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BIOMONITORING

EPA Could Make Better Use of Biomonitoring Data

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Highlights

Highlights of GAO-10-419T, a testimony before the Subcommittee on Superfund, Toxics, and Environmental Health, Committee on Environment and Public Works, U.S. Senate

Why GAO Did This Study

Biomonitoring, which measures chemicals in people's tissues or body fluids, has shown that the U.S. population is widely exposed to chemicals used in everyday products. Some of these have the potential to cause cancer or birth defects. Moreover, children may be more vulnerable to harm from these chemicals than adults.

The Environmental Protection Agency (EPA) is authorized under the Toxic Substances Control Act (TSCA) to control chemicals that pose unreasonable health risks. One crucial tool in this process is chemical risk assessment, which involves determining the extent to which populations will be exposed to a chemical and assessing how this exposure affects human health

This testimony, based on GAO's prior work, reviews the (1) extent to which EPA incorporates information from biomonitoring studies into its assessments of chemicals, (2) steps that EPA has taken to improve the usefulness of biomonitoring data, and (3) extent to which EPA has the authority under TSCA to require chemical companies to develop and submit biomonitoring data to EPA.

View GAO-10-419T or key components. For more information, contact John Stephenson at (202) 512-3841 or stephensonj@gao.gov.

What GAO Found

EPA has made limited use of biomonitoring data in its assessments of risks posed by commercial chemicals. One reason is that biomonitoring data relevant to the entire U.S. population exist for only 212 chemicals. In addition, biomonitoring data alone indicate only that a person was somehow exposed to a chemical, not the source of the exposure or its effect on the person's health. For most of the chemicals studied under current biomonitoring programs, more data on chemical effects are needed to understand if the levels measured in people pose a health concern, but EPA's authorities to require chemical companies to develop such data is limited. However, in September 2009, the EPA Administrator set forth goals for updated legislation to give EPA additional authorities to obtain data on chemicals.

While EPA has initiated several research programs to make biomonitoring more useful to its risk assessment process, it has not developed a comprehensive strategy for this research that takes into account its own research efforts and those of the multiple federal agencies and other organizations involved in biomonitoring research. EPA does have several important biomonitoring research efforts, including research into the relationships between exposure to harmful chemicals, the resulting concentration of those chemicals in human tissue, and the corresponding health effects. However, without a plan to coordinate its research efforts, EPA has no means to track progress or assess the resources needed specifically for biomonitoring research. Furthermore, according to the National Academy of Sciences, the lack of a coordinated national research strategy has allowed widespread chemical exposures to go undetected, such as exposures to flame retardants. While EPA agreed with GAO's recommendation that EPA develop a comprehensive research strategy, the agency has not yet done so.

EPA has not determined the extent of its authority to obtain biomonitoring data under TSCA, and this authority is untested and may be limited. The TSCA section that authorizes EPA to require companies to develop data focuses on health and environmental effects of chemicals. However, biomonitoring data indicate only the presence of a chemical in the body, not its impact on health. It may be easier for EPA to obtain biomonitoring data under other TSCA sections, which allow EPA to collect existing information on chemicals. For example, TSCA obligates chemical companies to report information that reasonably supports the conclusion that a chemical presents a substantial risk of injury to health or the environment. EPA asserts that biomonitoring data are reportable if a chemical is known to have serious toxic effects and biomonitoring data indicates a level of exposure previously unknown to EPA. EPA took action against a chemical company under this authority in 2004. However, the action was settled without an admission of liability by the company, so EPA's authority to obtain biomonitoring data remains untested. GAO's 2009 report recommended that EPA clarify this authority, but it has not yet done so. The agency did not disagree, but commented that a case-by-case explanation of its authority might be more useful than a global assessment.