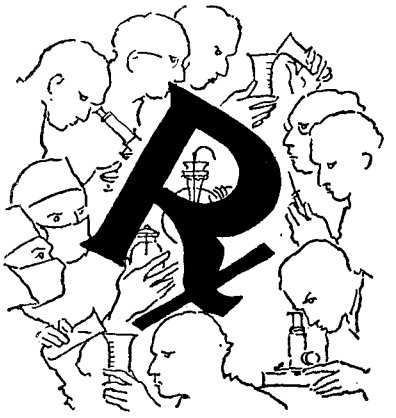
BILLION-DOLLAR PRESCRIPTION

By MARGARET CHASE SMITH, *U. S. Senator from Maine, whose interest in medical research extends far beyond the humanitarian instincts of politics. Here she discusses the dollars-and-cents practicalities of the first long-range approach to medical learning that has ever been proposed to Congress by a member of the Senate. Her billion-dollar bill is still before the Federal legislature, and there is yet time for a national debate on one of the great domestic issues of our time.*



WE HUMAN BEINGS act strangely. With the exception of our moral and spiritual values, the obviously most important thing to us is life—our own life and the lives of our dear ones and our friends. Yet we don't act that way. We pay little attention to our health. We take our health for granted. We don't get concerned about it until we have lost part of it. And sometimes that is too late.

Here in America last year we spent $10,000,000,000 for cocktails and other spirituous liquors. We spent $5,000,000,000 for tobacco. We spent $264,000,000 for chewing gum. But when I advocated on the floor of the United States Senate that we spend an extra $200,000,000 a year for the next five years on the better care of our health, some people were shocked.

"How could you possibly spend that much money?" these people have asked. "Why $200,000,000 a year for five years is $1,000,000,000!" Indeed it is. One billion. Forty-nine billions less than our drinking bill during those same five years. Twenty-four billions less than our smoking bill. More than $250,000,000 less than our bill for chewing gum.

Having made that comparison, I ask my questioners a question:

"Is $1,000,000,000 really a huge sum to spend to help protect and perhaps prolong 165,000,000 American lives?"

I think most people will agree that it is not. And here is my prescription:

(1) For medical research, spend $500,000,000.

(2) For medical research facilities, spend $150,000,000.

(3) For assistance to medical education, spend $350,000,000.

I believe that my prescription is unique in one very important respect. It is long-range medicine—something that we in this country have never attempted before.

As I am not a doctor, or even a nurse, I may be suspected of snap diagnosis. This, however, is not the case. I have been concerned with medical research for a long time. I do want to acknowledge, though, that my thinking was crystallized by an editorial in a great Maine newspaper, *The Bangor Daily News*. The title the editorial writer chose was "How About $1,000,000,000 for Health?"

The most thorough study to date of the impact of illness upon our national economy was made in a six-month-long investigation by the House Interstate and Foreign Commerce Committee in 1953 and 1954. I have leaned heavily upon my readings of those hearings in reaching my own conclusions. More recently, criticism of inadequate Federal support for medical research has come from the distinguished reports of the Hoover Commission. In these reports there is a recurrent plea for a five-year program. I am frank to state that the arguments of the Commission have had a great influence upon me. But the detailed dosage that follows is my own formula.

1. MEDICAL RESEARCH

At present the research and training programs of the National Institutes of Health have a current budget of approximately $100,000,000 a year. I would double this budget, making it $200,000,000 a year, an added five-year cost of $500,000,000.

Perhaps I should explain, for the benefit of those who are not so close to government as I am, that the

—Department of Health, Education, and Welfare.

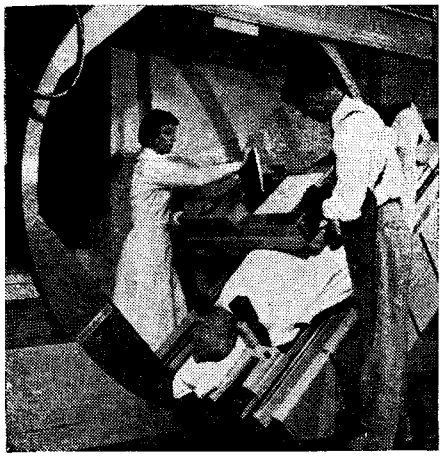
At the National Institute of Neurological Diseases and Blindness a scientist slices diseased brain tissue preparatory to biochemical studies.

National Institutes of Health together make up the foremost research agency of the U.S. Department of Health, Education, and Welfare. They have extensive laboratories of their own, probably the finest laboratories in the world, certainly the best government laboratories anywhere. But two-thirds of their funds are spent in support of research and training in non-Federal medical institutions. In this extramural research and training each Institute (there are seven: cancer, heart, mental health, arthritis and metabolic diseases, neurological diseases and blindness, dental, and microbiological) is aided by a National Advisory Council. Council members are citizens outstanding in medical science, education, and public affairs. They review all applications for grants, and make recommendations on these to the Surgeon General, who in his turn requests appropriations from Congress.

Historically the Councils have been hampered by our system of annual appropriations. Frequently they have not been able to attract the most qualified men to short-term jobs. And many research projects have been turned down because their continuance over the necessary span of time could not be guaranteed.

The more fundamental research becomes—and all the experts agree that it is fundamental (sometimes called "pure") research we need above all else—the less predictable is the time involved. Testimony before the House Appropriations Committee early in 1956 reminded us, for instance, that thirty-three years passed between (a) the time that the pancreas was found to contain the secret of diabetes and (b) the time when the secret was identified as insulin. Would anyone today begrudge the money spent in hunting down that elusive chemical, which, when finally discovered, saved millions of lives?

By making $500,000,000 more available to the National Institutes of Health, I do not claim to solve the problem of basic research. But I do feel that the Institutes would be given a degree of flexibility in supporting long-range studies. It seems pertinent to note, at this point, that long-range investigation means most in the little understood metabolic diseases which have their worst crippling effects in our growing proportion of older citizens.



Medicine needs expensive instruments.

2. MEDICAL RESEARCH FACILITIES

Early this year Senators Lister Hill and Styles Bridges introduced a bill to provide $90,000,000 over the next three years to match construction grants for medical research facilities in medical schools, hospitals, and private foundations in all parts of the country. The Senate passed the bill unanimously, and the measure is now before the House. Under my five-year prescription I would extend this three-year proposal to cover five years at the same annual rate of $30,000,000; a total of $150,000,000.

3. MEDICAL EDUCATION ASSISTANCE

Senator Hill also introduced, together with a dozen other Senators, another bill to provide $250,000,000 to match grants for construction of medical-school buildings. This bill has been strongly endorsed by the American Medical Association and almost unanimously by medical school Deans. I would increase this appropriation by $20,000,000 a year—from $50,000,000 to $70,000,000—for a five-year total of $350,000,000. That total approximates two estimates made by the National Fund for Medical Education (of which Herbert Hoover is honorary president) regarding the needs of the nation's medical schools.

My billion-dollar prescription is now complete.

I admit that $1,000,000,000 may appear to be a large amount for taxpayers to carry in addition to the burden they carry at present. But I call your attention to the fact that the American people unhesitatingly footed a 1954 bill of $1,700,000,000 for research on military weapons alone. This is eight-and-one-half times the annual rate I propose for medical research expansion. May I point out that our national defense and our national security are no stronger than our national health, on which our Federal Government's research spending is less than 1 per cent of the national budget?

Compare the current $100,000,000 research and training budget of the National Institutes of Health with the $90,000,000 appropriated at the last session of Congress for research activities in the Department of Agriculture. Add to this $90,000,000 the sum of $250,000,000 which is paid out to farmers for soil conservation. I do not want to imply that I am not heartily in favor of greatly expanded agricultural research. I know, of course, that much of such research benefits us in our studies of the diseases of man. And I have always supported farm-research activities. But I think it is about time this country brought research on human lives up to the level of research on animals and plants.

I referred earlier to the House Interstate and Foreign Commerce Committee hearings on the impact of disease on the national economy. The committee found that four diseases alone—heart, cancer, tuberculosis, and arthritis—have resulted in an annual loss of 370,000,000 man-days of work and that the annual cost to the nation from all illnesses is roughly equivalent to the total income-tax revenue, or $30,000,000,000 a year. Alongside that enormous loss, my proposed expenditure of $200,000,000 a year would seem a very modest investment.

Would it be a sound investment for a banker?

Over the last decade alone medical research has added five full years to the life expectancy of the average American. We all know something of the wonders of penicillin, streptomycin, isoniazid, cortisone, and a host of other battlers against disease. These miraculous products of medical research, along with new surgical techniques and blood plasma, have brought about these percentage reductions in the death rates of some of the major killers and cripplers:

	per cent
Influenza	77
Appendicitis	69
Acute rheumatic fever	66
Syphilis	56
Tuberculosis	50
Pneumonia	50
Kidney diseases	43

Now let us translate this into economic terms. The National Office of Vital Statistics reported that in 1954 approximately 350,000 Americans *under* the age of sixty-five died of cancer and heart disease alone. This is greater than the total of Americans who lost their lives in the armed forces during the Second World War and the Korean War together. Remember that those wars lasted not one year but approximately seven years.

Those 350,000 deaths of 1954 occurred, as I have stated, among people under sixty-five, people in their productive years who otherwise would have been at work, earning money, producing goods and services, and

consuming as well. Moreover, these people would have been paying taxes which would have gone, in part, to pay for research which would have helped to preserve their own and other lives.

IN an earlier year—the year 1951—a study of Federally-aided rehabilitation revealed that 8,000 people who were returned to work had been on public assistance prior to rehabilitation, at a cost of $5,700,000 annually. The cost of their rehabilitation was $4,000,000. These people are now employed. Instead of being tax-consumers they are taxpayers.

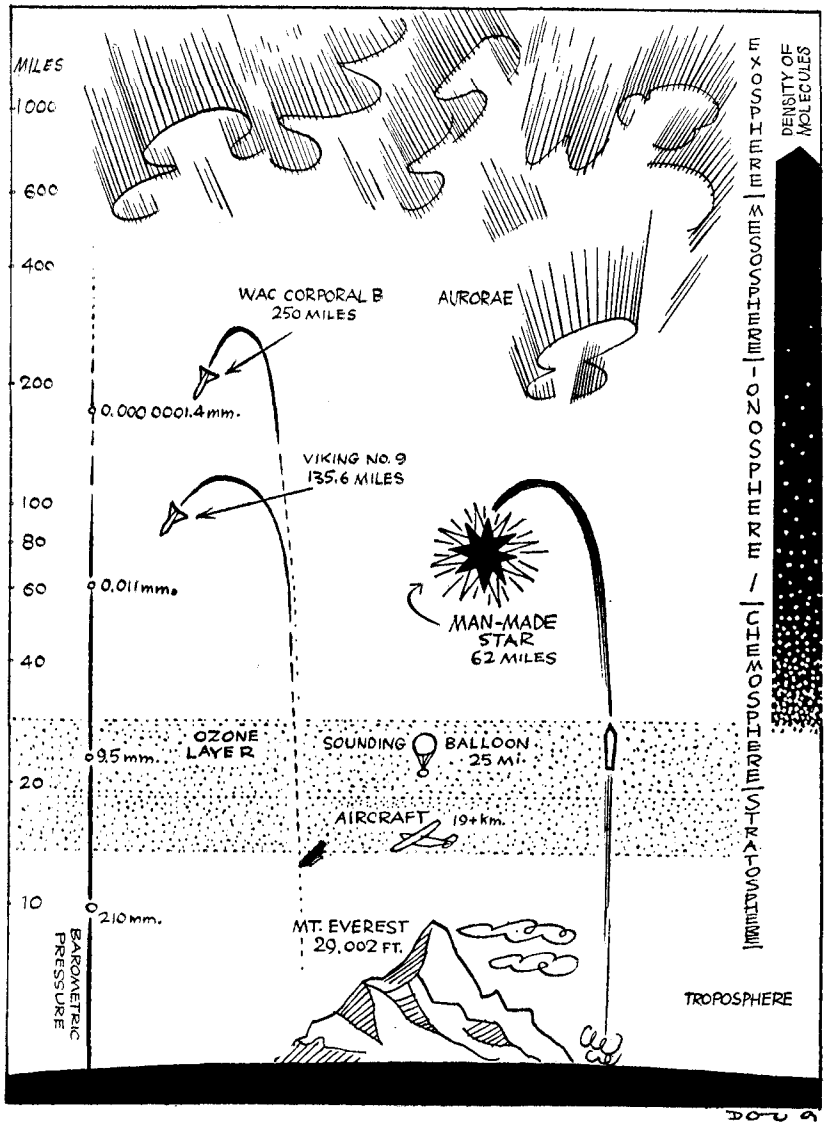
When we consider that chronic diseases account for 88 per cent of the disability of the approximately 2,000,000 physically handicapped people in the United States, we can see that the economic benefits to be derived from medical research on disabling diseases would be vast. The research would more than pay for itself.

I have been asked whether my billion dollar prescription for our national health amounts to socialized medicine. I have publicly and privately stated for many, many years that I am opposed to socialized medicine. The five-year program that I propose would have no aspects of socialized medicine. It is in keeping with recommendations and endorsements made by the Hoover Commission, the American Medical Association, medical-school Deans, and such outstanding doctors as Paul Dudley White, the eminent heart specialist who treated President Eisenhower.

Perhaps because he is the heart doctor of the President, Doctor White's own words have a great dramatic and impressive meaning to the American people on the need for expansion of medical research. Doctor White has pointed out that current heart research is severely limited because of lack of money. Testifying before a Senate committee, as a member of the Advisory Council of the National Heart Institute, Doctor White said he had been forced to use his own money for research because there were not sufficient government funds.

His was only one of a tremendous backlog of worthy projects, running into millions of dollars, for which the Advisory Councils have no money. As long as this backlog exists qualified people are being denied the opportunity to save life.

If one of the armed forces can build up a twenty-five year supply of hamburgers, and if another can spend hundreds of millions of dollars on a fighter plane that could not fly, I say we can afford to appropriate funds to give our children and our children's children the best in medicine.



Travel guide to the upper atmosphere, showing location of man-made star.

Man Makes His First Star

AS DR. MURRAY ZELIKOFF REPORTED IT TO JOHN LEAR, SR *SCIENCE EDITOR.*

THERE is light in the sky at night, even when there is no moon. Whence does it shine? All the stars together are not bright enough to explain it. How, then, does it come to be there?

Generations of curious men have wondered at this riddle of the heavens. A few of them have gone from wonderment to pondering. Although their speculations have impressed most other people as a foolish waste of time, this handful of intellectual adventurers has slowly reasoned its way upward through the dark toward the mystery of "the air glow."

Little by little, with bits of knowledge that have been learned about the light that reaches earth in the full sunglare of day, there have been pieced together theories of what must happen when the sun "goes down" to the other side of our planet. By burning fragments of the elements that make all things terrestrial, and watching the fire through prisms, it is possible to measure each differing shade of flame as simply as marking the widths of the bands of a rainbow on a ruler held before your eyes. And when these measured colors have been matched against the colors of the light that