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1977 ANNUAL REPORT OF THE BOARD OF  
TRUSTEES OF THE FEDERAL SUPPLEMENTARY  
MEDICAL INSURANCE TRUST FUND

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COMMUNICATION

FROM

THE BOARD OF TRUSTEES, FEDERAL  
SUPPLEMENTARY MEDICAL INSURANCE  
TRUST FUND

TRANSMITTING

THE 1977 ANNUAL REPORT OF THE BOARD, PURSUANT  
TO SECTION 1841(b) OF THE SOCIAL SECURITY ACT,  
AS AMENDED



MAY 10, 1977.—Referred to the Committee on Ways and Means and  
ordered to be printed

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U.S. GOVERNMENT PRINTING OFFICE

WASHINGTON : 1977



## LETTER OF TRANSMITTAL

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BOARD OF TRUSTEES OF THE  
FEDERAL SUPPLEMENTARY MEDICAL  
INSURANCE TRUST FUND,  
*Washington, D.C., May 9, 1977.*

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES,  
*Washington, D.C.*

SIR: We have the honor to transmit to you the 1977 Annual Report of the Board of Trustees of the Federal Supplementary Medical Insurance Trust Fund (the 12th such report), in compliance with the provisions of section 1841(b) of the Social Security Act.

Respectfully,

W. MICHAEL BLUMENTHAL,  
*Secretary of the Treasury,*  
*and Managing Trustee of the Trust Fund.*  
RAY MARSHALL,

*Secretary of Labor.*

JOSEPH A. CALIFANO, JR.,  
*Secretary of Health, Education, and Welfare.*

JAMES B. CARDWELL,  
*Commissioner of Social Security*  
*and Secretary, Board of Trustees.*

(III)



## LETTER OF TRANSMITTAL

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BOARD OF TRUSTEES OF THE  
FEDERAL SUPPLEMENTARY MEDICAL  
INSURANCE TRUST FUND,  
*Washington, D.C., May 9, 1977.*

The PRESIDENT OF THE SENATE,  
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# 1977 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE FEDERAL SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND

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## THE BOARD OF TRUSTEES

The Federal Supplementary Medical Insurance Trust Fund, established on July 30, 1965, is held by the Board of Trustees under the authority of section 1841(b) of the Social Security Act, as amended. The Board is comprised of three members who serve in an ex officio capacity. The members of the Board are the Secretary of the Treasury, the Secretary of Labor, and the Secretary of Health, Education, and Welfare. The Secretary of the Treasury is designated by law as the Managing Trustee. The Commissioner of Social Security is Secretary of the Board. The Board of Trustees reports to the Congress once each year, in compliance with section 1841(b)(2) of the Social Security Act. This Report is the annual report for 1977, the twelfth such report.

## HIGHLIGHTS

(a) Expenditures of the supplementary medical insurance trust fund increased 24 percent in fiscal year 1976 over 1975. Most of this increase resulted from higher physician fees recognized by the program and the use of more physician services by program enrollees. Other major factors in the increased outlays include greater use of outpatient hospital services and home health services and increased enrollment.

(b) Income to the trust fund increased 16 percent in fiscal year 1976 over 1975. This resulted from increased adequate actuarial rates which determine the general revenue contribution and from increased enrollment in the program.

(c) The trust fund decreased \$206 million to \$1,219 million during 1976. This resulted from cost increases greater than those anticipated when financing for fiscal year 1976 was established. The financing for the 2 following years has been established to restore the losses of the program during 1976.

(d) In December of 1976, the Secretary of the Health, Education, and Welfare promulgated a standard monthly premium rate of \$7.70 and adequate actuarial rates of \$12.30 for the aged enrollees and \$25.00 for the disabled enrollees for the 12-month period beginning July 1, 1977.

(e) 22.2 million persons aged 65 and over were enrolled in the program in July 1976. This is about 95 percent of the aged population. An additional 2.2 million disabled beneficiaries were enrolled in the same month.

## SOCIAL SECURITY AMENDMENTS SINCE THE 1976 REPORT

Public Law 94-368, which was enacted on July 16, 1976, amends the medicare law to: (1) provide that the prevailing charge for a physician's service in any period after fiscal year 1976 shall not, by reason of the economic index limitation on such prevailing charge increases, be lower than the prevailing charge for that service in fiscal year 1975; (2) provide that reasonable charge screens under part B shall continue to be updated on July 1 of each year, rather than on October 1 as had been provided under earlier legislation designed to modify Federal programs to conform with the new October-September Federal fiscal year; and (3) extend to October 1, 1977, the interim provisions of Public Law 93-233 under which teaching physicians may be reimbursed on a cost basis if the hospital in which they teach elects to receive payment for their services and all physicians in the hospital agree not to bill individually for their professional services to medicare patients.

Public Law 94-460, enacted October 8, 1976, is designed to unify the definition of a health maintenance organization (HMO) under the HMO Act and under medicare, except that under medicare an HMO must offer the benefits covered under parts A and B of the program in lieu of the basic and supplemental benefits required under the HMO Act.

Public Law 94-505, enacted October 15, 1976, includes an amendment establishing an Office of the Inspector General in HEW to direct, conduct, supervise, and establish policies with respect to audits and investigations concerning all programs and operations within the Department, including antifraud and abuse activities related to the medicare program.

### NATURE OF THE TRUST FUND

The Federal Supplementary Medical Insurance Trust Fund was established on July 30, 1965, as a separate account in the United States Treasury to hold the amounts accumulated under the supplementary medical insurance program. All the financial operations which relate to the supplementary medical insurance program are handled through this fund.

The major sources of receipts of the trust fund are (1) premiums paid by eligible persons who are voluntarily enrolled in the program and (2) contributions of the Federal Government that are authorized to be appropriated and transferred from the general fund of the Treasury. Eligible persons aged 65 and over have been able to enroll in the program since its inception in July 1966. Since July 1973, disabled persons under age 65, who meet certain eligibility requirements, have also been able to enroll in the program.

The premiums paid by participants are based on the standard monthly premium rate, which is the same for participants aged 65 and over and for disabled participants under age 65. Premiums paid for fiscal years 1967 through 1973 were matched by an equal amount of Government contributions. Beginning July 1973, the amount of Government contributions corresponding to premiums paid by each of the two groups of participants is determined by applying a ratio, prescribed in the law for each group, to the amount of premiums received from that group of participants. The ratio is equal to (1)

twice the amount of the adequate actuarial rate applicable to the particular group of participants, minus the amount of the standard monthly premium rate, divided by (2) the amount of the standard monthly premium rate.

Standard monthly premium rates and adequate actuarial rates are promulgated each year by the Secretary of Health, Education, and Welfare. The standard monthly premium rates in effect from the beginning of the program, July 1966 through June 1977, and the rate promulgated for July 1977 through June 1978, are shown in table 1. Adequate actuarial rates in effect from July 1973 through June 1977, and the rates promulgated for July 1977 through June 1978, are also shown.

Another source from which receipts of the trust fund are derived is interest received on investments held by the fund. The investment procedures of the fund are described later in this section.

Section 201(i) of the Social Security Act authorizes the Managing Trustee to accept and deposit in the trust fund unconditional money gifts or bequests made for the benefit of the fund or for any activity financed through the fund.

Expenditures for benefit payments and administrative expenses under the program are paid out of the trust fund. All expenses incurred by the Department of Health, Education, and Welfare and by the Department of the Treasury in carrying out the supplementary medical insurance provisions of title XVIII of the Social Security Act are charged to the trust fund. The Secretary of Health, Education, and Welfare certifies benefit payments to the Managing Trustee, who makes the payment from the trust fund in accordance therewith.

Hospitals, at their option, are permitted to combine their billing for both hospital costs and physician components of radiology and pathology services rendered hospital inpatients by hospital-based physicians. Where hospitals elect this billing procedure, payments are made initially from the hospital insurance trust fund, with reimbursement later to it from the supplementary medical insurance trust fund. The reimbursements so made are on a provisional basis and are subject to adjustment, with appropriate interest allowances, as the actual experience develops and is analyzed.

The Social Security Amendments of 1967 and 1972 authorize the Secretary of Health, Education, and Welfare to develop and conduct a broad range of experiments and demonstration projects designed to determine various methods of increasing efficiency and economy in providing health care services, while maintaining the quality of such services, under the hospital insurance and supplementary medical insurance programs. The costs of such experiments and demonstration projects are paid out of the hospital insurance and supplementary medical insurance trust funds.

Congress has authorized expenditures from the trust funds for construction, rental, and lease or purchase contract of office buildings and related facilities for the Social Security Administration. Both the capital costs of construction financed directly from the trust fund and the rental, lease, or purchase contract costs of acquiring facilities are included in trust fund expenditures. In 1972-75, construction of several large facilities was authorized under purchase contract authority, wherein initial capital costs are borne by the private sector. Under this method of facilities acquisition, trust fund expenditures for use and ultimate Government ownership of a facility are made over periods

of from 10 to 30 years. Whatever the manner of acquisition, the net worth of facilities and other fixed capital assets is not carried in the statements of the operations of the trust fund presented in this report. This is because the value of fixed capital assets does not represent funds available for benefit or administrative expenditures, and therefore is not viewed as being a consideration in assessing the actuarial status of the funds.

That portion of the trust fund which, in the judgment of the Managing Trustee, is not required to meet current expenditures for benefits and administration is invested in interest-bearing obligations of the U.S. Government (including special public-debt obligations described below), in obligations guaranteed as to both principal and interest by the United States, or in certain federally-sponsored agency obligations that are designated in the laws authorizing their issuance as lawful investments for fiduciary and trust funds under the control and authority of the United States or any officer of the United States. Obligations of these types may be acquired on original issue at the issue price or by purchase of outstanding obligations at their market price.

The Social Security Act authorizes the issuance of special public-debt obligations for purchase exclusively by the trust fund. The law requires that such special public-debt obligations shall bear interest at a rate based on the average market yield (computed by the Managing Trustee on the basis of market quotations as of the end of the calendar month next preceding the date of such issue) on all marketable interest-bearing obligations of the United States forming a part of the public debt which are not due or callable until after the expiration of 4 years from the end of such calendar month.

TABLE 1.—STANDARD MONTHLY PREMIUM RATES AND ADEQUATE ACTUARIAL RATES

	Standard monthly premium rate	Adequate actuarial rate	
		Participants aged 65 and over	Disabled participants under age 65
July 1966–March 1968 .....	\$3.00		
April 1968–June 1970 .....	4.00		
12-month period ending June 30 of—			
1971 .....	5.30		
1972 .....	5.60		
1973 .....	5.80		
1974 <sup>1</sup> .....	6.30	\$6.30	\$14.50
1975 .....	6.70	6.70	18.00
1976 .....	6.70	7.50	18.50
1977 .....	7.20	10.70	19.00
1978 .....	7.70	12.30	25.00

<sup>1</sup> In accordance with limitations on the costs of health care imposed under phase III of the economic stabilization program, the standard premium rate for July and August 1973 was set at \$5.80 and \$6.10, respectively. Effective September 1973, the rate increased to \$6.30.

### SUMMARY OF THE OPERATIONS OF THE TRUST FUND, FISCAL YEAR 1976

A statement of the income and disbursements of the Federal Supplementary Medical Insurance Trust Fund during fiscal year 1976 and of the assets of the fund at the beginning and end of the fiscal year is presented in table 2. Comparable amounts for fiscal year 1975 are also shown in the table.

The total assets of the trust fund amounted to \$1,424 million on June 30, 1975. During fiscal year 1976, total receipts amounted to \$4,994 million, and total disbursements were \$5,200 million. Total assets thus decreased \$206 million during the year to a total of \$1,219 million on June 30, 1976.

Of the total receipts, \$1,783 million represented premium payments by (or on behalf of) participants aged 65 and over, and \$168 million represented premium payments by (or on behalf of) disabled participants under age 65. Total premium payments amounted to \$1,951 million, an increase of 3.4 percent over premium payments by participants in the preceding fiscal year. This increase in premiums from participants resulted primarily from the expected growth in the number of persons enrolled in the supplementary medical insurance program.

Contributions received from the general fund of the Treasury amounted to \$2,939 million. This amount consisted of \$2,206 million representing contributions relating to premiums paid by participants aged 65 and over, \$731 million representing contributions relating to the premiums paid by disabled participants under age 65, and \$3 million in interest on delayed transfers of Government contributions.

TABLE 2.—STATEMENT OF OPERATIONS OF THE SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND DURING FISCAL YEARS 1975 AND 1976

[In thousands of dollars]

	Fiscal year 1975	Fiscal year 1976
Total assets of the trust fund, beginning of year .....	\$1, 272, 177	\$1, 424, 413
Receipts:		
Premiums from participants:		
Participants aged 65 and over .....	1, 736, 209	1, 782, 818
Disabled participants under age 65 .....	150, 753	168, 403
Total premiums .....	1, 886, 962	1, 951, 221
Transfers from general fund of the Treasury:		
Government contributions:		
For premiums received from participants aged 65 and over .....	1, 710, 559	2, 205, 709
For premiums received from disabled participants under age 65 .....	619, 029	730, 629
Total Government contributions .....	2, 329, 588	2, 936, 338
Interest on delayed transfers of Government contributions .....	2	3, 000
Total transfers from general fund of the Treasury .....	2, 329, 590	2, 939, 338
Interest:		
Interest on investments .....	104, 403	103, 670
Interest on amounts of interfund transfers due to adjustment in allocation of administrative expenses and construction costs <sup>1</sup> .....	1, 136	-25
Total interest .....	105, 539	103, 645
Gifts .....		2
Total receipts .....	4, 322, 090	4, 994, 206
Disbursements:		
Benefit payments:		
Paid directly from the trust fund for costs of health services .....	3, 759, 225	4, 665, 003
Transfers to the hospital insurance trust fund for reimbursement of interest loss related to transfer payments made in conjunction with the costs of radiology and pathology services <sup>2</sup> .....	6, 000	6, 000
Total benefit payments .....	3, 765, 225	4, 671, 003
Costs of experiments and demonstration projects <sup>2</sup> .....	172	844

See footnotes at end of table.

TABLE 2.—STATEMENT OF OPERATIONS OF THE SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND DURING FISCAL YEARS 1975 AND 1976—Continued

[In thousands of dollars]

	Fiscal year 1975	Fiscal year 1976
<b>Disbursements—Continued</b>		
Administrative expenses:		
Department of Health, Education, and Welfare <sup>1</sup> .....	423, 316	513, 372
Treasury Department.....	113	125
Railroad Retirement Board.....	1, 101	1, 218
Civil Service Commission.....	72	94
Construction of facilities for Social Security Administration.....	213	144
Interfund transfers due to adjustment in allocation of—		
Administrative expenses <sup>2</sup> .....	—20, 891	13, 138
Construction costs <sup>3</sup> .....	533	156
Gross administrative expenses.....	404, 458	528, 246
Less receipts from sale of surplus supplies, materials, etc.....		30
Net administrative expenses.....	404, 458	528, 216
Total disbursements.....	4, 169, 855	5, 200, 063
Net addition to the trust fund.....	152, 235	—205, 857
Total assets of the trust fund, end of year.....	1, 424, 413	1, 218, 555

<sup>1</sup> A positive figure represents a transfer of interest to the supplementary medical insurance trust fund from the other social security trust funds. A negative figure represents a transfer of interest from the supplementary medical insurance trust fund to the other social security trust funds.

<sup>2</sup> For explanation, see text.

<sup>3</sup> Includes administrative expenses of the carriers and intermediaries.

<sup>4</sup> A positive figure represents a transfer from the supplementary medical insurance trust fund to the other social security trust funds. A negative figure represents a transfer to the supplementary medical insurance trust fund from the other social security trust funds.

The remaining \$104 million of receipts consisted almost entirely of interest on the investments of the trust fund.

Of the \$5,200 million in total disbursements, \$4,665 million represented benefits paid directly from the trust fund for health services covered under title XVIII of the Social Security Act. In addition, transfers were made to the hospital insurance trust fund consisting of \$6 million to adjust for the loss of interest caused by the delay in transferring payments for the costs of radiology and pathology services that were paid initially from the hospital insurance trust fund but that were liabilities of the supplementary medical insurance trust fund. Total benefit payments from the trust fund in fiscal year 1976, therefore, amounted to \$4,671 million, an increase of 24.1 percent over the corresponding amount paid in fiscal year 1975.

Reference has been made in an earlier section to provisions which authorize payment from the trust fund for costs of experiments and demonstration projects in providing health care services. In fiscal year 1976, payments for such costs amounted to about \$844,000.

The remaining \$528 million of disbursements was for net administrative expenses. Administrative expenses are allocated and charged directly to each of the four trust funds—old-age and survivors insurance, disability insurance, hospital insurance, and supplementary medical insurance—on the basis of provisional estimates. Periodically, as actual experience develops and is analyzed, adjustments to the allocations of administrative expenses and costs of construction for prior periods are effected by interfund transfers, with appropriate interest allowances.

In table 3, the experience with respect to actual amounts of participants' premiums, Government contributions, and benefit payments

in fiscal year 1976 is compared with the estimates for fiscal year 1976 which appeared in the 1975 and 1976 annual reports. The actual experience was relatively close to the estimates for premiums and Government contributions. Actual benefit payments were 10 percent higher than estimated in the 1975 report and were quite close to the estimate in the 1976 report.

The assets of the trust fund at the end of fiscal year 1976 totaled \$1,219 million, consisting of \$1,230 million in the form of obligations of the U.S. Government and, as an offset, an overdraft of \$12 million which was covered by the redemption of securities on July 1, 1976. Table 4 shows a comparison of the total assets of the fund and their distribution at the end of fiscal years 1975 and 1976. A comparison of the assets of the trust fund with liabilities for incurred but unpaid benefits (and related administrative expenses) is shown in a later section.

The net decrease in the par value of the investments held by the fund during fiscal year 1976 amounted to \$148 million. New securities at a total par value of \$4,980 million were acquired during the fiscal year, through the investment of receipts and reinvestments of funds made available from the redemption of securities. The par value of securities redeemed during the year was \$5,128 million. Included in these amounts is \$4,818 million in certificates of indebtedness that were acquired and redeemed within the fiscal year.

The effective annual rate of interest earned by the assets of the supplementary medical insurance trust fund during fiscal year 1976 was 7.2 percent. The interest rate on public-debt obligations issued for purchase by the trust fund in June 1976 was 7.5 percent, payable semiannually.

TABLE 3.—COMPARISON OF ACTUAL AND ESTIMATED OPERATIONS OF THE SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND, FISCAL YEAR 1976

[Dollar amounts in millions]

Item	Comparison of actual experience with estimates for fiscal year 1976 published in—				
	1976 report			1975 report	
	Actual amount	Estimated amount	Actual as percentage of estimate	Estimated amount	Actual as percentage of estimate
Premiums from participants.....	\$1, 951	\$1, 921	102	\$1, 913	102
Government contributions.....	2, 939	2, 939	100	2, 939	100
Benefit payments.....	4, 671	4, 687	100	4, 260	110

Note: In interpreting the figures in the above table, reference should be made to the accompanying text.

TABLE 4.—ASSETS OF THE SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND, BY TYPE, AT THE END OF FISCAL YEARS 1975 AND 1976

	June 30, 1975		June 30, 1976	
	Par value	Book value <sup>1</sup>	Par value	Book value <sup>1</sup>
Investments in public-debt obligations sold only to this fund (special issues):				
Notes:				
5½ percent, 1979.....	\$232, 150, 000	\$232, 150, 000. 00	\$51, 094, 000	\$51, 094, 000. 00
6½ percent, 1978.....	129, 200, 000	129, 200, 000. 00	—	—
6½ percent, 1980.....	281, 762, 000	281, 762, 000. 00	281, 762, 000	281, 762, 000. 00

See footnotes at end of table.



TABLE 4.—ASSETS OF THE SUPPLEMENTAL MEDICAL INSURANCE TRUST FUND, BY TYPE, AT THE END OF FISCAL YEARS 1975 AND 1976—Continued

	June 30, 1975		June 30, 1976	
	Par value	Book value <sup>1</sup>	Par value	Book value <sup>1</sup>
Investments in public-debt obligations sold only to this fund (special issues)—Con.				
Bonds:				
7½ percent, 1981	11,547,000	11,547,000.00	11,547,000	11,547,000.00
7½ percent, 1982	11,547,000	11,547,000.00	11,547,000	11,547,000.00
7½ percent, 1983	11,546,000	11,546,000.00	11,546,000	11,546,000.00
7½ percent, 1984	11,546,000	11,546,000.00	11,546,000	11,546,000.00
7½ percent, 1985	11,546,000	11,546,000.00	11,546,000	11,546,000.00
7½ percent, 1986	11,547,000	11,547,000.00	11,547,000	11,547,000.00
7½ percent, 1987	11,547,000	11,547,000.00	11,547,000	11,547,000.00
7½ percent, 1988	11,547,000	11,547,000.00	11,547,000	11,547,000.00
7½ percent, 1989	11,547,000	11,547,000.00	11,547,000	11,547,000.00
7½ percent, 1990	73,510,000	73,510,000.00	73,510,000	73,510,000.00
7½ percent, 1981			8,050,000	8,050,000.00
7½ percent, 1982			8,050,000	8,050,000.00
7½ percent, 1983			8,051,000	8,051,000.00
7½ percent, 1984			8,061,000	8,061,000.00
7½ percent, 1985			8,061,000	8,061,000.00
7½ percent, 1986			8,061,000	8,061,000.00
7½ percent, 1987			8,061,000	8,061,000.00
7½ percent, 1988			8,061,000	8,061,000.00
7½ percent, 1989			8,061,000	8,061,000.00
7½ percent, 1990			8,060,000	8,060,000.00
7½ percent, 1991			81,570,000	81,570,000.00
7½ percent, 1981	61,964,000	61,964,000.00	61,964,000	61,964,000.00
7½ percent, 1982	61,964,000	61,964,000.00	61,964,000	61,964,000.00
7½ percent, 1983	61,964,000	61,964,000.00	61,964,000	61,964,000.00
7½ percent, 1984	61,964,000	61,964,000.00	61,964,000	61,964,000.00
7½ percent, 1985	61,964,000	61,964,000.00	61,964,000	61,964,000.00
7½ percent, 1986	61,963,000	61,963,000.00	61,963,000	61,963,000.00
7½ percent, 1987	61,963,000	61,963,000.00	61,963,000	61,963,000.00
7½ percent, 1988	61,963,000	61,963,000.00	61,963,000	61,963,000.00
7½ percent, 1989	61,963,000	61,963,000.00	61,963,000	61,963,000.00
Total investments in public-debt obligations	1,378,214,000	1,378,214,000.00	1,230,135,000	1,230,135,000.00
Undisbursed balance		46,198,547.97		* -11,579,689.33
Total assets		1,424,412,547.97		1,218,555,310.67

<sup>1</sup> Par value, plus unamortized premium, less discount outstanding.

\* A minus figure represents an overdraft which is covered by the redemption of securities on the 1st working day of the following month.

#### EXPECTED OPERATIONS AND STATUS OF THE TRUST FUND DURING THE PERIOD JULY 1, 1976, TO DECEMBER 31, 1979

Financing for the supplementary medical insurance program is established annually on the basis of standard monthly premium rates (paid by or on behalf of the participants) and adequate actuarial rates (on which general revenue contributions are based) which are applicable to a period of July 1 through the following June 30. In recent years, allowable fee limits for physician services have also been established to apply to the same July 1 to June 30 period.

Standard premium rates and adequate actuarial rates have been promulgated for periods through June 30, 1978. It has been assumed in this report that financing after that time will be established to cover the incurred expenses of the program.

The projections assume that allowable fees for physician services were increased 10.8 percent in the 1976 revision of the fee limits. This revision was delayed approximately 3 months because of technical difficulties in the law that required congressional action. As a result the average increase for the entire 12-month period July 1976 to June 1977 over the prior 12-month period is estimated to be about 7.2 percent. The projections assume that allowable fees will increase 9.5 percent in July 1977. The costs per enrollee for institutional serv-

ices under part B are projected to increase 30 percent for the 12-month period beginning July 1, 1976, over the previous 12 months and an additional 30 percent for the 12-month period beginning July 1, 1977.

Table 5 shows the projected operations of the trust fund on a fiscal year basis through fiscal year 1979. Table 5A shows the corresponding development on a calendar year basis. The trust fund declined in fiscal year 1976 due primarily to cost increases higher than those anticipated when the fiscal year 1976 financing was established. However, the adequate rates for the periods July 1, 1976, to June 30, 1977, and July 1, 1977, to June 30, 1978, were promulgated with a specific margin to improve the status of the trust fund. As a result the fund is projected to increase to \$2.1 billion by the end of fiscal year 1977 and to \$3.1 billion by the end of fiscal year 1978.

TABLE 5.—ESTIMATED PROGRESS OF SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND (CASH BASIS), FISCAL YEARS 1977-79 AND ACTUAL DATA FOR 1967—INTERIM

(In millions of dollars)

Fiscal year	Premiums from participants	Government contributions <sup>1</sup>	Benefit payments	Administration expenses	Interest on fund	Total income	Total expenditures	Balance in fund at end of year <sup>2</sup>
<b>Actual experience:</b>								
1967.....	\$647	\$623	\$664	* \$134	\$15	\$1,285	\$799	\$486
1968.....	698	634	1,390	143	21	1,353	1,532	307
1969.....	903	984	1,645	195	23	1,911	1,840	378
1970.....	936	928	1,979	217	12	1,876	2,196	57
1971.....	1,253	1,245	2,035	248	17	2,516	2,283	290
1972.....	1,340	1,365	2,255	288	29	2,734	2,544	481
1973.....	1,427	1,430	2,391	246	45	2,902	2,637	746
1974.....	1,704	2,029	2,874	409	76	3,809	3,283	1,272
1975.....	1,887	2,330	3,765	404	106	4,322	4,170	1,424
1976.....	1,951	2,939	4,671	529	104	4,994	5,200	1,219
Interim <sup>4</sup> .....	539	878	1,268	133	4	1,421	1,401	1,239
<b>Estimate of future experience:</b>								
1977 <sup>5</sup> .....	2,180	5,053	5,999	507	118	7,351	6,506	2,084
1978 <sup>5</sup> .....	2,374	6,383	7,325	598	181	8,938	7,923	3,099
1979 <sup>5</sup> .....	2,550	6,981	8,677	636	225	9,756	9,313	3,542

<sup>1</sup> The payments shown as being from the general fund of the Treasury include certain interest-adjustment items.

<sup>2</sup> The financial status of the program depends on both the total net assets and the liabilities of the program (see table 7).

<sup>3</sup> Administrative expenses shown include those paid in fiscal 1966 and 1967.

<sup>4</sup> Interim period is period from July 1, 1976 to Sept. 30, 1976.

<sup>5</sup> Beginning with fiscal year 1977 the fiscal year is the 12-month period ending with Sept. 30 of the year indicated.

TABLE 5A.—ESTIMATED PROGRESS OF SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND (CASH BASIS), CALENDAR YEARS 1977-79 AND ACTUAL DATA FOR 1966-76

(In millions of dollars)

Calendar year	Premiums from participants	Government contributions <sup>1</sup>	Benefit payments	Administrative expenses	Interest on fund	Total income	Total expenditures	Balance in fund at end of year <sup>2</sup>
<b>Actual experience:</b>								
1966.....	\$322	\$0	\$128	\$75	\$3	\$324	\$203	\$122
1967.....	640	933	1,197	110	24	1,597	1,307	412
1968.....	832	858	1,518	183	21	1,711	1,702	421
1969.....	914	907	1,855	196	18	1,839	2,061	199
1970.....	1,096	1,093	1,975	238	12	2,201	2,212	188
1971.....	1,302	1,313	2,117	260	24	2,639	2,377	450
1972.....	1,382	1,389	2,325	290	37	2,808	2,614	643
1973.....	1,550	1,705	2,526	318	57	3,311	2,844	1,111
1974.....	1,804	2,225	3,318	410	95	4,124	3,728	1,506
1975.....	1,918	2,648	4,273	462	106	4,673	4,735	1,444
1976.....	2,060	3,810	5,080	542	106	5,977	5,622	1,799
<b>Estimate of future experience:</b>								
1977.....	2,230	5,366	6,328	518	152	7,748	6,846	2,701
1978.....	2,418	6,267	7,662	606	204	8,889	8,268	3,322
1979.....	2,595	7,277	9,016	645	240	10,112	9,661	3,773

<sup>1</sup> The payments shown as being from the general fund of the Treasury include certain interest-adjustment items.

<sup>2</sup> The financial status of the program depends on both the total net assets and the liabilities of the program (see table 7).

## ACTUARIAL STATUS OF THE TRUST FUND

### 1. ACTUARIAL SOUNDNESS OF THE SUPPLEMENTARY MEDICAL INSURANCE PROGRAM

The concept of actuarial soundness, as it applies to the supplementary medical insurance program, is closely related to the concept as it applies to private group insurance. The supplementary medical insurance program is essentially yearly renewable term insurance intended to be self-supporting from premium income paid by the enrollees and from income contributed from general revenue in proportion to premium payments; in testing its actuarial soundness, it is not appropriate to look beyond the period for which the standard premium rate and the level of general revenue financing have been established. Financing has now been established through June 1978.

The primary test of actuarial soundness relates to the adequacy of the income for future years for which the premium rate and the level of general revenue financing have been established. The income for such years should be sufficient to meet the benefits incurred and associated administrative expenses for the period. The law requires the Secretary of Health, Education, and Welfare to establish the income of this basis.

A second test of actuarial soundness is whether the trust fund assets, at the end of the period for which the premium rate and the level of general revenue financing have been established, will be as large as the liabilities for services (and associated administrative expenses) that have been performed but for which reimbursement has not yet been made. This test will be met if the primary test of actuarial soundness has been met for all prior periods, but it may not be met, even though the financing is currently adequate and the primary test is therefore met, if in the past the income was inadequate to meet incurred benefits and administrative expenses.

Even if these two tests of actuarial soundness are not met, the program can continue to operate if the trust fund remains at an adequate level to permit the payment of claims as presented.

### 2. INCURRED EXPERIENCE OF THE SUPPLEMENTARY MEDICAL INSURANCE PROGRAM

Both of the tests of actuarial soundness of the supplementary medical insurance program noted above rely on the incurred experience of the program. Cash disbursements for benefits and administrative expenses by themselves are misleading, due to the relatively large liabilities outstanding at any time for benefits and processing costs that must be paid for services already performed. These liabilities result from the lag between the time that services are performed and the time that payments for them are made.

The experience of the program is substantially more difficult to determine on an incurred basis than on a cash basis. In the early months of program operations, it appears that some bills containing errors were never resubmitted following correction. Payment for some services is reported only on a cash basis, and the incurred experience must be inferred from the cash payment information. For

recent time periods, the tabulations of bills are incomplete due to normal processing delays. Finally, since bills are tabulated for only a sample of beneficiaries, the data is subject to bias and random fluctuation inherent in the sampling process.

Table 6 shows the estimated transactions of the trust fund on an incurred basis. For the reasons stated above, the incurred experience must be viewed as an estimate even for historical years. Various controls, such as cash outlay data, assure that the estimates are reasonably close, however.

Table 6 shows that income during fiscal year 1976 is projected to be less than the cost of services rendered during that year. This results from cost and utilization increases greater than those anticipated at the time the adequate rate for that period was determined. The adequate actuarial rates for the aged for the years ending June 30, 1977 and 1978 contain specific margins to amortize the deficits that result from earlier underfinancing. Thus a surplus of income over outgo is shown for the years ending June 30, 1977 and 1978.

TABLE 6.—ESTIMATED INCOME AND DISBURSEMENTS INCURRED UNDER SUPPLEMENTARY MEDICAL INSURANCE PROGRAM, 12-MONTH PERIODS ENDING JUNE 30, 1967-78

[In millions of dollars]

12-month period ending June 30:	Premiums from participants	Government contributions	Benefit payments	Administrative expenses	Interest on fund	Net of operations in year
Past experience:						
1967	\$647	\$647	\$1, 109	<sup>1</sup> \$190	\$15	\$10
1968	698	698	1, 450	149	21	-182
1969	903	903	1, 774	210	23	-155
1970	936	936	1, 905	209	12	-230
1971	1, 253	1, 253	2, 083	254	17	186
1972	1, 340	1, 340	2, 285	292	29	132
1973	1, 427	1, 427	2, 513	259	45	127
1974	1, 704	2, 031	3, 147	448	76	216
1975	1, 887	2, 395	3, 981	427	106	-20
1976	1, 951	2, 970	4, 971	563	107	-506
Projected:						
1977	2, 129	4, 652	5, 950	539	124	416
1978	2, 330	5, 849	7, 407	610	184	346

<sup>1</sup> Includes administrative expenses incurred prior to the beginning of the program.

### 3. ACCUMULATED SURPLUS OR DEFICIT OF THE PROGRAM

The liability outstanding at any time for the cost of services performed for which no payment has been made may be referred to as "benefits incurred but unpaid". Estimates of the amount of benefits incurred but unpaid as of June 30 of each year, and of the administrative expenses related to processing these benefits, appear in table 7.

TABLE 7.—SUMMARY OF ESTIMATED ASSETS AND LIABILITIES OF THE SUPPLEMENTARY MEDICAL INSURANCE PROGRAM, ON JUNE 30, 1967-78  
[Dollar amounts in millions]

	Past experience as of June 30—										Projected as of June 30—	
	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
<b>Assets:</b>												
Balance in trust fund.....	\$486	\$307	\$378	\$57	\$290	\$481	\$746	\$1,272	\$1,424	\$1,219	\$1,925	\$2,846
Government contributions due and unpaid.....	24	88	7	15	22	-3	-7	-5	66	100	117	0
<b>Total assets.....</b>	<b>510</b>	<b>395</b>	<b>385</b>	<b>72</b>	<b>312</b>	<b>478</b>	<b>739</b>	<b>1,267</b>	<b>1,490</b>	<b>1,319</b>	<b>2,042</b>	<b>2,846</b>
<b>Liabilities:</b>												
Benefits incurred but unpaid.....	445	505	634	560	608	638	760	1,033	1,249	1,549	1,830	2,251
Administrative cost thereon.....	56	62	77	69	75	79	92	131	154	188	214	249
<b>Total liabilities.....</b>	<b>501</b>	<b>567</b>	<b>711</b>	<b>629</b>	<b>683</b>	<b>717</b>	<b>852</b>	<b>1,164</b>	<b>1,403</b>	<b>1,737</b>	<b>2,044</b>	<b>2,500</b>
<b>Net surplus (or deficit).....</b>	<b>9</b>	<b>-172</b>	<b>-326</b>	<b>-557</b>	<b>-371</b>	<b>-239</b>	<b>-113</b>	<b>103</b>	<b>87</b>	<b>-418</b>	<b>-2</b>	<b>346</b>
<b>Ratio of assets to liabilities.....</b>	<b>1.02</b>	<b>.70</b>	<b>.54</b>	<b>.11</b>	<b>.46</b>	<b>.67</b>	<b>.87</b>	<b>1.09</b>	<b>1.06</b>	<b>.76</b>	<b>1.00</b>	<b>1.14</b>

For most years of the program, the assets have not been as large as the outstanding liabilities. Nonetheless, the fund has remained positive allowing claims to be paid. As of June 1974 and 1975 assets slightly exceeded the estimated liability for incurred but unpaid claims and associated administrative expenses, and thus the program could be considered sound according to the second test of actuarial soundness stated earlier.

The financing deficit in fiscal year 1976 referred to above resulted in a program deficit of \$418 million at the end of June 1976. However, the trust fund remained substantial and at an adequate level to permit the payment of claims. Although the deficit did not interfere with the operation of the program, it was still serious in that it indicated that liabilities were not being funded as they occurred. Thus, if the program should have terminated or if the funding scheme should have been changed, there would not have been sufficient assets available to pay for all service incurred to the date of the change.

Consequently, specific margins were included in the aged actuarial rates for the 12-month periods ending June 30, 1977 and 1978 to amortize the deficit in fiscal year 1976. If experience develops as projected, the trust fund assets for the 12-month periods ending June 30, 1977 and 1978 will grow both as absolute dollar amounts and as a percentage of liabilities during those years, and by June 30, 1978, the assets should exceed the outstanding liabilities.

#### 4. SENSITIVITY TESTING

Some of the assumptions underlying the projection presented in this report are highly uncertain, and variations in these assumptions would have a substantial impact on expenditures. In order to test the future status of the program under varying assumptions, a low cost projection and a high cost projection were prepared by varying these key assumptions. These assumptions and the resulting status of the trust fund are shown in table 8 along with the intermediate projection used in this report.

TABLE 8.—ACTUARIAL STATUS OF THE SMI TRUST FUND UNDER 3 SETS OF ASSUMPTIONS FOR THE 12-MONTH PERIOD ENDING WITH JUNE OF THE YEAR SHOWN

	Intermediate projection (this report)		Low-cost projection		High-cost projection	
	1977	1978	1977	1978	1977	1978
Per enrollee increases over prior year in:						
Physician fees (percent).....	<sup>1</sup> 10.8	9.5	10	9	12	10.5
Physician utilization (percent).....	3.0	3.0	2	2	6	6.0
Outpatient hospital and home health agencies (percent).....	30.0	30.0	20	20	50	50.0
Assets as of June 30 (in millions).....	\$2,042	\$2,846	\$2,150	\$3,274	\$1,799	\$1,836
Liabilities as of June 30 (in millions).....	2,044	2,500	2,005	2,397	2,135	2,750
Assets minus liabilities (in millions).....	-2	346	145	877	-336	-914
Ratio of assets to liabilities.....	100	114	107	137	84	67

<sup>1</sup> The effective rate of increase is lower than that shown because of the delay in updating the fee screens as discussed in the text.

The average increase in allowable physician fees is made uncertain primarily by the recent introduction of an economic index which restricts the increase in prevailing fees. The intermediate projection assumes that this index will reduce average fee increases by approximately 1.5 percentage points in the first two years of operation and by 2 percentage points thereafter. The low cost projection assumes that the index will have a greater effect, and the high cost projection assumes that it will have a lesser effect.

Increases in the use of physician services per enrollee is projected to be near the long term historical level by 1977 in the intermediate projection. The low cost projection assumes that increases in utilization will drop below historical levels. The high cost projection assumes that the high increases experienced in fiscal years 1973 to 1975 will continue. A similar rationale underlies the selection of assumptions for outpatient hospital and home health services.

Table 8 indicates that under the low cost assumptions, the trust fund assets will exceed liabilities by June 1977. Under the high cost assumptions, the deficit will increase substantially but the trust fund will remain positive allowing claims to be paid.

#### CONCLUSION

The financing of the supplementary medical insurance program has been established through June 30, 1978, by the promulgation of standard monthly premium rates (paid by or on behalf of the enrollee) of \$7.20 for the year ending June 30, 1977, and \$7.70 for the year ending June 30, 1978, and adequate actuarial rates which determine the amount to be contributed from general revenue on behalf of each enrollee.

The rates for fiscal year 1976 were inadequate due to cost and utilization increases larger than anticipated at the time the rates were established. As a result, the trust fund decreased \$206 million during fiscal year 1976 to \$1,219 million. The rates promulgated for the periods July 1976 through June 1977 and July 1977 through June 1978 are projected to be sufficient to cover benefit and administrative costs incurred during those periods and to make up the deficiency incurred during fiscal year 1976. Accordingly the trust fund is projected to increase by \$706 million during the 12-month period ending June 30, 1977, to a level of \$1,925 million and by \$921 million during the 12-month period ending June 30, 1978 to a level of \$2,846 million. The trust fund assets would then nearly cover program liabilities by June 30, 1977, and would be 14 percent greater than liabilities by June 30, 1978.

Under the intermediate assumptions used in this report, and under alternate, more pessimistic, assumptions the fund is projected to remain positive throughout the period for which financing has been established allowing claims to be paid as presented.

## APPENDIX A

### STATEMENT OF ACTUARIAL ASSUMPTIONS AND BASES EMPLOYED IN DETERMINING THE MONTHLY ADEQUATE ACTUARIAL RATES AND THE STANDARD MONTHLY PREMIUM RATE FOR THE SUPPLEMENTARY MEDICAL INSURANCE PROGRAM BEGINNING JULY 1977 <sup>1</sup>

This is a statement of actuarial assumptions and bases employed in determining the adequate actuarial rates and the standard monthly premium rate for the supplementary medical insurance program (SMI) for the period July 1977 through June 1978. The monthly adequate actuarial rate for enrollees age 65 and over is \$12.30. The monthly adequate actuarial rate for disabled enrollees is \$25.00. The standard monthly premium rate for both types of enrollees is \$7.70.

#### I. ACTUARIAL STATUS OF THE SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND

The law requires that the SMI program be financed on an incurred basis. That is, the income to the program during the 12-month period for which adequate rates are effective must be sufficient to pay for services (including associated administrative costs) rendered during that period even though payment for some of these services will not be made until after the close of the period. The portion of income required to cover those benefits not paid until after the close of the year is added to the trust fund until needed. Thus, the trust fund at any time should be equal to the cost of the benefits and administration incurred but not yet paid. Because the adequate rates are established prospectively, they are subject to projection error. As a result, the income to the program may not be equal to incurred costs, and therefore the trust fund may not be equal to the value of incurred but unpaid expenses. Modest deficiencies in the trust fund balance do not interfere with the operation of the program if the fund is large relative to outlays and if future financing is established to correct the deficiencies. Table I summarizes the estimated actuarial status of the trust fund as of June 30, 1975, 1976, and 1977.

TABLE I  
[In millions of dollars]

Year ending June 30—	Assets at end of period	Liability for incurred but Unpaid Services	Assets- liabilities
1975.....	\$1,484	\$1,399	\$85
1976.....	1,308	1,732	-424
1977.....	1,945	2,055	-110

<sup>1</sup> This statement appeared in the Federal Register of December 22, 1976. Projections shown in this statement differ slightly from the projections shown in the rest of this report because of minor changes in assumptions since the rates were promulgated.



The sizable deficit shown at the end of fiscal year 1976 results from program cost increases substantially in excess of those anticipated in setting the adequate rates for 1976. The adequate rates for the year ending June 30, 1977, contain a margin which is expected to decrease the program deficit by about \$300 million at the end of that year. This remaining deficiency must be considered in establishing the financing for subsequent years.

## II. MONTHLY ADEQUATE ACTUARIAL RATES FOR ENROLLEES AGE 65 AND OLDER

The monthly adequate actuarial rate is one-half the monthly projected per capita cost for benefits and administrative expenses adjusted to allow for interest earnings on the fund, to allow for a contingency margin, and to allow for amortization of the program surplus or deficit.

The monthly adequate actuarial rate for enrollees age 65 and older for the year ending June 30, 1978, was determined by projecting the fiscal year 1975 per capita cost by type of service. The projected costs for the years ending June 30, 1975, 1976, 1977, and 1978 are shown in table II. The 1975 values were established from program data. Subsequent years were projected using a combination of program data and data from external sources. The projection factors used are shown in table III.

TABLE II.—DERIVATION OF SMI AGED MONTHLY RATE REQUIRED FOR YEARS ENDING JUNE 30, 1975-78

	1975	1976	1977	1978
<b>Covered services (at level recognized):</b>				
Physicians' reasonable charges.....	\$8.20	\$9.34	\$10.41	\$12.25
Radiology and pathology.....	.36	.43	.49	.57
Group practice plans.....	.17	.21	.25	.28
Independent lab.....	.07	.07	.08	.09
Home health agencies.....	.14	.18	.24	.31
Outpatient hospital and other institutions.....	.98	1.28	1.66	2.16
<b>Total services.....</b>	<b>9.92</b>	<b>11.51</b>	<b>13.13</b>	<b>15.66</b>
<b>Cost sharing:</b>				
Deductible.....	-1.67	-1.70	-1.72	-1.73
Coinsurance.....	-1.55	-1.85	-2.14	-2.62
<b>Total benefits.....</b>	<b>6.70</b>	<b>7.96</b>	<b>9.27</b>	<b>11.31</b>
<b>Administrative expenses.....</b>	<b>.72</b>	<b>.90</b>	<b>.90</b>	<b>.97</b>
<b>Incurred expenditures.....</b>	<b>7.42</b>	<b>8.86</b>	<b>10.17</b>	<b>12.28</b>
Value of interest on fund.....	-.19	-.18	-.16	-.27
<b>Margin for contingencies and to amortize unfunded liabilities.....</b>	<b>-.53</b>	<b>-1.18</b>	<b>.69</b>	<b>.29</b>
<b>Promulgated rate.....</b>	<b>6.70</b>	<b>7.50</b>	<b>10.70</b>	<b>12.30</b>

TABLE III  
[In percent]

	Year ending June 30—		
	1976	1977	1978
Physicians' services:			
Fees <sup>1</sup> .....	8.5	<sup>2</sup> 10.8	9.5
Number and mix <sup>3</sup> .....	5.0	4.0	4.0
Outpatient hospital and home health agencies.....	30.0	30.0	30.0
Group practice plans.....	25.0	15.0	15.0
Other.....	20.0	15.0	15.0

<sup>1</sup> As paid by the program.

<sup>2</sup> Increase in the number of services received per capita and greater relative use of more expensive services.

<sup>3</sup> Reasonable charges were updated later than July 1, 1976, in most areas so the average cost increase shown in table II is less than 10.8 percent.

The projected monthly rate required to pay for one-half of the total of benefits and administrative costs for the year ending June 30, 1978, net of interest is \$12.01. The monthly actuarially adequate rate of \$12.30 will eliminate the remaining deficit if the assumptions used in this projection are realized.

### III. ADEQUATE ACTUARIAL RATE FOR THE DISABLED

The monthly adequate actuarial rate for disabled enrollees applies to persons eligible because they have been entitled to disability insurance benefits for not less than 24 consecutive months or because they are suffering from end stage renal disease. Projections for disabled beneficiaries (other than those suffering from end stage renal disease) are prepared in an exactly parallel fashion as projections for the aged using the same actuarial assumptions. Costs for the end stage renal disease program are projected using a computer model because of the complex demographic problems involved. The combined results for all disabled beneficiaries are shown in table IV. The monthly rate required to pay for one-half of the total of benefits and administrative costs for disabled beneficiaries for the year ending June 30, 1978, net of interest earnings is projected to be \$24.41. The monthly actuarially adequate rate of \$25.00 provides a small margin for contingencies.

TABLE IV.—DERIVATION OF SMI DISABLED MONTHLY RATE REQUIRED FOR YEAR ENDING JUNE 30, 1975-78

	1975	1976	1977	1978
Total benefits.....	\$12.15	\$15.53	\$18.88	\$22.97
Administrative expenses.....	1.30	1.76	1.83	1.98
Incurred expenditures.....	13.45	17.29	20.71	24.95
Value of interest on fund.....	— .34	— .35	— .32	— .54
Margin for contingencies and to amortize unfunded liabilities.....	4.89	1.56	—1.39	.59
Promulgated monthly rate.....	18.00	18.50	19.00	25.00

## IV. SENSITIVITY TESTING

Several factors contribute to uncertainty about future trends in medical care costs. In view of this, it seems appropriate to test the adequacy under alternate assumptions of the rates promulgated here. The most unpredictable factors which contribute significantly to future costs are outpatient hospital costs, physician utilization, and the increase in physician fees as constrained by the reasonable charge screens and the newly implemented economic index. (Utilization here is measured indirectly and refers to increased costs per capita due to added visits, the use of more expensive services, and other factors not explained by simple price per service increases.) Two alternative sets of assumptions and the results of those assumptions are shown in table V. All assumptions not shown in table V are the same as in table III.

Table V indicates that under fairly optimistic assumptions the monthly rates promulgated will result in a surplus of \$523 million by the end of June 1978. Under fairly pessimistic assumptions the deficit increases to \$994 million but the trust fund remains positive allowing the program to continue paying claims as presented.

## V. STANDARD PREMIUM RATE

The law provides that the standard monthly premium rate, promulgated in December to apply for both aged and disabled enrollees under the supplementary medical insurance program, shall be the lesser of:

1. The actuarial rate for enrollees age 65 and older; or
2. The standard monthly premium currently being charged, increased by the same percentage that old-age, survivors, and disability insurance benefits were increased since the May preceding the promulgation (and rounded to the nearer dime).

The standard monthly premium currently being charged is \$7.20. The OASDI benefit table was increased 6.4 percent in June 1976. The \$7.20 rate increased by 6.4 percent is \$7.70 rounded to the nearer 10 cent multiple. Since this is less than the \$12.30 actuarial rate, the standard premium rate is \$7.70 for the 12 months ending with June 1978.

TABLE V.—ACTUARIAL STATUS OF THE SMI TRUST FUND UNDER 3 SETS OF ASSUMPTIONS

	This projection		Low assumption		High assumption	
	1977	1978	1977	1978	1977	1978
Per enrollee increases in:						
Physician fees (percent).....	10.8	9.5	10	9	12	10.5
Physician utilization <sup>1</sup> (percent).....	4.0	4.0	3	3	6	6.0
Outpatient hospital and home health agencies (percent).....	30.0	30.0	25	25	50	50.0
Assets as of June 30 (in millions).....	\$1,945	\$2,645	\$2,029	\$2,970	\$1,741	\$1,773
Liabilities as of June 30 (in millions).....	2,055	2,533	2,021	2,447	2,140	2,767
Trust fund—liabilities.....	—110	112	8	523	—399	—994

<sup>1</sup> Increase in the number of services received per capita and greater relative use of more expensive services.

## APPENDIX B

### ACTUARIAL METHODOLOGY AND PRINCIPAL ASSUMPTIONS FOR COST ESTIMATES FOR THE SUPPLEMENTARY MEDICAL INSURANCE PROGRAM

#### 1. SUMMARY OF THE METHODOLOGY

##### *a. Aged beneficiaries:*

Estimates for aged beneficiaries are prepared by establishing, as accurately as possible, reasonable charges incurred per person in a recent year (fiscal 1975 for this report) and projecting these charges through the estimating period. The per capita charges are then converted to reimbursement amounts by subtracting out the per capita values of deductibles and coinsurance. Aggregate reimbursement amounts are calculated by multiplying the per capita values by the projected enrollment. Finally, in order to estimate the cash disbursements of the program an allowance is made for the delay between receipt of a service and payment therefor.

##### *b. Disabled beneficiaries:*

Persons on the disability insurance rolls for at least 24 months and persons suffering from chronic kidney disease first became eligible for coverage under SMI in July 1973. The experience of these enrollees has not yet matured in the sense that an accurate historical series of their cost patterns cannot be constructed from the sparse data so far available. Also, the number of covered chronic kidney disease patients is expected to continue to increase rapidly for the next few years. Therefore certain modifications in the projection methodology have been required for these beneficiaries, and further modifications may be necessary in the future as experience emerges.

#### 2. ESTIMATES FOR AGED BENEFICIARIES

##### *a. Establishing a suitable base for projection:*

###### *(1) Physician Services:*

Reimbursement amounts for physician services (and a small amount of other services) are paid through fiscal intermediaries, referred to as carriers. The carriers determine whether billed services are covered under the program and determine the allowable charge for the service. The amount reimbursed after reductions for coinsurance and the deductible is transmitted to the Social Security Administration in the form of a payment record.

Payment records for 0.1 percent of aged beneficiaries are tabulated by date of service, thus putting the data base on an incurred basis. Having the data on an incurred basis makes it possible to meet the statutory requirement that the program be financed on this basis and also makes possible comparison of program experience with non-program data sources.

Certain minor adjustments are made to the tabulated sample data to correct for biases and random fluctuation inherent in the sampling process. The incurred reimbursement amounts for fiscal year 1967 through 1975 are shown in table B1. Also shown are the average enrollment figures for each of those years and the average reimbursement per capita.

Finally, as a check on the quality of the tabulations, the incurred expenses are compared with the cash expenditures reported by the carriers through an independent reporting system. In a program with continuously increasing expenditures it is to be expected that cash payments will be slightly lower than incurred expenses except in the first year when the difference should be substantial. These differences between cash and incurred expenses occur because of the lag between receipt of services and payment therefor. Table B1 also shows the cash expenditures related to services reported on payment records.

TABLE B1.—AGED BENEFITS PAID FOR SERVICES ON PAYMENT RECORDS

Fiscal year	Average enrollment (millions)	Incurred		Cash	
		Total (millions)	Per capita	Total (millions)	Per capita
1967	17.750	\$1,055	\$59.49	\$635	\$35.77
1968	18,038	1,335	74.01	1,322	73.29
1969	18,833	1,557	82.67	1,518	80.60
1970	19,312	1,665	86.22	1,661	86.01
1971	19,664	1,801	91.59	1,782	90.62
1972	20,043	1,993	99.44	1,964	97.99
1973	20,428	2,175	105.47	2,095	102.56
1974	20,988	2,433	116.16	2,359	112.40
1975	21,471	2,948	137.33	2,782	129.57

### (2) *Institutional Services:*

Institutional services under part B of Medicare are paid by the same fiscal intermediaries that pay for part A services. The principal institutional services covered under part B are for outpatient hospital care and home health agency services.

Reimbursement for institutional services occurs in two stages. Provider bills are submitted to the intermediaries and an interim payment is made based on these bills. The bills are then submitted to SSA, and tabulations are prepared in a manner parallel to that for payment records and for the same sample of beneficiaries.

At the close of the provider's accounting period, a cost report is submitted, and lump-sum payments or recoveries are made to correct for the difference between interim payments made to providers and their actual cost for providing services (net of coinsurance and deductible amounts). The amounts of these final settlements are reported on a cash basis, and approximations are necessary to allocate these payments to time of service.

Table B2 shows the approximate total incurred reimbursement amounts and the actual cash expenditures as reported on both an interim and final settlement basis.

TABLE B2.—AGED BENEFITS PAID FOR INSTITUTIONAL SERVICES

Fiscal year	Average enrollment (millions)	Incurred benefits		Cash benefits			
		Total (millions)	Per capita	Interim	Final	Total	Per capita
1967.....	17.750	\$40	\$2.25	\$18.1	\$0.1	\$18.2	\$1.03
1968.....	18.038	70	3.88	55.4	1.0	56.4	3.13
1969.....	18.833	120	6.37	91.5	4.7	96.2	5.11
1970.....	19.312	135	6.99	102.3	26.2	128.5	6.65
1971.....	19.664	182	9.26	111.9	50.4	162.3	8.25
1972.....	20.043	202	10.08	140.4	71.7	212.1	10.58
1973.....	20.428	251	12.29	160.3	59.7	220.0	10.77
1974.....	20.988	271	12.91	198.1	50.1	248.2	11.83
1975.....	21.471	401	18.67	338.0	58.9	396.9	18.49

*(3) Other Services:*

Group practice prepayment plans are reimbursed directly by the Social Security Administration on a cost basis. Data are available for these payments only on a cash basis, and approximations must be made to assign expenses to the period when services were rendered.

Certain hospital based physicians are reimbursed through the hospital, and payments are reported only on a cash basis. Again, the incurred cost must be approximated from the cash data.

*b. Analysis of historical trends:*

Table B3 summarizes the incurred reimbursement amounts per capita for the various services described through fiscal year 1975. In order to analyze the historical trends in prices and use of services, these reimbursement amounts are converted to the reasonable charges or costs on which reimbursement was based. This is necessary largely because the fixed deductible becomes a smaller percentage of charges each year and thus causes reimbursement to rise faster than charges or costs.

Table B4 shows the covered charges per capita corresponding to the reimbursement values shown in table B3.

TABLE B3.—SUMMARY OF AGED INCURRED BENEFITS PER CAPITA

Fiscal year	All services	Physician services <sup>1</sup>	Inpatient radiology and pathology <sup>2</sup>	Outpatient hospital	Home health agencies	Group practice plans
1967.....	\$62.55	\$59.49	.....	\$1.48	\$0.77	\$0.81
1968.....	80.37	73.36	\$1.89	2.47	1.41	1.24
1969.....	94.19	79.84	6.57	4.41	1.96	1.41
1970.....	98.66	83.11	7.14	5.49	1.50	1.42
1971.....	105.90	87.91	7.21	8.16	1.10	1.52
1972.....	114.03	95.60	6.77	9.04	1.02	1.60
1973.....	123.03	101.84	6.99	11.19	1.10	1.91
1974.....	134.35	101.36	7.78	11.50	1.42	2.29
1975.....	160.53	130.59	8.56	15.89	2.78	2.71

<sup>1</sup> Includes all services on payment record (other than for inpatient radiology and pathology after 1967).

<sup>2</sup> Includes services on payment records and those using combined billing; amounts shown are for April 1968 and later when combined billings are authorized and inpatient radiology and pathology charges are reimbursed at 100 percent.

TABLE B4.—INCURRED REASONABLE CHARGES OR COSTS PER CAPITA FOR THE AGED: PAST EXPERIENCE

Fiscal year	All services	Physician services <sup>1</sup>	Inpatient radiology and pathology <sup>2</sup>	Outpatient hospital	Home health agencies	Group practice plan
1967	\$109.58	\$104.20	-----	\$2.59	\$1.37	\$1.42
1968	128.49	118.34	\$1.89	3.98	2.28	2.00
1969	146.30	127.32	6.57	7.03	3.13	2.25
1970	152.40	131.90	7.14	8.71	2.38	2.27
1971	162.14	138.00	7.21	12.81	1.73	2.39
1972	172.77	147.96	6.77	13.98	1.58	2.48
1973	187.22	158.30	6.99	17.39	1.56	2.98
1974	204.40	173.32	7.78	17.89	1.85	3.56
1975	237.90	198.29	8.56	23.57	3.38	4.10

<sup>1</sup> Includes all services paid on the basis of reasonable charges (except those for inpatient radiology and pathology after 1967).

<sup>2</sup> Includes services on payment records and those using combined billing; amounts shown are for April 1968 and later when combined billings are authorized and inpatient radiology and pathology charges are reimbursed at 100 percent.

*c. Increase in per capita reasonable charges for physician services:*

Per capita charges for physician services are affected by a variety of factors. Some of these can be identified explicitly. Others can only be recognized by the fact that the explicitly quantifiable factors do not explain all of the increase in per capita charges year to year.

*(1) Charges:*

Increase in average charge per service is one of the important elements creating increasing charges per capita. The physician services component of the consumer price index provides a reasonable estimate of the increase in charges per service. Increases in this index are shown in the first column of table B5.

Bills submitted to the carriers for payment are subject to reduction (according to statute) if they exceed the median charge that the physician assessed for that particular service in the calendar year preceding the fiscal year in which the bill is submitted. (This median charge is called the "customary" charge.) Bills are subject to further reduction if they exceed the prevailing charge for the locality. (Prevailing charge is defined as the 75th percentile of customary charges for a particular service in a particular area.) The customary and prevailing charge limits maintained by the carrier are called "fee screens." Recognized fees are the charges after they have been reduced by the fee screens.

The average reduction in submitted fees has increased each year due both to deliberate administrative actions and to differentials in the rate of increase of fees between the calendar year in which the screens are established and the fiscal year in which the screens are applied. The result is that the recognized fees have grown more slowly than submitted fees. Column 2 of table B5 shows the extent to which increases in submitted fees have been reduced each year by the screens. Column 3 shows the resulting increase in recognized fees.

*(2) Residual Effects:*

Per capita charges are also increased each year as a result of more physician visits per enrollee, increasing use of specialists and more expensive techniques and other factors. Column 6 of table B5 shows the increase in charges per capita resulting from these residual causes. Because the measurement of increased recognized charges per service is subject to error, this error is also included under residual causes.

The proportion of claims that are denied for non-covered care has increased in most years. Changes in the denial rate can be identified from program data and are shown in column 5 of table B5. Thus it is possible to see the growth rate of these residual elements without the distorting effects of denial changes. This increase rate is shown in column 4 of table B5. This column is used in the projection to indicate the amount of cost increases to be expected in the future from residual causes.

The last column of table B5 shows the total increase in charges per capita for services paid through carriers. It includes the effects of all the items discussed above.

TABLE B5.—COMPONENTS OF INCREASES IN REASONABLE CHARGES PER CAPITA FOR PHYSICIAN AND MISCELLANEOUS SERVICES<sup>1</sup>

[In percent]							
Fiscal year	CPI for physician's fees (1)	Effect of screens <sup>2</sup> (2)	Recognized fees (1)+(2) (3)	Residual causes (4)	Effect of denials <sup>3</sup> (5)	Net residual (4)+(5) (6)	Recognized charge (3)+(6) (7)
1968-----	5.9	-0.6	5.3	9.7	-1.4	8.3	13.6
1969-----	6.2	-1.4	4.8	3.2	-0.4	2.8	7.6
1970-----	6.7	-2.8	3.9	2.8	-3.1	-0.3	3.6
1971-----	7.5	-3.0	4.5	3.3	-3.2	0.1	4.6
1972-----	5.2	-1.2	4.0	2.8	+0.4	3.2	7.2
1973-----	2.6	-0.5	2.1	5.5	-0.6	4.9	7.0
1974-----	5.0	-1.6	3.4	6.7	-0.6	6.1	9.5
1975-----	12.8	-3.5	9.3	5.4	-0.3	5.1	14.4

<sup>1</sup> Increase over prior year.

<sup>2</sup> Change in reduction due to screen from previous to current year.

<sup>3</sup> Change in denials from previous to current year.

*d. Per capita cost increases for other services:*

The historical increases in per capita cost for physician services and for other services covered by the program are shown in table B6. The year-to-year changes in some services are quite erratic and provide little guidance to future trends in these components.

TABLE B6.—INCREASES IN REASONABLE CHARGES AND COSTS INCURRED PER CAPITA FOR THE AGED (AS RECOGNIZED BY THE PROGRAM)<sup>1</sup>

[In percent]					
Year ending June 30—	Physician services <sup>2</sup>	Inpatient radiology and pathology	Outpatient hospital	Home health agencies	Group practice plans
1968-----	13.6	-----	53.7	66.4	40.8
1969-----	7.6	-13.1	76.6	37.3	12.5
1970-----	3.6	8.7	23.9	-24.0	0.9
1971-----	4.6	1.0	47.1	-27.3	5.3
1972-----	7.2	-6.1	9.1	-8.7	3.8
1973-----	7.0	3.2	24.4	-1.3	20.2
1974-----	9.5	11.3	2.9	18.6	19.5
1975-----	14.4	10.0	31.7	82.7	15.2

<sup>1</sup> Increase over prior year.

<sup>2</sup> Includes all services paid for on the basis of reasonable charges except those for inpatient professional radiology and pathology.



e. *Projected increases in recognized charges and costs per capita:*

(1) *Physician Services:*

The projection factors for the cost of physician services are shown in table B7. Column 1 shows the increase in recognized charges that are projected to result from the operation of the fee screens. As explained earlier, these screens are updated based on the experience of the calendar year preceding their implementation. After July 1, 1975, prevailing fees are to be limited by an economic index intended to represent increases in the cost of a physician's practice. There is not sufficient experience available at this time to be able to judge the final impact of this index. Presumably the effect will vary year to year depending on relative increases of recognized fees and the index itself. Based on the very limited evidence since July 1, 1975, and some information on historical values of components of the index, it is assumed that, on the average, the index will retard charge increases by about 1½ percentage points for the first two years and 2 percentage points thereafter. The residual increases through June 1976 are estimated mostly from cash flow experience through the date of this report. After that period the residuals are assumed to be close to the historical level.

TABLE B7.—COMPONENTS OF INCREASES IN REASONABLE CHARGES PER CAPITA FOR PHYSICIAN AND MISCELLANEOUS SERVICES<sup>1</sup>

[In percent]

	Actual fees with fee screens	Effect of economic index <sup>2</sup>	Recognized fees	Net residual	Recognized charges
Year ending June 30—					
1976.....	10.0	—1.5	8.5	5.4	13.9
1977.....	<sup>3</sup> 12.3	—1.5	<sup>3</sup> 10.8	3.3	<sup>3</sup> 14.1
1978.....	11.5	—2.0	9.5	3.3	12.8
1979.....	10.0	—2.0	8.0	3.2	11.2
1980.....	8.0	—2.0	6.0	3.2	9.2

<sup>1</sup> Increase over prior year.

<sup>2</sup> Percentage by which the economic index reduces the average rate of increase in recognized fees in the year.

<sup>3</sup> The effective increases are lower than those shown here because of the delay in updating the fee screens discussed in the main text of this report.

(2) *Other Services:*

Table B8 shows the projected increases in charges or costs per capita for physician services and other services. The factors for non-physician services through June 1976 are chosen to be consistent with cash-flow data through the time of this report. After that time the factors reflect historical levels of increases.

TABLE B8.—PROJECTED INCREASES IN RECOGNIZED CHARGES AND COSTS INCURRED PER CAPITA FOR THE AGED<sup>1</sup>  
(In percent)

	Physician services <sup>2</sup>	Inpatient radiology and pathology	Outpatient hospital	Home health agencies	Group practice plans
Year ending June 30—					
1976-----	13.9	20.0	30.0	30.0	25.0
1977-----	<sup>3</sup> 14.1	15.0	30.0	30.0	15.0
1978-----	12.8	15.0	30.0	30.0	15.0
1979-----	11.2	15.0	20.0	20.0	15.0
1980-----	9.2	15.0	20.0	20.0	15.0

<sup>1</sup> Increase over prior year.

<sup>2</sup> Includes all services paid on the basis of reasonable charges except those for inpatient professional radiology and pathology.

<sup>3</sup> Increase reflects update of fee screens on July 1, 1976. However, the actual update was delayed producing an average increase of 10.4 percent for the year.

### (3) Aggregate Benefits:

Table B9 shows the per capita charges or costs for fiscal year 1976 and the projections of those charges or costs based on the assumptions in table B8.

TABLE B9.—INCURRED RECOGNIZED CHARGES AND COSTS PER CAPITA FOR THE AGED: PROJECTION

	All services	Physician services <sup>1</sup>	Inpatient radiology and pathology	Outpatient hospital	Home health agencies	Group practice plans
Year ending June 30—						
1976-----	\$276.27	\$225.84	\$10.27	\$30.64	\$4.39	\$5.13
1977-----	312.60	<sup>2</sup> 249.35	11.81	39.83	5.71	5.90
1978-----	370.12	290.55	13.58	51.78	7.42	6.79
1979-----	417.65	323.18	15.62	62.14	8.90	7.81
1980-----	465.06	352.87	17.96	74.57	10.68	8.98

<sup>1</sup> Includes all services paid on the basis of reasonable charges except those for inpatient radiology and pathology.

<sup>2</sup> This figure reflects the delay in updating the fee screens.

Table B10 shows the total reimbursement amounts per capita that result from subtracting the average amounts of copayment per period from the total covered charges in table B9.

TABLE B10.—PROJECTED BENEFITS INCURRED PER CAPITA<sup>1</sup>

Year ending June 30—	Benefits Incurred
1976-----	\$191.27
1977-----	220.45
1978-----	266.82
1979-----	305.25
1980-----	343.82

<sup>1</sup> For aged beneficiaries only.

Finally, the aggregate expenditures for aged beneficiaries are derived by multiplying average enrollment by average reimbursement for benefits. Table B11 shows this calculation. Table B11 also shows the cash outlays that result from allowing for the lag between time of service and time of payment.

TABLE B11.—PROJECTION OF AGGREGATE INCURRED BENEFITS AND CASH BENEFITS PAID FOR THE AGED

	Average enrollment (millions)	Benefits incurred		Fiscal year	Aggregate benefits paid (millions)
		Per capita	Aggregate (millions)		
Year ending June 30—					
1976.....	21,991	\$191.27	\$4,208	1976	\$3,970
1977.....	22,407	220.45	4,939	(1)	1,046
1978.....	22,808	266.82	6,086	1977	4,980
1979.....	23,201	305.25	7,082	1978	6,008
1980.....	23,600	343.82	8,114	1979	7,042

<sup>1</sup> Interim.

### 3. COST ESTIMATES FOR THE DISABLED AND PERSONS SUFFERING FROM CHRONIC KIDNEY DISEASE

Persons who have been entitled to disability insurance benefits for at least 2 years and certain persons suffering from chronic kidney disease have been eligible for part B coverage since July 1973.

Sufficient data pertaining to the experience of these beneficiaries is now available to reconstruct their incurred costs for fiscal year 1975 with a reasonable degree of reliability. However, the experience has not matured enough to detect cost patterns from historical series. Therefore, projections for disabled beneficiaries (except for those suffering with chronic kidney disease) are based on the same projection factors used for the aged (except for population) after fiscal year 1975. The estimates for the chronic kidney disease program assume per capita cost increases of 10 percent annually and a continued rapid increase in enrollment as shown in table B12. The combined projections for beneficiaries eligible to enroll because they have been receiving disability insurance cash benefits for at least 2 years are shown at the top of table B12. This includes some persons with chronic kidney disease. The projections for those beneficiaries entitled only on the basis of chronic kidney disease are shown at the bottom of table B12.

TABLE B12.—PROJECTION OF AGGREGATE INCURRED BENEFITS AND CASH BENEFITS PAID FOR DISABLED ENROLLEES AND THOSE WITH CHRONIC KIDNEY DISEASE

	Average enrollment (thousands)	Benefits incurred		Fiscal year	Aggregate benefits paid (millions)
		Per capita	Aggregate (millions)		
Year ending June 30—					
A. Disabled enrollees:					
1974.....	1,642	\$145.55	\$239	1974	\$162
1975.....	1,824	212.72	388	1975	348
1976.....	2,032	269.19	547	1976	503
1977.....	2,220	322.07	715	(1)	155
1978.....	2,392	391.72	937	1977	722
1979.....	2,549	453.51	1,156	1978	931
1980.....	2,700	517.04	1,396	1979	1,154
B. Enrollees entitled because of chronic kidney disease:					
1974.....	8	11,125.00	89	1974	78
1975.....	11	13,363.64	147	1975	132
1976.....	15	14,400.00	216	1976	198
1977.....	18	16,444.44	296	(1)	67
1978.....	21	18,285.71	384	1977	297
1979.....	23	20,869.57	480	1978	386
1980.....	25	23,280.00	582	1979	481

<sup>1</sup> Interim.

## 4. ADMINISTRATIVE EXPENSES

In developing incurred administrative expenses, it is assumed that the expense required to settle incurred but unpaid claims will be approximately the same on a percentage basis as required to settle paid claims. The projected cash administrative expenses are shown in table B13 and the historical and projected ratios of paid administrative expenses to paid claims in table B14.

TABLE B13.—PROJECTED ADMINISTRATIVE EXPENSES PAID IN FISCAL YEARS, 1976-79

Fiscal year:	In millions
1976.....	\$529
Interim.....	133
1977.....	507
1978.....	598
1979.....	636

TABLE B14.—RATIO OF ADMINISTRATIVE EXPENSES TO BENEFIT PAYMENTS

Fiscal year	Cash basis
Actual experience (for all enrollees):	
1967.....	. 202
1968.....	. 103
1969.....	. 119
1970.....	. 110
1971.....	. 122
1972.....	. 128
1973.....	. 103
1974.....	. 142
1975.....	. 107
1976.....	. 113
Interim.....	. 105
Projected (for all enrollees):	
1977.....	. 085
1978.....	. 082
1979.....	. 073