USDA's Food Survey Riddled With Flaws

GAO investigates a $7.6-million nutrition study and finds it so poorly validated it may be "unusable"

FOR THE SECOND TIME IN AS MANY YEARS, THE U.S. Department of Agriculture (USDA) has confessed to botching a major research project on nutrition. Investigators from the General Accounting Office (GAO) disclosed last week that the single most important survey of U.S. eating habits—the $7.6-million Nationwide Food Consumption Survey—was so poorly run in 1987-1988 that its data may be unusable. An earlier USDA fiasco involved a study of a supplemental food program for infants. Over the objections of the study's chief researcher, political appointees rewrote the study's conclusion, revising it to say the program failed to improve the health of beneficiaries (*Science,* 2 February 1990, p. 522).

But incompetence, not willful distortion, is the offense GAO finds in the current case. Research done for USDA by National Analysts, Inc., of Philadelphia (a subsidiary of the accounting firm Booz, Allen, and Hamilton) was so poorly planned and executed, GAO says, that there are "serious doubts" as to whether the survey data can be used as intended. The project was supposed to tabulate the nutritional value of individual and household diets in many social and ethnic categories, identifying changes over time. Surveys of this kind have been taken roughly every 10 years since 1936. Losing this data would thus break a 50-year continuum—a calamity for nutrition research and a setback for regulation of chemical residues in food.

The worst problem, according to GAO staffer Flora Milans, was the survey's design: It was long and cumbersome, containing 89 pages of questions in the initial segment that would require 3 hours to answer on the first day of a 3-day monitoring period. Each respondent received $2 for cooperating, up to $20 per household. The response rate was extremely low—only 34%—far short of the goal (74%), and just half the rate of the last national survey (61%). In fact, the response rate was so poor that there's a possibility that the people who responded may not be representative of the nation, GAO concludes.

To resolve such doubts, the USDA contract required that, in the event of a low response rate, the survey team would go back to the field and determine whether there was a significant difference between respondents and nonrespondents. But GAO reports that National Analysts told the government in March 1991, as the contract was coming to a close, that the data on nonrespondents were "unavailable." Asked why, the company officer in charge said the documents had been "lost during an office move in January 1990" and never entered in the computer. GAO probed further and found no evidence that the firm had ever collected the data. USDA and the company now concede this may be the case. Yet the firm was paid a fee of $6.2 million, plus cost overruns of $1.4 million, for completing the study.

New broom. *USDA's new nutrition survey chief, Sue Ann Ritchko, says the research plan is being redesigned.*

The consequences of the botched job are far-reaching, according to Representative George Brown (D–CA), chairman of the House science committee, sponsor of the GAO investigation. U.S. food supplement programs potentially affected by the data loss include the allocation of low-income benefits to states, the design of the "Thrifty Food Plan" for food stamp recipients, and the school breakfast and lunch programs. It may also create a gap in "baseline" nutrition data, making it hard to tell whether people are reducing their fat consumption or making other changes in their diets. Specifically, the loss could undermine a new 10-year campaign led by the Department of Health and Human Services to improve the average diet, called "Healthy People 2000."

The damage is likely to spread to other agencies that regulate food additives. A key factor in calculating toxicological risk is estimating human exposure, which requires detailed information on what people are eating, and how often. Small changes in diet estimates can have a large impact on regulatory decisions. For example, the most disputed point in the furor over Alar, a chemical once used to control the ripening of apples, was the "exposure" calculation of the amount of Alar residue reaching children. An environmental group that wanted the chemical banned came up with a high number of children eating apples and drinking apple juice, but other researchers said these data relied on weak survey information that greatly exaggerated the risk. This kind of dispute could become more common unless researchers find a database they can trust.

Researchers say they have been battling problems at USDA for a decade. "There's been a lot of concern within the nutrition science community that the data were not as good as they should be," says Patricia Swan, a nutrition researcher and vice provost of Iowa State University. "There's been a broad effort to improve the situation for at least 10 years," she says, though little progress has been made. "USDA has just been really slow and dragged its feet" about cleaning up the nutrition monitoring programs, says Audrey Cross, professor at the Institute of Human Nutrition at Columbia University.

That may soon change, however. A new law that took effect last year, the national nutrition monitoring and research act, establishes independent oversight of the USDA's survey program. (Panel members haven't been named yet, because the Administration and Congress have been stalling.) Sue Ann Ritchko, administrator of USDA's Human Nutrition Information Service, says the government is already taking steps to warn users of the limitations of the 1987 survey and to strengthen its research staff. Ritchko, who came into office in May after the mangled study had been completed, says, "We have a new management team" now, and it is working with officials in other agencies, including the Department of Health and Human Services, and with outside scientists to redesign and streamline the big national survey. This "heralds great progress," she claims. But as for the old 1987 survey, Ritchko agrees with GAO that it may be "impractical" to repair the damage at this date. The remedy the government has hit upon is to attach a warning label to each packet of data it sends out, telling researchers the information may be unreliable. ■ ELIOT MARSHALL