and defendants processed in the Federal criminal justice system. Data are currently obtained from the U.S. Marshals Service, U.S. Attorneys, Federal Judiciary, U.S. Sentencing Commission, and the Federal Bureau of Prisons. These data are available for online query and analysis.

4. National Clearinghouse for Criminal Justice Information Systems (CJIS). Sponsored by BJS and operated by the National Consortium for Justice Information and Statistics (SEARCH), the National Clearinghouse for Justice Information and Statistics provides on-line Internet access to a host of justice-related information resources, including; (1) The Automated Index of Criminal Justice Systems, a database containing information about criminal justice software and agencies that have practical experience with automated systems, (2) The Information Technology Acquisition Database, containing information technology procurement documents for dissemination and use as models by other justice agencies, and (3) Integrated Justice Information Systems, a site that provides policy, operational, technical and research information to the justice community about integrating their automated systems. It offers access to a database of state integration activities and information on best practices, case studies, federal activities, technical solutions and other resources.

5. Infobase of State Activities and Research (ISAR). The ISAR database is maintained by the Justice Research and Statistics Association and funded by BJS. The database contains current information about the research, activities, and publications of the State Statistical Analysis Centers which conduct research and analyze statistics concerning criminal justice issues of State interest. The ISAR is searchable by State, keyword, and date and includes over 4,000 research projects, publications, and other state-level products and activities.

III. OMB GUIDELINES TO ENSURE AND MAXIMIZE THE QUALITY, OBJECTIVITY, UTILITY, AND INTEGRITY OF INFORMATION DISSEMINATED BY FEDERAL AGENCIES: BJS PERFORMANCE STANDARDS

The Office of Management and Budget (OMB) has issued government-wide information quality guidelines under section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001. OMB's final version of the guidelines was published in the Federal Register on February 22, 2002 (67 FR 8452). The OMB guidelines direct each federal agency to issue its own guidelines to ensure and maximize the quality, utility, objectivity, and integrity of information disseminated by federal agencies.

The following performance standards explain in detail BJS' commitment to ensuring and maximizing the quality, utility, objectivity, and integrity of its publicly available statistics.

A. BJS Performance Standard for the Quality of BJS statistics

As stated in the Overview, BJS is dedicated to developing, maintaining, and disseminating all of its statistics in accordance with the highest professional and statistical standards. Sections IX through XIV of these guidelines present 23 Data Quality Guidelines that govern each phase of the BJS data collection process from survey design through the dissemination of statistics.

Because the quality of BJS statistics is essential to its credibility and the credibility of the Department of Justice, BJS staff are held to the highest standards of professionalism as presented in the American Statistical Association's *Ethical Guidelines for Statistical Practice* (see Section VI and Appendix).

B. BJS Performance Standard for the Utility of BJS statistics

BJS is committed to maximizing the utility of its statistics to all users of BJS data. BJS statistics are frequently cited by policymakers at all levels of government, members of the media, practitioners, academia, and the general public. To ensure that BJS statistics are as relevant as possible to its wide array of users, BJS is committed to being fully responsive to its users' needs (see the guidelines and discussion in Sections X and XI), and BJS makes its statistics available to them as soon as possible in a variety of useful formats (see Section II (C) and guidelines and discussion in Sections XII and XIV).

C. BJS Performance Standard for the Objectivity of BJS statistics

BJS is committed to ensuring objectivity in the presentation of its statistics and in the procedures used to generate them. The objectivity of BJS statistics is protected by several factors to ensure that BJS data are accurate, reliable and unbiased and are presented in an accurate, clear, complete and unbiased manner. Objectivity is achieved by careful preparation of the data in accordance with proven statistical methods (see guidelines and discussion in Section X), verification of data by additional BJS staff members (see guidelines and discussion in Section XIII), and procedural protections to ensure that data are not compromised before public release (see guidelines and discussion in Section XIII).

The American Statistical Association's *Ethical Guidelines for Statistical Practice* require that responsible attention be given to "the avoidance of any tendency to slant statistical work toward predetermined outcomes" (see Section VI and Appendix).

D. BJS Performance Standard for the Integrity of BJS statistics

BJS is committed to protecting the integrity of its statistics from unauthorized access or revision to ensure that the data are not compromised through corruption or falsification (see guidelines and discussion in Sections IX and XIII). BJS is committed to protecting the confidentiality and privacy of persons involved as subjects of BJS data collections in accordance with all federal privacy laws (see guidelines and discussion in Section IX).

IV. PRINCIPLES AND PRACTICES FOR A FEDERAL STATISTICAL AGENCY

The BJS Data Quality Guidelines have been substantially influenced by the findings of the 2001 National Research Council report, "Principles and Practices for a Federal Statistical Agency" (National Academy Press, 2nd ed, 2001). The report discusses three principles for a federal statistical agency; providing policy-relevant statistics, establishing credibility among data users, and maintaining trust among data providers. BJS views its Data Quality Guidelines as the mechanism by which the agency adheres to these three principles.

In addition, "Principles and Practices for a Federal Statistical Agency" lists eleven essential practices of a federal statistical agency, all of which are practiced by BJS:

1. A clearly-defined and well-accepted mission,
2. A strong position of independence,
3. Continual development of more useful data,
4. Openness about the data provided,
5. Wide dissemination of data,
6. Cooperation with data users,
7. Fair treatment of data providers,
8. Commitment to quality and professional standards of practice,
9. An active research program,
10. Professional advancement of staff, and
11. Coordination and cooperation with other statistical agencies.

V. BJS PARTNERSHIPS AND AFFILIATIONS

As a federal statistical agency, BJS maintains professional affiliations or working partnerships with several of the leading professional statistical associations in the nation and around the world, including the American Statistical Association (ASA), the Council of Professional Associations on Federal Statistics, the Consortium of Social Science Associations, the Federal Committee on Statistical Methodology, the Inter-university Consortium for Political and Social Research (National Archive of Criminal Justice Data), the Committee on National Statistics within the National Academy of Sciences, and the United Nations Office for Drug Control and Crime Prevention.

BJS is a member of the Interagency Council on Statistical Policy (ICSP), a council of federal statistical agency heads that is chaired by the Office of Management and Budget (OMB). Since its inception, the ICSP has been an important vehicle for coordinating federal statistical agencies and their practices, particularly when statistical activities and issues overlap or cut across agencies. The ICSP has also facilitated the exchange of information about agency programs and activities, and has provided advice and counsel to OMB on statistical matters. In the past year, agenda topics included: establishing priorities for further interagency collaboration; continuing efforts to elaborate the potential benefits of interagency data sharing; further enhancing the usefulness of the *FedStats* Internet site; extending a collaborative program to undertake research in various aspects of survey methodology; developing best practice guidelines for contracting for Federal surveys; and considering ways to strengthen interaction with the Committee on National Statistics. In addition, the ICSP reviewed and ultimately approved recommendations to develop performance measures for statistical agency programs, an initiative that

should lead to the identification of best practices, the development of benchmarks for comparison, and continual improvements in the processes the agencies measure.

The ASA has long served in an advisory capacity to BJS. The ASA has been active in providing technical advice, methodological reviews, and comments for a variety of BJS products. The topics that have been addressed by the ASA in recent years include: revisions to the National Crime Victimization Survey, hate crime research, and the use of force by law enforcement officers. The ASA's Committee on Law and Justice Statistics has also organized sessions at the Joint Statistical Meetings on research related to BJS data and has administered the BJS/ASA Statistical Methodological Research Program. The Statistical Methodological Research Program provides for the analysis of BJS data and was designed to encourage the creative and appropriate use of these data to inform substantive and methodological issues.

VI. BJS AND PROFESSIONAL ETHICS

From the initial design of BJS surveys through the dissemination and maintenance of our statistics, BJS staff are governed by the ASA's *Ethical Guidelines for Statistical Practice*. The ASA's Ethical Guidelines (see Appendix) represent the consensus of the professional statistical community for both the public and private sectors.

The ASA's Ethical Guidelines address eight general topic areas and specify important ethical considerations under each topic. The topics include: professionalism in the competence and judgment of statisticians, ethical behavior regarding allegations of misconduct, and responsibilities in publications, testimony, and research subjects. The ethical guidelines promulgated by the ASA apply to the professional activities of all BJS statistical staff without regard to seniority level.

VII. FEDERAL LEGISLATION, RULES, AND REGULATIONS GOVERNING BJS STATISTICS

BJS procedures for collecting, analyzing, publishing, and distributing data are subject to strict federal controls in order to ensure the quality, security, and integrity of our statistics. Among the governing regulations:

- ▶ OMB Circular A-130 (revised), *Management of Federal Information Resources*
- ▶ OMB *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies*
- ▶ OMB's Statistical Policy Directive No. 15, *Race and Ethnic Standards for Federal Statistics and Administrative Reporting*
- ▶ 1974 Privacy Act
- ▶ 28 CFR Part 22, *Confidentiality of Identifiable Research and Statistical Information*
- ▶ 28 CFR Part 46, *Protection of Human Subjects* ("The Common Rule")
- ▶ The Rehabilitation Act of 1973 as amended, Sections 504 and 508, codified at 29 U.S.C. § 794d, *Electronic and Information Technology*
- ▶ 42 U.S.C. § 3731 (BJS authorizing legislation)
- ▶ 42 U.S.C. § 3789g (BJS information confidentiality statute)

VIII. BJS Data Quality Guidelines: Overview

BJS has published these Data Quality Guidelines to implement Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (PL 106-554). OMB has issued guidelines under Section 515 which direct the Federal agencies subject to the Paperwork Reduction Act (44 U.S.C. Chapter 35) to establish and

implement written procedures to ensure and maximize the quality, utility, objectivity and integrity of the information that they disseminate. The final BJS guidelines will apply to a wide variety of substantive information and dissemination activities in order to meet basic information quality standards set forth by Section 515. Another purpose of these guidelines is to provide a framework under which BJS will provide persons an opportunity to seek and obtain correction of information maintained and disseminated by BJS that does not comply with these guidelines. These guidelines may be amended by the BJS Director if the BJS Director determines that good cause exists for an amendment.

A. Scope

Pursuant to the OMB guidelines (67 FR 8452) and the DOJ Information Quality Guidelines, the BJS guidelines apply to all information that is meant for public dissemination by BJS if the information is disseminated by BJS on or after October 1, 2002, regardless of when the information was first disseminated..

The BJS guidelines apply to BJS statistical products disseminated in all media (printed, electronic, or in other form). As is the intent of OMB's guidelines, the BJS guidelines focus primarily on the dissemination of substantive statistical information as enumerated in BJS' authorizing legislation rather than information pertaining to basic BJS or DOJ operations.

The BJS Data Quality Guidelines listed herein apply only to BJS statistics as disseminated directly by BJS. The guidelines do not apply to BJS statistics that are presented, manipulated, or interpreted by any entity other than BJS.

B. Exceptions

As stated in the above section, the BJS Data Quality Guidelines govern all justice statistics that BJS produces and disseminates for the general public, including all statistics that are featured in BJS publications, on the BJS website, and in BJS press releases. In addition to the exceptions provided in the DOJ's Information Quality Guidelines, the BJS Data Quality Guidelines do not apply to the following BJS information: information limited to government employees, grantees, or contractors; archival records, correspondence with individuals, statistical or analytic products containing a BJS disclaimer, internal BJS records, materials not intended for public distribution, hyperlinks to information disseminated by entities other than BJS, and responses to requests under the Freedom of Information Act, the Privacy Act, the Federal Advisory Committee Act, or other similar laws.

The BJS Data Quality Guidelines do not govern the entities to which the BJS website is linked. The BJS website only links to agencies and organizations with which BJS does business, including: other government agencies, professional organizations whose members provide technical advice or participate in BJS surveys, contractors, grantees, and commercial sites that provide software necessary to properly view BJS documents. It is BJS policy that links to other agencies or organizations are identified in the link title which specifies whether the site is operated by another government organization, partner sites that are funded by BJS in conducting its business, or other external sites for which BJS takes no responsibility. BJS Data Quality Guidelines only apply to the material on the BJS site and partner sites that disseminate BJS data to the extent that those sites disseminate BJS data.

BJS is committed to its mission of providing the public with justice statistics in a timely manner; however, this mission is limited by federal protections as to confidentiality of certain information and the privacy concerns of human subjects of federally funded research (discussed more fully below).

In urgent situations that may pose an imminent threat to public safety, the operations of federal, state or local criminal justice agencies, criminal justice information infrastructures, or homeland security, these requirements may be waived temporarily.

C. Legal Effect

The BJS Data Quality Guidelines represent the practices, priorities, and policy views of BJS. They are not applicable to any component of the DOJ other than BJS. They are not intended to be, and should not be construed as, legally binding regulations or mandates. These guidelines are intended only to inform the public of the quality controls utilized by BJS and do not create any right or benefit, substantive or procedural, enforceable at law or equity, by any party against the United States, its agencies (including the DOJ or any DOJ component), officers, or employees, or any person.

IX. GUIDELINES FOR PRIVACY AND MAINTAINING CONFIDENTIALITY OF DATA

- Guideline 1.1** To protect the privacy and confidentiality of persons involved as subjects of BJS data collections, BJS staff will ensure that all procedures for the collection, retention, and dissemination of statistics (including the procedures of BJS grantees) are subject to federal regulations concerning data confidentiality found at 28 CFR Part 22.
- Guideline 1.2** BJS must require its grantees to complete a Privacy Certificate as part of the application for BJS funding.
- Guideline 1.3** All research involving human subjects will be governed by the federal protections at 28 CFR Part 46 which provide for (among other things); legally effective informed consent to be given by human subjects, approval of the research plan by an Institutional Review Board under certain circumstances, and procedures to minimize risks to the human subject.
- Guideline 1.4** BJS staff will ensure that all paper and electronic data files and statistics in its possession are protected from external threats.

Discussion

As a federal statistical agency that collects and disseminates a wide array of information, BJS has taken aggressive measures to protect the privacy and confidentiality of individuals from whom they obtain information. BJS has procedures in place to ensure that information collected by BJS that is identifiable to a private person may only be used and/or revealed for the statistical or research-related purpose for which it is obtained. BJS has procedures in place to ensure that copies of such information shall not, without the consent of the person to whom the information pertains, be revealed to others who are not involved in the collection and analysis of the information.

BJS staff ensure that the identities of its human subjects are protected despite issues concerning sample size or the uniqueness of the statistical issue addressed by the data collection. Data must be aggregated as appropriate before public use datasets are disseminated. Data must not be disseminated that permits the identification of private information about an individual unless prior consent is obtained from the individual or the individual has agreed to participate in a project with knowledge that the findings cannot be expected to completely conceal subject identity.

Adequate precautions must be taken by BJS and its grantees to ensure the administrative and physical

security of identifiable data. Data collection plans must be designed to preserve the anonymity of private persons to whom information relates, including, where appropriate, name-stripping, coding of data, or other similar procedures.

In order to protect information identifiable to a private person, BJS requires that a Privacy Certificate be completed pursuant to BJS regulations which state that "research or statistical information identifiable to a private person may be used only for research or statistical purposes." (28 CFR Part 22).

BJS has designated a Human Subjects Protection Officer to ensure that in accordance with the requirements in 28 CFR Part 46, BJS protects human subjects who are subject to research or the collection of data. The BJS Human Subjects Protection Officer must ensure that risks to human subjects are minimized, informed consent is obtained, and confidentiality is protected according to federal law. Pursuant to the provisions of Part 46, BJS must submit certain research projects to the review of an Institutional Review Board. The BJS Human Subjects Protection Officer is responsible for the review of each grantee's Human Subjects Screening Sheet for BJS-funded research and data collection.

Only authorized BJS staff have access to completed data collection instruments and relevant data files. Data processing of files containing identifiable data is performed on a separate secured computer server that is only accessible to BJS staff.

X. GUIDELINES FOR INITIATING SURVEYS, CENSUSES, AND OTHER DATA COLLECTIONS

- Guideline 2.1** BJS surveys, censuses, and other data collections may only be undertaken to address a mandate from the U.S. Congress or a U.S. Department of Justice policy initiative as determined by the U.S. Attorney General or the BJS Director.
- Guideline 2.2** The BJS Director will collect and disseminate BJS statistics that address emerging information needs and highlight Department of Justice-related issues of policy relevance.
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- Guideline 2.4** BJS data collections are guided by the principle that the time series associated with each data collection activity should be preserved to permit the measurement of changes over time.

Discussion

The collection of BJS statistics occurs when a determination is made by the U.S. Attorney General, the BJS Director, or the U.S. Congress that there is a policy-relevant need for a data collection. To assist the BJS Director in determining when a new data collection effort is appropriate, BJS staff will continually monitor the field of justice statistics by maintaining a dialogue with state and local partners, consulting with professional and academic experts in the field, and convening and attending conferences in order to present and discuss BJS statistics. Because the detection of changes in the justice system over time is critical to the effective evaluation of the performance of the justice system, BJS is committed to the preservation and continuation of its time series data collections.

BJS will not attempt to collect statistics pertaining to any matter that the BJS Director reasonably believes

to be outside the scope of its authorizing legislation. Similarly, the BJS Director will not permit BJS staff to attempt to perform professional functions that the Director reasonably believes to be outside the scope of BJS' authorizing legislation.

XI. GUIDELINES FOR SURVEY DESIGN AND DATA COLLECTIONS

- Guideline 3.1** Data collections will be developed and conducted with an emphasis on cost effective methodologies, proven research methods, and established statistical practice.
- Guideline 3.2** All of the following elements will be determined according to established statistical standards; sample design, proper sample size, pretesting protocols for survey instruments, acceptable response rates, variables and variable definitions, burden on respondent, and data collection method (use of CAPI, personal interview, etc.).
- Guideline 3.3** Data collections and survey designs will be periodically reviewed and redesigned when appropriate by BJS to ensure the collection of high quality and policy relevant statistics.
- Guideline 3.4** For data collections conducted for the Department of Justice by the Bureau of the Census, the Census Bureau personnel will be governed by the Information Quality Guidelines applicable to the Census Bureau.

Discussion

Prior to the collection of data (either for a new or an ongoing series), BJS staff must critically examine cost-effective solutions for both the short and long term. BJS staff should regularly analyze the statistics that are currently available in terms of relevance, quality, and timeliness to determine whether and how to collect new justice statistics. BJS staff must utilize only proven research methods and established statistical practice in every step of the BJS data collection process. In accordance with the responsibility of BJS to produce the highest quality statistics possible, the following elements of BJS statistics must be determined according to established statistical standards; sample design, proper sample size, pretesting protocols for survey instruments, acceptable response rates, variables and variable definitions, burden on respondent, and data collection method.

BJS reports and other statistical products are prepared using a variety of analytical techniques including simple tabulations of descriptive statistics, time series projections, computation of odds ratios, and utilization of life table techniques, to name a few. Statistics made from sample data and cited in BJS reports are always tested to ensure that differences are not due to random variation. All analytic techniques must be reviewed by qualified BJS staff for their appropriateness to the data and the analysis. Analytic techniques that are considered to be complicated for the average reader should be clearly identified and explained in BJS reports.

Because certain federal statistical programs need to evolve, adapt, and innovate to keep pace with the demands of the users they serve, BJS staff must remain cognizant of the need to redesign surveys if the circumstances warrant a redesign. As the 1994 redesign of the National Criminal Victimization Survey indicates, there are times when the overhaul of existing surveys may be desirable to maintain the reliability of key statistical series, especially if sources of information have changed or the way in which they are made available is modified.

For certain data collections, BJS contracts with the U.S. Census Bureau to act as the data collecting agent. When serving this function, the activities of all Census Bureau staff will be governed by the Information Quality Guidelines developed by the Census Bureau.

XII. GUIDELINES FOR DATA TRANSPARENCY, ANALYSIS, AND PROCESSING

- Guideline 4.1** BJS statistical products must provide the reader with a statement of methodology that is reasonably specific as to the methods by which the statistics were generated.
- Guideline 4.2** BJS statistical products must provide sufficient information to permit the reader to evaluate the strengths and weaknesses of the data.
- Guideline 4.3** BJS statistical products must provide sufficient information concerning instances where data have been imputed.
- Guideline 4.4** BJS staff must archive all analysis and data sets as soon as they become final in order to ensure the reproducibility of the published statistics.

Discussion

A statement of methodology must be available for all statistical products to provide a substantial measure of transparency to the statistical findings that BJS publishes. Due to the varying lengths of BJS reports, special reports, and fact sheets, resource constraints may substantially limit the statement of methodology; however, BJS reports and other statistical products must provide the reader with the ability to receive more specific information upon request. In most cases, detailed methodological descriptions of the collection will be provided in the documentation for a public use dataset.

Wherever possible, BJS publications and other statistical products should disclose the following elements: standard errors, response rates, coverage issues, modifications from previous data collections, caveats in interpreting the data, and any other information that might be valuable to the data user in interpreting BJS statistics. In order to ensure that the data are utilized in a responsible fashion by data users and policymakers, BJS must provide sufficient guidance in the interpretation of the statistics it publishes.

BJS imputation procedures must be based on theoretical and empirical considerations and must make use of the most relevant data available. Published estimates based on incomplete data for which there has been no imputation should note this fact, and should be accompanied by a statement indicating the proportion of missing data when possible. In addition, all imputed values on a data file should be clearly identified as such.

BJS staff must maintain a comprehensive archive of all survey instruments, data sets and setups and make them available to the public. Not only does this transparency enhance public confidence in BJS reports, it also provides a public record to ensure consistent treatment of variables (including weights and computations) over time for ongoing statistical series.

XIII. GUIDELINES FOR CONTENT AND VERIFICATION OF BJS STATISTICS

- Guideline 5.1** The objectivity of BJS statistics must be vigilantly protected at all times by BJS staff.
- Guideline 5.2** All BJS reports and other statistical products must be subject to an objective and appropriate verification process conducted by qualified BJS staff other than the author of the report.

- Guideline 5.3** BJS staff must be available to discuss the content of a BJS report and the methodology utilized.
- Guideline 5.4** The public must have direct access to BJS staff members so that the public may obtain answers to specific questions regarding the content of BJS reports.
- Guideline 5.5** Presentation of all BJS statistics must be guided by a BJS Style Guide which is available to the public.

Discussion

Because the credibility of BJS data and the integrity of BJS as a federal statistical agency depend on the independence of BJS, the objectivity of BJS statistics must be protected at all times. Every step in the statistical process must be protected from improper external interference and the appearance thereof. Only qualified BJS staff may, (1) conduct or oversee the collection and initial analysis of BJS data, (2) oversee the drafting of the initial report, (3) edit the report, (4) verify the data, (5) format the report for publication, (6) oversee the publication process, and (7) determine the release date for the report. These protections from external influence apply to all BJS-disseminated statistics and are not limited to those statistics that appear in BJS reports.

The BJS verification procedures must be conducted by a qualified BJS staff member other than the author of the report at issue. The verification procedures must include; (1) the logic and recoding of the original analysis, (2) significance tests, (3) statistical output from the original analysis as presented in the report, (4) accuracy of text as it relates to supporting tables, (5) accuracy of all graphical depictions of data, (6) all information provided by entities outside of BJS, and (6) matters relating to spelling, formatting, grammar, and syntax.

The content of all BJS reports and other statistical products should be capable of being explained to any interested party including the news media, researchers, interest groups, policymakers, students, and other entities inside and outside of government. In order to make the content of BJS reports comprehensible to the public, the author must be identified on the report and contact information must be provided on the BJS website, including a toll free number where more information may be obtained.

To facilitate public access to BJS staff, BJS maintains an "Ask BJS" link on the BJS website through which the public may submit questions relating to BJS statistics and reports. These questions will be routed to the qualified BJS staff member and handled in a timely manner.

In order to ensure internal consistency among all BJS publications and statistical products and facilitate their use by readers, the BJS Style Guide governs all BJS publications produced by BJS, its grantees, and contractors. The Style Guide contains publication standards and other guidance relating to use of tables, graphs, spreadsheets, punctuation, capitalization, footnotes, and bullets.

XIV. GUIDELINES FOR DISSEMINATION

- Guideline 6.1** BJS should ensure that all statistics it collects are disseminated to the public as widely as possible, using all appropriate media.
- Guideline 6.2** BJS' dissemination policy is subject to federal regulations concerning confidentiality and privacy (described above).

Discussion

BJS statistics are disseminated in both paper and electronic formats. BJS makes all of its statistics easily discoverable on the BJS website where they may be downloaded for public use. There is a high degree of security for the BJS website to protect the integrity of BJS statistics from external threats.

The BJS Director must ensure that all data and reports are released to the public as soon as possible in order to comply with BJS' statutory responsibility to "provide information to the president, the Congress, the judiciary, State and local governments, and the general public on justice issues." (42 USC § 3732(c)(10)).

BJS issues press releases on about half of its publications annually. BJS maintains a list to ensure that all interested outlets are notified about new publications via email or fax. At the moment that data are released to the public, all publications and new data added to the BJS website are announced on the "What's New" webpage. BJS hosts a listserv called JUSTSTATS that sends email notices to subscribers of all new releases at the time of release. BJS also contributes to JUSTINFO, a biweekly electronic newsletter hosted by NCJRS that provides notices of publications, announcements, conferences, and solicitations for certain DOJ offices.

XV. PROCEDURES TO SEEK CORRECTION OF BJS STATISTICS

A. The Right to Seek Correction of BJS Statistics

Because the core function of BJS is the production and dissemination of the highest possible quality of justice statistics, there is no limitation on who may seek the correction of BJS statistics. Any individual, unit of government at the federal, state, local, and tribal levels, or private organization has the right to seek the correction of published BJS data if the complaining entity has a good faith and nonfrivolous basis to believe that BJS failed to comply with the BJS Data Quality Guidelines or the DOJ Information Quality Guidelines. All complainants seeking correction of BJS data must comply with the data correction procedures outlined in Section (B) below. The purpose of the information complaint and appeal process is to deal with information quality matters, not to resolve underlying substantive policy or legal issues.

The OMB guidelines require federal statistical agencies to provide redress for "affected persons" (67 F.R. 8459), and BJS has determined that the public's right to receive accurate statistics and the responsibility of BJS to provide them require BJS to define "affected persons" as broadly as possible.

The BJS data correction process outlined below applies to all BJS statistics covered by these guidelines without regard to the medium by which the statistics were disseminated. A complainant has the right to seek correction of any BJS data covered by these guidelines, whether the data are published in a paper BJS publication, included on a CD-ROM issued by BJS, included in a public use datasets made available by BJS, published on the BJS website, or directly disseminated by BJS in any other manner.

B. Data Correction Procedures

A complainant may request a correction of BJS data in one of three ways. In accordance with the requirements set out below, a complainant may submit a data correction request by mail to the contact provided below in Section (D)(1), by fax to the contact provided below in Section (D)(2), or by electronic mail to: askbjs@ojp.usdoj.gov.

A data correction request must:

1. fully describe the perceived error,
2. fully describe where the perceived error was identified (including where applicable, the publication title, date, page, webpage address (URL), graph, table, chart, column, row, etc.),
3. explain why a correction is needed, including an explanation of how the perceived error fails to comply with the data quality guidelines from DOJ, OMB, and BJS,
4. explain how the complainant is affected by the perceived error,
5. provide corrected information and supporting documentation,
6. provide additional information and evidence as the complainant deems appropriate,
7. provide the complainant's name, address, phone number, fax number, and/or e-mail address.
8. if the data correction request is via electronic mail, the subject line should read "DATA CORRECTION REQUEST." If it is submitted by regular mail or fax, the envelope or fax cover sheet should be clearly marked "DATA CORRECTION REQUEST."

The failure of a complainant to fully explain the nature of the complaint and provide contact information may cause significant delays for a BJS response. BJS will not attempt to contact the requestor to obtain additional information.

Frivolous data correction requests represent both a distraction to BJS staff and an inefficient use of federal resources; therefore, only nonfrivolous data correction requests will be considered. A data correction request may be rejected by the BJS Director as frivolous under any of the following six circumstances:

1. the request fails to establish a causal link between the perceived error and BJS' compliance with the BJS, DOJ, or OMB data quality guidelines,
2. the request is devoid of substantial merit on its face,
3. the request is unsupported by reasonable evidence,
4. the claim is of a nature that is not generally corrected by federal statistical agencies,
5. the data to be corrected are stale, or
6. the BJS Director has other good cause to reject the request.

C. Recordkeeping

BJS staff will maintain a record of all data correction requests and will promptly notify the complainant that the data correction request was received and is undergoing an initial review process as described in Section (E) below. BJS will maintain a log that records the nature and date of the BJS response and follow-up actions taken, if any.

D. Contact information

1. Data correction requests that are sent by mail must be addressed as follows:

DATA CORRECTION REQUEST
Bureau of Justice Statistics
810 Seventh Street, NW
Washington, DC 20531 USA

2. Data correction requests that are sent by fax must feature "DATA CORRECTION REQUEST" written clearly on the cover sheet. They should be sent to BJS at (202) 307-5846.
3. Data correction requests that are sent by electronic mail must contain "DATA CORRECTION REQUEST" in the subject line and be addressed to: askbjs@ojp.usdoj.gov.

E. Initial Review Process

As stated in the DOJ Information Quality Guidelines, "the request for correction will be processed by the DOJ component that disseminated the information in question." (Cite) In the initial review process, the BJS staff member to whom the data correction request is referred shall make determinations in good faith with respect to a submitted data correction request, including: (1) the initial determination of whether a data correction request is frivolous or repetitive, (2) whether an individual is entitled to correction, and (3) the appropriate level of correction. These decisions will be reviewed by a BJS manager.

BJS staff will make it a high priority to complete the initial review process within 60 calendar days from the transmittal of the BJS acknowledgment of the data correction request. If in an extraordinary circumstance the initial review process requires additional time, BJS staff will contact the complainant and provide an explanation and expected date of completion.

Promptly following the conclusion of the initial review process, BJS staff will notify the complainant in writing of the agency's determination, and provide the complainant with any necessary documentation. In addition, BJS staff will either inform the complainant about corrective actions that will be or have been undertaken by BJS or will provide the complainant with information on appealing the initial review.

F. Appeal of the Initial Review

At the request of the complainant (and no other party), the BJS staff member's decision in the initial review may be appealed to the BJS Director. Any appeal of the initial review must be made within 35 calendar days of the BJS transmittal of a response to the complainant using the contact information provided above in Section (D). Any appeal that is received by BJS after the 35 calendar day deadline may be denied as untimely by the BJS Director.

The appeal should be clearly designated "APPEAL OF INITIAL REVIEW." Review of the staff member's decision by the BJS Director is final and will be based only upon the written materials provided by the parties.

In carrying out the provisions of this section to consider the complainant's appeal, the BJS Director:

1. shall have access to all written materials initially provided to BJS by the complainant,
2. shall have access to all materials relied upon by the BJS staff member during the initial review,
3. may request additional written materials from either party as necessary,
4. may (if necessary) schedule a hearing with all parties if it is determined that a hearing is required for the swift resolution of the matter, and
5. shall make a final report available to the parties that contains the reasons for the final resolution of the matter.

The initial review appeal process should normally be completed within 60 calendar days from the date the BJS Director is presented with the initial review materials. If in an extraordinary circumstance the appeal of the initial review process requires additional time, BJS staff will contact the complainant and provide an explanation and expected date of completion.

Appendix A

“Influential” BJS Statistics for the Purposes of the BJS Data Quality Guidelines

The OMB guidelines for implementing section 515 recognize that certain information must meet a higher quality standard if the information is considered by the agency to be “influential.” Such data should have a sufficiently high degree of transparency about the data and methodology to facilitate the reproducibility of the information by qualified third parties.

BJS maintains approximately three dozen national statistical series designed to gather data on criminal victimizations experienced by millions of residents each year and operational data from the 50,000 agencies, offices, and institutions which compose the U.S. justice system. These data series provide the only national information to support policy formulation, program development, and assessment of the extent to which changes occur in any of the contingencies of crime and justice geographically or temporally. Such data address fundamental information needs of the public and all three branches of government.

When information is defined as influential there is usually an added level of scrutiny afforded this information, to include the need to ensure it is reproducible. At DOJ, influential information is that which is expected to have a genuinely clear and substantial impact at the national level and on major public and private policy decisions as they relate to federal justice issues. BJS data covering crime and the major functional areas and decision-points of the justice system all adhere to an explicit set of processes for insuring the integrity and adequacy of the data collected, analyzed, and reported.

For BJS, data on crime and the administration of justice undergo rigorous scrutiny and verification prior to release and datasets used to generate statistical findings are made accessible to the public to insure the replicability of reported findings. BJS works to maintain the transparency of all of its publicly disseminated statistics in two primary ways. First, BJS staff are available to provide direct assistance in interpreting all statistical data that BJS disseminates and in explaining the methodology employed. Second, the National Archive of Criminal Justice Data (NACJD) maintains over 300 BJS datasets and makes them available to researchers, journalists, scholars, and other users. The NACJD provides public access for the replication and secondary analysis of BJS statistics and findings, provides documentation for data users, and provides electronic access to BJS source data for public data users around the world.

At DOJ, the responsibility for determining if information is influential lies with the components that disseminate the information. DOJ components may designate certain classes of information as either “influential” or not in the context of their specific programs. Absent such designations, DOJ components will determine whether information is influential on a case-by-case basis, using the principles articulated in these guidelines. For BJS, each national statistical series addresses a major data need which has been established over a period of time and for which a significant audience exists. Two examples include:

- the National Crime Victimization Survey (NCVS) provides the only measure of personal and household victimization and one of the nation’s primary indicators of criminal activity. The NCVS provides details on the contingencies of crime with detailed information on victims, offenders, circumstances under which a crime took place, the relationship between offender and victim, school crime, racial profiling, hate crime, and computer crime, among other issues.

-BJS corrections statistics provide the nation with critical information concerning the size of the population in state and federal prisons and local jails, as well as those offenders under community supervision by probation and parole authorities. Corrections statistics describe the growth of these populations, provide estimates of prison crowding, and describe in detail the population of prisoners under sentence of death.

similar work, whether in the same or different organizations. Basically, they must contribute to the strength of their professions overall, by sharing non-proprietary data and methods, by participating in peer review, and by respecting differing professional opinions. G. Responsibilities Regarding Allegations of Misconduct addresses the sometimes painful process of investigating potential ethical violations and treating those involved with both justice and respect. Finally, H. Responsibilities of Employers, Including Organizations, Individuals, Attorneys, or Other Clients Employing Statistical Practitioners encourages employers and clients to recognize the highly interdependent nature of statistical ethics and statistical validity. Employers and clients must not pressure practitioners to produce a particular "result" regardless of its statistical validity. They must avoid the potential social harm that can result from the dissemination of false or misleading statistical work.

I. PREAMBLE

A. Purpose of the Guidelines

The American Statistical Association's Ethical Guidelines for Statistical Practice are intended to help statistical practitioners make and communicate ethical decisions. Clients, employers, researchers, policy makers, journalists, and the public should be urged to expect that statistical practice will be conducted in accordance with these guidelines and to object when it is not. While learning how to apply statistical theory to problems, students should be encouraged to use these guidelines whether or not their target professional specialty will be "statistician." Employers, attorneys, and other clients of statistical practitioners have a responsibility to provide a moral environment that fosters the use of these ethical guidelines.

Application of these or any other ethical guidelines generally requires good judgment and common sense. The guidelines may be partially conflicting in specific cases. The application of these guidelines in any given case can depend on issues of law and shared values, work-group politics, the status and power of the individuals involved, and the extent to which the ethical lapses pose a threat to the public, to one's profession, or to one's organization. The individuals and institutions responsible for making such ethical decisions can receive valuable assistance by discussion and consultation with others, particularly persons with divergent interests with respect to the ethical issues under consideration.

B. Statistics and Society

The professional performance of statistical analyses is essential to many aspects of society. The use of statistics in medical diagnoses and biomedical research may affect whether individuals live or die,

whether their health is protected or jeopardized, and whether medical science advances or gets sidetracked. Life, death, and health, as well as efficiency, may be at stake in statistical analyses of occupational, environmental, or transportation safety. Early detection and control of new or recurrent infectious diseases depend on sound epidemiological statistics. Mental and social health may be at stake in psychological and sociological applications of statistical analysis.

Effective functioning of the economy depends on the availability of reliable, timely, and properly interpreted economic data. The profitability of individual firms depends in part on their quality control and their market research, both of which should rely on statistical methods. Agricultural productivity benefits greatly from statistically sound applications to research and output reporting. Governmental policy decisions regarding public health, criminal justice, social equity, education, the environment, the siting of critical facilities, and other matters depend in part on sound statistics.

Scientific and engineering research in all disciplines requires the careful design and analysis of experiments and observations. To the extent that uncertainty and measurement error are involved -- as they are in most research -- research design, data quality management, analysis, and interpretation are all crucially dependent on statistical concepts and methods. Even in theory, much of science and engineering involves natural variability. Variability, whether great or small, must be carefully examined both for random error and for possible researcher bias or wishful thinking.

Statistical tools and methods, like many other technologies, can be employed either for social good or for evil. The professionalism encouraged by these guidelines is predicated on their use in socially responsible pursuits by morally responsible societies, governments, and employers. Where the end purpose of a statistical application is itself morally reprehensible, statistical professionalism ceases to have ethical worth.

C. Shared Values

Because society depends on sound statistical practice, all practitioners of statistics, whatever their training and occupation, have social obligations to perform their work in a professional, competent, and ethical manner. This document is directed to those whose primary occupation is statistics. Still, the principles expressed here should also guide the statistical work of professionals in all other disciplines that use statistical methods. All statistical practitioners are obliged to conduct their professional activities with responsible attention to:

1. The social value of their work and the consequences of how well or poorly it is performed. This

- includes respect for the life, liberty, dignity, and property of other people.
- 2.The avoidance of any tendency to slant statistical work toward predetermined outcomes. (It is acceptable to advocate a position; it is not acceptable to misapply statistical methods in doing so.)
 - 3.Statistics as a science. (As in any science, understanding evolves. Statisticians have a body of established knowledge but also many unresolved issues that deserve frank discussion.)
 - 4.The maintenance and upgrading of competence in their work.
 - 5.Adherence to all applicable laws and regulations, as well as applicable international covenants, while also seeking to change any of those that are ethically inappropriate.
 - 6.Preservation of data archives in a manner consistent with responsible protection of the safety and confidentiality of any human beings and organizations involved.

In addition to ethical obligations, good professional citizenship encourages:

- 7.Collegiality and civility with fellow professionals.
- 8.Support for improved public understanding of and respect for statistics.
- 9.Support for sound statistical practice, especially when it is unfairly criticized.
- 10.Exposure of dishonest or incompetent uses of statistics.
- 11.Service to one's profession as a statistical editor, reviewer, or association official and service as an active participant in (formal or informal) ethical review panels.

II. ETHICAL GUIDELINES

A. Professionalism

- 1.Strive for practical relevance in statistical analyses. Typically, each study should be based on a competent understanding of the subject matter issues, statistical protocols that are clearly defined for the stage (exploratory, intermediate, or final) of analysis before looking at those data that will be decisive for that stage, and technical criteria to justify both the practical relevance of the study and the amount of data to be used.
- 2.Guard against the possibility that a predisposition by investigators or data providers might predetermine the analytic result. Employ data selection or sampling methods and analytic approaches that are designed to assure valid analyses in either frequentist or Bayesian approaches.
- 3.Remain current in dynamically evolving statistical methodology; yesterday's preferred methods may be barely acceptable today and totally obsolete tomorrow.

4. Assure that adequate statistical and subject-matter expertise are both applied to any planned study. If this criterion is not met initially, it is important to add the missing expertise before completing the study design.
5. Use only statistical methodologies suitable to the data and to obtaining valid results. For example, address the multiple potentially confounding factors in observational studies, and use due caution in drawing causal inferences
6. Do not join a research project unless you can expect to achieve valid results and unless you are confident that your name will not be associated with the project or resulting publications without your explicit consent.
7. The fact that a procedure is automated does not ensure its correctness or appropriateness; it is also necessary to understand the theory, the data, and the methods used in each statistical study. This goal is served best when a competent statistical practitioner is included early in the research design, preferably in the planning stage.
8. Recognize that any frequentist statistical test has a random chance of indicating significance when it is not really present. Running multiple tests on the same data set at the same stage of an analysis increases the chance of obtaining at least one invalid result. Selecting the one "significant" result from a multiplicity of parallel tests poses a grave risk of an incorrect conclusion. Failure to disclose the full extent of tests and their results in such a case would be highly misleading.
9. Respect and acknowledge the contributions and the intellectual property of others.
10. Disclose conflicts of interest, financial and otherwise, and resolve them. This may sometimes require divestiture of the conflicting personal interest or recusal or withdrawal from the professional activity. Examples where conflict of interest may be problematic include grant reviews, other peer reviews, and tensions between scholarship and personal or family financial interests.
11. Provide only such expert testimony as you would be content to have peer reviewed.

B. Responsibilities to Funders, Clients, and Employers

1. Where appropriate, present a client or employer with choices among valid alternative statistical approaches that may vary in scope, cost, or precision.
2. Clearly state your statistical qualifications and experience relevant to your work.
3. Clarify the respective roles of different participants in studies to be undertaken.
4. Explain any expected adverse consequences of failure to follow through on an agreed-upon sampling or analytic plan.
5. Apply statistical sampling and analysis procedures scientifically, without predetermining the

outcome.

6. Make new statistical knowledge widely available, in order to provide benefits to society at large beyond your own scope of applications. Statistical methods may be broadly applicable to many classes of problem or application. (Statistical innovators may well be entitled to monetary or other rewards for their writings, software, or research results.)
7. Guard privileged information of the employer, client, or funder.
8. Fulfill all commitments.
9. Accept full responsibility for your professional performance.

C. Responsibilities in Publications and Testimony

1. Maintain personal responsibility for all work bearing your name; avoid undertaking work or coauthoring publications for which you would not want to acknowledge responsibility. Conversely, accept (or insist upon) appropriate authorship or acknowledgment for professional statistical contributions to research and the resulting publications or testimony.
2. Report statistical and substantive assumptions made in the study.
3. In publications or testimony, identify who is responsible for the statistical work if it would not otherwise be apparent.
4. Make clear the basis for authorship order, if determined on grounds other than intellectual contribution. Preferably, authorship order in statistical publications should be by degree of intellectual contribution to the study and to the material to be published, to the extent that such ordering can feasibly be determined. When some other rule of authorship order is used in a statistical publication, the rule used should be disclosed in a footnote or endnote. (Where authorship order by contribution is assumed by those making decisions about hiring, promotion, or tenure, for example, failure to disclose an alternative rule may improperly damage or advance careers.)
5. Account for all data considered in a study and explain the sample(s) actually used.
6. Report the sources and assessed adequacy of the data.
7. Report the data cleaning and screening procedures used, including any imputation.
8. Clearly and fully report the steps taken to guard validity. Address the suitability of the analytic methods and their inherent assumptions relative to the circumstances of the specific study. Identify the computer routines used to implement the analytic methods.
9. Where appropriate, address potential confounding variables not included in the study.
10. In publications or testimony, identify the ultimate financial sponsor of the study, the stated purpose, and the intended use of the study results.
11. When reporting analyses of volunteer data or other data not representative of a defined

population, include appropriate disclaimers.

12. Report the limits of statistical inference of the study and possible sources of error. For example, disclose any significant failure to follow through fully on an agreed sampling or analytic plan and explain any resulting adverse consequences.
13. Share data used in published studies to aid peer review and replication, but exercise due caution to protect proprietary and confidential data, including all data which might inappropriately reveal respondent identities.
14. As appropriate, promptly and publicly correct any errors discovered after publication.
15. Write with consideration of the intended audience. (For the general public, convey the scope, relevance, and conclusions of a study without technical distractions. For the professional literature, strive to answer the questions likely to occur to your peers.)

D. Responsibilities to Research Subjects (including census or survey respondents and persons and organizations supplying data from administrative records, as well as subjects of physically or psychologically invasive research)

1. Know about and adhere to appropriate rules for the protection of human subjects, including particularly vulnerable or other special populations who may be subject to special risks or who may not be fully able to protect their own interests. Assure adequate planning to support the practical value of the research, the validity of expected results, the ability to provide the protection promised, and consideration of all other ethical issues involved. Some pertinent guidance is provided in key references 3 - 7 at the end of this document for U.S. law, the U.N. Statistical Commission, and the International Statistical Institute. Laws of other countries and their subdivisions and ethical principles of other professional organizations may provide other guidance.
2. Avoid the use of excessive or inadequate numbers of research subjects by making informed recommendations for study size. These recommendations may be based on prospective power analysis, the planned precision of the study endpoint(s), or other methods to assure appropriate scope to either frequentist or Bayesian approaches. Study scope should also take into consideration the feasibility of obtaining research subjects and the value of the data elements to be collected.
3. Avoid excessive risk to research subjects and excessive imposition on their time and privacy.
4. Protect the privacy and confidentiality of research subjects and data concerning them, whether obtained directly from the subjects, from other persons, or from administrative records. Anticipate secondary and indirect uses of the data when obtaining approvals from research subjects; obtain approvals appropriate for peer review and for independent replication of analyses.

5. Be aware of legal limitations on privacy and confidentiality assurances. Do not, for example, imply protection of privacy and confidentiality from legal processes of discovery unless explicitly authorized to do so.
6. Before participating in a study involving human beings or organizations, analyzing data from such a study, or accepting resulting manuscripts for review, consider whether appropriate research subject approvals were obtained. (This safeguard will lower your risk of learning only after the fact that you have collaborated on an unethical study.) Consider also what assurances of privacy and confidentiality were given and abide by those assurances.
7. Avoid or minimize the use of deception. Where it is necessary and provides significant knowledge, as in some psychological, sociological, and other research, assure prior independent ethical review of the protocol and continued monitoring of the research.
8. Where full disclosure of study parameters to subjects or to other investigators is not advisable, as in some randomized clinical trials, generally inform them of the nature of the information withheld and the reason for withholding it. As with deception, assure independent ethical review of the protocol and continued monitoring of the research.
9. Know about and adhere to appropriate animal welfare guidelines in research involving animals. Assure that a competent understanding of the subject matter is combined with credible statistical validity.

E. Responsibilities to Research Team Colleagues

1. Inform colleagues from other disciplines about relevant aspects of statistical ethics.
2. Promote effective and efficient use of statistics by the research team.
3. Respect the ethical obligations of members of other disciplines as well as your own.
4. Assure professional-quality reporting of the statistical design and analysis.
5. Avoid compromising statistical validity for expediency, but use reasonable approximations as appropriate.

F. Responsibilities to Other Statisticians or Statistical Practitioners

1. Promote sharing of (nonproprietary) data and methods. As appropriate, make suitably documented data available for replicate analyses, metadata studies, and other suitable research by qualified investigators.
2. Be willing to help strengthen the work of others through appropriate peer review. When doing so, complete the review promptly and well.
3. Assess methods, not individuals.

4. Respect differences of opinion.
5. Instill in students a positive appreciation for the practical value of the concepts and methods they are learning.
6. Use professional qualifications and the contributions of the individual as an important basis for decisions regarding statistical practitioners' hiring, firing, promotion, work assignments, publications and presentations, candidacy for offices and awards, funding or approval of research, and other professional matters. Avoid as best you can harassment of or discrimination against statistical practitioners (or anyone else) on professionally irrelevant bases such as race, color, ethnicity, sex, sexual orientation, national origin, age, religion, nationality, or disability.

G. Responsibilities Regarding Allegations of Misconduct

1. Avoid condoning or appearing to condone careless, incompetent, or unethical practices in statistical studies conducted in your working environment or elsewhere.
2. Deplore all types of professional misconduct, not just plagiarism and data fabrication or falsification. Misconduct more broadly includes all professional dishonesty, by commission or omission, and, within the realm of professional activities and expression, all harmful disrespect for people, unauthorized use of their intellectual and physical property, and unjustified detraction from their reputations.
3. Recognize that differences of opinion and honest error do not constitute misconduct; they warrant discussion but not accusation. Questionable scientific practices may or may not constitute misconduct, depending on their nature and the definition of misconduct used.
4. If involved in a misconduct investigation, know and follow prescribed procedures. Maintain confidentiality during an investigation, but disclose the results honestly after the investigation has been completed.
5. Following a misconduct investigation, support the appropriate efforts of the accused, the witnesses, and those reporting the possible scientific error or misconduct to resume their careers in as normal a manner as possible.
6. Do not condone retaliation against or damage to the employability of those who responsibly call attention to possible scientific error or misconduct.

H. Responsibilities of Employers, Including Organizations, Individuals, Attorneys, or Other Clients Employing Statistical Practitioners

1. Recognize that the results of valid statistical studies cannot be guaranteed to conform to the expectations or desires of those commissioning the study or the statistical practitioner(s). Any measures taken to assure a particular outcome will lessen the validity of the analysis.

2. Valid findings result from competent work in a moral environment. Pressure on a statistical practitioner to deviate from these guidelines is likely to damage both the validity of study results and the professional credibility of the practitioner.
3. Make new statistical knowledge widely available in order to benefit society at large. (Those who have funded the development of new statistical innovations are entitled to monetary and other rewards for their resulting products, software, or research results.)
4. Support sound statistical analysis and expose incompetent or corrupt statistical practice. In cases of conflict, statistical practitioners and those employing them are encouraged to resolve issues of ethical practice privately. If private resolution is not possible, recognize that statistical practitioners have an ethical obligation to expose incompetent or corrupt practice before it can cause avoidable harm to research subjects or society at large.
5. Recognize that within organizations and within professions using statistical methods generally, statistical practitioners with greater prestige, power, or status have a responsibility to protect the professional freedom and responsibility of more subordinate statistical practitioners to comply with these guidelines.
6. Do not include statistical practitioners in authorship or acknowledge their contributions to projects or publications without their explicit permission.

whether their health is protected or jeopardized, and whether medical science advances or gets sidetracked. Life, death, and health, as well as efficiency, may be at stake in statistical analyses of occupational, environmental, or transportation safety. Early detection and control of new or recurrent infectious diseases depend on sound epidemiological statistics. Mental and social health may be at stake in psychological and sociological applications of statistical analysis.

Effective functioning of the economy depends on the availability of reliable, timely, and properly interpreted economic data. The profitability of individual firms depends in part on their quality control and their market research, both of which should rely on statistical methods. Agricultural productivity benefits greatly from statistically sound applications to research and output reporting. Governmental policy decisions regarding public health, criminal justice, social equity, education, the environment, the siting of critical facilities, and other matters depend in part on sound statistics.

Scientific and engineering research in all disciplines requires the careful design and analysis of experiments and observations. To the extent that uncertainty and measurement error are involved -- as they are in most research -- research design, data quality management, analysis, and interpretation are all crucially dependent on statistical concepts and methods. Even in theory, much of science and engineering involves natural variability. Variability, whether great or small, must be carefully examined both for random error and for possible researcher bias or wishful thinking.

Statistical tools and methods, like many other technologies, can be employed either for social good or for evil. The professionalism encouraged by these guidelines is predicated on their use in socially responsible pursuits by morally responsible societies, governments, and employers. Where the end purpose of a statistical application is itself morally reprehensible, statistical professionalism ceases to have ethical worth.

C. Shared Values

Because society depends on sound statistical practice, all practitioners of statistics, whatever their training and occupation, have social obligations to perform their work in a professional, competent, and ethical manner. This document is directed to those whose primary occupation is statistics. Still, the principles expressed here should also guide the statistical work of professionals in all other disciplines that use statistical methods. All statistical practitioners are obliged to conduct their professional activities with responsible attention to:

1. The social value of their work and the consequences of how well or poorly it is performed. This

- includes respect for the life, liberty, dignity, and property of other people.
- 2.The avoidance of any tendency to slant statistical work toward predetermined outcomes. (It is acceptable to advocate a position; it is not acceptable to misapply statistical methods in doing so.)
 - 3.Statistics as a science. (As in any science, understanding evolves. Statisticians have a body of established knowledge but also many unresolved issues that deserve frank discussion.)
 - 4.The maintenance and upgrading of competence in their work.
 - 5.Adherence to all applicable laws and regulations, as well as applicable international covenants, while also seeking to change any of those that are ethically inappropriate.
 - 6.Preservation of data archives in a manner consistent with responsible protection of the safety and confidentiality of any human beings and organizations involved.

In addition to ethical obligations, good professional citizenship encourages:

- 7.Collegiality and civility with fellow professionals.
- 8.Support for improved public understanding of and respect for statistics.
- 9.Support for sound statistical practice, especially when it is unfairly criticized.
- 10.Exposure of dishonest or incompetent uses of statistics.
- 11.Service to one's profession as a statistical editor, reviewer, or association official and service as an active participant in (formal or informal) ethical review panels.

II. ETHICAL GUIDELINES

A. Professionalism

- 1.Strive for practical relevance in statistical analyses. Typically, each study should be based on a competent understanding of the subject matter issues, statistical protocols that are clearly defined for the stage (exploratory, intermediate, or final) of analysis before looking at those data that will be decisive for that stage, and technical criteria to justify both the practical relevance of the study and the amount of data to be used.
- 2.Guard against the possibility that a predisposition by investigators or data providers might predetermine the analytic result. Employ data selection or sampling methods and analytic approaches that are designed to assure valid analyses in either frequentist or Bayesian approaches.
- 3.Remain current in dynamically evolving statistical methodology; yesterday's preferred methods may be barely acceptable today and totally obsolete tomorrow.

4. Assure that adequate statistical and subject-matter expertise are both applied to any planned study. If this criterion is not met initially, it is important to add the missing expertise before completing the study design.
5. Use only statistical methodologies suitable to the data and to obtaining valid results. For example, address the multiple potentially confounding factors in observational studies, and use due caution in drawing causal inferences
6. Do not join a research project unless you can expect to achieve valid results and unless you are confident that your name will not be associated with the project or resulting publications without your explicit consent.
7. The fact that a procedure is automated does not ensure its correctness or appropriateness; it is also necessary to understand the theory, the data, and the methods used in each statistical study. This goal is served best when a competent statistical practitioner is included early in the research design, preferably in the planning stage.
8. Recognize that any frequentist statistical test has a random chance of indicating significance when it is not really present. Running multiple tests on the same data set at the same stage of an analysis increases the chance of obtaining at least one invalid result. Selecting the one "significant" result from a multiplicity of parallel tests poses a grave risk of an incorrect conclusion. Failure to disclose the full extent of tests and their results in such a case would be highly misleading.
9. Respect and acknowledge the contributions and the intellectual property of others.
10. Disclose conflicts of interest, financial and otherwise, and resolve them. This may sometimes require divestiture of the conflicting personal interest or recusal or withdrawal from the professional activity. Examples where conflict of interest may be problematic include grant reviews, other peer reviews, and tensions between scholarship and personal or family financial interests.
11. Provide only such expert testimony as you would be content to have peer reviewed.

B. Responsibilities to Funders, Clients, and Employers

1. Where appropriate, present a client or employer with choices among valid alternative statistical approaches that may vary in scope, cost, or precision.
2. Clearly state your statistical qualifications and experience relevant to your work.
3. Clarify the respective roles of different participants in studies to be undertaken.
4. Explain any expected adverse consequences of failure to follow through on an agreed-upon sampling or analytic plan.
5. Apply statistical sampling and analysis procedures scientifically, without predetermining the

outcome.

6. Make new statistical knowledge widely available, in order to provide benefits to society at large beyond your own scope of applications. Statistical methods may be broadly applicable to many classes of problem or application. (Statistical innovators may well be entitled to monetary or other rewards for their writings, software, or research results.)
7. Guard privileged information of the employer, client, or funder.
8. Fulfill all commitments.
9. Accept full responsibility for your professional performance.

C. Responsibilities in Publications and Testimony

1. Maintain personal responsibility for all work bearing your name; avoid undertaking work or coauthoring publications for which you would not want to acknowledge responsibility. Conversely, accept (or insist upon) appropriate authorship or acknowledgment for professional statistical contributions to research and the resulting publications or testimony.
2. Report statistical and substantive assumptions made in the study.
3. In publications or testimony, identify who is responsible for the statistical work if it would not otherwise be apparent.
4. Make clear the basis for authorship order, if determined on grounds other than intellectual contribution. Preferably, authorship order in statistical publications should be by degree of intellectual contribution to the study and to the material to be published, to the extent that such ordering can feasibly be determined. When some other rule of authorship order is used in a statistical publication, the rule used should be disclosed in a footnote or endnote. (Where authorship order by contribution is assumed by those making decisions about hiring, promotion, or tenure, for example, failure to disclose an alternative rule may improperly damage or advance careers.)
5. Account for all data considered in a study and explain the sample(s) actually used.
6. Report the sources and assessed adequacy of the data.
7. Report the data cleaning and screening procedures used, including any imputation.
8. Clearly and fully report the steps taken to guard validity. Address the suitability of the analytic methods and their inherent assumptions relative to the circumstances of the specific study. Identify the computer routines used to implement the analytic methods.
9. Where appropriate, address potential confounding variables not included in the study.
10. In publications or testimony, identify the ultimate financial sponsor of the study, the stated purpose, and the intended use of the study results.
11. When reporting analyses of volunteer data or other data not representative of a defined

population, include appropriate disclaimers.

12. Report the limits of statistical inference of the study and possible sources of error. For example, disclose any significant failure to follow through fully on an agreed sampling or analytic plan and explain any resulting adverse consequences.
13. Share data used in published studies to aid peer review and replication, but exercise due caution to protect proprietary and confidential data, including all data which might inappropriately reveal respondent identities.
14. As appropriate, promptly and publicly correct any errors discovered after publication.
15. Write with consideration of the intended audience. (For the general public, convey the scope, relevance, and conclusions of a study without technical distractions. For the professional literature, strive to answer the questions likely to occur to your peers.)

D. Responsibilities to Research Subjects (including census or survey respondents and persons and organizations supplying data from administrative records, as well as subjects of physically or psychologically invasive research)

1. Know about and adhere to appropriate rules for the protection of human subjects, including particularly vulnerable or other special populations who may be subject to special risks or who may not be fully able to protect their own interests. Assure adequate planning to support the practical value of the research, the validity of expected results, the ability to provide the protection promised, and consideration of all other ethical issues involved. Some pertinent guidance is provided in key references 3 - 7 at the end of this document for U.S. law, the U.N. Statistical Commission, and the International Statistical Institute. Laws of other countries and their subdivisions and ethical principles of other professional organizations may provide other guidance.
2. Avoid the use of excessive or inadequate numbers of research subjects by making informed recommendations for study size. These recommendations may be based on prospective power analysis, the planned precision of the study endpoint(s), or other methods to assure appropriate scope to either frequentist or Bayesian approaches. Study scope should also take into consideration the feasibility of obtaining research subjects and the value of the data elements to be collected.
3. Avoid excessive risk to research subjects and excessive imposition on their time and privacy.
4. Protect the privacy and confidentiality of research subjects and data concerning them, whether obtained directly from the subjects, from other persons, or from administrative records. Anticipate secondary and indirect uses of the data when obtaining approvals from research subjects; obtain approvals appropriate for peer review and for independent replication of analyses.

5. Be aware of legal limitations on privacy and confidentiality assurances. Do not, for example, imply protection of privacy and confidentiality from legal processes of discovery unless explicitly authorized to do so.
6. Before participating in a study involving human beings or organizations, analyzing data from such a study, or accepting resulting manuscripts for review, consider whether appropriate research subject approvals were obtained. (This safeguard will lower your risk of learning only after the fact that you have collaborated on an unethical study.) Consider also what assurances of privacy and confidentiality were given and abide by those assurances.
7. Avoid or minimize the use of deception. Where it is necessary and provides significant knowledge, as in some psychological, sociological, and other research, assure prior independent ethical review of the protocol and continued monitoring of the research.
8. Where full disclosure of study parameters to subjects or to other investigators is not advisable, as in some randomized clinical trials, generally inform them of the nature of the information withheld and the reason for withholding it. As with deception, assure independent ethical review of the protocol and continued monitoring of the research.
9. Know about and adhere to appropriate animal welfare guidelines in research involving animals. Assure that a competent understanding of the subject matter is combined with credible statistical validity.

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