

APPLIED RESEARCH AND METHODS

Applied Research and Method's (ARM) primary mission is to provide technical and specialist expertise that supports and extends the work of other GAO teams and thus contributes to the overall quality of the information with which GAO supports congressional and federal agency decision making. ARM's staff serve as consultants to other GAO teams, provide technical analyses where required, perform specialized reviews, and prepare guidance on methodological issues. ARM also conducts studies on questions of interest to the Congress that require specialized analysis.

Our Work

ARM is organized into four centers that assist GAO's mission teams. It also houses five subject matter Chiefs—Chief Accountant, Actuary, Economist, Statistician, and Technologist—who provide expert advice to all GAO.

Center for Economics: The economists in this center, trained and experienced in various economic specialties, provide economic analysis for GAO's work. Playing a variety of roles on different projects, the members of the center develop and adapt economic models to evaluate the effectiveness and efficiency of government programs and examine the impact of proposed policy and program changes.

Center for Design, Methods, and Analysis: This center provides assistance on job design and technical methods and analysis. The staff includes social science analysts, survey specialists, statisticians, and computer specialists. They help in conceptualizing researchable questions, selecting appropriate research methodologies, designing and implementing data collection strategies, and gathering and analyzing complex data sets.

Center for Evaluation Methods and Issues: The reports this center produces and the networking it conducts are aimed at strengthening the evaluation methods "toolbox," incorporating program evaluation information into policy making and program management, and promoting knowledge of evaluation within GAO and the government. Its methodologies include performance measurement, social science research, and future-oriented analyses such as grounded foresight.

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Center for Technology and Engineering and the e-Security Laboratory: This center's objectives are to improve information technology and software/system engineering and modernization efforts and to assess the computer security of the federal government. In addition, the center reviews the technical content of GAO products for accuracy. The staff includes engineers, scientists, and mathematicians with expertise in systems engineering, cost estimation, software engineering, real-time systems, computer security, and biological technologies.

Accomplishments and Key Projects

Recent ARM studies have contributed to three major areas. In addressing threats to security, ARM has

- evaluated technologies to detect and kill anthrax and decontaminate the mail and the environment,
- assessed the application of biometric techniques in authenticating individuals entering the United States,
- reviewed studies of the economic impact of the terrorist attack on the World Trade Center,
- developed a method of obtaining reliable information on the immigration status of foreign-born persons in the United States to inform and evaluate decisions and changes in immigration law and policy,
- analyzed DOD's modeling and classifications of U.S. troops' exposures to chemical warfare agents during the Gulf War.

In other studies that examined technical practices in federal programs or emerging issues or methods, ARM

- applied ethnographic techniques to evaluate an agency's program to implement cultural change,
- identified how an overstay tracking system for illegal immigrants could work together with intelligence, investigation, and information sharing in a layered national defense,
- reviewed the Census Bureau's implementation of the American Community Survey,
- analyzed the privacy and confidentiality issues that arise when programs link computerized data from different sources that contain personal information, and
- developed a survey technique that can support estimates of sensitive variables without directly asking respondents sensitive questions.

A third group of ARM studies examined issues in federal program evaluation, including

- federal agencies' use of OMB's Program Assessment Rating Tool to improve program results,
- agencies' improving their program effectiveness by building their evaluation capacity,
- the use of social science methods, including ethnography, to improve agency programs, policies, and procedures,
- commitment to self-examination, data quality, analytic expertise, and collaborative partnerships as elements in agencies' evaluation capacity, and
- reviews of existing estimates of illegal immigrants to determine that none are sufficient to estimate the costs of illegal immigrant schoolchildren at state or local levels.