what premature to project to the 1980's tokamak, and even more premature for a reactor. The plasma theorist who is the undisputed dean of tokamak studies, Marshall Rosenbluth of the Institute for Advanced Studies, could not be reached for comment, but his office noted that he had been called by President Carter recently, so presumably the White House has tallied his vote on the subject. (Scaling is one of the most critical factors in projecting the economics of fusion power.)

So the matter of the significance comes

to an uneasy conclusion. There is no doubt among physicists that the Princeton results are salutory, but the experts' opinions on the meaning are varied and in part conflicting. There is no consensus that the finding clears the way to fusion. Most observers think that the good news heard last week will carry through to the 1980's experiment, but whether it will apply to a full-sized fusion reactor they are not so sure. Some experts do not appear to know what to make of the results yet and all agree that it does not guarantee scientific proof of fusion, much less successful engineering of a fusion reactor. (Among six critical problems for tokamaks identified in a recent review of fusion compiled by John Deutch's office, the Princeton result only addresses part of the first one.)

Now that it is over, people can resume reading their solar energy catalogs again, continue with plans to insulate their houses, and put aside a little longer the dream of cheap energy. It may not have been the last word on fusion, but it sure was a good story.

-WILLIAM D. METZ

Senators Hear Case for Psychotherapy

The Senate Finance Committee held an unusual morning of hearings last week devoted to coverage of mental health services by Medicare and Medicaid.

The fact of the hearing may be evidence that Congress is preparing to respond to mounting pressure by the mental health professions—bolstered by accumulating evidence on the economic benefits of making mental health services widely accessible—by expanding mental health coverage, particularly under Medicare. This crusade—and that is what it is beginning to look like—is particularly significant because it is an attempt to lay a basis for future coverage under national health insurance.

At the hearings, presided over by health subcommittee chairman Herman Talmadge (D-Ga.), senators heard testimony from psychiatrists, psychologists, psychiatric nurses, Community Mental Health Center representatives, and Martin L. Gross, author of the controversial book *The Psychological Society*.

Gross was the only antipsychotherapy person in the lot. Psychotherapy, which he branded "an absolute hoax," is "considered a reasonable practice in only one country in the civilized world—the United States," he claimed. Contending that his views were endorsed by such prominent biochemical researchers as Seymour Kety and Solomon Snyder, he made a big pitch for more biological research and better treatment for the major mental illnesses. He claimed that studies showed psychotherapy to be worthless for those with nonpsychotic problems, which he dismissed as the normal anxieties all humans are heir to. He also asserted that a person's "natural temperament" exists at birth and "parents have very little to do with the emotional balance of children."

With enemies such as this, psychotherapy hardly needs friends. The senators present were clearly more sympathetic with the views of the mental health professionals.

Most of the talk was about the need to expand coverage under Medicare. The provisions for mental health have not been changed since 1965, when the act was passed. In what professionals, backed up by the President's Commission on Mental Health, regard as gross discrimination against mental as opposed to physical disorders, Medicare sets a lifetime limit of 190 days for hospitalization (physical disorders are allowed 90 days per episode); there is a \$250 annual limit on payments for outpatient visits, and only 50 percent of the cost per visit is reimbursed (as opposed to 80 percent for physical illness).

Medicare was passed when there still were few data on the cost-effectiveness of including outpatient psychological services in health systems. But witnesses cited a half-dozen studies which they said show that availability of mental health services significantly reduce the number of visits people make to the doctor, as well as hospitalizations.

Perhaps the most extensively studied system has been the Kaiser-Permanente Health Plan in San Francisco, where the

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effects of short- and long-term psychotherapy have been followed for 18 years. Kaiser-Permanente psychologist Nicholas Cummings, who is president-elect of the American Psychological Association, said that a 5-year study of a group of patients who had short-term psychotherapy showed a "sustained reduction" in the use of medical services of 60 to 70 percent. This provides support for the frequently made claim that over half of visits to doctors are spurred primarily by psychological problems.

Also cited was a 4-year study of people over 65 in Harris County, Texas. According to psychiatrist James L. Cavanaugh of Rush-Presbyterian-St. Luke's Medical Center, access to treatment for mental illness reduced the mean length of hospital stays from 111 to 53 days resulting in a saving of \$1.1 million.

Medicare was criticized more than once for being "penny wise and pound foolish": the limited benefits for outpatient services force old people into mental hospitals and nursing homes; yet many who are diagnosed with the catchall term "senility" suffer a variety of conditions that could be reversed without hospitalization.

Although mental health professionals are united on general principles, there has been a major and at times bitter conflict between psychiatrists and non-medically trained professionals over who should qualify for direct reimbursement under various insurance schemes. The psychiatrists emphasize their "unique role" in encompassing medical and psychological expertise. They see themselves at the top of the mental health pyramid and as necessary intermediaries psychologists, psychiatric between nurses, social workers, and patients to ensure accountability and quality control

Psychologists, however, see themselves as alternatives rather than as sub-

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ordinate to psychiatrists. They contend that the requirement for "physician supervision" adds another layer of costs and reduces the availability of psychotherapy. With the Medicare requirement for physician referral, said Cummings, "the patient is not likely to receive psychological services unless he or she is also billed for a medical problem of some kind." Psychologists, he said, are perfectly aware that many mental problems require drug treatment or are linked to physical problems, and they are as capable as any other professional of referring their patients to appropriate specialists.

A major forum of this conflict is in Community Mental Health Centers. Most CMHC's, except those that are

hospital-based, are not recognized as health providers under Medicare. So patients do not even get the limited Medicare mental health benefits unless they are treated by a physician. Many psychiatrists are disillusioned with what Cavanaugh called the "general trend toward deprofessionalization" in CMHC's, and they believe the only remedy for the perceived low quality of care is to give them a lot more money so they can attract psychiatrists. The nonmedical professionals, however, contend that great savings could be made if benefits were made available not only to pay nonpsychiatrists but to cover costs of expanded outpatient therapy and "partial hospitalization" (spending the day in the hospital and going home at night). Wit-

Health Officials Fired Up over "Tolerable" Cigarettes

In case anyone had any doubts before, they now know for sure. The Secretary of the Department of Health, Education, and Welfare (HEW), the Directors of the National Cancer Institute (NCI) and the National Heart, Lung, and Blood Institute (NHLBI), and the Surgeon General of the United States all agree, vehemently. Smoking cigarettes is hazardous to your health.

In fact, their pronouncements came so thick and fast and were so emphatic, an observer might think that someone, a government scientist, for example, had just asserted that some cigarettes were safe. That did not happen, however.

What did happen was this. A government scientist, Gio B. Gori, who is deputy director of the Division of Cancer Cause and Prevention at NCI, described to an Associated Press reporter the contents of a paper he coauthored with Cornelius J. Lynch of Enviro Control, Inc. In the paper, which is soon to be published in the Journal of the American Medical Association (JAMA), the two scientists conclude that the toxic substances in some brands of cigarettes, which they name, have been reduced to such a degree that an individual may be able to smoke limited numbers of the cigarettes without a detectably increased risk of dying as compared to the risk of nonsmokers. Gori, who is fond of saying "The only safe cigarette is an unlit ciga-SCIENCE, VOL. 201, 1 SEPTEMBER 1978

rette," was careful to point out that smokers might still be at higher risk—as much as two times higher—than nonsmokers. He maintains, however, that even a risk twice that of nonsmokers might be difficult to detect in an epidemiological study and, as he wrote in the JAMA paper, "The inability to verify this risk might lead to it being considered socially tolerable."

But in Gori's interviews with reporters and the subsequent news accounts there-



Gio B. Gori duce the huma 0036-8075/78/0901-0795\$00.50/0 Copyright © 1978 AAAS

nesses from the National Council of CMHC's said that according to government data the average stay for elderly mental patients in state and county hospitals was 53 days, but for those supported by CMHC's it was only 14 days.

Although the senators present appeared willing to go along with the idea that expanded mental health services are desirable, their concepts about the difference between psychiatry and psychology, and the nature of mental illness itself, seemed foggy at best. Talmadge, for example, posed the following question: if a doctor prescribes tranquilizers for an anxious patient and the patient instead goes out and gets some "pep-up" pills— "is that mental illness?"

-CONSTANCE HOLDEN

of, he translated a risk that might be socially tolerable into "tolerable cigarettes," as in the Washington *Post* headline "Some Cigarettes Now 'Tolerable,' Doctor Says." And "tolerable" suddenly became an intolerable word in the environs of the NIH and HEW.

Reaction was swift as Julius Richmond, the Surgeon General and assistant secretary for health at HEW, and Robert Levy and Arthur Upton, directors of NHLBI and NCI, respectively, issued statements disavowing the possibility that any level of smoking might be safe. Everyone agrees Gori never actually said that. But they were concerned about an uncritical public being misled by the word "tolerable" to equate a risk too small to be measured with no risk at all, especially since they are far from convinced that Gori's conclusions were justified in the first place.

Virtually everything that happens in Washington has political ramifications and the smoking issue is no exception. Gori's boss HEW secretary Joseph Califano has been waging a well-publicized, although not particularly well-financed, campaign against smoking. Exact figures on just how much HEW is spending to educate the public about the health hazards of smoking are somewhat hard to come by. The Office of Smoking and Health estimates the amount to be under \$2 million in FY 1978 and projects spending of about \$6 million for FY 1979. These are miniscule figures by Washington standards, but additional programs funded by NCI or NHLBI are sometimes cited as having an antismoking component.

In any event, health officials, who are finally coming to grips with the idea that prevention is a cost-effective way to reduce the human and economic toll of ill-