

Final May 12, 2013

**Report of the Office of Research and Methodology Review Panel
to the NCHS Board of Scientific Counselors**

Table of Contents

1. Executive Summary
2. Overview of the Report
3. Review Process
4. History and Activities of ORM
 - 4.1. Overview
 - 4.2. ORM Structure and Organization
 - 4.3. ORM Activities
5. Accomplishments, Strengths and Challenges of ORM
 - 5.1. Office of the Director
 - 5.2. Statistical Research and Survey Design Staff
 - 5.3. Questionnaire Design Research Laboratory
 - 5.4. Research Data Center
6. Conclusion
 - Attachment 1 - Panel Members

1. Executive Summary

The Board of Scientific Counselors (BSC) of the National Center for Health Statistics (NCHS) commissioned a panel to review the Office of Research and Methodology (ORM) as part of an on-going program review process and to report its findings to the BSC. The panel report is available at www.cdc.gov/nchs. This Executive Summary provides an overview of that report. .

The report describes the background and history of the program; its current operations, structure and resources; its accomplishments and contributions; and the challenges it faces. The report includes a series of recommendations designed to assist the program in meeting the challenges to its present operations and the potential for its future goals. The Panel concluded that the ORM is a key office for ensuring that NCHS carries out its mission to provide high-quality information about the nation's health. Under the current Director, the Office is on an excellent trajectory. The panel makes the following recommendations, which are discussed in the main report.

Recommendations for the ORM Office of the Director:

- 1.1. Endorse the current mixed research model. The current mixed model of research organization, with both centralized researchers in ORM and researchers in the individual programs, is fully endorsed by the committee, and should be continued.
- 1.2. Continue recruitment efforts. The committee was impressed by ORM's efforts to recruit strong researchers, particularly in the Statistical Research and Survey Design Staff. ORM should continue these efforts to recruit excellent staff, capable of conducting independent research and collaborating effectively with the production staffs.
- 1.3. ORM's strategic role within NCHS. ORM should increasingly play a major proactive role in strategic decisions concerning the design and analysis of NCHS surveys, and the development of new products.
- 1.4. Imbed ORM researchers in NCHS programs. Recommendation 1.3 requires that ORM researchers are increasingly embedded in program activities. One way this can be accomplished is by a "triple citizenship" model, involving joint appointments between ORM and two program staffs. NCHS and ORM can benefit from ORM researchers being associated with more than one program, and this may be necessary given resource constraints. Also some rotation of researchers among programs is recommended to encourage cross-fertilization of ideas across divisions.
- 1.5. Scope of survey measurement activities. The QDRL appears to be mainly focused on cognitive interviewing. While this is an important tool in the study of survey measurement, we recommend that ORM expands its research agenda to incorporate hypothesis testing approaches to issues of reliability and validity.
- 1.6. Value methodological innovation, peer-reviewed research. NCHS has been a leader in methodological innovation among government statistical agencies, and the committee learnt about a number of strong research activities. The close and collegial relationship between ORM and OAE was particularly valuable, given the distinct but related missions of these units. The current emphasis on high quality peer-reviewed research is excellent and should be continued, while ensuring that this does not delay important programmatic activities. Collaborative publications between ORM researchers and staff from other offices and divisions are strongly encouraged.

- 1.7. Regular communication with data divisions. There should be regular communication between the director of ORM and the data divisions on upcoming projects and statistical needs. This should include formal and informal gatherings to communicate concerns and needs, and a regularized process for reviews and agenda setting with NCHS data divisions and other groups that collaborate with ORM staffs.
- 1.8. Splitting QDRL and RDC staffs. The splitting of the QDRL and RDC staffs, currently underway, is sensible and should be finalized.
- 1.9. Dialog with researcher directors in other agencies. We recommend regular dialogue between the ORM Director and directors of similar units in other agencies, in order to promote inter-agency collaboration and share lessons from dealing with similar problems.

Recommendations for Statistical Research and Survey Design Staff

- 2.1. Role and size of SRSDS. We endorse having a strong unit for statistical research and collaboration within ORM. Due to attrition, the SRSDS is about half the size it was a few years ago. A reduction in the number of statisticians in the data divisions has also increased the responsibilities of SRSDS. We recommend that at least 5 additional statisticians be hired in SRSDS.
- 2.2. SRSDS strategic role. As discussed in Recommendations 1.3 and 1.4, we recommend that SRSDS staff play a major proactive role in strategic decisions concerning the design and analysis of NCHS surveys, that they are imbedded in data division activities as part of a collaborative team.
- 2.3. Coverage of major programs. We recommend that at least two SRSDS statisticians are knowledgeable about each of the major NCHS programs, to ameliorate the effects of unexpected departures. The “triple citizenship” model in Recommendation 1.4 is one possible way to accomplish this.
- 2.4. Collaboration with QDRL. We encourage greater collaboration between SRSDS and QDRL.

Recommendations for Questionnaire Design Research Laboratory

- 3.1. QDRL research focus. The focus of the Question Design Research Lab (QDRL) on standardized procedures, careful documentation and peer-reviewed publication is to be commended. This orientation should be balanced with service delivery to survey staffs.
- 3.2. QDRL collaborations. As in the “triple citizenship” suggestion for SRSDS, we recommend specific designations of each QDRL staff member to one or two data divisions, to identify research needs and opportunities, reduce the number of unanticipated demands for fast turnaround cognitive testing, and engage the QDRL staff as active partners.
- 3.3. QDRL work prioritization. The process of prioritizing QDRL work should include periodic and proactive solicitation of NCHS program needs from the Director’s office.
- 3.4. Addressing time-sensitive QDRL needs. Strategies to meet emerging or critical time-sensitive QDRL needs should be developed, such as establishing a ‘swat’ team to quickly test a set of questions; establishing a more robust pool of subjects from which to quickly recruit; and establishing advanced

agreements with OMB and the NCHS ERB about a streamlined process for obtaining clearance for time-sensitive projects.

3.5. Usage of application suite. The application suite documenting cognitive interviewing studies holds promise as a valuable resource for the study of question development. Because of the costs involved in this resource, we recommend that QDRL monitor and evaluate usage of the information in the suite, and identify and address any impediments to usage by NCHS and other external agencies.

Recommendations for Research Data Center

- 4.1. RDC researchers as a resource. The Committee is impressed by excellent progress recently made in the area of RDC activities. NCHS should consider RDC researchers as a potential resource in proposing new ideas for existing or new NCHS products, by promoting two-way communications between these researchers and NCHS researchers.
- 4.2. Recusal policy – While the benefits of “researchers assisting researchers” in the proposal development and review process are substantial, conflict of interest (or the appearance thereof) may arise. This is a common problem in any peer review process. A recusal policy and procedure should be put in place to encourage transparency.
- 4.3. Flat fees – Since the data set up fees are not intended for cost recovery and users experience some frustration and uncertainty regarding the amount, a flat fee for partial recovery of the marginal cost is suggested. Even though the charge is viewed as “nominal” an application process for student researchers to obtain a waiver is also recommended.
- 4.4. Encourage a collaborative relationship with the Census RDC Network - The NCHS RDC has an official partnership (MOU) with Center for Economic Studies at Census HQ, however the research community that the Census RDC network serves is spread across remote sites around the country. The NCHS RDC staff should be encouraged to develop a collaborative relationship with the local, on-site Census network administrators and university site directors.
- 4.5. 24/7 Access at remote Census RDC Sites - Given the high level of physical and electronic security at Census RDC remote sites, we recommend that the NCHS policy that requires researchers to work only when the Census employee is physically present be changed to allow 24/7 access, as is done for researchers using Census and AHRQ data.

2. Overview of the Report

The Board of Scientific Counselors (BSC) of the National Center for Health Statistics (NCHS) commissioned a panel to review the Office of Research and Methodology (ORM) as part of an on-going program review process and to report its findings to the BSC. This report summarizes the review process; provides background information on the ORM, its history and current operations; describes the accomplishments, contributions and assets of the three main components of ORM, the Statistical Research and Survey Design Staff (SRSDS), the Questionnaire Design Research Laboratory (QDRL) and Research Data Center Staff (RDCS), and presents a series of recommendations.

3. Review Process

The ORM Panel members (attachment 1) reviewed the BSC charge and the “Procedures for Reviewing the NCHS Program” (attachment 2) established by the BSC. These procedures call for the reviewers to examine the current status, scientific quality and responsiveness of each program within the context of its mission. Further, the review procedures require that the review takes into account future availability of financial and staffing resources, emphasizes forward thinking and future plans as well as assesses current operations, and conducts an interactive review that obtains information from written materials, presentations and discussion with program staff.

The Panel received advance information on the ORM, including a self-study. As a result of a conference call in January, the committee also asked the ORM director for information on a number of topics, which he provided at the site review, with a thoughtful summary of ORM’s current status and future plans. The Panel members met with NCHS staff on February 5, 2013, following the agenda given in attachment 3. They heard presentations by Dr. Edward Sondik, NCHS Director; Dr. Jennifer Madans, Associate Director for Science, Dr. Nathaniel Schenker, Director of ORM, leaders from four staffs who work closely with ORM, and leaders of the ORM Staffs for Statistical Research and Survey Design, Questionnaire Design Research Laboratory, and Research Data Centers. Panel members prepared this report, which was presented to the BSC at the May 2013 meeting. With BSC and further Panel input, the report was finalized and submitted to the BSC. A year later--at the May, 2014 BSC meeting-- the ORM will report on the progress made on the recommendations and other actions taken as a result of the Panel’s report.

4. History and Description of ORM activities

4.1. Overview

A focus on statistical methodology and improving statistical and research methods has been a hallmark of NCHS since its start in 1960. In its early history, an Office of Statistical Methods and an Office of Research provided this expertise and guidance and it wasn’t until the early 1980s that the current Office of Research and Methodology (ORM) was formed to bring those functions together. Today, ORM is charged with advancing the state of knowledge in four core areas: measurement, data collection, data analysis, and dissemination. In this capacity, the primary activities of the office include:

- conducting research
- providing technical assistance
- collaborating with other agencies and
- developing applications.

ORM employs approximately 50 multidisciplinary full-time-equivalent staff (FTEs) and contractors. In July 2010, a new Director of ORM was appointed. Since that time, the Office has been undergoing a process of reorganization. A current focus of the reorganization is to increase the level of statistical expertise within the Office. The ORM resource costs are largely in FTE’s. ORM has a small evaluation funds budget of approximately \$1.2M, which is used primarily to fund visiting scholars, contractors and travel.

4.2. ORM Structure and Organization

ORM is one of the five freestanding Offices within NCHS. The ORM Director, who serves as the NCHS Associate Director for Research and Methodology, reports directly to the NCHS Director. ORM includes its Office of the Director (OD) and three staffs: Statistical Research and Survey Design Staff (SRSDS), Questionnaire Design Research Laboratory (QDRL), and Research Data Center (RDC) which correspond to the core functions of ORM.

- **ORM's Office of the Director (OD)** provides scientific, management, and budget oversight for ORM leadership and direction for the Office's IT initiatives, representation of ORM to NCHS and CDC senior management, and review of all ORM publications. The OD also participates in several of ORM's research, technical assistance, collaboration, and application activities. In addition to the ORM Director, the OD staff includes the Assistant Director (who also serves as the Director of the RDC), the Associate Director for Science, the Senior Advisor for Statistical Programs, a faculty member from the University of Michigan who is on a part-time IPA to ORM, and the ORM secretary.
- **Statistical Research and Survey Design Staff (SRSDS)** focuses on methods for the collection and analysis of data. The SRSDS conducts research on survey design and statistical methodology, with a primary goal of maximizing the efficiency and analytical capabilities of NCHS- and CDC-sponsored systems of data collection. SRSDS staff members focus on three critical areas of activity: 1) technical assistance with planning and designing health surveys or studies to achieve mission-oriented objectives; 2) research and development of statistical methods for design and analysis; and 3) dissemination of findings in publications, presentations and written reports. The staff also provides support for disclosure risk assessment for public-use data files and reports prior to release. Recent areas of work by the SRSDS include the redesign of NCHS surveys, modeling and analyzing survey data, small-area estimation, life-table analysis, combining information from multiple data sources, quality control, statistical disclosure limitation and protection of confidentiality, handling missing data, and statistical computing. The SRSDS has a staff of 9 FTEs, 1 part-time expert consultant (from the University of Maryland), and 2 temporary student interns (STEPs). The FTEs are primarily Mathematical Statisticians, with 6 at the GS-12 and GS-13 levels and 3 at the GS-14 level. In addition, ORM's Senior Advisor for Statistical Programs is serving as the Acting Staff Chief while a search is being conducted for a Staff Chief at the GS-15 level or above. ORM has plans to recruit several more statistical staff members over the next few years.
- **Questionnaire Design Research Laboratory (QDRL)** focuses on measurement and collection of data. The QDRL was established as a resource for NCHS and other Federal statistical agencies to develop and test survey instruments. Continuing in this capacity, the QDRL's fundamental mission is to improve the quality and usefulness of Federal statistics by improving the reliability and validity of survey instruments and providing an understanding of the substantive meaning represented in survey statistics. As an expanding focus, the QDRL seeks to understand how response processes and response error might differ across socio-cultural or diverse language populations—work that is necessary for developing comparable health measures intended for global use and among varied cultural and economic populations. The primary method used in the QDRL is cognitive interviewing, although other qualitative and quantitative methods are also used. The focus of QDRL evaluation studies is to isolate and define 1) patterns of question

interpretation, 2) types of response error, and 3) potential for bias in cross-national or cross-cultural studies. Work is performed collaboratively with NCHS data divisions as well as other Federal agencies. Studies are documented in final reports and research is presented at conferences and in published papers. The QDRL staff includes 9 FTEs and 8 contractors. The FTEs consist primarily of Survey Statisticians and Behavioral Scientists and are mostly at the GS-12 and GS-13 levels. The staff also includes a GS-14 Behavioral Scientist and a GS-15 Director. Much of the QDRL's work performed for agencies outside of NCHS is funded through Interagency Agreements.

- The **Research Data Center (RDC)** focuses on ORM's work in data analysis and dissemination. The RDC was established in 1998 to provide a mechanism for researchers to access detailed data files in a secure environment without jeopardizing the confidentiality of respondents. Researchers working in the RDC often request variables that are restricted due to their carrying a high risk of disclosure, such as those involving geographic or temporal components. Examples include: 1) using latitude, longitude, and date to estimate exposure to sunlight to measure vitamin D intake; and 2) using a state identifier and the month of data collection to measure state-level fluctuations in health insurance coverage. Historically, the data files accessed in the RDC have consisted of NCHS survey data and vital statistics. The RDC has recently begun housing data that were produced by agencies outside of NCHS. To gain access to RDC data, Guest Researchers submit proposals for review and approval. After a proposal is approved, Guest Researchers meeting certain criteria are allowed access, under strict supervision, to the restricted data. The RDC provides access to data through two secure laboratories operated by NCHS, one in Atlanta and one in Hyattsville; eleven other sites operated by the Census Bureau; and a remote access tool that allows researchers access to output generated through analyses but not the underlying microdata. In addition, RDC staff members often assist researchers in their work with the data and analyses. The RDC is constantly researching new modes of access and is investing heavily in technological solutions to data access and statistical disclosure limitation. The RDC has a staff of 14 FTEs, which include Statisticians, Health Scientists, and Computer Scientists at the GS-12 and GS-13 levels, one Computer Scientist at the GS-14 level, and the RDC Director, who is at the GS-15 level.

4.3. ORM Activities

ORM's role in NCHS is integral to its mission, which is to provide statistical information that will guide actions and policies to improve the health of the American people. As the Nation's principal health statistics agency, NCHS leads the way with accurate, relevant, and timely data.

ORM activities are intended to be relevant and beneficial first and foremost to NCHS, but also to CDC, the Department of Health and Human Services (HHS), the Federal statistical system, and the broader scientific community. Through the years, ORM has directly contributed to the collection, analysis and dissemination of high-quality data and worked closely with NCHS data divisions to enhance the quality and usefulness of NCHS data. ORM's statistical and methodological research has advanced the science within NCHS, with other partners, throughout the Federal statistical system and in the field broadly.

ORM staff members serve and provide leadership in external committees and associations that focus on statistical and health issues relevant to NCHS. ORM also has a wide range of agencies and organizations with which it collaborates, consults and provides technical assistance. ORM staff members serve on the

Federal Committee on Statistical Methodology sponsored by the Office of Management and Budget to improve the quality of Federal Statistics. An ORM staff member serves on the Committee on National Statistics Panel to Review the 2010 Census and advise on the methodology for the 2020 census. ORM staff plays a key role in CDC's Statistical Advisory Group, having served as its chair and organized symposia and short courses. ORM participates in the National Science Foundations' Methodology, Measurement and Statistics Program by reviewing and recommending funding of proposals that can benefit the Federal statistical agencies. ORM participation has been important to the American Statistical Association (ASA), the world's largest community of statisticians. Members of ORM have served on the ASA Boards of Directors and its local chapter, as well as chaired various committees; the ORM Director has been elected ASA President for 2014. There are many other statistical and research organizations, committees and groups, either short-term or long-standing, with which is ORM is affiliated and has been recognized for its participation and far-reaching contributions.

ORM's primary clients are the other programs in NCHS. In addition, ORM's clients include other CDC Centers and Offices, agencies and offices within HHS, Federal agencies outside of HHS, international organizations, and academic institutions. Many of ORM's clients are also collaborators, with longstanding relationships with ORM staff and products. ORM staff members also provide consultation, collaboration, and technical assistance on methodological issues and data to independent researchers, graduate students, and faculty, and they serve on doctoral dissertation committees. The QDRL and RDC are developing potential new clients in HHS, elsewhere in government, and in academia. These relationships usually include an agreement to perform a service associated with validity testing or hosting data. The SRSDS is building its statistical staff to become a leader in Federal statistics and developing appropriate collaborations as time and resources allow.

Recent noteworthy activities and accomplishments of the individual offices/staffs are summarized under the discussions of those offices in Section 5 below.

5. Accomplishments, Strengths and Challenges of ORM

5.1. Office of the Director

Under the current Director, ORM is on an excellent trajectory. In this section we present a number of challenges and opportunities described by the ORM Director and identified by the Committee, and in subsequent sections we discuss the staffs that comprise the Office.

Challenges include maintaining current staff and attracting and hiring additional staff, an increasing dependence upon reimbursable funding, locating a new permanent space for the Atlanta RDC site and developing a new remote access system. In addition, ORM needs to continue and enhance its strategic planning process and communication within ORM and among NCHS programs.

- Staff Resources. ORM is vulnerable to losing critical statistical expertise through staff attrition, including retirements. ORM's statistical staff has shrunk considerably in the past decade and, in many instances, ORM has no back-ups if its experts leave. ORM needs to determine the knowledge, skills, and experience that contribute most to the NCHS mission and are the highest priority for replacement. ORM also needs to develop effective succession planning strategies. Exacerbating the situation is the difficulty of recruiting talented new staff members in statistics and survey

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Recommendations for the ORM Office of the Director:

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Recommendations for Statistical Research and Survey Design Staff

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ORM is one of the five freestanding Offices within NCHS. The ORM Director, who serves as the NCHS Associate Director for Research and Methodology, reports directly to the NCHS Director. ORM includes its Office of the Director (OD) and three staffs: Statistical Research and Survey Design Staff (SRSDS), Questionnaire Design Research Laboratory (QDRL), and Research Data Center (RDC) which correspond to the core functions of ORM.

- **ORM's Office of the Director (OD)** provides scientific, management, and budget oversight for ORM leadership and direction for the Office's IT initiatives, representation of ORM to NCHS and CDC senior management, and review of all ORM publications. The OD also participates in several of ORM's research, technical assistance, collaboration, and application activities. In addition to the ORM Director, the OD staff includes the Assistant Director (who also serves as the Director of the RDC), the Associate Director for Science, the Senior Advisor for Statistical Programs, a faculty member from the University of Michigan who is on a part-time IPA to ORM, and the ORM secretary.
- **Statistical Research and Survey Design Staff (SRSDS)** focuses on methods for the collection and analysis of data. The SRSDS conducts research on survey design and statistical methodology, with a primary goal of maximizing the efficiency and analytical capabilities of NCHS- and CDC-sponsored systems of data collection. SRSDS staff members focus on three critical areas of activity: 1) technical assistance with planning and designing health surveys or studies to achieve mission-oriented objectives; 2) research and development of statistical methods for design and analysis; and 3) dissemination of findings in publications, presentations and written reports. The staff also provides support for disclosure risk assessment for public-use data files and reports prior to release. Recent areas of work by the SRSDS include the redesign of NCHS surveys, modeling and analyzing survey data, small-area estimation, life-table analysis, combining information from multiple data sources, quality control, statistical disclosure limitation and protection of confidentiality, handling missing data, and statistical computing. The SRSDS has a staff of 9 FTEs, 1 part-time expert consultant (from the University of Maryland), and 2 temporary student interns (STEPs). The FTEs are primarily Mathematical Statisticians, with 6 at the GS-12 and GS-13 levels and 3 at the GS-14 level. In addition, ORM's Senior Advisor for Statistical Programs is serving as the Acting Staff Chief while a search is being conducted for a Staff Chief at the GS-15 level or above. ORM has plans to recruit several more statistical staff members over the next few years.
- **Questionnaire Design Research Laboratory (QDRL)** focuses on measurement and collection of data. The QDRL was established as a resource for NCHS and other Federal statistical agencies to develop and test survey instruments. Continuing in this capacity, the QDRL's fundamental mission is to improve the quality and usefulness of Federal statistics by improving the reliability and validity of survey instruments and providing an understanding of the substantive meaning represented in survey statistics. As an expanding focus, the QDRL seeks to understand how response processes and response error might differ across socio-cultural or diverse language populations—work that is necessary for developing comparable health measures intended for global use and among varied cultural and economic populations. The primary method used in the QDRL is cognitive interviewing, although other qualitative and quantitative methods are also used. The focus of QDRL evaluation studies is to isolate and define 1) patterns of question

interpretation, 2) types of response error, and 3) potential for bias in cross-national or cross-cultural studies. Work is performed collaboratively with NCHS data divisions as well as other Federal agencies. Studies are documented in final reports and research is presented at conferences and in published papers. The QDRL staff includes 9 FTEs and 8 contractors. The FTEs consist primarily of Survey Statisticians and Behavioral Scientists and are mostly at the GS-12 and GS-13 levels. The staff also includes a GS-14 Behavioral Scientist and a GS-15 Director. Much of the QDRL's work performed for agencies outside of NCHS is funded through Interagency Agreements.

- The **Research Data Center (RDC)** focuses on ORM's work in data analysis and dissemination. The RDC was established in 1998 to provide a mechanism for researchers to access detailed data files in a secure environment without jeopardizing the confidentiality of respondents. Researchers working in the RDC often request variables that are restricted due to their carrying a high risk of disclosure, such as those involving geographic or temporal components. Examples include: 1) using latitude, longitude, and date to estimate exposure to sunlight to measure vitamin D intake; and 2) using a state identifier and the month of data collection to measure state-level fluctuations in health insurance coverage. Historically, the data files accessed in the RDC have consisted of NCHS survey data and vital statistics. The RDC has recently begun housing data that were produced by agencies outside of NCHS. To gain access to RDC data, Guest Researchers submit proposals for review and approval. After a proposal is approved, Guest Researchers meeting certain criteria are allowed access, under strict supervision, to the restricted data. The RDC provides access to data through two secure laboratories operated by NCHS, one in Atlanta and one in Hyattsville; eleven other sites operated by the Census Bureau; and a remote access tool that allows researchers access to output generated through analyses but not the underlying microdata. In addition, RDC staff members often assist researchers in their work with the data and analyses. The RDC is constantly researching new modes of access and is investing heavily in technological solutions to data access and statistical disclosure limitation. The RDC has a staff of 14 FTEs, which include Statisticians, Health Scientists, and Computer Scientists at the GS-12 and GS-13 levels, one Computer Scientist at the GS-14 level, and the RDC Director, who is at the GS-15 level.

4.3. ORM Activities

ORM's role in NCHS is integral to its mission, which is to provide statistical information that will guide actions and policies to improve the health of the American people. As the Nation's principal health statistics agency, NCHS leads the way with accurate, relevant, and timely data.

ORM activities are intended to be relevant and beneficial first and foremost to NCHS, but also to CDC, the Department of Health and Human Services (HHS), the Federal statistical system, and the broader scientific community. Through the years, ORM has directly contributed to the collection, analysis and dissemination of high-quality data and worked closely with NCHS data divisions to enhance the quality and usefulness of NCHS data. ORM's statistical and methodological research has advanced the science within NCHS, with other partners, throughout the Federal statistical system and in the field broadly.

ORM staff members serve and provide leadership in external committees and associations that focus on statistical and health issues relevant to NCHS. ORM also has a wide range of agencies and organizations with which it collaborates, consults and provides technical assistance. ORM staff members serve on the

Federal Committee on Statistical Methodology sponsored by the Office of Management and Budget to improve the quality of Federal Statistics. An ORM staff member serves on the Committee on National Statistics Panel to Review the 2010 Census and advise on the methodology for the 2020 census. ORM staff plays a key role in CDC's Statistical Advisory Group, having served as its chair and organized symposia and short courses. ORM participates in the National Science Foundations' Methodology, Measurement and Statistics Program by reviewing and recommending funding of proposals that can benefit the Federal statistical agencies. ORM participation has been important to the American Statistical Association (ASA), the world's largest community of statisticians. Members of ORM have served on the ASA Boards of Directors and its local chapter, as well as chaired various committees; the ORM Director has been elected ASA President for 2014. There are many other statistical and research organizations, committees and groups, either short-term or long-standing, with which is ORM is affiliated and has been recognized for its participation and far-reaching contributions.

ORM's primary clients are the other programs in NCHS. In addition, ORM's clients include other CDC Centers and Offices, agencies and offices within HHS, Federal agencies outside of HHS, international organizations, and academic institutions. Many of ORM's clients are also collaborators, with longstanding relationships with ORM staff and products. ORM staff members also provide consultation, collaboration, and technical assistance on methodological issues and data to independent researchers, graduate students, and faculty, and they serve on doctoral dissertation committees. The QDRL and RDC are developing potential new clients in HHS, elsewhere in government, and in academia. These relationships usually include an agreement to perform a service associated with validity testing or hosting data. The SRSDS is building its statistical staff to become a leader in Federal statistics and developing appropriate collaborations as time and resources allow.

Recent noteworthy activities and accomplishments of the individual offices/staffs are summarized under the discussions of those offices in Section 5 below.

5. Accomplishments, Strengths and Challenges of ORM

5.1. Office of the Director

Under the current Director, ORM is on an excellent trajectory. In this section we present a number of challenges and opportunities described by the ORM Director and identified by the Committee, and in subsequent sections we discuss the staffs that comprise the Office.

Challenges include maintaining current staff and attracting and hiring additional staff, an increasing dependence upon reimbursable funding, locating a new permanent space for the Atlanta RDC site and developing a new remote access system. In addition, ORM needs to continue and enhance its strategic planning process and communication within ORM and among NCHS programs.

- Staff Resources. ORM is vulnerable to losing critical statistical expertise through staff attrition, including retirements. ORM's statistical staff has shrunk considerably in the past decade and, in many instances, ORM has no back-ups if its experts leave. ORM needs to determine the knowledge, skills, and experience that contribute most to the NCHS mission and are the highest priority for replacement. ORM also needs to develop effective succession planning strategies. Exacerbating the situation is the difficulty of recruiting talented new staff members in statistics and survey

methodology. Mathematical Statisticians and Survey Methodologists are hard-to-fill positions for NCHS and competition is intense in the DC area. Moreover, contracting organizations tend to pay higher salaries than does the Federal Government.

- Funding. A primary challenge faced by the QDRL is its growing dependence on reimbursable agreements, which are not predictable in timing or scope. In the past 2 years, QDRL has had 6 reimbursable agreements totaling \$750k. The amount of funds from reimbursable agreements has increased dramatically over the past 5 years. Projects, particularly those large in scope such as the evaluation of the Blood Donor History questionnaire, require that there are ample trained staff members to oversee and conduct the work. Filling research staff positions requires a fair amount of time to identify and hire qualified applicants, and additional time is needed to train new hires. The process, therefore, must be completed prior to signing agreements. If, however, reimbursable work decreases in a given year, QDRL will be unable to maintain the staff supported by reimbursable agreements. Because of the unpredictability of such agreements, FTEs have been filled by 1- to 3-year fellowships. If agreements decrease, then contracts are not renewed. This solution is not problem-free: Use of short-term fellowships creates a more transient staff and, with fewer stable positions, may generate smaller pools of qualified applicants for future hiring.
- Scope of Survey Measurement Activities. The QDRL appears to be mainly focused on cognitive interviewing. While this is an important tool in the study of survey measurement, we recommend that ORM expands its research agenda to incorporate hypothesis testing approaches to issues of reliability and validity. This research would involve more collaborative activities between SRSDS and QDRL staff.
- RDC Expansion. The RDC needs to find new permanent space for the Atlanta site and develop a new remote access system. The NCHS RDC has increasingly been viewed as the RDC for CDC and many HHS programs use its services. If the RDC becomes a data enclave for all of HHS and incorporates and manages a wider range of data resources, it will need staff to support that expanded role.
- Strategic Planning. Strategic planning with an alignment of ORM activities and initiatives with the overall NCHS mission and NCHS program needs and goals is crucial to ORM's continued and elevated success in NCHS. Mechanisms to maintain and expand communication within the ORM program and with ORM and other NCHS programs are being identified and utilized but will need to move apace with the challenges and opportunities NCHS faces. ORM will be challenged to find a balance between basic research and technical assistance, as well as how to engage more production - oriented units and other government agencies in collaborative research in the face of differing priorities and philosophies.

Recommendations

- 1.1. Endorse the current mixed research model. The current mixed model of research organization, with both centralized researchers in ORM and researchers in the individual programs, is fully endorsed by the committee, and should be continued.
- 1.2. Continue recruitment efforts. The committee was impressed by ORM's efforts to recruit strong researchers, particularly in the Statistical Research and Program Staff. ORM should continue these efforts to recruit excellent staff, capable of conducting independent research and collaborating effectively with the production staffs.

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- 1.3. ORM's strategic role within NCHS. ORM should increasingly play a major proactive role in strategic decisions concerning the design and analysis of NCHS surveys, and the development of new products.
- 1.4. Imbed ORM researchers in NCHS programs. Recommendation 1.3 requires that ORM researchers are increasingly embedded in program activities. One way this can be accomplished is by a "triple citizenship" model, involving joint appointments between ORM and two program staffs. NCHS and ORM can benefit from ORM researchers being associated with more than one program, and this may be necessary given resource constraints. Also some rotation of researchers among programs is recommended to encourage cross-fertilization of ideas across divisions.
- 1.5. Scope of survey measurement activities. The QDRL appears to be mainly focused on cognitive interviewing. While this is an important tool in the study of survey measurement, we recommend that ORM expands its research agenda to incorporate hypothesis testing approaches to issues of reliability and validity.
- 1.6. Value methodological innovation, peer-reviewed research. NCHS has been a leader in methodological innovation among government statistical agencies, and the committee learnt about a number of strong research activities. The close and collegial relationship between ORM and OAE was particularly valuable, given the distinct but related missions of these units. The current emphasis on high quality peer-reviewed research is excellent and should be continued, while ensuring that this does not delay important programmatic activities. Collaborative publications between ORM researchers and staff from other offices and divisions are strongly encouraged.
- 1.7. Regular communication with data divisions. There should be regular communication between the director of ORM and the data divisions on upcoming projects and statistical needs. This should include formal and informal gatherings to communicate concerns and needs, and a regularized process for reviews and agenda setting with NCHS data divisions and other groups that collaborate with ORM staffs.
- 1.8. Splitting QDRL and RDC staffs. The splitting of the QDRL and RDC staffs, currently underway, is sensible and should be finalized.
- 1.9. Dialog with researcher directors in other agencies. We recommend regular dialogue between the ORM Director and directors of similar units in other agencies, in order to promote inter-agency collaboration and share lessons from dealing with similar problems.

5.2. Statistical Research and Survey Design Staff

The SRSDS within ORM conduct statistical research and provide statistical expertise to the data divisions within NCHS. Core areas of strength include survey design, variance estimation, small area estimation, missing data methods, and record linkage. Statisticians within ORM are nationally recognized for the quality of their research and are highly visible in the scientific community. The ORM Director described to us the following recent research activities and accomplishments of this staff:

- The SRSDS conducts research and provides technical assistance in support of the National Immunization Survey, in collaboration with staff from elsewhere in NCHS, CDC's National Center for Immunization and Respiratory Diseases, and the National Opinion Research Center. Examples of assistance include sample design review, assessment of data quality, disclosure review, public-use data release, review of documentation, addressing non-coverage and non-response, and weighting.
- The SRSDS has collaborated with the Division of Health Interview Statistics (DHIS) on two projects that involve outside contracts: the development of an Online Analytic System for the NHIS and the development of a cost model for the NHIS that describes relations among survey operations, sampling levels, and costs for use in redesign efforts. SRSDS staff members have provided technical review and support for both projects.
- The SRSDS developed specifications for producing estimates from the first ever National Survey of Residential Care Facilities, which was fielded by the Division of Health Care Statistics (DHCS) in 2010; directed and assisted with the development of the operational specifications for selecting the hospital sample for the 2011-13 National Hospital Care Survey; and collaborated with DHCS on several other surveys.
- The SRSDS and the OD are collaborating on multiple projects on small-area estimation, such as an ongoing project with the National Cancer Institute, CDC's National Center for Chronic Disease Prevention and Health Promotion, and others on small-area estimation for cancer risk factors and screening using combined data from the Behavioral Risk Factor Surveillance System and the NHIS; and small-area estimation of outcomes using the National Ambulatory Medical Care Survey and National Hospital Ambulatory Medical Care Survey. In addition, HHS's Office of the Assistant Director for Planning and Evaluation endorsed ORM's proposal to develop methods for assessing whether an outcome would benefit from small-area estimation.
- The SRSDS and OD are working with the NCHS Office of Analysis and Epidemiology on issues in analyzing NCHS survey data that have been linked to other data sources, and an NCHS workgroup on linked data issues is being formed. The workgroup aims to address conceptual and technical issues that arise in the analysis of linked data and to develop guidelines for researchers. The work is beginning with the study of several examples that are illustrative of common scenarios.
- DHIS and ORM have established a joint committee to lead the redesign of NHIS. The committee, which includes members from the SRSDS and OD, will conduct research and develop applications, collaboratively with the Bureau of the Census, related to expansion of the survey, the use of address-based sampling, the use of modes other than personal interviewing, and the use of responsive design.
- NCHS has been a leader in the adaptation and application of multiple-imputation methods to handle missing data in its surveys, with major contributions from the SRSDS and OD. Most recently, public use data for the National Health and Nutrition Examination Survey have been released with multiple imputations for missing data on dual-energy x-ray absorptiometry (DXA) body scans.

Any statistical division fills multiple roles in an organization, and these roles require a complex balancing. Some of the issues that arise when considering the role of statisticians include: What is the best use of

resources? Should statisticians be in a central unit, or should they be dispersed among the divisions that rely on statistical expertise? What is the appropriate balance between fundamental research and working on client-centered problems?

ORM follows the model in which there is a group of statisticians in a central unit, and individuals in that unit collaborate with colleagues in data divisions and with other agencies. By no means does all the statistical talent reside in this central group -- the major programs also have statisticians dedicated to their program missions, who also play a crucial role.

We endorse this model for ORM because of its many advantages for both statisticians and their collaborators. The statisticians within a central unit have better opportunities for communication and collaboration as research partners than they would if dispersed throughout the organization. A central unit of statisticians creates a critical mass and shared esprit, promotes more efficient use of resources by exploiting the common features of different research problems, avoiding duplication, and giving flexibility for assigning statisticians to problems as needs arise. A strong central research unit provides high visibility for the statistical work within NCHS and facilitates partnerships with other statistical agencies and with universities. This visibility and research strength helps NCHS recruit talented statisticians to join the staff.

The statisticians in ORM who collaborate with colleagues in a data division often become specialists in that area. This sort of immersion is desirable because it gives the statistician a deep understanding of the statistical needs and gives the division staff a knowledgeable point of contact within ORM. Embedding ORM statisticians in data divisions---essentially, having them be “dual citizens” of ORM and of the data division---allows ORM to have the advantages of the centralized model as well as the advantages of dispersing statisticians throughout the organization.

We suggest that the current practice of involving ORM statisticians in data divisions might be modified in two ways to give more flexibility and protection against staffing changes. Both of these suggestions move in the direction of less specialization toward specific surveys and more breadth across surveys for the statisticians in ORM.

First, we recommend that teams of two or more statisticians be assigned to large projects or data divisions in contrast to the current practice of having one person assigned. This broadens the distribution of expertise across the staff, and will ensure continuity of statistical support when a staff member leaves NCHS.

Second, we recommend that consideration be given to moving towards a “triple citizenship” model, where besides being a “citizen” of ORM, a statistician in ORM works intensively with surveys from two different data divisions, instead of just one as in the “dual citizenship” model. One of these assignments might be viewed as “primary” and the other as “secondary”. Having individual statisticians deeply involved in two surveys will help the statistical staff in ORM be responsive to shared statistical research problems, and encourage cross-fertilization across surveys. It is likely that in the future there will be more integration of data sources, and the statisticians involved in that integration will need to be knowledgeable about more than one data source. Areas of statistical expertise should be considered when making assignments to units. Some rotation of statisticians between data divisions, with overlap, is suggested to broaden perspectives and promote sharing of knowledge across the agency.

The statistical staff members within ORM are generally viewed as responsive to program needs and providing invaluable help. There is concern, however, that cumulative reductions in the statistical staff

have stretched the staff too thinly, and that it is sometimes difficult to get in the ORM “queue” because of the demands on statisticians’ time.

The present staffing of 10 FTEs is insufficient to meet current needs for statistical expertise in NCHS. Projected retirements mean that a vigorous hiring program is needed to ensure continued quality of statistical research and support. ORM may be taking over statistical work that was previously done within DHANES, and needs additional staff for those responsibilities as well. We recommend that hiring efforts be targeted toward persons who can meet these current needs of the data divisions and who are adaptable enough to provide leadership for future collaborative research. ORM may also want to consider using new hires to broaden the statistical expertise beyond areas traditionally thought of as survey research, in anticipation of future research needs. Expertise in data mining, for example, would be helpful for making use of non-survey data sources to improve estimates. Anticipated future research needs include linking and combining data sources, spatial and time series methods, methods for internet data collection, and statistical methods for multiple mode surveys.

At present, SRSDS and QDRL are largely independent, with SRSDS providing statistical expertise to NCHS and QDRL doing research on questionnaire design. We believe it would be beneficial to have a stronger connection between these units with more collaboration on statistical designs and analyses for question evaluations.

The members of SRSDS have highly regarded statistical and collaborative research programs. These in general are well balanced with the activities of providing statistical expertise to NCHS divisions on problems that are important for the agency but do not necessarily lead to external publications. As the unit changes its performance evaluation criteria, it is important that statistical work that is needed for NCHS programs but less visible outside the organization is valued as much as external publications.

A potential danger with a central statistical unit is that it can become inward-directed and less responsive to needs in the rest of the organization. We endorse the efforts of the ORM director to increase communication between ORM and the rest of NCHS. A “triple citizenship” model would facilitate communication because the embedded statisticians serve as a link between ORM and the data divisions, and informally supplement the ongoing communication between the ORM and the data division directors. We recommend that in addition ORM implement a regularized procedure for ensuring that statistical projects in the data divisions are assigned to appropriate statisticians and those deadlines are met.

In addition to these ongoing discussions, it would be helpful to have an in-depth analysis of the statistical needs of the data divisions and other ORM collaborators while considering citizens and their missions. We view the ideal relationship between SRSDS and the data divisions to be a partnership as opposed to a service provider/client relationship. Achieving this ideal requires ongoing communication between the director and the to-be-hired director of statistical staff, and the collaborators in other divisions.

Recommendations

2.1. Role and size of SRSDS. We endorse having a strong unit for statistical research and collaboration within ORM. Due to attrition, the SRSDS is about half the size it was a few years ago. A reduction in the number of statisticians in the data divisions has also increased the responsibilities of SRSDS. We recommend that at least 5 additional statisticians be hired in SRSDS.

2.2. SRDRS strategic role. As discussed in Recommendations 1.3 and 1.4, we recommend that SRSDS staff play a major proactive role in strategic decisions concerning the design and analysis of NCHS surveys, that they are imbedded in data division activities as part of a collaborative team.

2.3. Coverage of major programs. We recommend that at least two SRSDS statisticians are knowledgeable about each of the major NCHS programs, to ameliorate the effects of unexpected departures. The “triple citizenship” model in Recommendation 1.4 is one possible way to accomplish this.

2.4. Collaboration with QDRL. We encourage greater collaboration between SRSDS and QDRL.

5.3. Questionnaire Design Research Laboratory

The NCHS Questionnaire Design Research Laboratory (QDRL) was established in 1985. It was the first permanent cognitive research laboratory in a statistical agency or elsewhere, and it served as a model for cognitive testing of survey questionnaires that has been adapted by many survey research organizations in the government and private sectors in this country or elsewhere¹. The NCHS QDRL was the test bed for much of the early demonstration of improvements that application of cognitive research methods could make to survey measurement.² The QDRL performs a critical function within the ORM and its research endeavors will continue to advance our understanding of the complexities involving question design.

The QDRL performs important work for programs within NCHS as well as agencies outside of NCHS. Two examples illustrate recent accomplishments. First, the QDRL contributed substantially to the development and evaluation of Sexual Identity questions for the National Health Interview Survey. This landmark research had the support and attention of HHS, CDC and NCHS leadership and is groundbreaking in its effort to improve estimates of the lesbian, gay, and bisexual populations. The questions will likely migrate to a variety of other surveys, thus providing a broad enhancement to the Federal statistical system and its national surveys. Similarly, through the Washington Group (a United Nations Statistical Commission workgroup), the QDRL has led a multi-national project utilizing a mixed-method design to evaluate a set of disability questions in cross-national contexts. These disability measures are finding their way onto a multitude of surveys across many countries and serve to provide consistent methods to measure challenging phenomena.

The QDRL has led an innovative effort developing an application suite for questionnaire evaluation to provide tools that facilitate the alignment of cognitive interviewing methodology more consistently with the principles of scientific inquiry. The four components of the application suite are: 1) Q-Video, a data base of videos which makes cognitive interview data accessible and transparent; 2) Q-Notes, an on-line data entry and analysis tool which promotes standardization in data collection and analysis; 3) Q-Notes+, which interconnects Q-Notes with Q-Video to provide an audit trail; and 4) Q-Bank, an on-line data base of evaluation reports accessible to the public. Although the QDRL develops and maintains Q-Bank, the

¹ http://www.cdc.gov/mmwr/preview/mmwrhtml/su6004a8.htm?s_cid=su6004a8_w

² J. Jobe and D. Mingay, Cognitive research improves questionnaires. American Journal of Public Health 09/1989; 79(8):1053-5.

initiative represents an interagency effort that has been sponsored by the Census Bureau, the Bureau of Labor Statistics, the National Science Foundation, and the National Cancer Institute. The usage of this potentially valuable resource is unclear, and participation by other federal agencies appears to be limited.

The QDRL leadership has increased its emphasis in publishing and contributing to the scientific literature. Its senior staff has presented regularly at scientific conferences and has authored a book (forthcoming) on cognitive interviewing methodology, covering best practices of cognitive interviewing. It has pushed for reporting of research results and established a more rigorous process for documenting its projects and outcomes.

One challenge for QDRL is balancing service to both internal and external customers. The NCHS data divisions and the Office of Analysis and Epidemiology (OAE) have subject matter experts that create, revise, or change questions and explore conceptual and measurement issues in their surveys, but they do not employ experts trained in cognitive research methods. Thus, the QDRL resource is a critical one to other divisions and offices in NCHS that seek to use cognitive research methods to develop and test new or revised questions for surveys. Representatives from the data divisions expressed the need for more practical and timely input from the QDRL on question development. The demands posed by external work may periodically affect the ability of QDRL to service internal needs. The ORM Director can shape the process for prioritizing QDRL work by proactive solicitation of QDRL needs on a routine basis, coupled with additional strategies to meet emerging or critical time sensitive needs (e.g., establishing a 'swat' team to quickly test a set of questions; establishing a more robust pool of subjects from which to quickly recruit; establishing advanced agreements with OMB and the NCHS ERB about a streamlined process for obtaining clearance for time sensitive projects; and so forth).

While the core QDRL staff is institutionally funded (that is, it does not obtain reimbursement from other NCHS divisions or offices to cover salaries), other staff are funded by reimbursable agreements to conduct work requested from external clients. This function—serving both internal and external customers—can lead to difficulties of prioritization of resources as well as instability of staff if funding of positions relies increasingly on reimbursable agreements with other Federal agencies. The QDRL, like the NCHS RDC, actively seeks new clients in HHS, elsewhere in government, and in academia. These relationships usually include an agreement to perform a service associated with validity testing or hosting data. As stated by the QDRL in its materials provided to us, *“A primary challenge faced by the QDRL is its growing dependence on reimbursable agreements, which are not predictable in timing or scope. In the past 2 years, QDRL has had 6 reimbursable agreements totaling \$750k. The amount of funds from reimbursable agreements has increased dramatically over the past 5 years.”*

Thus, therein lies a conundrum for the ORM Director. The benefits of external customers are extensive and include the ability to expand one's research interests and opportunities, leveraging of research dollars to test new methods while also providing an important service to clients, the continued expansion of the reputation of the QDRL as a leading cognitive research laboratory in the Federal government, and of course, the funding of additional staff. The QDRL should continue to build this capacity; it is especially important for the CDC and its sister agencies in HHS, particularly NIH, to see the QDRL as a resource to meet their needs. However, this should not be at the expense of the NCHS divisions and offices priority needs.

A related recommendation is to have QDRL staff better integrated with all NCHS data divisions and offices. It is clear that OAE and the Division of Health Interview Statistics collaborate with the QDRL to

conduct research to develop and test new measures. It is less clear to what extent QDRL is a key resource to other data divisions. For example, the committee did an informal poll of the data divisions on the extent to which they use the application suite for questionnaire evaluation developed by QDRL, and a number of the divisions apparently make no use of them. This may be in part because the tools are a recent development, but the lack of use needs to be investigated. The existence of the application suite does not assuage the need for QDRL services, as may have been intended. Not surprisingly, it appears that the QDRL often has a backlog of work or sometimes cannot provide services requested by the data divisions. Thus, the ORM Director and the QDRL leadership should jointly assess whether efforts such as the application suite should be reduced in order to free up valuable staff time.

Integration of QDRL staff in data divisions. As in the “triple citizenship” recommendation 1.4, a specific designation for each QDRL staff member to be ‘assigned’ to one or two data divisions (especially attending division meetings that discuss new or revised questions, emerging needs or new measures, or analysis of data indicating poorly performing questions) would identify research needs and opportunities and engage the QDRL staff as active partners. Unanticipated demands for fast turnaround cognitive interviewing studies may be reduced. In addition, the data divisions not using the QDRL may simply have little true appreciation of the benefits of using cognitive research methods in their work; by having a QDRL member involved in their survey planning and design, the QDRL staff may contribute in new ways to survey improvements.

We recognize that the ORM Director may experience reluctance from some data divisions on the usefulness of integrating QDRL staff into their planning efforts; this type of effort to improve communication, collaboration, and partnerships is usually embraced on paper but difficult to implement. The ORM Director has done an excellent job reaching out to the other division directors to obtain their feedback and priorities; this effort should continue and be expanded to include greater partnerships and integration of QDRL staff into division work.

We also recommend that QDRL increase collaboration with NCHS Divisions and Offices to address a wider set of needs. In the early years of the QDRL, its focus was usually on the development and testing of new questions (or supplements to surveys) that were clearly targeted for insertion in surveys. In addition to conducting cognitive interviews using think aloud and in-depth probing techniques, the staff conducted focus groups and often held ‘expert panels’ to discuss measurement issues and possible changes to question items. The QDRL has now made great strides in improving its rigor; it approaches client requests with a focus on understanding the interpretative features of questions and concepts and pursues a standardized, documented approach for producing results. In general, this has strengthened the QDRL and increased its usefulness to many clients; this has also met the direction of the NCHS Office of the Director who expressed keen interest in improving the rigor of cognitive research methods prior to changing or finalizing questions.

Also, while the focus on research publication is valuable and important, especially to the ORM, it may have an unintended consequence of decreasing the staff time available to meet data division needs. QDRL staff should seek to balance this effort with helping data divisions ‘fix’ questions or quickly review proposed questions and opine on their fitness for use in surveys. To be of greatest utility to the NCHS staff, the QDRL needs to provide ‘technical assistance’ in addition to scientific inquiry.

In addition, it is unclear to what degree data division experts work side by side with QDRL experts in the design and implementation of the research method. Sharing protocols, observing interviews (and in some

cases, sharing the interview responsibilities), meeting frequently with QDRL staff to review findings and tweak questions on an iterative basis, and collaborating on analysis and results are ways to strengthen relationships with other division and office staff. Ultimately, the NCHS and QDRL staff should see each other as partners in all aspects of instrument design.

Recommendations

3.1. QDRL research focus. The focus of the Question Design Research Lab (QDRL) on standardized procedures, careful documentation and peer-reviewed publication is to be commended. This orientation should be balanced with service delivery to survey staffs.

3.2. QDRL collaborations. As in the “triple citizenship” suggestion for SRSDS, we recommend specific designations of each QDRL staff member to one or two data divisions, to identify research needs and opportunities, reduce the number of unanticipated demands for fast turnaround cognitive testing, and engage the QDRL staff as active partners.

3.3. QDRL work prioritization. The process of prioritizing QDRL work should include periodic and proactive solicitation of NCHS program needs from the Director’s office.

3.4. Addressing time-sensitive QDRL needs. Strategies to meet emerging or critical time-sensitive QDRL needs should be developed, such as establishing a ‘swat’ team to quickly test a set of questions; establishing a more robust pool of subjects from which to quickly recruit; and establishing advanced agreements with OMB and the NCHS ERB about a streamlined process for obtaining clearance for time-sensitive projects.

3.5. Usage of application suite. The application suite documenting cognitive interviewing studies holds promise as a valuable resource for the study of question development. Because of the costs involved in this resource, we recommend that QDRL monitor and evaluate usage of the information in the suite, and identify and address any impediments to usage by NCHS and other external agencies.

5.4. Research Data Center

The RDC is an excellent example of an agency balancing the data dissemination mission with confidentiality protection. Following a similar model to that established by the Census Bureau, researchers 1) submit proposals for review by the RDC staff, once approved 2) conduct the analysis at a secure computer lab, and 3) obtain analysis results that undergo a disclosure review. Unlike Census, remote job submissions with “automated” disclosure are also an option. The advantages of having both allow some simple analysis to be conducted using remote submission and more detailed analysis occurring in the secure computer lab, although even those projects using remote submission may need to spend some time at a physical RDC in Hyattsville or Atlanta.

The RDC provides expert consultation to other Federal agencies and to State and foreign organizations on the handling of restricted-use data. For example, in Fiscal Year 2011, technical assistance was provided to the Department of Justice, the Department of Defense, the Department of Energy, the Centers for Medicare and Medicaid Services, and the Environmental Protection Agency, as well as to practitioners from New York State, South Africa, Singapore, China, Statistics Canada, the Organization for Economic Cooperation and Development.

The RDC staff led an effort to coordinate and standardize the geocoding of data across NCHS. Such data will now be geocoded by the Department of Housing and Urban Development (HUD). In addition, HUD will provide public housing data elements that will be appended to NCHS data, which will allow researchers to examine relationships between receipt of public assistance and health outcomes.

The RDC developed and organized a presentation series that highlighted NCHS data systems and NCHS research activities for CDC audiences in Atlanta. The series included nine presentations and a research expo that featured posters by Atlanta CDC researchers who used the RDC to access NCHS data. Roughly 600 people attended the series and expo.

The RDC activity has grown significantly, reflecting the demand by researchers for this type of access. The RDC appears to have managed the growth fairly well. The partnership with the Census Bureau RDC network has expanded the number and location of secure computer labs where researchers can access the data for research, which is commendable. As the Census network grows the RDC project load is also likely to grow, so the agency should make sure that there are adequate resources to keep up with the demand.

This welcome growth raises possible concerns about “customer service”, and the RDC recently conducted a non-scientific poll of researchers using the RDC on this topic. The overall results were encouraging, suggesting that a majority of users are “satisfied” or “very satisfied” in nearly every category that was polled.

The review process for researcher access seems timely and well managed. It is encouraging to hear that, not only do the data divisions play an important role in the proposal reviews, but see it as part of their job to do so and in a timely manner. One staff member of a data division indicated that they even appreciate “friendly reminders” from the RDC staff when reviews are late. The exception appears to be NHANES, who have the largest number of researcher requests and are currently short staffed. RDC staff will have to carry the brunt of the review in the interim. We hope that they allocate adequate resources so that the proposal review times for this data set do not suffer. Maintenance of good relationships between the RDC staff and counterparts in the data divisions will be critical for keeping a good record on proposal reviews, particularly as the demand grows.

Staff members at NCHS that conduct the reviews of proposals are researchers themselves, i.e. typically PhD level. Again, drawing on experience from the Census RDC program, researchers helping researchers is a good model for productivity, particularly when someone is new to using confidential data generally or a particular NCHS data set specifically. Since there is a ‘chicken and egg’ problem, i.e. a new researcher by definition will have limited experience with the confidential version of the data set and cannot access it to gain experience until the proposal is approved; this means that guidance from another experience researcher is needed. Experience may be growing in the ‘outside’ research community as more researchers continue to use the non-public data, but there will always be a need for an experienced ‘insider’ to guide prospective researchers, at least in the beginning. Peer research reviewing, whether for journal articles or proposals, can raise the issue of conflict of interest. The potential productivity benefits of the peer process outweigh this concern, in our view. However, a stated policy of full disclosure / recusal in instances where an RDC staff person is conducting research on a topic that is “too close” to a proposed project should be in place. This policy should at least require the RDC staff person to inform the RDC director about any perceived conflicts. The RDC director can then either inform the prospective researcher or assign another reviewer.

RDC Staff prepare a dataset extract for the researcher. The reason for this is that a project is only given access to the sub-set of variables requested in the proposal and because merging files may require access to data elements that NCHS does not allow researchers to access themselves. This is in contrast to the Census RDC program where access is provided to all variables in the approved files and merging is done by the researchers. This has some advantages and disadvantages. In principle, RDC staff should be more experienced and knowledgeable and restricting some geocodes used for merging MAY provide a higher level of disclosure avoidance. In practice this may limit the researcher “unnecessarily.”

In addition, since RDC staff prepares the dataset(s) a fee is charged to the researcher. This fee is not intended to be for cost recovery, but rather some form of “due diligence” on the part of the researcher making the request. Although NCHS feels the fees are nominal, the uncertainty regarding the amount of the fee creates some frustration and uncertainty with the researchers. We suggest that a flat fee would be more transparent and predictable, particularly since the level of staff effort only matters when cost recovery is the goal. In addition, even “nominal fees” may be a hardship for student researchers. An application for a fee waiver should be available to students. If “due diligence” is still a goal then this waiver could be limited to the first (or follow-up) research project(s).

The RDC has an official partnership with Center for Economic Studies at the Bureau of the Census, however the research community that the Census RDC network serves is spread across remote sites around the country. The RDC staff should be encouraged to develop a collaborative relationship with the Census network administrators and university site directors. The local admin and director are often the first point of contact for potential NCHS RDC researchers, so the ability of the local staff to interact with NCHS RDC staff has an impact on the researchers’ experience and productivity.

The labs in the Census RDC network are under 24/7 video archive and computer keystroke logging, with access to printing only available through the on-site Census employee. Given the high level of physical and electronic security we recommend that the current policy that requires researchers to work only when the Census employee is physically present be changed to allow 24/7 access, as is done for researchers using Census and AHRQ data.

The research community often uses the Integrated Health Interview Survey (IHIS) prepared by the University of Minnesota. This integrated dataset is in the spirit of the IPUMS that harmonizes variables across different versions of the survey. Researchers often find this to be a major advantage. The RDC should make the option of using IHIS more transparent and researcher friendly.

Recommendations

- 4.1. The Committee is impressed by excellent progress recently made in the area of RDC activities. NCHS should consider RDC researchers as a potential resource in proposing new ideas for existing or new NCHS products, by promoting two-way communications between these researchers and NCHS researchers.
- 4.2. Recusal policy – While the benefits of “researchers assisting researchers” in the proposal development and review process are substantial, conflict of interest (or the appearance thereof) may arise. This is a common problem in any peer review process. A recusal policy and procedure should be put in place to encourage transparency.

- 4.3. Flat fees – Since the data set up fees are not intended for cost recovery and users experience some frustration and uncertainty regarding the amount, a flat fee for partial recovery of the marginal cost is suggested. Even though the charge is viewed as “nominal” an application process for student researchers to obtain a waiver is also recommended.
- 4.4. Encourage a collaborative relationship with the Census RDC Network - The NCHS RDC has an official partnership (MOU) with Center for Economic Studies at Census HQ, however the research community that the Census RDC network serves is spread across remote sites around the country. The NCHS RDC staff should be encouraged to develop a collaborative relationship with the local, on-site Census network administrators and university site directors.
- 4.5. 24/7 Access at remote Census RDC Sites - Given the high level of physical and electronic security at Census RDC remote sites, we recommend that the NCHS policy that requires researchers to work only when the Census employee is physically present be changed to allow 24/7 access, as is done for researchers using Census and AHRQ data.

Conclusions

The ORM is a key office for ensuring that NCHS carries out its mission to provide high-quality information about the nation’s health. Under the current Director, the Panel believes that the Office is on an excellent trajectory.

We have presented a range of findings which believe would help ORM further advance the NCHS mission. We note that our recommendations were based on the background information provided to us and the conversations we had in a one day site visit. Clearly this does not provide a comprehensive picture of how ORM operates within NCHS, and as a result, some of our recommendations may be more informed and useful than others. However, we appreciate the opportunity to evaluate ORM, thank the NCHS staff for their collegiality and assistance with the review, and hope that our recommendations are useful and receive serious consideration.