

programmatic opportunities. However, the plan does not, in isolation, describe the only priorities for the NIAID research program. For example, two areas of research—the pursuit of group antigens that might stimulate a protective response and the investigation of liposomes/ISCOMS as delivery vehicles—were recognized as scientifically important areas and already are receiving significant support from the Institute. The panel readily endorsed the Institute's proposal for FY 1994.

How can NIAID take maximum advantage of developments in basic research in immunology, microbiology, and allied disciplines to accelerate the development of vaccines? This question was the source of considerable discussion during presentation of the plan. Nine issues emerged that the panel recommended be addressed. These are listed below, although not necessarily in priority order. All but the first and seventh were specifically identified in the FY 1993-1994 plan.

1. *The need to organize and convene workshops on areas of vaccine research identified in the plan.* Progress in vaccine development, as in any endeavor in science, requires exchange of information and communication between interested scientists. The panel stressed the importance of this process and recommended that additional workshops be considered as a way of enhancing communication among all scientists interested in vaccine research. There is an urgent need for multidisciplinary study groups to identify basic principles of artificial immunization as specified in topics 2, 3, and 4 below. In addition, NIAID indicated that it was proceeding with more detailed research plans for the development of more than 20 specific vaccines. The appropriate evolution of these plans may require that NIAID convene a series of workshops to discuss them. The panel endorsed this approach as generally useful but cautioned that the plans must be flexible so that the scientific community can take maximum advantage of relevant scientific developments as they occur.
2. The need for basic research in immunology as it relates to vaccine research. Research initiatives in neonatal immunology are especially relevant to the CVI goal of immunizing infants as early in life as possible. There is a need for enhanced understanding of microbial-induced immunosuppression and interference by maternal antibody. The Institute funds a limited number of grants in neonatal immunology, and the panel suggested that additional resources would be valuable in this area. Also, research on the immunogenetics of vaccine responsiveness and nonresponsiveness will be difficult, especially in reference to duration of the immune response. Significant work has been done in animal models but has yet to be extended to humans.