



Actuarial Cost

Estimates for Hospital Insurance Bill

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FOREWORD

Proposals to add hospital benefits for beneficiaries aged 65 and over to the OASDI program have created an interest in the data and methods used to develop actuarial cost estimates in this new area. This Study is a revision and expansion of Actuarial Study No. 52, which dealt with an earlier version of the Administration proposal.

It is the policy of the Division of the Actuary to make its methods and procedures available to those interested. It is our hope that this Study will provide the information not readily available in other published reports.

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A. Introduction

This Study presents long-range actuarial cost estimates for the Hospital Insurance Bill, H.R. 3920, introduced by Congressman King on February 21 (an identical bill, S. 880, was introduced by Senator Anderson on the same date). H.R. 3920 contains the recommendations for a hospital insurance program for beneficiaries aged 65 or over under the Old-Age, Survivors, and Disability Insurance system made by President Kennedy as part of his Message Transmitting Recommendations Relating to the Elderly Citizens of Our Nation (House Document No. 72, 88th Congress). In addition, the proposal would provide similar protection for beneficiaries under the Railroad Retirement system and for most persons aged 65 and over in 1965 (and for those attaining this age in the next few years) who are not insured under either of the social insurance systems.

As to OASDI beneficiaries, this bill would provide a specific program of hospital and related benefits for all persons who are (1) aged 65 and over and (2) "entitled" to monthly benefits. The term "entitled" means that the individual meets all the statutory provisions governing eligibility for monthly benefits (old-age, dependent, or survivor) and has filed an application therefor (which may be concurrent with application for hospital benefits). The term thus includes not only beneficiaries in current-payment status, but also those who are not drawing monthly benefits because they are continuing in substantial employment. The following benefits would be provided:

- (a) 90 days of semi-private hospital care within a "benefit period", with a deductible of \$10 per day for the first 9 days (minimum deductible of \$20); the beneficiary can elect^{a/}, irrevocably, to have either of two other types of protection--(1) a 45-day maximum with no deductible or (2) a 180-day maximum with a flat deductible in an amount equal to $2\frac{1}{2}$ times the average daily hospital cost under the program^{b/} (except that the deductible will be the customary charges for the particular case if these are less than the amount of the flat deductible).
- (b) 180 days of skilled-nursing-facility services within a "benefit period", when such services are furnished following transfer from a hospital and are necessary for continued treatment of a condition for which the individual was hospitalized.
- (c) 240 home-health-service visits during a calendar year.

a/ For insured persons aged 65 and over at the end of 1964, the election must be made in June-November 1964. For insured persons reaching age 65 after 1964, the election must be made in the 3-month period preceding the month of attaining age 65.

b/ This average cost for a particular calendar year is based on the actual average in the second preceding calendar year. For 1965 and 1966, the average cost is established in the bill at \$37 (so that the flat deductible is \$92.50).

- (d) Outpatient-hospital-diagnostic services in excess of a \$20 deductible during a 30-day period.

The term "benefit period" means the period beginning with the first day that an individual receives hospitalization benefits and ending with the 90th day thereafter during each of which he has not been a patient in a hospital or a skilled nursing home (but such 90 days must occur within a 180-day period). The benefits would first be available in January 1965, except for nursing-home benefits, which would first be available in July 1965.

These benefits for OASDI beneficiaries (and the accompanying administrative expenses) would be financed, on a long-range basis, by (1) an increase in the combined employer-employee contribution rate of $\frac{1}{2}\%$ (effective in 1965), with a corresponding increase in the rate for the self-employed (amounting to .4%), and (2) the "gain" to the OASDI system resulting from increasing the maximum earnings base^{c/} from \$4,800 to \$5,200 (effective in 1965). The gain from increasing the earnings base is estimated to be equivalent to the effect of a rise in the combined employer-employee contribution rate of .18% of payroll, on the basis of 1961 earnings levels (as used in the actuarial cost estimates). This income would be channelled into the Hospital Insurance Trust Fund, which would be established on a basis similar to that of the existing OASI and DI Trust Funds.

The same benefit protection would be available to beneficiaries under the Railroad Retirement system.^{d/} Persons who are beneficiaries under both systems would, of course, not receive "double" benefits. The employer and employee contribution rates would be increased by the same amount as under the OASDI system, but the taxable wage basis would not be changed from the present \$400 per month. The financial interchange provisions^{e/} would apply so that, in essence, the OASDI system would be "reinsuring" the hospital-benefit experience of the Railroad Retirement system, which would neither gain nor lose as a result of the actual experience. The Railroad Retirement system would, of course, have to provide out of its existing financing the equivalent income arising from raising the earnings base to \$5,200.

c/ This gain results from the "weighting" in the benefit formula, such that relatively higher benefits are paid to those with lower average earnings, and from the additional interest income which arises from the time lag between the collection of the increased contributions and the payment of the higher benefits (based on the increased covered earnings). Thus, under the present law, the primary benefit that is payable on the basis of the maximum average wage is \$127 per month, whereas under the bill this figure is \$134. This is an increase of 5.5%, as contrasted with the rise of 8.3% in the maximum earnings base. Accordingly, the contributions with respect to a person covered for his entire working lifetime at the maximum creditable earnings would be 8.3% higher for a \$5,200 earnings base than for a \$4,800 base, but the benefits would be only 5.5% higher.

d/ However, Railroad Retirement beneficiaries would have certain additional benefit protection in that, under certain circumstances, the benefits would be available in Canada.

e/ For a description of these provisions, see pages 43, 46, and 47 of the 23rd Trustees Report (House Document No. 80, 88th Congress).

Likewise, the benefit protection will be provided to any person aged 65 and over on January 1, 1965 who is not eligible as an OASDI or Railroad Retirement beneficiary and who (a) is not an employee of the Federal Government or a retired Federal employee eligible for health benefits under the plan established by the Federal Government for such persons, (b) is not a member of a subversive organization and has not been convicted of subversive activities, and (c) is a citizen or has had at least 10 years of continuous residence. Persons meeting such conditions who attain age 65 before 1967 also qualify for the hospital benefits, while those attaining age 65 after 1966 must have some OASDI or Railroad Retirement coverage to qualify--namely, 3 quarters of coverage (which can be acquired at any time after 1936) for each year elapsing after 1964 and before the year of attainment of age 65 (e.g. 6 quarters of coverage for attainments in 1967, 9 quarters for 1968, etc.). This transitional provision "washes out" for men attaining age 65 in 1972 and for women attaining age 65 in 1971, since the fully-insured-status requirement for monthly benefits for such categories is then no greater than the special-insured status requirement. The benefits for the "non-insured" group are paid from the HI Trust Fund, but with full reimbursement therefor from the General Treasury.

Section B gives the basic data utilized, the assumptions made, and the computation procedure. Section C presents the cost estimates, along with discussion of changes made in them in recent years. Finally, Section D outlines the problems involved in making actuarial cost estimates for the proposal.

B. Data, Assumptions, and Procedures in Cost Estimates for Hospital and Related Health Benefits for OASDI Beneficiaries

The various cost factors involved for each of the types of hospital and related benefits (such as probabilities of becoming hospitalized and average length of hospitalization, varying by age and sex) have been developed by the Division of the Actuary in collaboration with the Division of Research and Statistics. These factors have been applied to the estimated numbers of OASDI eligibles, which are available from the long-range actuarial cost estimates for the existing cash-benefits system. The latter are summarized in the 23rd Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance Trust Fund and the Federal Disability Insurance Trust Fund, pages 26-32 and 37-43 (H. Doc. No. 80, 88th Congress, March 6, 1963); the general assumptions and procedures used in developing them are described in Actuarial Study No. 49.

Factors Affecting Hospitalization-Benefit Costs

The elements affecting costs may be itemized as follows:

- (1) Number of eligible beneficiaries and their age-sex composition;
- (2) Rates of hospital admission;
- (3) Average duration of hospitalization;
- (4) Average daily per capita hospital charges; and
- (5) Effect of maximum-duration and deductible provisions.

Hospitalization-benefit costs for various future years are obtained by multiplying the estimated number of eligibles by a factor representing the average annual per capita cost of hospitalization (after taking into account any maximum-duration and deductible provisions). This is done separately by sex and by age groups (65-69, 70-74, and 75 and over), since hospital utilization varies significantly by age and sex. The age-sex composition of the eligible group will vary over the years. The per capita hospitalization-cost factor is derived in relation to all eligibles in the age-sex group, including those who are not hospitalized.

The per capita hospitalization-cost factor consists of two elements, the average length (in days) of compensable hospitalization (considering all eligibles, and including the effect of any deductible, as well as any maximum-duration provisions) and the average daily cost of hospitalization (including both room and board, and all other hospital services--averaged out on a daily basis).

Average Hospital Utilization

First, considering the element of average hospital utilization, the basic procedure is to make the detailed calculations for a 60-day maximum provision and then to modify the overall results for the differences in the provisions of the particular proposal. The basic data are presented in Table 1, which shows hospital utilization rates on both low-cost and high-cost bases. The "hospital utilization rate" is defined as the average number of hospital days experienced per person exposed to risk. In other words, such rates are the result obtained by multiplying the proportion of persons experiencing hospitalization by the average duration of hospitalization for those hospitalized.

The basic data are from the Survey of Beneficiaries conducted by the Social Security Administration, but with modifications to recognize that the availability of benefits will result in greater utilization than that reported in the Survey. In addition, the basic data have been adjusted upward to allow for hospitalization of persons who died during the year, who were not reported in the Survey.

The adjustments for the availability of hospitalization benefits were made in the following manner (described in more detail on pages 77-78 of the 1959 Hospitalization Report). For the high-cost estimate, the admission rate used was the same as the rate reported in the Survey for those with insurance (approximately 60% higher than the reported rate for those without insurance). The average duration of hospitalization for the high-cost estimate was taken to be the same as that reported in the Survey for those with insurance and those without insurance combined (the average duration for the latter category was about 50% higher than for the former)--this assumption is, of course, a "conservative" one.

For the low-cost estimate, the hospital utilization rate was obtained by weighting such rate for insured persons in the Survey by the proportion of insured persons and by weighting such rate for those in the Survey without insurance by the average hospital utilization rate for all persons in the Survey (about 5% higher than the actual experience for the uninsured group). Also, a downward adjustment of the hospital utilization rate was made for men aged 65-69 to reflect the fact that utilization is substantially lower among employed persons than among retired persons (a high proportion of the eligibles in this age group will be employed). In connection with the latter point, it should be noted that the beneficiary group surveyed consisted of retired persons; thus, making no such downward adjustment in the high-cost estimate added an element of conservatism. Operating in the other direction, however, is the factor that utilization of the proposed health benefits by persons with insurance in the past may be somewhat increased because of the greater protection available in many instances (where the deductible does not have an offsetting effect).

Table 1

HOSPITALIZATION UTILIZATION RATES FOR PERSONS AGED 65 AND OVER,
60-DAY MAXIMUM, AVERAGE DAYS PER PERSON PER YEAR

Age Group	Low-Cost Estimate			High-Cost Estimate		
	Before Cor- rection for Decedents	Correc- tion for Decedents	Cor- rected Rate	Before Cor- rection for Decedents	Correc- tion for Decedents	Cor- rected Rate
Men						
65-69	1.59	.34	1.93	2.18	.43	2.61
70-74	1.66	.48	2.14	2.01	.60	2.61
75 & over	2.44	.93	3.37	3.46	1.17	4.63
Women						
65-69	1.59	.20	1.79	1.73	.25	1.98
70-74	2.42	.31	2.73	2.65	.38	3.03
75 & over	2.53	.78	3.31	3.11	.97	4.08
Total Persons						
Total ^{a/}	1.99	.47	2.46	2.43	.58	3.01

^{a/} Obtained by weighting the rates by age and sex by the estimated OASDI "eligible" population as of the beginning of 1960.

Note: The figures shown above for "corrected rates" are the same (except for one correction) as those in the table on page 101 of the Hospitalization Report of April 3, 1959, published by the House Ways and Means Committee.

The assumptions in the low-cost estimate produce costs only slightly above the Beneficiary Survey experience. This seems plausible for the near-future. For the long-range future, this low-cost assumption may be said to give recognition to the possibility of success of current efforts for progressive patient care, for reductions in hospitalization costs resulting from development of outpatient-hospital-diagnostic facilities, and for progressive cost-reducing trends in medical practice.

Hospital utilization data from the National Health Survey, for July 1958 to June 1960 ("Hospital Discharges and Length of Stay: Short-Stay Hospitals, United States, 1958-1960", Health Statistics from the U. S. National Health Survey, Series B - No. 32; April 1962, Public Health Service, U. S. Department of Health, Education, and Welfare), have been used to develop utilization rates comparable with those obtained from the Beneficiary Survey data. These data for hospital utilization rates (average days per person per year) are shown in the following table:

Category	National Health Survey		Low-Cost Estimate from Table 1
	As Shown in Report	Adjusted to 60-day Maximum ^{a/}	
Men, aged 65-74	2.54	2.21	1.62 ^{b/}
Men, aged 75 and over	2.78	2.42	2.44 ^{b/}
Women, aged 65-74	1.61	1.40	1.94 ^{b/}
Women, aged 75 and over	2.18	1.90	2.53
Total, aged 65 and over	2.19 ^{b/}	1.91	1.99 ^{b/}

a/ Based on total hospital utilization with no maximum limitation being 15% higher than with 60-day maximum.

b/ Obtained by weighting the rates by age (and, where applicable, by sex) by the estimated OASDI "eligible" population as of the beginning of 1960.

In the aggregate, the hospital utilization rates derived from the NHS data are very close to those developed from the Beneficiary Survey (used for the purposes of this Actuarial Study). They are somewhat lower than the rates derived on the "low-cost" basis. Furthermore, it should be noted that the NHS data have some upward bias since they include utilization of Federal hospitals, which would not be covered under the Bill (about 10% of all hospital days--for persons of all ages--were in Federal hospitals).

The hospital utilization rates derived from the Beneficiary Survey, modified as described above to allow for the effect of benefits being available as a right, must be corrected to allow for hospitalization used by persons dying during the survey year, who were not included in the Survey. For both cost estimates, this correction was obtained for each age-sex group by applying to the estimated proportion dying in a year an assumed average number of days of hospitalization for decedents (8 days for the low-cost estimate and 10 days for the high-cost estimate). As indicated by Table 1, the relative size of this correction naturally varies considerably by age and sex. For both cost estimates, the correction amounts to about 24% of the rate derived from the Beneficiary Survey for all ages combined, but it is as little as about 15% for women aged 65-69 and as much as 35% for men aged 75 and over. The absolute amount of the correction for decedents averages .53 days for a cost estimate intermediate between the low-cost and high-cost ones.

After the basic work on these cost estimates had been completed, a more extensive study on the general subject of correcting hospital utilization rates derived from surveys so as to allow for decedents became available ("Hospital Utilization in the Last Year of Life," Health Statistics from the U.S. National Health Survey, Series D - No. 3, January 1961, Public Health Service, U.S. Department of Health, Education, and Welfare). This report presented a preliminary study using data for the Middle Atlantic states (New Jersey, New York, and Pennsylvania) for 1957. On the whole, after modifications to obtain comparability, the results of this survey agreed reasonably well with the adjustments made in the cost estimates for the effect of the exclusion of decedents from the Beneficiary Survey. Therefore, no changes were made.

The NHS report showed that for persons aged 65 and over, the unadjusted utilization rate was 1.67 days per person per year, while the rate adjusted for decedents was 2.33 days. This is a difference of .66 days, or a relative increase of 39%. The absolute correction for decedents of .66 days in the NHS report is somewhat higher than used in these cost estimates (.53 days on the basis of the current age-sex distribution of the eligibles). The correction based on NHS data, however, did not include the effect of a 60-day maximum, which of course would have the effect of reducing the absolute correction (in days) and also the unadjusted utilization rate. Furthermore, it was derived from a population that is somewhat older on the average than the present OASDI "entitled" population (which includes those who are not current beneficiaries because of the retirement test), since the latter includes a higher proportion of the total aged population at the ages just beyond 65 than it does at the oldest ages.

The percentage increase due to this correction factor was higher in the NHS report than in these cost estimates (39% vs. 24%), both because of the foregoing two elements and because the absolute increase of the "decedent" adjustment (in terms of days) was measured against a lower unadjusted rate, computed solely on the basis of reported experience of persons alive at date of interview (namely, 1.67 days in the NHS report as compared with the 2.21 days in the Beneficiary Survey). Current NHS statistics on hospital utilization by the population alive at date of interview are higher than formerly reported--as a consequence of the improved data-collection procedures now followed. Accordingly, when measured against this higher base, the days used by decedents would raise the estimated days used by all the aged (derived from the experience of survivors) by a significantly lower amount than 39%, especially after further adjustment for a 60-day limit and for age distribution. Therefore, the use of a 24% correction factor for the data used in this Study appears reasonable.

As a further point of comparison between the NHS data and the assumptions in these cost estimates, the average number of days of hospitalization per decedent was 9.57 for the former, as against the assumption here of 8 days for the low-cost estimate and 10 days for the high-cost estimate.

A growing body of additional data on hospitalization experience of persons aged 65 and over, subdivided by health-insurance ownership and other relevant characteristics, is available from the National Health Survey. In some respects these findings are at variance with those from the Beneficiary Survey, partly because of the later time period and differing population groups represented, and partly because of differences in survey techniques. On balance, the present cost estimates would be little changed if NHS data were substituted for corresponding Beneficiary Survey data.

The foregoing discussion has related to the derivation of hospital utilization rates on the basis of a 60-day maximum provision. It is assumed that such rates apply with equal accuracy whether the maximum relates to a calendar year, a benefit year, or a benefit period as defined in the proposal. Proceeding from those basic cost factors, modifications have been made for proposals considered from time to time in the past that have had different maximum-duration periods or that introduced deductible periods (whether expressed in terms of the first "n" days of hospitalization, a flat dollar deductible regardless of length of hospitalization, or a uniform dollar deductible per day for the first "n" days of hospitalization).

The relative effect on the cost factors of increasing the maximum duration of benefits from 60 days to various other durations is as follows: 90 days - 9%; 120 days - 10½%; 180 days - 12%; and 360 days - 15%. Conversely, if the maximum duration is reduced from 60 days to 21 days, the cost is lowered by 15%. These factors have been derived from consideration of data from the National Health Survey and from private insurance experiences.

In considering the effect of a deductible provision on hospitalization-cost factors, it is necessary to have what is termed a hospitalization continuance table applicable to the particular beneficiary group involved. Such a table was derived from data in the National Health Survey (Health Statistics, Series B - No. 7) and is shown in Table 2.

Average Daily Cost of Hospitalization

The second element in hospitalization-benefit cost factors is the average daily cost (including both room and board and other hospital costs). The 1959 Hospitalization Report derived a figure of \$21 a day for persons aged 65 and over in 1956 (see pp. 79-80). This figure was used as the basis for the long-range actuarial cost estimates made for that Report, since all the actuarial cost estimates for the OASDI system made at that time used the 1956 general earnings level. The figure, however, was adjusted upward by 14% (to \$24) to take into account the fact that, before 1956, hospital charges had been increasing more rapidly than the general wage level and would probably do so for at least a few more years. The basis of the 14% increase was the assumption that over the next 4 or 5 years after 1956, hospital charges might increase at an average rate of about 6% (perhaps 7-8% in the beginning and lessening amounts thereafter) before an assumed leveling-off so as to have the same rate of increase as the general wage level. Thus, during this period, the cost estimates made in 1959 assumed that the "real increase" of hospital costs in relation to the general wage level might begin at 3-4% a year and then decline, so that a cumulative relative increase of 14% would precede the leveling-off at the end of the 4-5 year period.

An analytical study was made in 1959 as to the reasonableness of assuming that after this 14% relative increase, there would be a leveling-off as between hospitalization costs and the general wage level. The data seemed to indicate that in the years since World War II, hospital daily costs have been increasing in a linear manner (at a rate of about \$1.60 per year), and that wage rates have been increasing geometrically. Accordingly, although in the recent past the difference between these two trends series has been about 3-4% per year, this difference seems to be declining somewhat.

In early 1962, the long-range cost estimates for the hospitalization benefits were again re-examined, this time on the basis of the 1961 earnings levels and considering the relative recent trends of hospital costs, taxable wages, and total wages. In brief, the results of this reconsideration were that both hospital-benefit costs and the "savings" to the OASDI system from raising the earnings base were increased--the former rising somewhat more than the latter.

The long-range cost estimates of this Study are based on level-earnings assumptions, at the 1961 level. Another--and equally acceptable--way of describing the earnings-assumption basis of the long-range cost

Table 2

ABRIDGED HOSPITALIZATION CONTINUANCE TABLE FOR AGED PERSONS FOR 60-DAY MAXIMUM BENEFIT
(Days of hospitalization per 100 persons)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Waiting Period (days)	Proportion Hospitalized for		Days of Hospitalization for Those With		Hospitalization Excluded by Waiting Period	
	Exactly the Length of the Waiting Period	Length of the Waiting Period or a Shorter Time	Exactly the Length of the Waiting Period	Length of the Waiting Period or a Shorter Time	Days	Pro- portion
1	3.8%	3.8%	3.8	3.8	100.0	7.2%
3	6.6	17.5	19.8	37.8	285.3	20.6
5	6.0	29.8	30.0	93.0	444.0	32.0
7	5.6	41.2	39.2	167.0	578.6	41.7
10	4.5	56.0	45.0	299.4	739.4	53.3
14	3.1	70.9	43.4	483.8	891.2	64.3
20	1.2	81.5	24.0	664.3	1034.3	74.6
30	.6	89.6	18.0	866.4	1178.4	85.0
60	.1	95.0	306.0 ^{a/}	1386.1 ^{a/}	b/	b/

a/ Including 60 days of hospitalization for the 5.0% who are hospitalized more than 60 days.

b/ Not meaningful (to have waiting period coincide with maximum benefit-period covered).

Source: Based on data from the National Health Survey (Health Statistics, Series B-7, December 1958, Table 14), Public Health Service, U.S. Department of Health, Education, and Welfare.

estimates insofar as the resulting level-cost figures are concerned is to state that they are based on the assumptions that if earnings rise, the deductible provisions and the earnings base will be kept up-to-date with their relative positions in 1961. Such assumed keeping up-to-date would not, of course, have to be done every year in the future that earnings rose, but would--in order to be consistent with the cost-estimate assumptions--have to be done at intervals of every few years, when such rises in earnings occur. It should be noted in this respect that one of the two hospital deductibles in the bill is on a dynamic basis (the flat deductible of 2½ days' average hospital charges) and so would automatically be kept up-to-date.

Further, it may be noted that, for at least a number of years, the financial soundness of the program as determined under level-earnings assumptions would be maintained even though the earnings base and the deductibles are not kept up-to-date if it is assumed that the gains resulting under the OASDI cash-benefits portion of the system will be used, at least in part, to offset the increased cost (as a percentage of taxable payroll) arising for the hospital-benefits portion of the system and that hospital-benefit costs do not increase more than OASDI cash-benefit costs decrease. This, however, would require repeated legislative action to increase the allocation rate for the HI Trust Fund (.68% in the Bill) and at the same time to decrease correspondingly the allocation rates for the OASI and DI Trust Funds. If this practice is followed, it would mean that there would not be available sufficient funds for the cash benefits to be kept up-to-date with changing earnings levels.

At this point, it may be worthwhile digressing for a moment to discuss the effect on the cost of the OASDI cash benefits of increasing-earnings trends. As has been indicated previously (see footnote c), the benefit formula is "weighted" so that relatively higher benefits are paid to those with low earnings than to those with higher ones. For example, the primary benefit for an average monthly wage of \$300 is \$105 per month (or 35.0% of average wage), while the corresponding benefit for an average monthly wage of \$360 is \$118 per month (32.8% of average wage). Thus, for an average wage that is 20% higher, the primary benefit increases only 12.4%. The effect on the financing of the program is evident, since contributions increase directly proportionately with increases in covered earnings, whereas benefits rise less than proportionately. In addition, there is the decreasing-cost effect that results from the lag involved when earnings levels rise, since the average wage is, in essence, a lifetime one and thus is affected by the lower earnings levels of the past.

The long-range actuarial cost estimates for the OASDI system always have assumed that earnings would be level in the future at about the level currently prevailing at the time the estimates were made. It has been recognized that if earnings levels rise--as they have in the past--

the benefit level and the taxable earnings base will undoubtedly be modified. Rising earnings will automatically "generate" savings to the system that can be utilized for such purposes as keeping it up-to-date, although the savings may not be sufficient to do this completely.

Another factor that results in "automatic generation" of savings to the OASDI system of cash benefits is the effect of raising the earnings base for tax and benefit-computation purposes. The reason for this effect has been discussed previously in footnote c. Such changes have been made a number of times in the past^{f/} for the purpose of keeping this element of the program up-to-date.

In the past, the savings to the OASDI system resulting from the above two factors (rising-earnings levels considered alone, and increases in the maximum earnings base) have been utilized to keep the benefit structure up-to-date by such changes as increasing the general benefit level, adding new types of benefits, and liberalizing existing benefit provisions.

In the long-range cost estimates of this Study, the average hospital-per-diem cost for OASDI beneficiaries aged 65 and over is taken to be \$31.30 (on the basis of 1961 price and earnings levels and on the basis of the 1961 age and sex distribution of the beneficiaries); this includes a 3%^{g/} allowance for administrative expenses of the OASDI system for the hospital and related benefits (as discussed subsequently). This average hospital-per-diem cost is adjusted in future years for the changing age-sex distribution of the beneficiary roll (thus, allowing for the "aging" of this group).

The figure of \$31.30 is derived in the following manner. The average hospital-expense per patient-day in short-term general and special non-Federal hospitals for 1961 was estimated by the American Hospital Association at \$34.98 (see Health, Education, and Welfare Trends, 1962 Edition, U. S. Department of Health, Education, and Welfare, page 24). In accordance with adjustment procedures described in the 1959 Hospitalization Report (page 79), this figure should be reduced by 13%^{g/} to yield the estimated average reimbursable hospital-per-diem cost for persons aged 65 and over. The resulting figure of \$30.40 is then increased by 3% to yield the hospital-per-diem cost for persons aged 65 and over, including allowance for administrative expenses of the OASDI system.

f/ The earnings base was \$3,000 during 1937-50, \$3,600 during 1951-54, and \$4,200 during 1955-58, and it has been \$4,800 since 1959.

g/ This is the decrease from the 1956 figure of \$24.15 in the AHA series to the adjusted figure of \$21.00 used for OASDI beneficiaries.

It should be pointed out that the foregoing figure for the average hospital-per-diem cost for persons covered by the proposal does not include an allowance for a "catching-up" factor, as was previously done. In other words, the assumption made is that, following 1961, hospital costs will, on the average, increase no more rapidly than the general earnings level (as indicated previously, if such changes do occur, then it is further hypothesized that the system will be kept up-to-date insofar as the maximum earnings base and the deductibles are concerned). Although it seems likely that hospital costs may increase somewhat more rapidly than the general earnings level in the next few years, it may be presumed that any such differential will, over the long run, be counterbalanced by hospital costs rising less rapidly than will the general earnings level (thus reflecting, as in most other types of economic activity, the productivity gains of the work force involved).

The short-range cost estimates in this Study assume that hospital costs increase from the actual 1961 level at an annual rate of 4%--part of this representing the increase in the general earnings level, and the remainder reflecting the higher differential rate of increase of hospital costs relative to the general earnings level. The resulting estimated average hospital-per-diem costs for persons aged 65 and over who are OASDI beneficiaries, exclusive of the 3% allowance for administrative expenses, are \$35.60 for 1965 and \$37.00 for 1966. The latter is the basis for the rounded figure of \$37 that is the presumed average daily hospital charge used in the "180-day maximum hospital duration" alternative--as described in footnote b on page 1.

The foregoing figures for average hospital-per-diem costs for OASDI beneficiaries aged 65 and over are not completely comparable with similar figures in the annual series issued by the American Hospital Association for persons of all ages because of two reasons:

- (1) The average daily cost for persons aged 65 or over is lower than for persons of all ages. The hospital experience data on which the cost estimates are based indicate that persons aged 65 or over have significantly longer durations, on the average, and the generally high costs for hospital extras (such as use of operating room, laboratory tests, etc.), which most often occur in the first few days of hospitalization, are thus averaged over longer periods consisting in the later days generally of room-and-board costs only.
- (2) The reimbursable costs under the bill would not include all the costs that go into the AHA figures (such as those for research, outpatient services, and public dining facilities).

The actuarial cost estimates for the 1960 legislative proposals in regard to health benefits were modified to reflect the 1959 earnings level,

but the hospitalization-benefit costs relative to payroll were left unchanged. Thus, in essence, the assumption was made that, from 1956 to 1959, hospitalization costs increased more rapidly than the change in covered earnings and would shortly "level off" (with equal relative increases thereafter).

The average hospital-per-diem cost of \$21 for 1956, used in the Hospitalization Report, represented .851% of the average annual taxable wage of \$2467 in that year (on a \$4200 base). This ratio is important to consider when analysis is made of the current and projected future relationships.

The cost estimates for monthly benefits of the OASDI system made in 1960 were based on the 1959 earnings level. The estimated average hospital-per-diem cost for persons aged 65 and over in 1959 was about \$26 (as against \$21 in 1956) which was .932% of the average annual taxable wage of \$2790 in that year (on a \$4800 base). This ratio is 10% higher than the 1956 ratio.

The preceding analysis indicates that during 1956-59, hospital costs rose 10% more than average covered earnings. This was almost as much as the 14% "leveling off" factor previously assumed. Since this "leveling off" had not actually been achieved and apparently would not be achieved in the next few years, on the basis of current trends, it seemed advisable in the cost estimates prepared for the 1961 health-benefit proposal (in Actuarial Study No. 52) to begin the cost-projection of hospitalization charges from the 1959 base. Accordingly, the procedure adopted in the cost estimates for hospitalization benefits that were made in 1961 (on the basis of the 1959 earnings levels) provided for a 14% increase in the base-year (1959) average hospital-per-diem cost for persons aged 65 and over of \$26--yielding a figure of \$29.60 (including a 5% allowance for administrative expenses)--to allow for future "leveling off" of the ratio of hospitalization costs to the general wage level. In other words, the adjustment factor used in the previous estimates was applied to reflect the assumption that the "leveling off" period would be transferred and postponed until some time after the mid-1960's. If this were the only change made, the hospitalization-benefit costs as a percentage of payroll would remain unaffected. However, the costs were also adjusted upward by an additional 10% to reflect the experience during 1956-59, when the expected trend toward a "leveling off" did not occur.

Intermediate-Cost Estimates for Hospitalization Benefits

As indicated previously, low-cost and high-cost factors were developed for hospital utilization rates. An intermediate-cost estimate is necessary for purposes of determining the financing basis of this program. In order to arrive at such a long-range estimate, the low-cost and high-cost factors were averaged and applied to the intermediate estimate of persons aged 65 and over who are entitled (or could become entitled upon application) to monthly cash benefits under the OASDI system.

In considering the figures actually presented for the intermediate-cost estimate, it should be kept in mind that a considerable range of variation is possible. The spread from the intermediate-cost estimate to the high-cost estimate (or to the low-cost estimate) is approximately 10% due to the hospitalization element alone, and perhaps another 15% due to the range of variation inherent in the basic OASDI cost estimates.

The cost figures shown for the first few years incorporate the low-cost assumptions as to hospital utilization (to allow for the normal lag in making "use" of insurance benefits), but thereafter the intermediate-cost factors are used.

Cost Estimates for Skilled-Nursing-Facility Benefits

It is very difficult to make estimates for skilled-nursing-facility benefits because currently such facilities are not uniformly available in adequate amount in all sections of the country, and even more so because there are a number of different concepts under which these benefits might be operative or be utilized by the medical profession. At the one extreme, such a benefit might be utilized almost entirely for very limited convalescent care and be applicable to only a relatively few cases. At the other extreme, the benefit might be utilized so broadly as to provide care that emphasizes the long-term domiciliary element far more than nursing care (naturally, both elements must be present, but much importance hinges on the relative predominance of one feature or the other). In fact, there is the question of whether hospitalization will occur that, under present circumstances, would not be considered necessary and proper, and whether nursing-facility benefits will be provided following these hospital stays.

The bill provides that skilled-nursing-facility benefits should be available only in a hospital-associated facility (i.e., affiliated or under common control with a hospital) upon transfer from a hospital and for further treatment of the condition that resulted in the hospitalization. It is not possible to know from this written definition exactly what the actual admitting and transferring practices may be. In the early years of operation, one limitation on the costs for this benefit will, of course, be the limited availability of qualifying facilities. In the long run, however, this cannot reasonably be regarded as a cost-control factor. Section 1706(i) provides that the Secretary of Health, Education, and Welfare may, after making studies, broaden the category of skilled-nursing facilities that qualify for benefit receipt to include those which are not hospital-associated if he finds that such action will not create (or increase) any actuarial imbalance in the HI Trust Fund. Because of the latter limitation, and because the program is estimated to be exactly in balance when only hospital-associated nursing-facility benefits are provided, no account is taken of this provision (and the expanded protection possible thereunder) in this Study.

In the 1959 Hospitalization Report, cost estimates were made for a strictly administered "recuperative care only" skilled-nursing-home benefit (and also for much broader provisions)--see pages 83-84. The original cost

estimates for this very limited benefit were based on the experience of a few Blue Cross plans having such a benefit. The available data suggested that there might be annual utilization of 10 days of such care per 100 beneficiaries protected by this type of benefit. Since the average daily cost would be about \$10, this would mean an aggregate average cost of \$1 per year per person aged 65 and over entitled to monthly OASDI cash benefits.

Subsequent staff consideration of skilled-nursing-home benefits analyzed the various elements involved in the cost of this type of benefit, namely:

- (1) Present number of skilled-nursing-home beds;
- (2) Number of such beds that are acceptable according to reasonable standards;
- (3) Estimated needed beds;
- (4) Proportion of beds occupied;
- (5) Proportion of occupied beds used by aged persons;
- (6) Proportion of the aged occupants of beds that consists of OASDI beneficiaries;
- (7) Proportion of occupants with duration less than 6 months;
- (8) Proportion of occupants who entered the nursing home by transfer from a hospital; and
- (9) Average daily cost.

Use of the above data and analysis can produce a wide spread in the cost estimates--both short-range and long-range. This is particularly the case under the limited benefit protection provided by the bill, under which only hospital-associated facilities qualify. In the first full year of operation, the cost would be relatively low because of absence of facilities and because of lack of knowledge of the benefits available. In the next few years of operation, the cost would rise steadily as new facilities are built to meet the demand or existing facilities are improved to meet the qualifying conditions (and in recognition of the money available from the benefits).

The long-range cost of these nursing-facility benefits would be higher than the early-year costs for a number of reasons--an increase in the number of available beds to meet the demands, OASDI beneficiaries being a larger proportion of the total population aged 65 and over, and a greater utilization of the benefits available.

The cost estimates of Actuarial Study No. 52 (and, likewise, those of this Study) recognize these factors that produce higher long-range costs.

Also, they take into account the fact that part of the cost arising for the skilled-nursing-facility benefits, when more widely utilized, will be an offset to the cost for hospitalization benefits. In the present estimates, it is assumed that this offset represents 33% of the cost of the skilled nursing-facility benefits and is taken against the hospitalization-benefit cost.

Cost Estimates for Home-Health-Service Benefits

The original estimates for home-health-service benefits were based on an assumed annual cost of \$1 per eligible beneficiary. This assumption was based on such limited experience with this benefit as was available, taking into account also the limited general availability of such services at present. For the foregoing reason, it is likely that this is the cost that will develop in the early years of operation of the program. In later years, however, it seems reasonable to assume that this type of service will become generally available throughout the country, since there will be the money to pay for it.

A study made by the Kansas Blue Cross and Blue Shield indicates that for persons aged 65 and over, the annual per capita cost was almost \$6. Over the long-range, for the country as a whole, it seemed that this was a much better figure to use than the previous figure of \$1, and so this figure was used in Actuarial Study No. 52 and also is used in this Study.

If there are significant expenditures for home-health-service benefits, this should mean somewhat lower hospitalization and skilled-nursing-facility benefit costs. In fact, in cases where a person would otherwise be in the hospital but is instead receiving the much less expensive home-health services, there would actually be a net savings in cost to the program, or in other words the program would cost less because of the inclusion of this type of benefit. It is believed, however, that any such savings will be more than offset by the home-health services being made available to people who would not otherwise be in hospitals or skilled-nursing facilities. Nonetheless, with the availability of these home-health services on an expanded national basis, there should be some offset taken against the hospitalization-benefit costs that would otherwise occur if there were no home-health-service benefits. This adjustment has been taken as 40% of the estimated cost for home-health-service benefits and is taken against the hospitalization-benefit cost.

Cost Estimates for Outpatient-Hospital-Diagnostic-Services Benefits

The cost estimate for the outpatient-hospital-diagnostic-services benefits was first made on the basis that there would be no deductible. Relatively little experience is available in regard to the cost of this benefit for a group consisting of persons aged 65 and over. Such Blue Cross and insurance company experience as there is seems to indicate that the annual cost per capita will be about \$7.50 (spread over the total protected population and not merely among those who will use this benefit).

From a cost standpoint, the effect of a \$20 deductible per month will be significant. This deductible provision will reduce the aggregate cost by an estimated 80%, since most of the charges for these services will be relatively small amounts, such as \$10 for an X-ray. The number of claims will also be reduced by about 80% by the deductible provision, and thus a considerable amount of the administrative costs otherwise involved in paying a large number of small claims will be eliminated. The relative magnitude of the reduction arising from such a deductible tends to be verified by a study of the actual charges of hospital outpatients covered under group insurance policies (see "A Reinvestigation of Group Hospital Expense Experience" by S. W. Gingery in Transactions, Society of Actuaries, Vol. XII, 1961, which gives data on such claims by size intervals).

Estimated Administrative Expenses

It is assumed that the administrative expenses that will be chargeable to the Hospital Insurance Trust Fund for processing the benefit claims and for a pro-rata share of the cost of maintaining the earnings records and collecting the contributions will represent 3% of the benefit disbursements. This 3% element is included in the cost figures for each of the various types of benefits, as described previously. This figure is consistent with the relative administrative costs of the most efficiently-run Blue Cross plans. The latter generally have higher administrative costs than 5% of premium collections, but this is because they have expenses that would not arise in connection with hospital benefits under OASDI--such as those for selling individual enrollments, collection of health insurance contributions alone, and maintenance of the rolls of insured persons solely for purposes of health insurance. In the early estimates for health benefits, a 5% allowance for administrative expenses had been made, but studies by administrative personnel of the Social Security Administration now indicate that this is too high a figure for the type of program under consideration.

The administrative expenses for the proposed health benefits that are chargeable to the Hospital Insurance Trust Fund do not, of course, include the administrative expenses of the hospitals and other health agencies supplying the benefits, which are included as part of the benefit disbursements. Also not included are the record-keeping and tax-payment expenses incurred by employers in connection with the OASDI program.

C. Results of Cost Estimates

Cost Estimates for 1961 Proposal

Long-range actuarial cost estimates for the 1961 proposal^{g/} (as presented in Actuarial Study No. 52) that were made at about the time the 1961 bill was introduced indicated that the benefits provided (and the accompanying administrative expenses) would be exactly financed, on a long-range basis, by the two sources of revenue to the Health Insurance Account. These two sources were an increase of $\frac{1}{2}\%$ in the combined employer-employee contribution rate (and a corresponding increase of $\frac{3}{8}\%$ for the self-employed), effective in 1963, and the net "gain" to the OASDI system resulting from increasing the maximum annual earnings base from \$4800 to \$5000, effective in 1962. The latter "gain" was estimated to be equivalent, over the long run, to the effect of a rise in the combined employer-employee contribution rate of .10% of taxable earnings. The bill provided that the equivalent of this level contribution rate was to be continuously appropriated to the Health Insurance Account.

As indicated in the previous section, these estimates were revised somewhat during the first half of 1961, as a result of the continuous process of study and investigation of all factors involved in the actuarial cost estimates. In particular, this reexamination was focused on the three "subsidiary" benefits (i.e., other than hospitalization benefits), which are less important cost-wise. The revised estimates for these benefits also included certain partially offsetting reductions in hospitalization-benefit costs, as discussed previously.

The following table shows the original and revised estimates of the level-costs^{h/} of the various types of benefits (plus administrative expenses) under the 1961 proposal, expressed as percentages of taxable payroll:

<u>Type of Benefit</u>	<u>Original Estimate</u>	<u>Revised Estimate</u>
Hospitalization	.56%	.52%*
Skilled-Nursing-Facility	.01	.08
Home-Health-Services	.01	.05
Outpatient-Hospital-Diagnostic	.02	.01
Total	.60	.66

*After offset for reduced cost because of availability and use of skilled-nursing-facility and home-health-service benefits.

g/ This Administration proposal was contained in H.R. 4222, introduced by Congressman King on February 13, 1961 (and in S. 909, introduced by Senator Anderson).

h/ The level-cost is the average long-range cost, based on discounting at interest, relative to effective taxable payroll (which is the total earnings of all covered workers reduced to take into account both the maximum taxable earnings base and the lower contribution rate for the self-employed as compared with the combined employer-employee rate so that, in effect, only $\frac{3}{4}$ of the earnings of the self-employed within the maximum base are counted). For more details on this concept, see Section E of Actuarial Study No. 49.

As will be seen from these figures, the level income of .60% of taxable payroll provided under the bill would have been just sufficient to finance the benefits on a long-range basis according to the original intermediate-cost estimate, but would have fallen about 10% short relatively according to the revised figures. For this reason, the Secretary of Health, Education, and Welfare in his testimony before the House Ways and Means Committee on this legislation in July 1961 recommended raising the earnings base from the \$5,000 in the bill to \$5,200; this change would have resulted in total financing of .66% of taxable payroll being available, or just sufficient to support the cost of the proposal, since the "gain" from raising the earnings base was estimated at .16% of taxable payroll (on the basis of 1959 earnings levels).

When the actuarial cost estimates (both for the cash benefits and the hospital benefits) were revised in 1962 to take into account 1961 earnings levels and other factors (as described previously), the financing available under a \$5,200 earnings base was estimated at .68% of taxable payroll (because of a larger "gain" from raising the earnings base), but the benefit cost was estimated at .72% of taxable payroll. The Anderson-Javits Amendment^{i/} that was considered by the Senate in July 1962 was the same as the 1961 version of the King-Anderson Bill insofar as OASDI beneficiaries were concerned, except for having a \$5,200 earnings base and except for restricting the skilled-nursing-home benefits to such services provided by hospital-associated facilities (just as in the current proposal). This change in the benefits reduced their estimated level-cost to .68% of taxable payroll, so that the financing was estimated to be just sufficient to support the benefits.

Cost Estimates for 1963 Proposal, Insured Persons

Cost estimates for the current 1963 proposal^{j/} have been made on the same general basis as those described above for the Anderson-Javits Amendment. The following table shows the estimated long-range level-costs and first-year costs (i.e., for 1965 on an accrual basis), by type of benefit, including the accompanying administrative expenses:

<u>Type of Benefit</u>	<u>Level-Cost (as % of Payroll)</u>	<u>First-Year Cost (in millions)</u>
Hospitalization	.59%*	\$1,315
Skilled-Nursing-Facility	.03	30
Home-Health-Services	.05	10
Outpatient-Diagnostic	.01	10
Total	.68	\$1,365

* After offset for reduced cost because of availability and use of skilled-nursing-facility and home-health-services benefits.

The above figures for the first year of operation take into account the estimated actual price and earnings-level situation in 1965 (rather than the long-range assumptions in these respects).

i/ For more details on this proposal and legislative action thereon, see Wilbur J. Cohen and Robert M. Ball, "Public Welfare Amendments of 1962 and Proposals for Health Insurance for the Aged," Social Security Bulletin, October 1962.

j/ The 1963 Administration proposal was contained in H.R. 3920, introduced by Congressman King on February 21, 1963 (and in S.880, introduced by Senator Anderson).

Next there are presented estimates of the contribution income and outgo for benefits and related administrative expenses under the King-Anderson Bill for the first 5 years of operation. As mentioned previously, the financing basis of the proposal is that the system will be changed from time to time if earnings levels change, so as to keep it more or less continuously up-to-date with the earnings level of 1961 (insofar as the maximum taxable earnings base and the "dollar deductibles" are concerned; no changes are, of course, necessary in the flat deductible based on $2\frac{1}{2}$ times the average daily hospital cost under the program that is used in connection with the 180-day maximum hospitalization benefit, since this is on a dynamic basis to begin with). The following cost estimates, however, have not taken into account any such changes, but rather assume the continuation of the \$5,200 earnings base and the fixed-dollar deductibles proposed, instead of keeping the system up-to-date, as is necessary under the financing assumptions underlying the long-range estimates for OASDI as well as HI. For the short-range period considered below, the assumption is made that the earnings level will continue to rise in the same general manner that it has in recent years (and that, similarly, hospital costs will also rise). These estimates have been prepared on a cash-payment basis, rather than on an accrual basis, and are as follows (in millions):

Year	<u>Calendar-Year Basis</u>		<u>Fiscal-Year Basis</u>	
	<u>Contributions</u>	<u>Benefits*</u>	<u>Contributions</u>	<u>Benefits*</u>
1965	\$1,430	\$1,040	\$ 710	\$ 420
1966	1,710	1,530	1,690	1,390
1967	1,760	1,720	1,730	1,625
1968	1,820	1,900	1,790	1,810
1969	1,860	2,090	1,840	1,995

* Including also administrative expenses.

The above figures--as is also the case for all other figures in this section--do not include in the "contributions" those payable by railroad employees or in the "benefits" those payable to persons eligible under the Railroad Retirement Act. Thus, benefits for the approximately 250,000 persons in 1965 who possess "dual eligibility" (under both OASDI and RR)--see page 2--are assumed to be claimed from RR, which would then be reimbursed therefor under the financial interchange provisions. The total HI benefit payments (and accompanying administrative expenses) for all RR eligibles, on a cash basis, is estimated at about \$55 million for calendar year 1965 and \$70 million for 1966.

Table 3 similarly presents data for fiscal years 1965-68 on the various income and outgo items of the three trust funds as would result under the King-Anderson Bill. These figures assume that economic conditions will be dynamic (both as earnings levels and hospital costs), but that the provisions of the bill (including the \$5,200 earnings base and the deductibles) will remain unchanged--even though the long-range financing basis of the proposal is based on their being kept up-to date by changes from time to time.

Table 3

ESTIMATED SHORT-RANGE OPERATIONS OF TRUST FUNDS
UNDER KING-ANDERSON BILL OF 1963
(in millions)

<u>Fiscal Year</u>	<u>Contributions</u>	<u>Benefit Payments and Administrative Expenses</u>	<u>Transfer to Railroad Retirement</u>	<u>Interest on Fund</u>	<u>Fund at End of Year</u>
HI Trust Fund					
1965	\$ 710	\$ 420	--	\$ 3	\$ 293
1966	1,690	1,390	\$10	16	599
1967	1,730	1,625	40	24	688
1968	1,790	1,810	40	26	654
OASI Trust Fund, Additional Transactions					
1965	\$ 125	\$ 8	--	\$ 1	\$ 118
1966	345	21	-\$ 5	11	458
1967	485	30	- 7	26	946
1968	605	43	- 9	46	1,563
DI Trust Fund, Additional Transactions					
1965	\$ 25	\$ 1	--	--	\$ 24
1966	60	4	-\$ 1	\$ 2	83
1967	65	5	- 1	4	148
1968	70	7	- 1	7	219

The data for the OASI and DI Trust Funds are the estimated additional transactions that would occur, as compared with those under present law. As would be anticipated, the effect of raising the earnings base is relatively small insofar as additional benefit payments are concerned, although these will build up to a relatively sizable amount over the years. On the other hand, in the case of contributions, the effect of raising the earnings base is noticeable quite soon.

The rapid increase in the additional income of the OASI Trust Fund results from the fact that the total additional income (for all three Trust Funds combined) from raising the earnings base increases in accordance with the step rate rises in the contribution schedule while the "savings" to the entire system from raising the earnings base is, in essence, channeled on a level-equivalent basis into the HI Trust Fund solely from the OASI Trust Fund. Accordingly, the allocation of the additional amount of contributions to the OASI Trust Fund is on a "residual" basis--of a rapidly increasing nature.

The bill provides that the DI Trust Fund will continue to receive an allocation of the full $\frac{1}{2}\%$ of payroll (in respect to the combined employee-employer rate) which it receives under present law. In theory, it might be argued that the DI portion of the program has a certain cost reduction as a result of raising the earnings base and that this should have been channeled into the HI Account, rather than having the entire savings for both OASI and DI being taken from the OASI portion of the system. However, this savings to the DI system would be only .01% of payroll on a level-cost basis, and under the proposal it hardly seemed worthwhile to complicate matters by changing slightly the $\frac{1}{2}\%$ basis for DI.

Table 4 presents the estimated progress of the Hospital Insurance Trust Fund by calendar years, according to the intermediate-cost estimate, carried out into the long-range future. As indicated previously, the assumptions underlying these figures are that there will be level earnings and level hospital costs--at the 1961 level.

The cost in the early years (including both benefits and administrative expenses) under the long-range estimates is significantly lower than the level-cost and, conversely, higher eventually. This is the result of the relatively more rapid rise in the number of persons aged 65 and over eligible for monthly cash benefits than in the covered-worker population. As a result, the invested assets that will develop in the early years of operation will provide interest earnings which will help to meet ultimate benefit costs. It will be remembered that the long-range estimates, as presented in Table 4, are based on the assumption of level earnings in the future at the 1961 level (and a corresponding trend for hospital costs). In 1966, the first full calendar year of operation on a cash basis, the cost is estimated at .48% of taxable payroll, and by 1970 it is .53%. The cost as a percentage of taxable payroll gradually rises after 1970: by 1980, it is .66%; by 1990, it is .72%; and ultimately it rises to about .90%.

Table 4

ESTIMATED LONG-RANGE PROGRESS OF HOSPITAL INSURANCE TRUST FUND
 UNDER KING-ANDERSON BILL OF 1963
 INTERMEDIATE-COST ESTIMATE
 (in millions)

<u>Calendar Year</u>	<u>Contri- butions^{a/}</u>	<u>Benefit Payments and Administrative Expenses</u>	<u>Interest^{b/} On Fund</u>	<u>Fund at End of Year</u>
1965	\$1,382	\$ 899	\$ 6	\$ 489
1966	1,659	1,177	22	993
1967	1,689	1,230	40	1,492
1970	1,781	1,388	90	2,959
1975	1,934	1,690	161	5,145
1980	2,077	2,009	213	6,807
1990	2,386	2,515	272	8,819
2000	2,751	2,793	329	10,721

a/ Including the effect of the financial interchange provision with the Railroad Retirement Account.

b/ Based on varying interest rate estimated to be earned by Disability Insurance Trust Fund, ultimately leveling off at 3.25% on invested assets.

In the years immediately following 1965, income to the HI Trust Fund is 25-40% in excess of outgo according to the long-range cost estimate, so that a moderate fund builds up, and by 1970, it is \$3.0 billion (see Table 4). Income continues to exceed outgo in the following years since the covered population increases almost as rapidly as the beneficiary roll. In fact, it is not until about 20 years from now that outgo for benefits and administrative expenses is estimated to exceed the contributions allocated to this Trust Fund, which is estimated to reach \$6.8 billion by the end of 1980. Thereafter, interest earnings continue to augment the growth of the Trust Fund so that it reaches a level of about \$11 billion in the year 2000. It will, of course, be remembered that this is the intermediate-cost estimate and, accordingly, that high-cost experience would not show such favorable developments, while low-cost experience would show more favorable developments.

Consideration of the different trends of the estimated progress of the HI Trust Fund under the intermediate-cost estimates as between the short-range cost estimates that are based on dynamic economic conditions (as in Table 3) and the long-range cost estimates that are based on static economic conditions--or, alternatively, can be viewed as being on dynamic economic conditions, with the system being kept up-to-date as to the maximum taxable earnings base and the deductibles--(as in Table 4) gives some entirely different results. In the long-range cost estimates, the HI Trust Fund builds up for a considerable number of years, as the result of a continuing excess of contribution income over outgo for benefits and administrative expenses. On the other hand, under the short-range cost estimates, the fund builds up for only a few years; by fiscal year 1968, income is shown to be slightly less than outgo.

The reason for these diverse trends is that the cost estimates indicate that, according to the intermediate-cost estimate, the proposal is adequately financed with the basic underlying assumption that the system will be kept up-to-date with conditions prevailing in 1961, so that if this is not done before 1968, the unfavorable situation shown in Table 3 would eventuate. To put it another way, if the system is kept up-to-date as to the maximum taxable earnings base and the deductibles, then contribution income plus interest receipts will exceed outgo for benefits and administrative expenses for quite a number of years according to these cost estimates, but if this action is not taken, then income will exceed outgo for only a few years, and thereafter there will be financing problems.

Cost Estimates for 1963 Proposal, Non-Insured Persons and Savings under Assistance Programs

This section presents short-range cost estimates of the financial effect of blanketing-in noninsured persons aged 65 and over for the hospital benefits provided under the King-Anderson Bill. The specific details of these provisions have been given in Section A.

The figures in the table below show the cost to the Federal General Treasury for the blanketed-in group, taking into account the administrative lags in making the payments for the hospital and related benefits that would first become available on January 1, 1965. The figures indicate the amount of money that would flow through the Hospital Insurance Trust Fund on the assumption that the General Treasury would reimburse the trust fund immediately after it had made its payments to the providers of the benefits. The table also shows the savings to the General Treasury and to State and local funds under the Medical Assistance for the Aged and the Old-Age Assistance programs (with respect to both insured and noninsured individuals receiving hospital and related benefits through the trust fund that would otherwise have been paid under the two assistance programs). The figures (in millions) are as follows (but note later, slightly revised figures on page 28):

Fiscal Year	If No Blanketing-In MAA and OAA Savings		Federal Cost for HI	If Blanketing-In MAA and OAA Savings		Net Federal Cost
	Federal	State and Local		Federal	State and Local	
1965	\$35	\$35	\$80	\$60	\$75	\$20
1966	100	115	280	190	225	90
1967	115	125	300	210	245	90
1968	125	135	310	230	265	80

It will be observed that for the first full fiscal year of operation, the estimated Federal savings in MAA and OAA would be about \$100 million with respect to insured OASDI beneficiaries (in other words, assuming that there would be no blanketing-in), while the corresponding State and local savings would be slightly higher. On the other hand, if there is blanketing-in, the corresponding figures would be a cost to the General Treasury of about \$280 million for the HI benefits (which would flow through the HI Trust Fund), but that this would be partially offset by Federal savings for MAA and OAA of about \$190 million (again, \$100 million with respect to OASDI beneficiaries and \$90 million with respect to the blanketed-in group), leaving a net Federal cost of \$90 million--as against a Federal savings of \$100 million if there were no blanketing-in. Of course, the blanketing-in would have a favorable effect on State and local finances, since then their savings in MAA and OAA would be about \$100 million higher.

Since the blanketed-in group is a closed one (with no new entrants after 1971), the cost therefor eventually disappears. The initial number of persons included in this category decreases slowly from the estimated 2.4 million in 1965 to about 1.75 million in 1970, since the effect of mortality more than offsets the increments from new persons becoming eligible as they attain age 65. The estimated cost, under dynamic-economic assumptions, rises from 1965 to 1970--despite fewer potential beneficiaries--because of the rise in the estimated per capita cost and usage. After 1970, the number in the blanketed-in group is estimated to decrease rapidly--to about 1.0 million in 1975 and .5 million in 1980, and then is virtually negligible after 1990. The estimated cost to the General Treasury--without considering the savings in MAA and OAA--is \$330 million in 1970, \$240 million in 1975, \$150 million in 1980, and \$20 million in 1990.

Subsequent to the preparation of the foregoing estimates, slightly revised data have become available as to the number of insured persons aged 65 and over. Although these do not have a significant effect on the cost estimates for the insurance program, they have some effect on those for the blanketed-in group. The following table compares the estimates of the number of persons aged 65 and over affected by the proposal as of the beginning of 1965 (in millions, rounded to nearest 50,000):

<u>Category</u>	<u>Original Estimates</u>	<u>Current Estimates</u>
Total Population	18.20	18.20
OASDI Insured	15.05	15.20
Railroad Retirement Insured ^{a/}	.55	.55
Not Eligible ^{b/}	.20	.20
Blanketed-In	2.40	2.25

a/ Does not include about 250,000 individuals who are "insured" under both OASDI and Railroad Retirement (shown in the preceding line).

b/ Consists primarily of those who are protected under the Federal Employees Health Benefits Act or the Retired Federal Employees Health Benefits Act (also includes certain non-insured persons who do not meet the residence or citizenship requirements or who are members of a subversive organization or have been convicted of a serious offense involving subversive activities).

The foregoing data indicate that the most recent estimates show 1% more insured persons; such a small differential is not sufficiently large to have any significant effect on the cost estimates for the HI program, particularly from a long-range viewpoint. On the other hand, the 6% fewer blanketed-in persons resulting makes necessary the revision of the table on page 27, as follows (in millions):

Fiscal Year	<u>If No Blanketing-In</u>		Federal Cost for HI	<u>If Blanketing-In</u>		Net Federal Cost
	<u>MAA and OAA Savings Federal</u>	<u>State and Local</u>		<u>MAA and OAA Savings Federal</u>	<u>State and Local</u>	
1965	\$35	\$35	\$75	\$60	\$75	\$15
1966	100	115	260	180	215	80
1967	115	125	280	200	235	80
1968	125	135	290	220	255	70

D. Problems Involved in Cost Estimates for Hospital and Related Benefits

Long-range actuarial cost estimates, by their very nature, can present the general range of future costs but cannot be a precise forecast of future experience. This fact has been taken into consideration in the cost estimates for the Old-Age, Survivors, and Disability Insurance program over the quarter century of its operation. From time to time the assumptions underlying the actuarial cost estimates have been revised to take into account later available data and indications of trends. The cost estimates for the proposed hospital benefits program are subject to similar revisions.

There is a somewhat greater relative range of probable costs for the proposed hospital benefits than for the OASDI monthly cash benefits, which system has been in operation for more than 20 years. Not only are the data incomplete for some of the various cost aspects and factors underlying the proposed hospital benefits as they would be provided under a social insurance system, but also service benefits quite obviously do not have costs as readily determinable as cash benefits that are directly related to covered earnings. But it should be recognized that, similarly, when the present OASDI cash benefits program was inaugurated in 1935, little was known about many of the factors entering into the actuarial cost estimates. Then, as now, assumptions had to be made on the basis of the data available, using the best possible actuarial judgment.

From a cost standpoint, the major benefit in the bill is the provision of hospital care. A great amount of data is available in regard to hospitalization experience of aged persons. Principal sources include the 1957 Beneficiary Survey made by the Social Security Administration the continuing investigations made by the National Health Survey of the Public Health Service, and the experience of various insuring organizations such as the Blue Cross and private insurance companies. Much of this information has previously been summarized in the 1959 Hospitalization Report. Nonetheless, precise estimates are not possible because of such unknowns as the extent of hospital utilization by persons who have not had insurance in the past, but who would have benefit coverage under the provisions of the bill.

Another major difficulty in making cost estimates for hospitalization benefits is the extent to which hospital costs will rise in the future. The long-range actuarial cost estimates for the OASDI system have always assumed that earnings would be level in the future--for reasons that are described in detail elsewhere (see Actuarial Study No. 49, page 8, and the Report of the Committee on Ways and Means of the House of Representatives on the Social Security Amendments of 1961, H. Rept. No. 216, 87th Cong., April 7, 1961, pp. 14-16). This assumption means that benefit costs relative to payroll will not be affected by any rising-earnings trend that may develop, because it is assumed that the benefit structure (including the maximum earnings base that is creditable toward benefits and that is subject to contributions) will be adjusted to keep pace with the rising earnings.

When earnings levels have increased in the past (increasing both benefit outgo and tax income--the latter more than the former, because of the weighted benefit formula), this factor has been recognized in

subsequent cost estimates. Any resulting net reduction in cost has been made available for the financing of the program, including proposed benefit liberalizations. Liberalizations financed entirely in this manner tend to keep the system up to date.

In considering the hospitalization-benefit costs in conjunction with a level-earnings assumption for the future, it is sufficient for the purposes of long-range cost estimates merely to analyze possible future trends in hospitalization costs relative to covered earnings. Accordingly, any study of past experience of hospitalization costs should be made on this relative basis. The actual experience in recent years has indicated, in general, that hospitalization costs have risen much more rapidly than the general earnings level, with the differential being in the neighborhood of 3% or 4% per year.

One of the uncertainties in cost estimates for hospitalization benefits, then, is how long and to what extent this tendency of hospital costs to rise more rapidly than the general earnings level will continue in the future--and whether or not it may, in the long run be counterbalanced by a trend in the opposite directions. Some factors to consider are the relatively low wages of hospital employees (which have been rapidly "catching up" with the general level of wages and obviously may be expected to "catch up" completely at some future date, rather than to increase indefinitely at a more rapid rate than wages generally) and the development of new medical techniques and procedures, with resultant increased expense. In connection with the latter factor, there are possible counterbalancing factors, in that the higher costs involved for more refined and extensive treatments may be offset by better general health conditions, the development of out-of-hospital facilities, shorter durations of hospitalization, and less expense for subsequent curative treatments as a result of preventive measures. Also, it is possible that at some time in the future, the productivity of hospital personnel will increase significantly so that, as in other fields of economic activity, wages will increase more rapidly than prices.

Perhaps the major difficulty in making, and in presenting, these actuarial cost estimates for hospitalization benefit is that--unlike for the OASDI monthly benefits--an unfavorable cost result is shown when total earnings levels rise unless the provisions of the system are kept up-to-date (insofar as the maximum taxable earnings base and the dollar amounts of the deductibles are concerned). The reason for this is that there is the fundamental actuarial assumption that the hospitalization costs will rise at the same rate over the long run as total earnings level, whereas the contribution income rises less rapidly than the total earnings level since it depends on the covered earnings level, which is dampened because of the effect of the earnings base. Accordingly, it is necessary in the actuarial cost estimates for hospitalization benefits to assume either that earnings levels will be unchanged in the future or that, if wages continue to rise (as they have done in the past), then from a given point of time, the system will be kept up-to-date insofar as the earnings base and the deductibles are concerned. In this respect, it may be noted that in H.R. 3920 the

"2½ times the average daily hospital cost" deductible associated with the 180-day maximum hospitalization alternative is on a "dynamic" basis and so is automatically kept up-to-date, while the deductible of "\$10 per day" is not on a "dynamic" basis.

The other three benefits provided by the bill would have a far lower relative cost than the hospitalization benefits (assuming that the types of services provided by the different facilities remain approximately the same as at present). Accordingly, even relatively large variations in the cost estimates for these benefits would have much less effect on the overall costs of the proposal. Although these services (skilled-nursing-facility care following hospitalization, outpatient-hospital-diagnosis, and home-health-visits) are now being extensively provided in a number of areas, comparatively little data is available in regard to their cost for aged persons, when provided in the manner set out by the bill.

In many instances, these three types of benefits are not currently available because of lack of facilities (or insufficient facilities). Accordingly, the early-year costs for these benefits will be relatively low. The long-range costs, however, are determined on the assumption that sufficient, adequate facilities will be available to supply the benefits provided.

Another important factor in connection with the actuarial analysis of proposals for various types of health benefits is their cost-inter-relationship. For example, if hospitalization benefits were provided, but skilled-nursing-facility care were not, there would tend to be more utilization of the hospitalization benefits because an individual would be more likely to stay longer in a hospital (at little or no cost to him) rather than to enter a skilled-nursing-facility operating at lower costs, but with the full amount to be paid by him. Similarly, if there were no outpatient-hospital-diagnostic benefits provided in the bill, and if there were no deductible in the hospitalization benefits, there would be a financial incentive for an individual to enter a hospital (with resulting higher cost) to obtain these services without cost to him.

Likewise, the availability of home-health services can reduce hospitalization-benefit costs in certain cases. Otherwise, an individual might enter a hospital or stay in it longer if in doing so there were less cost to him personally than in obtaining home-health services. On the other hand, the home-health services, when available, will undoubtedly be utilized by many persons who would not otherwise have been in hospitals. In the same way, the presence (or absence) of a deductible provision for one benefit can influence not only the cost of that benefit, but also the costs of other types of benefit.

Actuarial Studies Available from the Division of the Actuary*

10. Various Methods of Financing Old-Age Pension Plans--September 1938.
14. An Analysis of the Benefits and Costs under Title II of the Social Security Act Amendments of 1939--December 1941.
19. OASI 1943-44 Cost Studies--May 1944.
21. Analysis of Long-Range Cost Factors--September 1946.
32. Analysis of 346 Group Annuities Underwritten in 1946-50--October 1952.
34. Analysis of the Benefits under the OASI Program as Amended in 1952--December 1952.
37. Estimated Amount of Life Insurance in Force as Survivor Benefits under Social Security Act Amendments of 1952--August 1953.
38. Long-Range Cost Estimates for Changes Proposed in the OASI System by H.R. 7199, with Supplementary Estimates for Universal Coverage--March 1954.
40. The Financial Principle of Self-Support in the OASI System--April 1955.
41. Analysis of Benefits, OASI Program, 1954 Amendments-- May 1955.
43. Estimated Amount of Life Insurance in Force as Survivor Benefits under OASI--1955--September 1955.
44. Analysis of 157 Group Annuity Plans Amended in 1950-54--July 1956.
45. Present Values of OASI Benefits in Current Payment Status 1940-56 --May 1957.
46. Illustrative United States Population Projections--May 1957.
47. Estimated Amount of Life Insurance in Force as Survivor Benefits under OASI--1957--July 1958.
48. Long-Range Cost Estimates for Old-Age, Survivors, and Disability Insurance under 1956 Amendments--August 1958.

* Numbers not listed are out of print.

49. Methodology Involved in Developing Long-Range Cost Estimates for the Old-Age, Survivors, and Disability Insurance System--May 1959.
50. Analysis of Benefits, OASDI Program, 1960 Amendments--December 1960.
51. Present Values of OASI Benefits in Current Payment Status, 1960 -- February 1961.
52. Actuarial Cost Estimates for Health Insurance Benefits Bill-- July 1961.
53. Medium-Range Cost Estimates for Old-Age, Survivors, and Disability Insurance and Increasing-Earnings Assumption--August 1961.
54. Estimated Amount of Life Insurance in Force as Survivor Benefits under OASI 1959-60--October 1961.
55. Remarriage Tables Based on Experience under OASDI and U.S. Employees' Compensation Systems--December 1962.
56. Analysis of Benefits under 26 Selected Private Pension Plans-- January 1963.