

August 12, 2014

**Report of the  
Office of Analysis and Epidemiology Review Panel  
to the  
NCHS Board of Scientific Counselors**

## **Executive Summary**

The review of the Office of Analysis and Epidemiology (OAE) is the latest in a series of reviews of NCHS programs by the Board of Scientific Counselors (BSC). Based on reports and presentation from OAE and NCHS staff and DHHS program and policy officials, an expert OAE Review Panel deliberated and developed a series of recommendations to guide OAE in achieving the greatest and most beneficial impact. The Panel considered the many and impressive accomplishments of OAE and also the considerable challenges it faces in terms of finite staff and financial resources.

The Panel developed three primary recommendations on strategic planning, evaluation, and priority setting which are related and need to be implemented in a coordinated fashion. The first recommendation is for OAE to develop a strategic vision based on an on-going planning process which involves OAE staff and is guided by user needs and feedback. OAE may need to hold a staff retreat to ensure the development of such a plan. The second recommendation calls for OAE to conduct a continuing evaluation of its programs and products and systematically capture user data and feedback to do so. OAE should develop robust mechanisms to obtain user input and to integrate that input into its decision making. The strategic vision developed through an effective and responsive planning process leads to the third recommendation which is to utilize that information to establish priorities and align resources in OAE. OAE has many choices and opportunities to pursue in research, data development, and analysis and to ensure that its finite resources are used most effectively, a well-developed strategic vision must be the basis for setting OAE priorities and aligning its staff.

Other specific recommendations to further the OAE mission were developed by the Panel.

- The Panel recommended that OAE establish or formalize new partnerships and cooperative ventures to synergistically advance scientific and research goals and perhaps obtain additional resources. The Panel particularly advocated for closer ties to other government agencies that collect and analyze data on health and health services. OAE should also, the Panel advised, seek opportunities to link with other NCHS programs to advance the science in areas of importance to the NCHS as a whole.
- OAE should enhance staff development and deployment the Panel concluded. OAE has an expert interdisciplinary staff, many of whom have years of experience and to enable that staff to perform at the highest levels, OAE should seek opportunities for staff enrichment. Opportunities to explore are independent research and involvement with the broader research community; staff training, sabbaticals, career ladders; and other means of enhancing staff experiences. With a clear and well-communicated strategic

plan, staff should have more direct and personal knowledge of the program goals and thus a better understanding of the resulting priorities, staff assignments and any necessary realignment.

- Define and improve data dissemination is another Panel recommendation. Specifically, OAE should ensure that the full range of OAE products are identified and publicized as generated by OAE. This will give OAE greater visibility and credibility and may foster collaborative ventures as OAE is accurately identified as an expert in all of its program activities. As with other aspects of its work, OAE should use the strategic vision to identify products to continue or initiate.
- The opportunities for insightful data linkage are expanding and OAE should evaluate its ongoing and any future projects in this area. OAE should conduct an assessment of the value and utility of data linkage projects and seek to implement those which have the biggest impact for health knowledge in general and for OAE in particular.

The Panel concluded is that OAE's strong record of accomplishment can be continued and enhanced by implementing a dynamic strategic planning process.

## **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 Analysis and Epidemiology (OAE) 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 organization and functions of the OAE, briefly addresses accomplishments of the program as well as the challenges and issues it faces, and presents a series of recommendations.

## **Review Process**

The OAE 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 and others.

The Panel received advance information on the OAE, including a comprehensive report on the program, prepared by OAE staff (attachment 3) and a number of additional references. Next, the Panel members had conference calls in December and February, to review the information received and to establish its approach for the review. The Panel submitted additional questions and information requests to the OAE to be addressed at the Panel meeting in March.

The Panel members met on March 4 and 5, 2014, at NCHS and followed an established agenda (attachment 4). During that two-day visit, they heard presentations by Charles Rothwell, NCHS Director; OAE Director Irma Arispe; Julia Holmes, Chief, Analytical Studies Branch (ASB); Rebecca Hines, Chief, Health Promotion Statistics Branch (HPSB); Julie Weeks, Chief, Aging and Chronic Disease Studies Branch (ACDSB); Ken Schoendorf, Chief, Infant, Child and Women's Health Statistics Branch (ICWHSB); and Jennifer Parker, Chief, Special Projects Branch (SPB). A number of OAE staff members were present to answer questions or provide additional information. The Panel also heard presentations by Donald Wright, Deputy Assistant Secretary of Health, DHHS on the Healthy People program and OAE participation and leadership in statistical consultation to the Department and James Scanlon, Deputy Assistant Secretary for Planning and Evaluation, HHS who spoke of Departmental uses of NCHS data, including the Secretary's annual report to Congress, *Health: United States*. Mr. Rothwell and Dr. Arispe were present at other times during the meeting and on call to respond to questions. The Panel report was presented to the BSC on May 12, 2014, by Panel Chair, Don Steinwachs. .

## **Background**

### OAE Functions and Organization

The OAE was established in 1975 to serve NCHS, HHS and the broader national and international health and health care communities by using data from NCHS and other sources to inform policies and programs designed to improve the Nation's health. OAE conducts cross cutting analysis to monitor the nation's health; conducts research and develops analytic tools to increase the utility of NCHS data systems and assist the research community in using NCHS data; disseminates data electronically through interactive and informational websites; and participates in interagency and international data development collaborations and cross cutting research on public health, health policy, and statistical methods. OAE is also responsible for an extensive linkage program merging NCHS survey data with administrative data such as the National Death Index, data from the Centers for Medicare and Medicaid Services, and the Social Security Administration.

The 75 FTEs of the OAE are organized into 5 branches and the office of the Director. The two largest branches are devoted almost entirely to the production of *Health, United States* (ASB) and the data development and dissemination to support Healthy People (HPSB). Two branches have subject matter experts on specific topics and subpopulations. These include ACDSB which houses studies on aging and chronic disease as well as the Disability Statistics and the Injury Statistics Programs. The Special Projects Branch is responsible for the NCHS Data Linkage Program, a program which designs, plans and implements linkages between NCHS surveys and administrative records from vital statistics and other agencies. A health economics group is also housed in this Branch. The ICWHSB houses research on maternal and child health and has key responsibility for development and maintenance of, and programming for, data access systems such as Health Data Interactive and the Health Indicators Warehouse. Work on OAE programs is often shared among the branches. More information on the organization, structure and functions of OAE and the individual branches appears in the OAE Program Review Self-Assessment (Attachment 3).

## Accomplishments and Products of the OAE

OAE has had numerous and substantial accomplishments in the four decades since it was established.

- *Health, United States* - The 37<sup>th</sup> edition of the Congressionally-mandated annual report from the Secretary of DHHS to the President and Congress, *Health, United States, 2013* (Hashini, Khajuria and Sheila Franco, ASB; David Huang, Leda Gurley, Ritu Tuteja and Makram Talih, HPSB) was published in May 2014. *Health, US* has grown in content, diversified in format and presentation, and increased in access and usability since the first volume was published in 1976. The report integrates and analyzes trend data from 56 different sources to describe the health of the nation in terms of health status and determinants, health care utilization, health care resources and health care expenditures. *Health, United States, 2013* has 134 trend tables, highlights, 19 graphs on key health indicators, a special feature on emergency care, and a companion product, *Health, United States in Brief*. It's available in limited print copies and on the NCHS website, where users can access the full report indexed by topic and population group, charts in PowerPoint, tables in Excel, and information updated throughout the year.

*Health: US, 2013* presents national data health status and outcomes, health care utilization, the supply of health care personnel and spending on health care, and is considered a gold standard for this type of report, drawing from data systems throughout DHHS. This year's Special Feature on Prescription Drugs in America is important as prescriptions drugs are an important part of the health care delivery system. The Special Feature contains 10 graphs and associated text describing who uses prescription drugs, polypharmacy use, and frequently prescribed drugs and outlines some quality issues such as antibiotic prescribing for the common cold and the rise of opioid poisoning deaths. It also includes information about the role of antiretroviral drugs in reducing AIDS death, the use of computerized prescription ordering systems to promote patient safety and spending on prescription drugs over time.

- Healthy People – Healthy People is the DHHS initiative to improve the health of the nation through identifying specific health objectives in disease prevention and health promotion and monitoring those objectives to track progress. OAE has provided expertise on the development and monitoring of the objectives and prepared mid-course and final progress reviews on a series of 10-year initiatives as well as holding topical progress reviews throughout the decade. OAE now manages the data and reporting for more than 1200 objectives in 42 topical areas as well as developing online data access and monitoring systems. Through HPSB, OAE is responsible for monitoring of the Department's Leading Health Indicators. These indicators form the core of other national efforts such as the National Prevention Strategy. The Healthy People initiative has been credited with unifying national, state and local efforts and achieving substantial improvements in the targeted areas. OAE, primarily through HPSB, also provides data and analytical support for the annual National Prevention Strategy report and to AHRQ for the annual National Healthcare Quality and Disparities Reports.

- NCHS Data Linkage – Linkage of survey data to administrative and other data sources expands the analytical potential of the data and enables researchers to examine factors which influence disability, morbidity and mortality and access and use of health services among other key indicators. OAE has developed and managed a program to link NCHS data files to administrative data from Medicare, Medicaid, the National Death Index, and the Social Security Administration data. Linked data are available primarily through the NCHS Research Data Center.
- Collaborative Analytic and Methodological Research for Policy and Programmatic Purposes – OAE conducts research with public and private partners to advance the science of health data analysis and to produce data for policy formulation and program development and evaluation. Some of the current and past projects have focused on asthma and allergies, aging and chronic conditions, disability measures, health disparities, injury, summary measures of health status, children's health and various aspects of health care access, utilization, and costs.
- Data Analysis and Access Tools – OAE has developed and maintains several extensive systems which facilitate the use of data from NCHS and other data sources to address policy and research issues. The Health Indicators Warehouse is a web-accessible data base of 1200 pre-tabulated national, state and community health indicators and data from 150 sources. Health Data Interactive website presents a broad range of pre-tabulated population health indicators through an interactive web-based application which permits users to select topics and variables of interest. OAE creates annually the Compressed Mortality File which is available through CDC's WONDER, an easy-to-use tool for obtaining mortality analyses by trends, causes of death and decedent variables. OAE has created an Urban/Rural Classification Scheme, maintains the Bridged Race Population Estimates, and other systems which seek to improve the awareness of and access to high-quality health data and frameworks for understanding and using the data.

### Challenges and Issues Facing the OAE

The BSC review of OAE comes at a good time. The OAE Director Irma Arispe is new to the job and seeking guidance for the future development and directions for the program. Likewise, NCHS's Director Charles Rothwell has been in that position for just a few months. He is looking to OAE for leadership and to play an active role in shaping the Center's research and analysis agenda. OAE is well situated to do so for several reasons: a productive history of achievements and noteworthy research projects; expert interdisciplinary staff, some with many years of experience; and a willingness to tackle new projects and responsibilities.

At the same time, despite many successes, there are challenges and barriers to OAE's maximizing the opportunities to advance its program and contribute to the mission of NCHS. Currently, OAE does not have a single, overarching strategic vision to guide and prioritize its activities. Planning is responsive to emerging agency and departmental priorities. Other activities are focused on specific areas. The overall mission of OAE is to serve NCHS, CDC, HHS and the broader community by using NCHS and other data to inform policies and programs designed to improve the nation's health. However, there isn't a comprehensive

strategy for prioritizing efforts, nor is the process in place to create and maintain one. Therefore, new projects and assignments are undertaken without a full evaluation of their priority relative to ongoing work, of their optimal location within NCHS, or their relative importance to OAE and NCHS. Without the overall strategic vision, priority setting is driven more by a short-term assessment rather than a long-term approach. As a result, new projects are not viewed in comparison with continuing responsibilities nor are old and new ventures ranked in a competitive fashion. OAE, as the rest of NCHS, is operating with a finite number of staff members and is unlikely to acquire significant additional staff through hiring or contractual services. Much of its discretionary spending is used to obtain contract programming services for such on-going major projects as *Health, United States* and *Healthy People*. In order to tackle new projects and address future issues, OAE may need to stop doing some of its current work, combine or integrate some activities, change the periodicity of other tasks, or find other ways to streamline its operations. Also attracting additional funding sources may be an option that would allow OAE to respond to new opportunities.

The landscape in which OAE, NCHS and other health agencies exist has changed and will continue to do so. The passage of the Affordable Care Act and the systems to implement it have created enormous pressure to provide the data needed to administer, evaluate and refine its multi-faceted provisions and to understand better what really brings about real improvement in health. NCHS received some funds for expanding its data systems with new, relevant data items and increasing the sample size to produce state estimates. That funding is not secure or certain for upcoming years and that uncertainty affects plans for data collection, analysis and dissemination. The push for more and faster data also has the potential to affect the quality of the analysis and research conducted throughout NCHS and OAE.

For OAE, its strength is in its staff---present and future. It does have a major vacancy, that of the Associate Director for Science, to fill and some other opportunities emerge periodically. OAE has encountered difficulties in the past of gaining sufficient and knowledgeable HR support to enable it to select, hire and bring on board the right people for its vacancies. The OAE branch structure and configuration may not be optimum and there is some discussion of a reorganization or realignment.

### **Recommendations:**

The Panel developed three primary recommendations which seek to improve OAE's planning process so that its major activities are in alignment with its goals and objectives. These recommendations are related and all three need to be implemented in order to achieve the improvements recommended in the planning and vision-setting process.

1. Develop a Strategic Vision -- OAE needs a strategic vision to guide its decision-making process. The strategic vision would position OAE to build on past achievements but take full advantage of future opportunities. Decisions on program directions, priorities, and allocation of resources in funding and personnel would be even more efficient and effective if based upon a strategic vision defining the current and future goals and objectives of the program. Given the length of time needed to plan and conduct research and analysis, OAE should think of a 5- to 7-year planning frame. The vision needs to be a product of an on-going, transparent strategic planning process with input

from all staff. The strategic planning process also needs to consider the overall role of OAE in NCHS and its leadership position for research and analysis. OAE must also look strategically at its role and that of NCHS in regards to CDC and DHHS, other Federal agencies, and major players in the field. OAE should consider a staff retreat with a facilitator. It should intentionally discuss and determine the appropriate level of involvement and input from other NCHS programs, the NCHS Director's office and CDC in the process of developing its strategic vision. This process can improve morale and create buy-in for difficult decisions and choices in the future. OAE would find value in continuing strategic planning as an on-going process. ..

2. **Conduct Systematic Evaluation and Capture User Data and Feedback** – OAE needs better data on the uses and users of its information and products to guide its decision making in all phases of its work. This is critical information for the strategic planning process. It's surprising that information on how and how often the OAE products—publications, analyses, data linkage projects, and data access systems--are used hasn't been available and used regularly to direct the OAE activities. OAE should evaluate its program based on systematically obtained user statistics as well as an informed assessment of the research needs and interests of its user community, broadly defined to include policymakers, program directors, researchers and analysts in multiple fields and venues. OAE should establish an effective and robust mechanism to obtain user input and to integrate that input into its decision making. OAE could use existing sources of user feedback such as web data, media monitoring and periodic user surveys and conduct environmental scanning to make sure it's aware of the context in which it operates. It should consider commissioning independent evaluation(s) to inform its strategies going forward.
3. **Establish Priorities and Align Resources** - There are many choices and opportunities facing OAE because of its proven achievements over the past four decades and the level of expertise demonstrated by its interdisciplinary staff. Yet, the historical roots of OAE functions should not necessarily mandate the maintenance of those functions, unless a current objective assessment would support their continuance. With limited resources, in order for OAE to take on new functions and challenges, it must eliminate some on-going tasks. It must employ its creative energy and think "outside the box" to stretch its capacity. It could consider combining ongoing functions, consolidate data access systems, or otherwise identify synergies in similar functions. This may call for a ground-up assessment of the value of each program and the resources it consumes, to be followed by working with staff to ensure that personnel resources mirror the priorities.

Given the current policy environment and the critical need for accurate and timely data on all aspects of health care, OAE should expand its work in this area. For example, OAE could work more closely with staff of NCHS's Division of Health Care Statistics on cooperative research and analytical projects and be on the lookout for innovative approaches not currently utilized. OAE could provide leadership in understanding the use and analysis of data from surveys, clinical records and administrative files. OAE should take a broad view of health care and seek to lead or coordinate analyses throughout DHHS and across all Federal agencies with responsibilities in this area. Thoughtful collaborative ventures and partnerships will be critical in those applications. Another area in which OAE could be involved is the analysis of state and local area data

made possible by expanded survey samples by providing its unique and valued expertise to the state level estimation. There's a special need for analysis on the dual-eligible population (Medicaid and Medicare) which could benefit from OAE expertise. OAE could help focus on important data gaps and identify new opportunities for data linkage with files previously not linked for analytical purposes. OAE has been a pioneer in data linkage, developing models which have been applied to numerous analyses and, for this timely application, could provide a unique perspective.

Other recommendations from the Panel:

In addition to the primary recommendations, the Panel developed several other recommendations for OAE to consider.

1. Establish or formalize new partnerships and cooperative ventures - Identify new opportunities for mutually beneficial partnerships with other CDC and DHHS programs, other government agencies and the private sector. In particular, OAE should build a stronger link to government agencies that collect and analyze data on health and health services. Another focus for OAE to consider is expanding its partnerships with universities and other educational programs, with the purpose of sharing and building expertise in specific areas. OAE has much to offer in terms of advancing analytical and statistical knowledge and so partnering with OAE should be viewed favorably by traditional as well as new partners. OAE should also investigate partnerships for the resources they can bring. With its finite financial resources from agency funding, OAE should seek opportunities to support its work with targeted funding from external sources. Another type of partnership is the closer collaboration with other NCHS programs. OAE should look at its research agenda for opportunities to link with other NCHS programs to advance the science in areas of importance to the NCHS as a whole.
2. Support and Enhance Staff Development and Deployment – With a strong vision and resulting priorities, staff alignment and assignments should be more effective for the program and individual staff members. Reasons for the selection of certain projects over others should be understood and based upon the criteria identified in the strategic planning process. There should be more opportunities for collaboration within the overall OAE strategic plan and opportunities for interdisciplinary research and analysis. Reasons for the selection of various objectives for the OAE and the subsequent projects should be well understood by all. In addition, to the extent possible, OAE should identify opportunities for staff to engage in independent research and maintain scholarly involvement and identity within the broader research community. Other opportunities for staff enrichment, such as training, development of career ladders, reverse sabbaticals, and other approaches to enhance staff experiences need to be explored and adopted wherever possible. When recruiting, OAE should keep in mind its vision for the program and recruit staff members who bring needed and missing skills and further complete the interdisciplinary makeup of OAE. When current staff members are involved in the development of OAE priorities and new staff is recruited with them in mind, they will have a better understanding of the mix of work most staff members will be expected to do. More accurate descriptions and grouping of OAE functions within the

branches may also foster a better and clearer alignment of staff functions and roles. With the aid of the strategic planning process when future goals and objectives are set, the OAE can determine how to assign those functions and align the branches to carry out the work most efficiently and effectively.

3. Define and Improve Data Dissemination – All of the publications, articles, reports, slides, presentations and data products developed and disseminated by OAE should be identified as such. In addition, all OAE data tables printed or available on the web should carry the NCHS/OAE identification since these tables may appear in many other documents or products not generated directly by OAE. Whatever corporate (CDC) identification needs to appear, NCHS/OAE should also be on the materials. OAE and NCHS need to get credit for and be associated with all of the data and analytical products disseminated, so that OAE will gain more visibility and readers/users of its materials will be able to identify and reach out to OAE as the source. The recognition of the body of work of OAE will also foster collaborative ventures as OAE is identified as active and expert in specific areas. As with other aspects of its work, OAE should use its vision and planning process to evaluate and select the types of products to be continued or to initiate. Assessment of user interest, policy impact, and scientific progress should inherently be a part of the process.
4. Determine Data Linkage Needs and Opportunities – The opportunities for insightful data linkage are expanding rapidly as our health care system changes in the way it's financed, organized and utilized. Changes in our understanding of disease prevention and health promotion also foster opportunities to link previously unassociated data files. The conceptual as well as methodological advances are bringing about more productive opportunities to consider or implement linkage of historic or newly-generated data files. OAE should take advantage of those opportunities with a thorough and thoughtful assessment of the value and utility of current data linkage projects and consideration of which new data linkage projects to pursue. It should seek to implement those which have the biggest impact both for health knowledge in general and for OAE in particular.

## Conclusion

NCHS's Office of Analysis and Epidemiology has an important role at NCHS and in the broader health data arena. OAE has many accomplishments upon which to reflect but those accomplishments can't be the total sum of OAE's current and future activities and functions. With a thoughtful user-informed strategic plan, OAE can appropriately prioritize its work to achieve the greatest and most beneficial impact.