

lished procedures for recognizing a wide range of employee problems.

Companies in "sensitive" industries, such as air lines, banks and manufacturing plants with dangerous equipment, tend to feel that they cannot take chances with their customers, their employees, or their image. Once drug abuse of any kind, from heroin to marijuana, has been determined, dismissal follows. Most firms, however, still find the decision complex and difficult, as they discover that drug abuse is anything but neatly categorized. Some are already making a distinction between the "soft drugs" such as marijuana and the "hard drugs" such as heroin and the other opiates.

While some companies plan to stick to a policy of automatic dismissal because of the sensitive nature of their work, others feel that they will be unable to do this in the future as the problem grows. Still others see themselves as part of the community and feel that they have to expand their existing health services to meet changing social demands.

The primary problem is detection. Screening of employees by urinalysis to detect recent amounts of drugs in the system is not effective if a user has abstained from drugs for a few days prior to the test. A urinalysis costs from \$25 to \$35 and many firms have neither the facilities for sophisticated medicals nor the funds to have this test run on every applicant. In any case, many applicants slip through this screening. One company reported that 25 per cent of its applicants in 1969 showed positive urine specimens. These were not hired, but a spot check a few months later found that 25 per cent of the group hired were using drugs.

Since preventive detection is so often neither practical nor effective, the study stresses that the role of company supervisors in recognizing the symptoms of drug abuse early and taking the appropriate action can be crucial.

COMMUNICATIONS

Spanish Eye on Space

SPAIN will soon have a fully steerable dish aerial equivalent to the largest in the United States. A replica of the 210-foot diameter tracking aerial at Goldstone, California, is being built 40 miles west of Madrid.

When the building programme is complete, in 1973, the new deep space network will provide continuous coverage for the probes to the outer planets that are being prepared for the seventies. A secondary role for the 210-foot dishes could be in the tail end of the Apollo Moon exploration programme, but for most of the time the 85-foot aerials of the present deep space network are adequate. These are installed in Australia at Woomera and Canberra, at Johannesburg, at Goldstone, and at Madrid, and take over from the 30-foot aerials of the Manned Space Flight Network once the spacecraft have left the vicinity of the Earth. But the Goldstone aerial and the similar-sized aerial at Parkes, New South Wales, have often been used to cope with data during transmissions from the lunar surface.

The aerial at Goldstone has already proved a boon to NASA during last summer's Mariner 6 and 7 flights to Mars when close-up television pictures of the surface were relayed back to Earth. The spacecraft

were then 60 million miles from the Earth, but since then in an experiment on general relativity Goldstone has picked up signals from Mariner 6 over a distance of 251 million miles as the spacecraft moved behind the Sun, a record for long-distance space communications.

Frequencies into the X-band can be picked up by the Goldstone design, which has a pointing accuracy of 0.05 degrees. The total cost of the two new dishes will be about \$34 million, and when they are complete they will be managed by the Jet Propulsion Laboratory which also runs the Goldstone aerial. Radio astronomers in Europe must be hoping that the Madrid aerial will be made available to them in the same way that the Jet Propulsion Laboratory has thrown open the Goldstone 210-foot and 85-foot aerials (see *Nature*, 225, 124; 1970). Although it is anticipated that only about 5 per cent of the time on the Goldstone 210-foot dish is likely to be available in this way, a similar arrangement at Madrid is not to be sniffed at.

Hazards of Illness

IF one is carried into a hospital emergency room in a major city at midnight suffering from automobile accident injuries or whatever, the odds are that one will be cared for, in the first instance, by an interne who probably was educated overseas and who has come to the United States to earn big money and prestige. Generally, these physicians come from the Philippines, Spain, Mexico, Italy and the British Isles.

As the shortage of physicians in the United States becomes increasingly severe, sociologists concerned with the health professions are asking what happens to the more than 10,000 pre-medical graduates rejected each year by medical schools in the United States. Unfortunately, no one has a complete answer on how the nation does, or does not, utilize this human resource for medical purposes.

It is, however, apparent that an increasing number of the rejected students are enrolling in medical schools abroad. About 3,000 Americans are now taking medical courses in such countries as Italy, Switzerland, Belgium, Germany, Spain and Mexico—most of them in Italy and Mexico. Virtually all American students now overseas intend to take up internships in the United States and residencies and eventually practise there. Now, unfortunately for those who have been taking the foreign route, many European medical schools are beginning to limit the enrolment of Americans—on the moral premise that they ought to be aiding the disadvantaged nations instead of the relatively rich ones.

There seems to be little question that the first 3,000 or 4,000 US rejects are just about as sound a bet to become good physicians as the last 3,000 or 4,000 acceptees. That is one reason why some medical schools are increasing their enrolments, with the aid of federal funds, and some universities are planning to add medical schools to their campuses for the first time.