

Session 5

Improving Data Quality

Ensuring Information Quality: Challenges And Opportunities

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It's a pleasure to join with my colleagues to discuss ongoing efforts of OMB and the Federal agencies to improve the quality of information that agencies disseminate to the public. As most if not all of you know, a recent law added further impetus to, and substantially broadened, the scope of our long-term efforts in this arena.

Background

The particular efforts we are discussing today began late in 2000, when Congresswoman Jo Ann Emerson sponsored an amendment to OMB's appropriations bill. This provision required OMB to develop government-wide standards "for ensuring and maximizing" the quality of information disseminated by Federal agencies. It was enacted as Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001. (This law should not be confused with an earlier "information access" law – one that I know is very familiar to you – that was sponsored by Senator Richard Shelby of Alabama and amended the Freedom of Information Act to provide greater public access to research data generated under Federal research grants.)

At OMB, we call this more recent legislation the "Information Quality Act." There were no hearings or extensive legislative history, and no fanfare when it passed. Yet, in our view, this law provides a very important opportunity to raise the quality of government information. Together, the information access and information quality laws will be mutually reinforcing in promoting responsible public access to technical information produced and used by Federal agencies.

The Information Quality Law establishes a performance-oriented information quality system across the government. It could help build quality into the system from the beginning and lead to evolutionary progress. We expect there will be a network effect – with cross-fertilization between agencies, among agency programs, and between government and citizens.

Interagency dialogue is flourishing as agencies developed and are now beginning to implement their particular guidelines, in concert with OMB's government-wide guidelines. No better example could be cited than the collaborative efforts of the statistical agencies in addressing this new challenge.

With that background, let me spend the remainder of my time briefly walking you through three phases of our recent information quality efforts: (1) OMB's general guidelines; (2) the agency guidelines; and, on the horizon (3) implementation of the guidelines.

Phase One: OMB's Government-Wide Guidelines

OMB issued its government-wide guidelines in interim final form on September 28, 2001, and in final form on February 22, 2002 (67 FR 8452). To implement the statute, OMB imposed three core responsibilities on the Federal agencies.

First, agencies must embrace a basic standard of quality as a performance goal, as embodied in the OMB government-wide guidelines, and develop pre-dissemination review procedures. In information collections proposed by agencies under the Paperwork Reduction Act, the agency and OMB can consider whether the quality of subsequent disseminations would meet the applicable performance standards.

Second, agencies must report annually to OMB on "the number and nature of complaints" and "how such complaints were handled by the agency."

Finally, agencies must establish a petition process allowing affected parties to request that the agency correct information that does not comply with the OMB or agency guidelines. OMB made clear that the burden of proof is squarely on the affected parties; they must demonstrate that a specific dissemination does not meet the applicable quality standards. The opportunity for complaints and appeals went into effect on October 1.

The scope of the Information Quality Act is very broad. It spans information related to regulatory, statistical, research, and benefits programs. It covers all Federal agencies subject to the Paperwork Reduction Act, including the independent regulatory commissions. OMB's guidelines define "information" as "any communication or representation of knowledge such as facts or data" in any medium. (Indeed, this is why OMB calls this law the Information Quality Act, and not the Data Quality Act. It covers more than just quantitative data.)

OMB's guidelines explain that "quality" encompasses "utility" (usefulness to its intended users), "integrity" (security), and "objectivity." "Objectivity" focuses on whether the disseminated information is accurate, reliable and unbiased as a matter of presentation and substance.

At the same time, OMB provided a variety of exemptions from the guidelines to protect privacy and commercial secrets, and to facilitate press releases, third party submissions in public filings, archival records, personal articles by agency employees, testimony, and subpoenas and adjudicative determinations. OMB also provided agencies discretion to reject complaints that are groundless or made in bad faith, or boil down to a difference of opinion.

OMB recognized that information quality can be costly and encouraged agencies to consider the social value of better information in different contexts. Ordinary information is distinguished from "influential" information -- that is, scientific, financial and statistical information having a clear and substantial impact on important public policies or important private sector decisions. "Influential" information is subject to higher standards of quality. With several important exceptions and qualifications, influential information should be reproducible by qualified third parties.

Phase Two: Agency-Specific Guidelines and OMB Review

In moving to the development of agency-specific guidelines, it is important to note that the statistical agencies were decidedly “out in front” on this challenge. In a very real sense, they were perhaps most ready to meet the challenge, for information quality standards historically have been central to their work. What was especially remarkable, however, was the fact that the statistical agencies, under the umbrella of the Interagency Council on Statistical Policy, voluntarily came together at the earliest stages of this process to develop a common template for their agency guidelines, and subsequently published a common Federal Register notice to draw the public’s attention to their individual statistical agency guidelines. (My co-panelist Nancy Kirkendall will be discussing that initiative in more detail.)

At a broader level, to facilitate development of the agency guidelines, OMB – with support from the agencies -- arranged for three workshops that were conducted by the National Academies last Spring. These workshops were widely attended by hundreds of agency staff and interested members of the public. They facilitated the early exchange of ideas and fostered the development of the agency guidelines.

OMB’s review of the agencies’ guidelines began when proposed drafts were released for public comment in May. Based on a preliminary review, OIRA Administrator John Graham sent a June 10 memorandum to the President’s Management Council suggesting for the agencies’ consideration particularly noteworthy provisions gleaned from various drafts. He also provided guidance for greater uniformity in some provisions.

Similarly, on September 5, while OIRA was completing its review of agencies’ draft final guidelines, Administrator Graham sent a short follow-up memorandum to the President’s Management Council encouraging greater uniformity on a few process issues.

By October 1, OMB had completed its review of the information quality guidelines for more than 65 Federal departments and agencies (including over 45 guidelines developed for specific components of Federal departments).

Phase Three: Implementation

Having developed information quality guidelines, the agencies now must turn to the equally challenging task of implementing them. Agencies must ensure that the new procedures and criteria are integrated into their day-to-day activities. On October 4, Administrator Graham sent a third memorandum to the President’s Management Council outlining OMB’s current plans for providing continuing guidance to agencies on applying OMB’s information quality guidelines, as well as for monitoring the agencies’ implementation.

In the October 4 memo, OMB established two basic oversight measures:

- First, we offered some preliminary suggestions to the agencies on information to include in their annual reports – most notably descriptions of the kinds of complaints they receive

and their resolution – so we and the public can understand the effectiveness of the administrative correction process.

- Second, to help OMB gauge the public interest in information quality issues and agencies= responses, we requested that each agency provide us with copies of complaints and related information involving several key issues:
 1. major policy questions of strong interest to two or more Federal agencies;
 2. “influential” disseminations alleged to be in violation of OMB's government-wide guidelines;
 3. novel procedural, technical or policy issues; or
 4. disseminations occurring in a public comment process where the complainant shows a reasonable likelihood of suffering actual harm if the agency does not promptly consider the complaint and doing so would not unduly delay the agency’s proceeding.

(Agencies that post their complaints and responses on their websites will not need to forward these materials to OMB.)

Conclusion

In sum, we have an ambitious legislative mandate, and many of you are helping us implement this responsibility effectively.

**The Census Bureau Quality Program and
Section 515 Information Quality Guidelines**
Cynthia Z.F. Clark and Jay Keller

Census Bureau Quality Program

Prior to OMB's Information Quality Guidelines directive, and our participation in the joint statistical agency activities described by Nancy Kirkendall, the Census Bureau had established a Quality Program designed to relate the different quality efforts underway throughout the Census Bureau.

The program, which is under the stewardship of the Census Bureau's Methodology and Standards Directorate, partners with program areas and is designed to build excellence through innovative techniques, technologies, evaluations and improvements in our business processes.

- Specific objectives of the program are to ensure that Census Bureau products meet quality standards and that we provide sufficient information on quality so that users can determine the appropriateness of these data for the intended purposes.

- The strategies for achieving the goals are to:
 - design processes,
 - establish quality principles, standards, guidelines, and best practices,
 - develop tools and checklists,
 - and design web sites to facilitate communication.

The Quality Management Repository (QMR) was established as a portal intranet site in the summer of 2001:

- to share,
- manage,
- and disseminate information addressing principles, practices and related quality issues to Census Bureau employees.

QMR users can find and view information by "product" and "process." The process documents are organized around the standard workflow of surveys and censuses, with the Census Bureau using the following categories:

- Content
- Planning
- Design
- Data Collection
- Data Processing
- Data Quality, Analysis, and Evaluation
- Dissemination
- Data Products and Services

The QMR view of documents organized by product includes menu selections for principles, standards, guidelines, current practices, and training. These documents provide direct support to project managers in developing, tracking, and updating their quality management plans.

Census Bureau Guidelines

At the time of the OMB directive and the initial work of the joint statistical agency group, the Census Bureau had begun work populating our Quality Management Repository with principles, standards, guidelines, and best practice documents.

- Criteria was established for each type of document as well as a template.
- Documents were to be issued by the Census Bureau Methodology and Standards Council after receiving review from the program divisions and the associate directors.
- These documents were developed as issues arose by convening cross-directorate teams.
- Additionally, an effort was made to inventory and review documents previously issued that provided direction or guidance.
 - In most cases the previous direction provided was for individual directorate programs with the exception of the well known Technical Paper 32 (and a follow-up memorandum) that provided direction for the Discussion and Presentation of Errors.
 - By contrast the current approach was to develop documents that were corporate or bureau wide.

In developing the Census Bureau Section 515 Information Quality Guidelines, we took an organizational approach—as, it turned out, did many statistical and other federal agencies—inspired by the Social Security Administration model. Our guidelines discuss:

- the role of the Census Bureau,
- efforts to ensure utility (and relevance) in our products,
- objectivity guidelines (including the use of reliable data sources, sound analytic techniques, required reviews before the release of data, and informing users of data quality and methodology),
- guidelines on transparency and reproducibility,
- data integrity,
- the Census Bureau's performance principles in the eight categories of statistical activities identified by the statistical agencies,
- and administrative correction mechanisms.

The Census Bureau quality processes are very similar to but not exactly the same as the joint statistical agency activities (Chart 1). In the process of preparing the Census Bureau Section 515 Information Quality Guidelines, the Census Bureau desired to ensure consistency between the activities identified by the statistical agencies and the previously established (but not yet populated) Quality Framework. To do this, we chartered eight working groups of internal experts from throughout the organization to develop principles for each of the joint agency activities, drawing upon previous documents and known practices at the Census Bureau. These principles were envisioned as broad underlying policies, approaches and direction that govern the design of the

activity in question with emphasis on those that relate to quality. They appear both in our Section 515 Information Quality Guidelines and in the Census Bureau Quality Management Repository. These written principles now provide an encompassing framework for future development of relevant standards, guidelines, and best practices.

Efforts at the Department of Commerce

At the same time the Census Bureau was participating in the joint statistical agency activities to develop the Federal Register Notice and the categories of statistical agency activities, we were also part of a Department of Commerce effort to develop umbrella DOC guidelines.

The DOC effort was headed by the Chief Information Officer and the Office of General Counsel at Commerce. Teams were formed, made up of representatives of Commerce operating units, to develop the overall DOC guidelines and instructions for operating units to follow in developing their individual guidelines. For some aspects of OMB's information quality guidelines requirements, such as in the areas of computer system integrity, financial information, and organizational and administrative information, the DOC guidelines ultimately served as a model for its operating units to use. However, operating units were responsible for developing their own guidelines, particularly in the area of "objectivity," and especially components of the objectivity requirements including transparency (of methods) and reproducibility (of results).

Corrections Mechanism

Commerce also developed a prototype corrections mechanism process. An early issue for us was the Department's initial objective for the centralizing of requests for correction—perhaps at the Department of Commerce, or at minimum at each operating unit. Our internal objective was to maintain the decentralization of processes already in place for corrections of our current programs:

- Count Question Resolution,
- Local Update of Census Addresses,
- Governmental Unit Boundaries and Street and Address Range Information,
- Small Area Income and Poverty Estimates,
- Population Estimates,
- Foreign Trade Statistics.

Because these programs had their own complaint procedures, which in some cases were longstanding and highly publicized, we secured approval from the Department of Commerce to keep these programs in place, and to advertise methods for the public to request correction of these programs through their individual mechanisms on our Information Quality Guidelines website. We also established a corrections mechanism for "All Other" complaints—any requests for correction that do not fall into the preexisting programs.

To fulfill Department of Commerce requirements that the tracking of corrections requests be automated and that tracking occurs during and after the resolution process, our Computer Assisted Survey Research Office designed automated procedures using Microsoft Access, and worked with our various program areas to ensure that they either had their own automated tracking system or

could incorporate the use of our newly designed system by October 1. Our current plans are to develop monthly summaries of corrections requests across our seven preexisting mechanisms and our “all other” procedure, and use these to provide quarterly (or more frequent) reports to the Department of Commerce and the annual report to OMB.

Continuing the Quality Program at the Census Bureau

Besides developing our agency’s Section 515 Information Quality Guidelines, and the performance principles associated with the eight statistical agency activities, we have continued to develop quality principles, standards, guidelines, and best practices to populate the Quality Management Repository. Standards in this framework are survey or statistical methodology procedures required for all Census Bureau program areas. We developed two standards that are particularly relevant to our Section 515 Information Quality Guidelines:

- Standard for Correcting Information that does not Comply with Census Bureau Section 515 Information Quality Guidelines (Dissemination; Data Products and Services – issued 05/16/02)
- Standard for Review of Census Bureau Documents and Presentations (Data Products and Services – issued 08/09/02)

Other standards in the Quality Framework include:

- Standard: Source and Accuracy Statements for Census and Survey Data Tabulations and Model-Based Estimates (Dissemination – reissued 09/24/02)
- Standard: Minimal Information to Accompany any report of Census Bureau Data (Dissemination – soon to be issued)
- Standard: Definitions for Survey and Census Metadata (Planning – soon to be issued)

Guidelines in the framework highlight survey or statistical methodology procedures recommended for all Census Bureau program areas. They are being developed using a checklist approach that would guide the employee in ensuring that all relevant aspects are considered in planning and executing a statistical program activity. Our guidelines currently include:

- Quality Checklist for Census Bureau Products (Planning – issued 05/07/01)
- Coding Verification (Data Processing – issued 06/13/02)
- Sample Selection Verification (Design – issued 10/29/01)

We have several efforts currently underway. They include the development of:

- Standards for Pretesting Questionnaires for Census Bureau Demographic, Decennial, and Economic Census, Surveys, and Tests.
- Standards for Discussion and Presentation of Errors in Data (a revision of Technical Paper 32),
- Guidelines for Quality Assurance for CAPI Interviewing,
- Guidelines for Quality Assurance for Commercial Printing,
- Guidelines for Quality Assurance for Record Linkage,
- Guidelines for Quality Assurance Procedures for Research and Evaluation Reports.

The Quality Program will convene working groups to develop standards and guidelines as issues arise. Additionally, previous guidance is being reviewed to determine whether these documents need to be revised and reissued in the Quality Framework.

Chart 1
Census Bureau Quality Processes and Statistical Agency Activities

Quality Framework Processes

Statistical Agency Activities

Content

Development of Concepts and Methods

Planning

Planning and Design

Design

Data Collection

Collection of Data

Data Processing

Processing and Editing of Data

Data Quality, Analysis and Evaluation

Analysis of Data

Production of Estimates or Projections

Dissemination

Establishment of Review Procedures

Dissemination of Data

Data Products and Services

Information Quality Guidelines At NCES

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Purpose of Statistical Standards

The National Center for Education Statistics (NCES), the principal statistical agency within the U.S. Department of Education, released the 2002 revised version of the *NCES Statistical Standards* on October 1, 2002: http://nces.ed.gov/statprog/stat_standards.asp

Our primary goal is to provide high quality, reliable, useful, and informative statistical information to public policy decision makers and to the general public. Thus, much of the standards and guidelines are geared towards fulfilling that goal. In particular, the standards and guidelines are intended for use by NCES staff and contractors to guide them in their data collection, analysis, and dissemination activities. These standards and guidelines are also intended to present a clear statement for data users regarding how data should be collected in NCES surveys, and the limits of acceptable applications and use. Beyond these immediate uses, we hope that other organizations involved in similar public endeavors will find the contents of some of these standards and guidelines useful in their work as well. All users of these standards and guidelines should be cognizant of the fact that the contents of the NCES standards are continually being reviewed for technological and statistical advances.

Background of Statistical Standards

Data quality is the cornerstone of all official statistics programs. To this end, there are a number of international and national groups that have devoted considerable time and effort to delineating important concepts and principles for official statistics. On the international front, the United Nations (UN) and the Economic Commission For Europe (ECE) have both adopted a set of “Fundamental Principles of Official Statistics.” Included among the 10 principles are calls for statistical agencies to use professional standards that are based on scientific principles to guide the methods and procedures for the collection, processing, storage, and presentation of statistical data. The principles also call for the inclusion of relevant information on the sources, methods, and procedures of the statistics. In a similar vein, one of the main objectives identified by the Statistics Directorate of the Organization for Economic Co-operation and Development (OECD) includes the development of international statistical standards, systems, and collaborations. Similarly, the International Monetary Fund’s (IMF) data dissemination standard includes the integrity and quality of data, coverage, periodicity and timeliness, public access to data, and full documentation of the data collection.

In the United States, there are two national committees that have each been working for a quarter of a century to improve statistical methods and data quality—the Federal Committee on Statistical Methodology (FCSM) and the Committee on National Statistics (CNSTAT). The Office of Management and the Budget (OMB) convenes the Federal Committee to provide a forum for communicating and disseminating information about statistical practices among all

Federal statistical agencies. The FCSM also recommends the introduction of new methodologies in Federal statistical programs to improve data quality.

The National Research Council of the National Academy of Sciences convenes CNSTAT, a committee of prominent researchers from universities and private research organizations, to study statistical topics to improve the effectiveness of the Federal statistical system. CNSTAT monitors the statistical policy and coordinating activities of the Federal government, reviews the statistical programs of federal agencies and suggests improvements, reviews data-handling and privacy and confidentiality policies and provides recommendations for best practices, studies data gaps and recommends additions as necessary, and reviews extant methodologies and suggests improved statistical methods.

CNSTAT published a monograph on the “Principles and Practices for a Federal Agency” to assist Federal statistical agencies. The main principles include relevance of data, credibility among data users, confidentiality of data, and trust among data providers. Many of the practices identified parallel the “Fundamental Principles of Official Statistics” promulgated by the UN and the ECE. For example, statistical agencies should have a commitment to high quality and professional standards. In discussing openness about the data, CNSTAT stresses the importance of providing a full description of the data, the methods used, and assumptions made. The description should include reliable indicators of the kinds and amount of error in the data. CNSTAT also stressed the importance of wide dissemination of data presented in a user-friendly format. The CNSTAT guide was one of the tools used by NCES staff in planning their current revision of the agency’s statistical standards.

Development of Statistical Standards at NCES

NCES first adopted written statistical standards in the spring of 1987. These standards were the result of a multi-year evaluation and planning process that included a recommendation for the development of statistical standards from the Committee on National Statistics at the National Academy of Science. With that recommendation, a statistical standards program was initiated at NCES in 1985. Using the Energy Information Administration’s Standards Manual and the Census Bureau’s technical paper on “Standards for Discussion and Presentation of Errors in Survey and Census Data,” NCES staff, in consultation with outside experts developed the 1987 version of NCES statistical standards.

With the adoption of this first set of standards, the Agency Director called for a formal evaluation to start the following fall, to insure that the standards were fully implemented and to identify any difficulties with the standards. In 1989, the Center undertook a full-scale revision of the 1987 standards. The revisions were developed by NCES staff, and reflected their first-hand experiences in using the 1987 standards. After multiple reviews of interim drafts by NCES staff and the NCES Advisory Council of Education Statistics, NCES Senior Staff accepted the revised standards in the spring of 1992.

At the June 1992 release of the *NCES Statistical Standards* report, the Acting Commissioner summarized the standards in the following statement:

They: (1) codify how we expect to behave professionally, (2) indicate the basis on which we expect to be judged by our peers in the statistical community, (3) represent the quality we expect in any of our efforts or those of our contractors and grantees, (4) provide a means to assure consistency among the studies the Center conducts, and (5) document for users, the methods and principles the Center employs in the collection of data.

The Acting Commissioner also reiterated the Center's commitment to periodic evaluations of the implementation of the standards and to a periodic review of the standards' operational feasibility.

The current revision process began in the summer of 1999 with a review of existing standards from a number of national and international statistical policy agencies and committees and from other international and national statistical agencies. At the same time the 1992 *NCES Statistical Standards* were made available on the Web, and NCES staff were given a 30-day period to submit comments concerning potential revisions and additions to the NCES standards. Following these activities an agency-wide Steering Committee was formed to work on the standards revision process. The Steering Committee formed 15 Working Groups that comprised more than one-half of the NCES staff to work on the set of topics identified in the 1999 reviews.

Each Working Group drafted their assigned standards; each of which underwent a multi-step review process. Following a 30-day NCES staff comment period, the working group members made revisions, the Steering Committee reviewed the drafts and submitted them to Senior Staff. The drafts were then reviewed by Senior Staff, modified as necessary, and then shared with a group of 40 to 50 representatives of the contractors who work with NCES on data collection, analysis, and dissemination. Additional revisions were incorporated following the input from this broad group. NCES also commissioned the National Institute of Statistical Sciences to convene an independent review panel of statistical experts to review and comment on the draft standards prior to final acceptance by the Steering Committee and Senior Management. The standards on this Web site are the result of the efforts of the many persons who participated in this multi-stage review process, but ultimately NCES takes responsibilities for any lack of clarity or completeness.

During the recent NCES standards revision, the Office of Management and Budget (OMB) issued government-wide guidelines for ensuring and maximizing the quality of information disseminated by Federal agencies. The OMB guidelines direct all agencies covered by the Paperwork Reduction Act (44 U.S.C. chapter 35) to develop and implement procedures for reviewing and substantiating the quality of information disseminated by the agency. In order to meet these goals, each agency is required to develop and promulgate quality guidelines.

In response to the OMB guidelines, the federal statistical agencies collaborated to identify a set of activities that are essential to maintaining the quality and credibility of statistical data. The NCES draft revised standards are organized around the shared framework for federal statistical agencies. NCES remains committed to the principles outlined by the 1992 NCES Acting Commissioner; what is more, these principles are reaffirmed in the OMB call for data quality guidelines.

OMB Quality Guidelines

Background

Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-554), directed the U.S. Office of Management and Budget (OMB) to issue government-wide guidelines that “provide policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies.” Information, as defined by OMB, includes any communication or representation of knowledge, such as facts or data, in any medium or form, including textual, numerical, graphic, cartographic, narrative or audiovisual forms. Dissemination refers to any agency initiated or sponsored distribution of information to the public (OMB, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies*, February 22, 2002, 67 FR 8452-8460).

NCES provides the public with a wide variety of information about the condition of American education. Information quality is important to NCES because educators, researchers, policymakers, and the public use NCES products for a variety of purposes. Thus it is important that information products that NCES disseminates are accurate and reliable. Most of the information products are available both as printed and electronic documents. They are announced on the NCES website (nces.ed.gov), and most electronic versions can be accessed and downloaded directly from the website.

Purpose and Scope

NCES guidelines have been identified as Standards for the last 15 years, thus we will retain that label. The purpose of these Standards is to describe NCES policy and procedures for reviewing and substantiating the quality of information before it is disseminated. These Standards are consistent with those issued by OMB and the Department of Education. These Standards represent a performance goal for NCES and are intended to improve the quality of the information NCES shares with the public.

In addition to the NCES Standards, the Department of Education and OMB have more general Information Quality Guidelines that apply to NCES. What is more, NCES will follow the request for corrections and appeal process described in the Department Information Quality Guidelines. www.ed.gov/offices/OCIO/info_quality/info_guide.html

The Standards are applicable to any information that NCES disseminates after October 1, 2002. In addition, some previously released information products continue to be used for decision-making or are relied upon by the Department of Education and the public as official, authoritative, government data; these data are, in effect, constantly being re-disseminated and thus are subject to these Standards and to the Department and OMB Information Quality Guidelines. Previously released information products that do not meet these criteria are considered archived information and thus are not subject to the Guidelines.

In addition to archived reports, these Standards do not cover all other information held or disseminated by NCES. The Department of Education Information Quality Guidelines include a list of excluded items, although that list also applies to NCES, the items that are particularly relevant to NCES are included here. For example, the guidelines generally do not cover: internal information such as employee records; internal procedural, operational, or policy manuals prepared for the management and operations of the Department of Education (and NCES) that are not primarily intended for public dissemination; information collected or developed by NCES that is not disseminated to the public, including documents intended only for inter-agency or intra-agency communications; opinions that are clearly identified as such, and that do not represent facts or NCES views; correspondence with individuals; comments received from the public in response to *Federal Register* notices, electronic links to information on other Web sites; and research findings published by NCES data cooperatives or grantees, unless NCES represents or uses the information as the official position of the Department, or in support of the official position of the Department, or has authority to review and approve the information before release.

For information covered by information quality guidelines, the NCES standards provide a basic standard of quality that can be defined based on the three elements of quality as defined by OMB: utility, objectivity, and integrity. These elements are intended to ensure that information disseminated by the nces is useful, accurate, reliable, unbiased, and secure.

Framework

Utility refers to the usefulness of the information to its intended users. The usefulness of information disseminated by NCES should be considered from the perspective of NCES, educators, education researchers, policymakers, and the public. Utility is achieved by staying informed of information needs and developing new products and services where appropriate.

NCES wants to ensure that information it disseminates meets the needs of the intended users. NCES relies upon internal reviews and analyses, along with feedback from advisory committees, educators, education researchers, policymakers, and the public to ensure that information disseminated by NCES meets the needs of intended users. In addition, all information products should be grammatically correct and clearly written in plain English. The target audience should be clearly identified, and the product should be understandable to that audience.

Consistent with OMB guidance, the goal is to maximize the usefulness of information and minimize the cost to the government and the public. When disseminating its information products, NCES will utilize all feasible and available dissemination channels so that the public, education researchers, and policymakers can locate NCES information in an equitable and timely fashion.

The information disseminated by NCES includes administrative and statistical data. NCES collects and disseminates administrative data from universe collections of elementary and secondary and postsecondary institutions. These universe collections are based on reports aggregated from records from schools, school districts, and states. NCES also collects and disseminates data from a number of sample survey data collections that are designed to fill the

information needs for statistical data. NCES supports both ongoing sample survey data collections and special purpose surveys that are designed to fill data gaps or information needs that are identified through internal review, legislative mandates, or input from data users outside the Department. All statistical reports and related products are reviewed to ensure their usefulness to the intended users. Where appropriate, contact information is available on each publication to facilitate feedback and questions by users.

The specific NCES standards that contribute directly to the utility and the dissemination of information include those on the Initial Planning of Surveys (1-1), Publication and Product Planning (1-2), and the Release and Dissemination of Reports and Data Products (7-3).

***Objectivity** refers to whether information is accurate, reliable, unbiased, and is presented in an accurate, clear, and unbiased manner. It involves both the content of the information and the presentation of the information. This includes complete, accurate, and easily understood documentation of the source of the information, with a description of the sources of any errors that may affect the quality of the data, when appropriate. Objectivity is achieved by using reliable information sources and appropriate techniques to prepare information products.*

NCES strives to present information to the public in an accurate, clear, complete, and unbiased manner. Prior to dissemination to the public, all products are reviewed for objectivity using sound statistical methods and the principles of transparency and reproducibility, as delineated in the OMB Information Quality Guidelines. In addition, all products undergo editorial and technical peer review to assist NCES in meeting this goal.

NCES is committed to the principles for objectivity in administrative and statistical data that are outlined in the Department of Education's Guidelines. To that end, we have specific standards that relate to each of the Department's principles:

1. In formulating a data collection plan goals of the study should be clearly described—Initial Planning of Surveys (1-1), Design of Surveys (2-1), Developing a Request for Proposal (RFP) for Surveys (2-3).
2. The subjects to be studied and the data to be collected should be clearly defined, using broadly understood concepts and definitions—Initial Planning of Surveys (1-1), Codes and Abbreviations (1-4), Defining Race and Ethnicity Data (1-5), Design of Surveys (2-1), Developing a Request for Proposal (RFP) for Surveys (2-3), Maintaining Data Series (2-5).
3. The data collection techniques should be well thought out, clearly articulated, and designed to use state of the art methodologies in the data collection—Initial Planning of Surveys (1-1), Design of Surveys (2-1), Survey Response Rate Parameters (2-2), Developing a Request for Proposal (RFP) for Surveys (2-3), Pretesting Survey Systems (2-4), Educational Testing (2-6), Coverage for Frames and Samples (3-1), Achieving Acceptable Response Rates (3-2), Monitoring and Documenting Survey Contracts (3-3).
4. In designing the work, every effort should be made to minimize the amount of time required for survey participants—Achieving Acceptable Response Rates (3-2).

5. The source of data should be reliable. In the case of sample survey data, the sample should be drawn from a complete list of items to be tested or evaluated, the appropriate respondents must be identified, correctly sampled, and queried with survey instruments that have been properly developed and tested—Initial Planning of Surveys (1-1), Design of Surveys (2-1), Pretesting Survey Systems (2-4), Coverage for Frames and Samples (3-1).
6. Response rates should be monitored during data collection. When necessary, appropriate steps should be taken to ensure the respondents are a representative sample—Computation of Response Rates (1-3), Survey Response Rate Parameters (2-2), Achieving Acceptable Response Rates (3-2), Monitoring and Documenting Survey Contracts (3-3), Nonresponse Bias Analysis (4-4).
7. Care should be taken to ensure the confidentiality of personally identifiable data, as required by law, during data collection, processing, and analysis of the resulting data—Maintaining Confidentiality (4-2).
8. Upon completion of the work, the data should be processed in a manner sufficient to ensure that the data are cleaned and edited to help ensure that the data are accurate and reliable—Initial Planning of Surveys (1-1), Design of Surveys (2-1), Monitoring and Documenting Survey Contracts (3-3), Data Editing and Imputation of Item Nonresponse (4-1), Evaluation of Surveys (4-3).
9. The data collection should be properly documented and stored, and the documentation should include an evaluation of the quality of the data with a description of any limitations of the data—Monitoring and Documenting Survey Contracts (3-3), Documenting a Survey System (3-4), Machine Readable Products (7-1).
10. Data should be capable of being reproduced or replicated based on information included in the documentation including, for example:
 - a) The source(s) of the information;
 - b) The date the information was current;
 - c) Any known limitations on the information;
 - d) The reason why the information is provided;
 - e) Descriptions of any statistical techniques or mathematical operations applied to source data; and
 - f) Identification of other sources of potentially corroborating or conflicting information.

The relevant standards include—Monitoring and Documenting Survey Contracts (3-3), Documenting a Survey System (3-4), Machine Readable Products (7-1), Survey Documentation in Reports (7-2).

11. If secondary analysis of data is employed, the source should be acknowledged, the reliability of the data should be confirmed and documented, and any shortcomings or

explicit errors should be acknowledged (e.g., the representativeness of the data, measurement error, data preparation error, processing error, sampling errors, and nonresponse errors)—Survey Documentation in Reports (7-2).

12. The analysis should be selected and implemented to ensure that the data are correctly analyzed using modern statistical techniques suitable for hypothesis testing. Techniques may vary from simple tabulations and descriptive analysis to multivariate analysis of complex interrelationships. Care should be taken to ensure that the techniques are appropriate for the data and the questions under inquiry—Statistical Analysis, Inference, and Comparisons (5-1), Variance Estimation (5-2), Rounding (5-3), Tabular and Graphic Presentations of Data (5-4).
13. Reports should also include the reason the information is provided, its potential uses, and cautions as to inappropriate extractions or conclusions, and the identification of other sources of corroborating or conflicting information—Survey Documentation in Reports (7-2).
14. Descriptions of the data and all analytical work should be reported in sufficient detail to ensure that the findings could be reproduced using the same data and methods of analysis; this includes the preservation of the data set used to produce the work—Monitoring and Documenting Survey Contracts (3-3), Documenting a Survey System (3-4), Evaluation of Surveys (4-3), Machine Readable Products (7-1), Survey Documentation in Reports (7-2).
15. All reports, data, and documentation should undergo editorial and technical review to ensure accuracy and clarity prior to dissemination. Qualified technical staff and peers outside the Department should do the technical review—Review of Reports and Data Products (6-1).
16. To ensure the utility of the work, all work must be conducted and released in a timely manner—Publication and Product Planning (1-2), Release and Dissemination of Reports and Data Products (7-3).
17. There should be established procedures to correct any identified errors. These procedures may include the publication of errata sheets, revised publications, or Web postings—Review of Reports and Data Products (6-1), Release and Dissemination of Reports and Data Products (7-3).

Integrity refers to the security or protection of information from unauthorized access or revision. Integrity ensures that the information is not compromised through corruption or falsification.

NCES has in place appropriate security provisions for the protection of confidential information that is contained in all identified systems of records. In accordance with statutory and administrative provisions governing the protection of information, NCES protects administrative records and sample survey data that include personally identifiable information, especially survey data that are collected under a pledge of confidentiality. Applicable provisions governing the protection of information include the following:

- Privacy Act;
- Computer Security Act of 1987;

- Freedom of Information Act;
- OMB Circulars A-123, A-127, and A-130;
- Federal Policy for the Protection of Human Subjects;
- Government Information Security Reform Act; and
- National Education Statistics Act, as amended by the USA Patriot Act of 2001.

The relevant standard is Maintaining Confidentiality (4-2).

Influential Information

The OMB guidelines for implementing section 515 recognize that some government information needs to meet higher quality standards than a basic standard of quality. The level of effort required to ensure the quality of information is tied to the uses of the information. Information that is defined as “influential” requires a higher level of effort to ensure its’ quality and reproducibility. Scientific, financial, and statistical information is considered influential if the Department can reasonably determine that the information is likely to have a clear and substantial impact on important public policies or private sector decisions if disseminated.

Influential information must be accompanied by supporting documentation that allows an external user to clearly understand the steps involved in producing the information and, to be able to reproduce the information. Any influential original data files must describe the design, collection, and processing of the data in sufficient detail that an interested third party could understand the specifics of the original data and, if necessary, independently replicate the data collection. In the case of influential analytic results, the mathematical and statistical processes used to produce the report must be described in sufficient detail to allow an independent analyst to substantially reproduce the findings using the original data and identical methods.

When full public access to NCES data and methods is not possible due to other compelling interests, NCES will apply especially rigorous robustness checks to analytic results and will document the checks that were undertaken. In those cases where protecting the confidentiality of individually identifiable data precludes the full release of a data file, persons seeking access to such data and methods are required to follow applicable NCES requirements and procedures for seeking such access. In all cases, the interest in transparency of the agency’s data shall not override other compelling interests such as privacy, intellectual property, and other confidentiality protections (16 CFR 4.9-4.11 and OMB Guidelines, par V.b.3.ii.B.j.).

Inasmuch as it is not always possible to predict in advance all of the uses of the information included in NCES data collections, all information collected and disseminated by NCES is held to the standards of quality, reproducibility, and documentation that are required for influential information.

Information Correction Requests and Appeals

Effective October 1, 2002 the Department of Education and NCES will allow any affected person to request the correction of information the Department disseminates that does not comply with applicable OMB, Department of Education, and NCES information quality guidelines. An affected person is an individual or an entity that may use, benefit or be harmed by the disseminated information at issue.

All NCES information products include the names of knowledgeable staff that can assist users in understanding the information presented, and in determining whether there is an error that warrants action using the correction process described in this section. Users of NCES information should consult with the contact person listed in the product before filing a formal request for correction.

Information Correction Requests

In the Department of Education's correction request process, the burden of proof rests with the requester. An affected person who believes that information the Department disseminates does not adhere to the information quality guidelines of OMB or the Department, or an office of the Department that has issued program-specific guidelines, and who would like to request correction of specific information, needs to provide the following information:

- Identification of the requester (*i.e.*, name, mailing address, telephone number, and organizational affiliation, if any);
- A detailed description of the information that the requester believes does not comply with the Department's, OMB's, or NCES guidelines, including the exact name of the data collection or report, the disseminating office and author, if known, and a description of the specific item in question;
- Potential impacts on the requester from the information identified for correction (*i.e.*, describe the requestor's interest in the information and how the requestor is affected by the information in question); and
- An explanation of the reason(s) that the information should be corrected (*i.e.*, describe clearly and specifically the elements of the information quality guidelines that were not followed).

This information should be provided to the Deputy Chief Information Officer for Information Management at the following address

Director, Information Management
Office of the Chief Information Officer
US Department of Education
RE: Information Quality Request
Room 4060, ROB-3
400 Maryland Avenue, SW
Washington, DC 20202

Alternatively, requesters may submit e-mail requests to the following address: "ocio.infoqualityrequest@ed.gov." Requesters should indicate that they are submitting an Information Quality Request in the subject line of the e-mail.

Review

The Director, Information Management, CIO (DIM/CIO) will review the request and determine whether it contains all the information required for a complaint. If the request is unclear or incomplete, the Department will seek clarification from the requester.

If the request is clear and complete, the DIM/CIO will forward it to the appropriate program office(s) for a response to the requester. The responsible office(s) will determine whether a correction is warranted, and if so, what corrective action it will take. Any corrective action will be determined based on the nature and timeliness of the information involved, as well as the significance of the error on the use of the information, the magnitude of the error, and the cost of undertaking a correction.

Comments about information on which the Department has sought public comment, such as rulemaking or studies cited in a rulemaking, will be responded to through the public comment process, or through an individual response if there was no published process for responding to all comments. The Department may choose to provide an earlier response, if doing so is appropriate, and will not delay issuance of the final action in the matter.

The Department is not required to change the content or status of information simply based on the receipt of a request for correction. The Department may reject a request that appears to be made in bad faith or without justification, and is only required to undertake the degree of correction that is appropriate for the nature and timeliness of the information involved. In addition, the Department need not respond substantively to requests that concern information not covered by the information quality guidelines.

Response

The Department will respond to all requests for correction within 60 calendar days of the DIM/CIO's receipt of the request, including requests that the Department elects not to process further. For requests that merit review -

- If the request is clear and complete, the Department's response will explain the findings of the review, or will inform the requester if more time is needed to complete the review, the reason(s) for the additional time, and an estimate of the time it will take to respond. The appropriate program office will be responsible for determining what action is necessary and, if an error was made, it will determine the appropriate level of correction.
- If the request is incomplete or unclear, the DIM/CIO, will seek clarification from the requester. In the case of an unclear or incomplete request, the requester may submit additional clarifying information if he or she so chooses. However, the deadline for the Department's review and response will be based upon the date the clarifying information is received.

Once a decision is made, the response will explain to the requester that he or she has a right to appeal the decision. Copies of all Department correspondence related to Information Quality Requests will be maintained by the DIM/CIO.

Appeals

If a requester is not satisfied with the Department's decision on the request (including the corrective action, if any), he or she may appeal to the Department's Chief Information Officer within thirty (30) calendar days of receipt of the Department's decision. This administrative appeal must include a copy of the initial request, a copy of the Department's decision, and a letter

explaining why he or she believes the Department's decision was inadequate, incomplete, or in error.

This appeal information should be provided to the Department's Chief Information Officer (OCIO) at the following address:

The Chief Information Officer
US Department of Education
RE: Information Quality Appeal
Room 4082, ROB-3
400 Maryland Avenue, SW
Washington, DC 20202

Alternatively, requesters may submit an appeal by e-mail to the following address: "ocio.infoqualityappeal@ed.gov."

Requesters should indicate that they are submitting an Information Quality Appeal in the subject line of the e-mail. Such e-mail requests must include all of the information specified for an appeal submitted by regular mail.

The Department will ensure that all appeals are subjected to an impartial review that is conducted by parties other than those who prepared the Department's decision. The Department will respond to all appeals within 60 calendar days of the CIO's receipt of the appeal, or will inform the requester if more time is needed to complete the review of the appeal, and the reason(s) for the additional time.