a method to test a drug's absorption in an individual patient right in the doctor's office—if resistance from private practitioners can be overcome.

Among the techniques discussed were gas-liquid chromatography, the separation of particles according to their differing speeds of diffusion; radioactive labeling aiding the tracing of drugs and their metabolites through the body; radioautography, in which a thin slice of radioactive-drug-labeled tissue is placed against film, exposing it in a pattern which reveals the distribution of the drug in the tissue; and fluorescence spectrometry, oscillographic polarography, X-ray diffractometry, nuclear magnetic resonance and mass spectrometry—all sophisticated techniques traditionally in the physicist's, not the physician's arsenal.

Most physicians will maintain hotly that their prescription of a drug for a patient is based on long training and experience; and they are right, in most instances. But on top of the different absorption rates among similar patients, human beings may react very differently to the same blood levels of drug. To cap the confusion, identical doses of a drug given to the same individual at different times may have a different therapeutic effect.

Given the variation in effect of standard drug doses, it would be ideal if instruments could be put in the doctor's office which would directly measure not simply blood levels but the intended effect itself.

According to Dr. George J. Cosmides of the National Institute of General Medical Sciences, a member of the Drug Research Board of the National Academy of Sciences and one of the organizers of the Gaithersburg meeting, the techniques and instruments already exist. What is needed is miniaturization of both the hardware and the price tag.

Dr. Cosmides predicts that such miniaturization is coming and will revolutionize the prescribing of drugs. He adds, though, that such a prediction made at a medical meeting would get him laughed down; doctors who learned to prescribe by the seat of their pants are more comfortable sitting down than paying for newfangled machinery.

His pessimism is backed up by reactions from private physicians. Many admit freely that dosage is not an exact science, but they insist that it need not be. One private practitioner says that the dose for most drugs is not critical; a doctor simply prescribes what he knows to be an amount in excess of that required for the therapeutic benefit he wants.

Another doctor agrees. He says there is little need to achieve a minimum dosage in most cases because few of the often used drugs are very toxic.

HEALTH PROGRAMS

Super-bureaucrat challenged

President Johnson's attempts to reorganize the executive departments have often run into trouble from a Congress organized along its own lines. Executive changes mean power changes in Congressional relations.

Last week, the President was trying again. As part of the long-pending third phase of the reorganization of the health side of the Department of Health, Education and Welfare (SN: 4/13, p. 353), he implemented a decision to make HEW Secretary Wilbur J. Cohen coordinator of the sprawling, $15.6 billion health and health research programs operated by some 15 Federal agencies. But the task he laid out will tax even Cohen's abilities as a superbureaucrat—abilities honed over several decades of Federal service during which he has been principal architect of many of the programs now identified with the Great Society.

Cohen, on paper at least, will be the Government's policy-maker for such questions as:

- The rationality of the doctor draft in relation to the health needs of the rest of the nation.
- The suitability of the health research programs of the National Aeronautics and Space Administration, the Atomic Energy Commission and the Veterans Administration, in relation, for instance, to the needs of his own department's Regional Medical Centers (heart, cancer and stroke) program.
- The wisdom of policies that make available to veterans, through Veterans Administration hospitals, health care more sophisticated than that available to the public at large.

Cohen's ability to make decisions stick in these and similar areas will depend on his ability to win Presidential support, issue by issue, as well as to deal with the Congressional committee structure. These are problems which have hamstrung other coordinators.

Within his own department, he may have more success. The establishment of the new Consumer Protection and Environmental Health Service, for example in HEW, should give him little trouble. But even here he will have to cope with such watchdog committees as the Subcommittee on Intergovernmental Relations which, under Chairman L. H. Fountain (D-N.C.), regards itself as guardian of the militancy of the Food and Drug Administration and critic of the form, if not the function, of the National Institutes of Health.

Highly organized pharmaceutical manufacturers have expressed interest in having Dr. James A. Shannon's National Institutes of Health become scientific monitor—a kind of court of last resort—over FDA regulatory decisions regarding drug matters.

Shannon, who has been seeking leverage for several years by which to make money available for expanded programs in pharmacology and toxicology, is proposing that NIH have some $50 million for an FDA-monitoring role.

Any such role now, since it would require revision of the Food, Drug and Cosmetics act by Congress, would come principally under the eye of Representative Fountain, who is wary of any move that might diminish FDA's new-found effectiveness.

Food and Drug, then, remains essentially unchanged under the reorganization, despite the fact that it becomes, rather than an independent agency in HEW, a piece of the broader consumer agency which includes as well the Air Pollution Control Division, radiological health functions, urban and industrial health and the Communicable Disease Control Center in Atlanta. Charles C. Johnson, Jr., assistant commissioner of health for environmental services in New York City, and a sanitary engineer by training, will head the new agency.

Under the new arrangement, plugged into FDA are likely to be such functions as the supervision of milk and shellfish production which had been Public Health Service functions. And FDA will seek its own ways to take advantage of the toxicological and pharmaceutical capabilities now widely scattered in the divisions of NIH, but ultimately to be coordinated.

WORLD HEALTH

Debugging the jet set

According to international quarantine regulations, all international flights originating in countries where disease-carrying mosquitoes could be aboard should be sprayed before they land. An insecticide from an aerosol bomb, most often DDT, is used.

This procedure, even if followed to the letter (as it often is not), still leaves the possibility that many insects jet from one country to another. One reason is that the aircraft's air conditioning system removes the aerosol spray before it has had much chance to affect mosquitoes or other insects.

World health authorities have now approved a system that should end this problem:

Tomorrow's jumbo jet planes and their passengers will be disinfected in flight by a 30-minute automatic vapor