TITLE: THE PRICING OF MEDI GAP CONTRACTS

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To set the stage for the current interest by the regulatory authorities in the pricing of and the benefit content of Medi Gap policies some analysis of the advent of Medicare and its subsequent impact on the economy might be helpful.

The seeds for providing health care to the aged were planted in 1935 in some of the initial versions of the Social Security Act. Under the study provisions of the Act, the Social Security Board was empowered to conduct research and investigations relative to national health insurance. During the intervening years, 1935 to 1965 (passage of Medicare), a series of bills dealing with national health insurance were presented to the Congress: 1939, the Wagner Bill; 1943, the Wagner, Murray, Dingell Bill; 1946, the Taft Bill. In the 1951 to 1964 era, most of the bills dealt with social insurance proposals for persons aged 65 and over. In 1960 the Kerr-Mills Act was passed establishing a program of medical assistance for the aged. Beginning in 1960 efforts to enact a social insurance program of hospital benefits were stepped up with a series of attempts to enact a sound insurance program of hospital benefits known as the King-Anderson Bills. Sufficient momentum was gained so that in 1964 the Senate passed an admendment providing hospital insurance benefits for the aged 65 and over. The House, however, would not agree on a compromise position and the legislation died in conference. In 1965, in addition to a King-Anderson Bill, other proposals were presented such as the Byrnes Bill (named after its author Representative Byrnes), the Eldicare Bill (sponsored by the American Medical Association and introduced by Representative Herlong and Curtis). Early in

1965, under the leadership of Chairman Mills of the House Ways & Means Committee, the Ways & Means Committee put together the Medicare program which was to become effective on July 1, 1967.

The social pressures brought about by the cost to the aged to provide for medical care was a major factor influencing the passage of Medicare. The aged were caught in the bind of fixed incomes and rising cost with medical care costs constantly consuming more of their available income. An examination of the Medicare benefits is in order to assess its impact on the covered individual as well as its impact upon the health care system and the group benefit package for the under 65.

The Medicare program for the 65 and over provides a most comprehensive package of benefits. On the hospital side inpatient room and board for a semiprivate accommodation (and where medically necessary private room) and all special services (general nursing, drugs, operating room, diagnostic services etc) were paid in full for the first 60 days after payment of a deductible. From the 61st to the 90th day the same benefit provisions prevailed but with a daily copayment equal to 25% of the initial deductible. In addition, there was coverage for care provided in a skilled nursing facility (SNF) plus home health services. Full outpatient diagnostic benefits were also provided to minimize use of inpatient usage for such services. Skilled nursing facility benefits were covered in full for the first 20 days, the next 80 days of benefits had a daily copayment equal to 1/8th of the initial inpatient deductible. All of these benefits were provided under the hospital insurance portion of Medicare and commonly referred

to as Part A.

Physicians benefits, in addition to home health services, were provided under the Supplementary Medical Insurance (SMI) portion of Medicare generally referred to as Part B. The SMI portion had an annual deductible (as contrasted to a spell of illness deductible under Part A) with the patient and SMI sharing on a 20%-80% (20% patient payment - 80% SMI) basis. Physicians were to be reimbursed on a reasonable charge basis.

With the passage of Medicare the people 65 and over had available to them comprehensive benefits which equalled to and in many cases was greater than that held by the under 65 population. By removal of the financial constraints due to inadequate or no insurance and a backlog of medical need, the medicare population made full use of the program. Its impact upon the medical care system for the entire population has been well documented by health economist and is reflected in:

Table 1. Portion of Health Care Costs Paid By Individuals versus Third Party Payors

Table 2. Health Care Expenditures As % Of Gross National Product.

Table 3. Ratio of Personal Expenditures For Medical Care To Personal Income

Table 4. Annual Changes In Consumer Price Index and In Medical Components of the Index

The following tables present those variables from 1966 to 1977:

Table 1.—Portion of Health Care Costs Paid By Individuals versus Third Party Payors

Fiscal Years Ending June 30	UNDER 65 Total	UNDER 65 Out of Pocket	UNDER 65 Third Party	65 AND OVER Total	65 AND OVER Out of Pocket	65 AND OVER Third Party
1966	100%	51%	49%	100%	53%	47%
1967	100%	48%	52%	100%	37%	63%
1970	100%	43%	57%	100%	33%	67%
1973	100%	38%	62%	100%	33%	67%
1976	100%	35%	65%	100%	27%	73%
1977 (Sept)	100%	32%	68%	100%	27%	73%

Table 2.—Health Care Expenditures As % of Gross National Product

Fiscal Years Ending	
1966	5.8%
1967	6.2%
1970	7.2%
1973	7.7%
1976	8.7%
1977 (Sept)	8.8%

Table 3.—Ratio of Personal Expenditures For Medical Care To Disposable Personal Income

Calendar Year	
1966	6.2%
1967	6.3%
1970	7.1%
1973	7.4%
1976	8.6%
1977	9.1%

Table 4.—Annual Changes In Consumer Price Index and In Medical Components of the Index

Calendar Year	All Items	All Medical Care Items	Physician Fees	Hospital Room	Prescriptions & Drugs
1966	2.9%	4.4%	5.8%	100%	1.3%
1967	2.9%	7.1%	7.1%	19.8%	- 0.5%
1970	5.9%	6.3%	7.5%	12.9%	2.3%
1973	6.2%	3.9%	3.3%	4.7%	0.3%
1976	5.8%	9.5%	11.3%	13.8%	6.1%
1977	6.5%	9.6%	9.3%	11.5%	6.4%

The results speak for themselves as to the rapid rise in medical care costs. Considering the limited and relatively fixed income for the 65 and over population one can see how the social pressures to provide relief in the form of medical care arose in the early 60's and have been aggravated in the latter half of the 70's.

A history of the movement of the medicare deductibles and the cost to purchase Part B (medical) benefits will also show how the increase in these elements have further impacted the standard of living of the aged.

MEDICARE DEDUCTIBLES, COPAYS & COINSURANCE AND PREMIUM

	PART A				PART B		
	Benefit Period Deductible	Daily CoPay 61st to 90th Hospital Days	21st to 100th SNF Days		Premium	Annual Deductible	Coin-surance
7/66	$40	$10	$5.00	7/66	$3.00	$50	20%
1/69	$44	$11	$5.50	4/68	$4.00		
1/70	$52	$13	$6.50	7/70	$5.30		
1/71	$60	$15	$7.50	7/71	$5.60		
1/72	$68	$17	$8.50	7/73	$5.80	$60	20%
1/73	$72	$18	$9.00	7/74	$6.30		
1/74	$84	$21	$10.50				
1/75	$92	$23	$11.00				
1/76	$104	$26	$13.00	7/76	$7.20		
1/77	$124	$31	$15.50	7/77	$7.70		
1/78	$144	$36	$18.00	7/78	$8.20		
1/79	$160	$40	$20.00	7/79	$8.70		

It should be noted that in 1972 the Medicare benefits were extended to the disabled under social security and those receiving treatment for chronic kidney disease. As was mentioned earlier in this treatise, deductibles were introduced to keep down the cost of the program to the government. The initial hospital deductible was

set equal to the daily cost of care in a semiprivate room. The Part B deductible was set at $50 per calendar year with 20% paid by the recipient for the remaining balance with the first period being only 6 months to minimize the cost of the program to the government.

To meet the needs of the 65 and over population as to insuring the uncovered portions of the Medicare program, policies were designed which tended to duplicate in conjunction with Medicare comprehensive programs offered by the industry.

The major elements of cost to be met were:

1. The initial inpatient deductible for each spell of illness.
2. The copay days from the 61st to the 90th day.
3. Full coverage from the 91st day on.
4. The copay days in a skilled nursing facility from the 21st to the 100th day.
5. The deductible (currently $60) and coinsurance (20%) for services provided by physicians and surgeons which were routinely provided under a typical health insurance policy.
6. Prescription drugs not provided by the hospital.

More than a decade has past since the program began and along with it the availability of data particular to the insured medicare population. Data pertaining to the complimentary Part A deductible and copays is relatively clean as the benefits are for a spell of illness or benefit period. On the other hand the Part B presents some problems due to the status of the deductible being maintained by Social Security and the difficulty if not the inability to maintain appropriate service counts and distribution of losses by size

that limits the ability to measure the impact of inflation upon the deductible and the truncation of service counts under the deductible. An additional ramification relative to inflation is the coverage provided under Part B for certain services provided in the outpatient area of a hospital similar to those provided on an inpatient basis.

For analytical purposes I've taken the pure premium calculation underlying the rate calculation for policies issued April 1 thru June 30, 1979, for a duration of 12 months.

The largest element, in terms of cost, is the inpatient hospital deductible. The estimation of the utilization for this benefit is relatively simple. A regression analysis is performed using 13 data points. These points represent 12 months of incurred or accident year data for successive quarters. The actual results and extrapolations considered and used are contained in Exhibit 1.

The estimation of the deductible amount, unfortunately, is not quite as simple since it is based upon nationwide data for a period of time which is incomplete as far as development. In the case of this example the 1980 deductible will be developed from 1978 data and as shown in Exhibit 2 (the rates were calculated during the last quarter of 1979).

The method employed to estimate the deductible is dependent upon two sources of data. The first is the calculation of the hospital deductible for the period prior to the year to be estimated (in this case 1979) as published in the Federal Register (see Appendix A) and the reports issued by OASDI displaying the experience for hospital insurance for various time periods which correspond to those used to

calculate the hospital deductible (Appendix B). It should be noted that the deductible value serves as a basis to establish the daily copay payments (by the insured or insurer) for the 61st to the 90th day and in a skilled nursing facility from the 21st to the 100th day.

The use of such external indices as the hospital services component of the Consumer Price Index are not reliable as it does not reflect the mix of services used by the 65 and over population.

If one compared the change in the inpatient hospital deductible with the change in the hospital charge indices contained in the CPI, they would find no consistency even when the CPI change is adjusted to reflect its impact one year hence on the Part A deductible.

The pure premium calculation for the in hospital copay for the 61st to the 90th day and skilled nursing copay for the 21st to the 100th day present no unusual consideration except for the calculation of the copay value. The method of determining the liability, as previously mentioned, follows that of the inpatient deductible. Consideration must be given to any variance between results of insured programs and those of the total medicare population and the availability of institutions which provide certain levels of care. Medicare studies (Appendix C) indicate days of care in a short hospital stay decreasing as well as a decrease in the number of skilled nursing facilities. These factors were considered in the choice of anticipated utilization levels for in hospital copay days from the 61st to the 90th day and skilled nursing copay days from the 21st to the 100th (Exhibits 3 & 4 respectively).

Exhibit 3 shows the day utilization for cases with length of stays from the 61st to the 90th day increasing. Without a distribution of cases by length of stay from 1 to 90 or more days, it is difficult to compare the total day utilization (1 to 90 days) of the insured population to that of the medicare population. One can rationalize as being reasonable that the number of claims with length of stays of less than 61 days could be decreasing while cases with length of stays beyond 60 days could have either had an increase in volume or length of stay. In addition, an insured program might be more attractive to those who need or anticipate the need of medical care, thereby inducing higher utilization.

Exhibit 5 presents the development of pure premiums for in hospital benefits beyond the 90th day. Benefits for days beyond 90 are paid for in full by the insured carrier. Normally one would expect that this value would be determined by estimating the day utilization and the average daily costs. An analysis of these elements indicated erratic behavior in terms of utilization, length of stay and costs whereas the composite (i.e., pure premiums) produce stable as well as reasonable results.

The most difficult element of pure premium to calculate is that to cover the Part B annual deductible in whole or in part for physician and outpatient hospital services. As was previously mentioned, there are no available statistics by size of losses to determine the impact of inflation and utilization upon the deductible value as the status of the Part B deductible and the benefits applicable to satisfy the deductible are maintained by Medicare.

To obviate the problem, the choice of the regression curve was paramount. It had to not only show a high degree of correlation to historical data but also demonstrate a pattern of future development that was logical. With increasing unit cost one would expect that in successive years the average deductible would increase at a decreasing rate and become asymptotic as it approached the deductible limit.

The most recent observation would indicate that the values have become asymptotic, therefore, the last observed value was chosen as the expected pure premium for the rating period. The historic values and the projected pure premiums are shown in Exhibit 6.

For the coinsurance benefits which compliment the Part B 80% co-insurance payments, a return to the more traditional technique of using utilization (frequency) and average cost per service for calculating pure premiums was adopted. The physicians and hospital elements are separated as each is influenced differently by the inflation factors particular to each of the segments. The increase in physicians prevailing fees is controlled by the Department of Health, Education & Welfare. For 1979 this value was calculated to be 5.08% over 1978 values and this same value was assumed to continue in 1980. The increase in hospital charges would reflect the inflationary pressures of the local hospital area and are currently being controlled by competition amongst hospitals and the American Hospital Association voluntary effort. Appendices D1, D2, and D3 detail the allowable increases in physicians prevailing charges carried into the pure premium calculations.

Exhibit 7 develops the expected service utilization for physicians

coinsurance benefits. The most recent observations indicate a leveling if not a moderation of usage. For projection purposes the last observed value was used. The average service cost is developed in Exhibit 8 and used the previously mentioned 5.08% and prior values as taken from the letters issued by Health, Education and Welfare to Part B intermediaries. The companion piece to the physicians' coinsurance is the outpatient hospital coinsurance benefit. The utilization and cost considerations are displayed in Exhibits 9 and 10.

To corroborate these trends and values (Physicians & Hospital) a review is made of the assumptions used by Health, Education and Welfare in developing Part B monthly actuarial and monthly premium rates. These calculations are contained in the Federal Register and are normally published each December.

Appendix E1 presents the various SSA assumptions underlying various SSA pricing and funding calculations. Table 5 presents a range of values for the projection factors for physicians' fees, utilization of physicians' services and outpatient hospital services. The projection factor used in the pure premium calculation to cover the uninsured coinsurance portion for these benefits are below those indicated by SSA for physicians' fees and utilization and within the high and low assumptions for outpatient hospital services.

The next and last benefit to be analyzed is prescription drugs. Prescription drugs, outside of those provided in a hospital setting, are not covered by Medicare. The benefit to be priced provides prescription drugs subject to a $25 quarterly deductible and 25% coinsurance. Pure premiums are developed by estimating the number of

claims and the average number of prescriptions per claim and the average cost per prescription. The estimation of the number of claims and the average number of prescriptions present no unusual or unique considerations. Generally the number of claimants have increased over time with the number of prescriptions showing a continuing decline. The underlying data and projections for these two elements are shown in Exhibits 11 & 12. In order to develop the full prescription charge, the average prescription claim payment has to be adjusted to reflect the removal of the 25% coinsurance and the $25 deductible. Projecting the average prescription charge without modification would obviously produce erroneous and undefensible results. The conversion of the average prescription cost from a partial to a full basis is developed in Exhibit 13. The resultant values are then transferred to Exhibit 14 where the projected value is developed. To evaluate the reasonableness of this value the inherent annual trend from the last observed value to the projected value is compared to the trends observed for the most recent annual values in the Consumer Price Index and for those shown in the Lilly Digest. At the time of preparation of the filing, the Consumer Price Index trend, as of October 1978, was 7.5%, while the Lilly Digest (1977) showed 9.4%. The 5.5% trend in the pure premium projections used was therefore considered to be reasonable. The estimated pure premiums for the benefit was calculated by developing the estimated full charge per claim and then reducing this value by the deductible amount and 20% coinsurance. Exhibit 15, Item H, details the calculation.

The pure premium for each of the benefit categories previously described and their detailed calculations are contained in Exhibit 15.

ANNUAL CLAIMS INCIDENCE
PER 100 CONTRACTS FOR FISCAL YEARS ENDING

Benefit Category	3/31/75	6/30/75	9/30/75	12/31/75	3/31/76	6/30/76	9/30/76	12/31/76	3/31/77	6/30/77	9/30/77	12/31/77	-PROJECTED- 6/14/80
	ACTUAL												
Inpatient Hospital Deductible	24.932	24.966	25.001	25.026	25.346	25.513	25.750	25.910	26.771	25.917	25.889	26.215	26.968*

* The projected values resulting from the three projection methods indicated below were initially considered. Despite the significantly high indexes of determination and the reasonability of the values, it was determined to be appropriate to calculate the projected claim incidence value using the most recently observed annual rate of increase (1.2%) which is somewhat lower than the annual trends underlying the aforementioned projected values. $[(26.215)(1.012)^{28.5/12} = 26.968]$.

Projection Method	Form of Equation	Index of Determination	Projected Value
Linear	Y = A + BX	.928	27.329
Hyperbolic	Y = 1/(A + BX)	.927	27.462
Exponential	Y = A(EXP(BX))	.926	27.392

The remaining projection methods employed produce values and/or indexes of determination that were judged to be inappropriate for consideration.

	FORM OF EQUATION	TYPE OF FUNCTION	EQUATION NUMBER	INDEX OF DETERMINATION	A	B	PROJ. VALUE	ANN. TREND
1.	Y=A+(B*X)	LINEAR	1	.928	24.735696	.120598	27.329	1.8%
2.	Y=1/(A+B*X)	HYPERBOLIC	5	.927	.040403	-.000186	27.462	2.0%
3.	Y=A*EXP(B*X)	EXPONENTIAL	2	.926	24.743391	.004730	27.392	1.9%
4.	Y=A*(X^B)	POWER	3	.827	24.625612	.021323	26.290	.1%
5.	Y=A+B*LOG(X)	LOGARITHMIC	7	.826	24.615411	.542850	26.201	.1%
6.	Y=X/(A+B*X)	HYPERBOLIC	6	.540	.001940	.038695	25.703	-.7%
7.	Y=A*EXP(B/X)	EXPONENTIAL	8	.537	25.843334	-.049305	25.784	-.7%
8.	Y=A+(B/X)	HYPERBOLIC	4	.534	25.843736	-1.253488	25.785	-.7%

EXHIBIT 2

Estimate of 1980 Medicare Inpatient Hospital Deductible*

ITEM		AMOUNT	SOURCE
A.	Average hospital charge per day for the period January 1, 1977 to December 31, 1977	$197.07	Appendix B
B.	Average per diem rate for the period January 1, 1977 to December 31, 1977	$160.69	Page 44891, Federal Register, Vol. 43 No. 190, dated 9/29/78. Appendix A
C.	Ratio of per diem rate to average hospital charge per day for the period January 1, 1977 to December 31, 1977	.815	Item B ÷ Item A
D.	Average hospital charge per day for the period January 1, 1977 to June 30, 1977	$190.77	Appendix B
E.	Average hospital charges per day for the period January 1, 1978 to June 30, 1978	$217.21	Appendix B
F.	Estimated average hospital charge per day for the period January 1, 1978 to December 31, 1978	$224.38	(Item E ÷ Item D)(Item A)
G.	Estimated ratio of per diem rate to average hospital charge per day for the period January 1, 1978 to December 31, 1978	.815	Based on 1977 experience. Item C.
H.	Estimated average per diem rate for the period January 1, 1978 to December 31, 1978	$183.68	(Item F)(Item G)
I.	Average per diem rate for the period January 1, 1966 to December 31, 1966	$ 40.01	Page 44891, Federal Register, Vol. 43 No. 190, dated 9/29/78. Attachment I
J.	Estimated 1980 inpatient hospital deductible	$184.00	(Item H - Item I)($40) rounded to the nearest multiple of $4.00

*The law provides that for spells of illness beginning in calendar years after 1968 the inpatient hospital deductible shall be equal to $40 multiplied by the ratio of (1) the current average per diem rate for inpatient hospital services for the calendar year preceding the year in which the promulgation is made to (2) the current average per diem rate for such services for 1966. Changes in the amount of the inpatient hospital deductible also affect certain other cost-sharing provisions under the Medicare hospital insurance program, the patient co-payment for the 61st to 90th inpatient day which equals 25 percent of the inpatient hospital deductible, and the skilled nursing home daily co-payment which is equal to 12.5 percent of the inpatient hospital deductible.

EXHIBIT 2A

Actual and Estimated Deductible and
Coinsurance Amounts for Medicare Beneficiaries

Item	ACTUAL 1974	1975	1976	1977	1978	1979	ESTIMATED 1980
A. Hospital Inpatient Deductible Per Admission	$84.00	$92.00	$104.00	$124.00	$144.00	$160.00	$184.00
B. Patient Co-Payment from the 61st to the 90th Inpatient Day (25% of Item (A) values)	$21.00	$23.00	$ 26.00	$ 31.00	$ 36.00	$ 40.00	$ 46.00
C. Skilled Nursing Facility Daily Co-Payment (12.5% of Item (A) values)	$10.50	$11.50	$ 13.00	$ 15.50	$ 18.00	$ 20.00	$ 23.00
D. Physicians' Services and Outpatient Services Annual Deductible	$60.00	$60.00	$ 60.00	$ 60.00	$ 60.00	$ 60.00	$ 60.00
E. Patient Coinsurance for Physicians' Services and Outpatient Services	20%	20%	20%	20%	20%	20%	20%

Calculation of the Liability for the
Period of these Rates for the Benefit Categories
Impacted by the Expected Increase in the
1980 Medicare Inpatient Hospital Deductible

ITEM		AMOUNT	SOURCE
A.	1979 Medicare inpatient hospital deductible	$160.00	Page 44891, Federal Register, Vol. 43 No. 190, dated 9/29/78. Attachment I
B.	Estimated 1980 Medicare inpatient hospital deductible	$184.00	Exhibit 2A, Item K
C.	Medicare inpatient hospital deductible for the period 5/15/79 to 5/14/80	$169.00	[(7.5/12)(Item A) + (4.5/12)(Item B)]
D.	Co-payment for the 61st to the 90th inpatient hospital day for the period 5/15/79 to 5/14/80	$ 42.25	(Item C)(.250)
E.	Skilled nursing facility daily co-payment for the period 5/15/79 to 5/14/80	$ 21.13	(Item C)(.125)

ANNUAL DAY INCIDENCE

PER 100 CONTRACTS FOR FISCAL YEARS ENDING

Benefit Category	ACTUAL 3/31/75	6/30/75	9/30/75	12/31/75	3/31/76	6/30/76	9/30/76	12/31/76	3/31/77	6/30/77	9/30/77	12/31/77	PROJECTED 5/14/80
Co-payment for the 61st to the 90th Inpatient Hospital Day	15.732	16.504	16.633	17.384	17.995	18.137	18.420	18.407	18.453	18.484	18.443	18.644	19.225*

* The projected values resulting from the two projection methods indicated below were initially considered. Despite the significantly high indexes of determination and the reasonability of the values, it was determined to be appropriate to calculate the projected day incidence value using the most recently observed annual rate of increase (1.3%) which is somewhat lower than the annual trends underlying the aforementioned projected values [(18.644)(1.013)$^{28.5/12}$ = 19.225].

Projection Method	Form of Equation	Index of Determination	Projected Value
Logarithmic	Y = A + B(ln X)	.951	19.529
Power	Y = AX^B	.951	19.648

The remaining projection methods employed produce values and/or indexes of determination that were judged to be inappropriate for consideration.

FORM OF EQUATION	TYPE OF FUNCTION	EQUATION NUMBER	INDEX OF DETERMINATION	A	B	PROJ. VALUE	ANN. TREND
1. Y=A+B*LOG(X)	LOGARITHMIC	7	.951	15.679929	1.254644	19.529	2.0%
2. Y=A*(X^B)	POWER	3	.951	15.721701	.072661	19.648	2.2%
3. Y=X/(A+B*X)	HYPERBOLIC	6	.867	.011565	.053449	18.523	-.3%
4. Y=A*EXP(B/X)	EXPONENTIAL	8	.855	18.675771	-.197837	18.505	-.3%
5. Y=A+(B/X)	HYPERBOLIC	4	.843	18.646558	-3.390909	18.489	-.4%
6. Y=A+(B*X)	LINEAR	1	.807	16.194574	.242322	21.404	6.0%
7. Y=A*EXP(B*X)	EXPONENTIAL	2	.797	16.206697	.013945	21.873	7.0%
8. Y=1/(A+B*X)	HYPERBOLIC	5	.786	.061665	-.000804	22.532	8.3%

ANNUAL DAY INCIDENCE

PER 100 CONTRACTS FOR FISCAL YEARS ENDING

Benefit Category	3/31/75	6/30/75	9/30/75	12/31/75	3/31/76	6/30/76	9/30/76	12/31/76	3/31/77	6/30/77	9/30/77	12/31/77	6/14/80
	ACTUAL												PROJECTED
Skilled Nursing Facility Copayment from 21st to 100th day	38.222	37.110	36.874	36.101	34.642	34.094	32.028	29.945	27.113	23.493	20.563	18.111	11.257*

* The projected value is the result of an exponential projection [Y = A(EXP(BX))] which has an index of determination of .879. This value is considered to be appropriate for inclusion in the rate calculation in view of the acceptable index of determination as well as the fact that the annual trend underlying the projected value is consistent with the expectation that day incidence for Skilled Nursing Facilities will continue to decrease, but at a somewhat lesser rate than has been historically observed. A linear projection [Y = A + BX] has a higher index of determination (i.e., .926), however the resulting projected value of 3.161 was considered to be clearly inadequate and therefore rejected. The remaining projection methods employed produce values and/or indexes of determination that were judged to be inappropriate for consideration.

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	FORM OF EQUATION	TYPE OF FUNCTION	EQUATION NUMBER	INDEX OF DETERMINATION	A	B	PROJ. VALUE	ANN. TREND
1.	Y=A+(B*X)	LINEAR	1	.926	42.621060	-1.835343	3.161	-52.0%
2.	Y=A*EXP(B*X)	EXPONENTIAL	2	.879	45.623749	-.065091	11.257	-18.1%
3.	Y=1/(A+B*X)	HYPERBOLIC	5	.821	.018952	.002392	14.207	-9.7%
4.	Y=A+B*LOG(X)	LOGARITHMIC	7	.697	43.344607	-7.596821	20.037	4.3%
5.	Y=A*(X^B)	POWER	3	.631	46.313503	-.263028	20.665	5.7%
6.	Y=A+(B/X)	HYPERBOLIC	4	.395	26.444535	16.422209	27.208	18.7%
7.	Y=A*EXP(B/X)	EXPONENTIAL	8	.340	25.892833	.554400	26.569	17.5%
8.	Y=X/(A+B*X)	HYPERBOLIC	6	.288	-.019405	.039521	25.894	16.2%

EXHIBIT 4

MONTHLY PURE PREMIUM
PER CONTRACT FOR FISCAL YEARS ENDING

Benefit Category	ACTUAL 3/31/75	6/30/75	9/30/75	12/31/75	3/31/76	6/30/76	9/30/76	12/31/76	3/31/77	6/30/77	9/30/77	12/31/77	PROJECTED 5/14/80
Payment from the 91st Inpatient Hospital Day On.	$1.210	$1.324	$1.433	$1.525	$1.606	$1.601	$1.631	$1.643	$1.653	$1.643	$1.661	$1.650	$1.678*

* The projected value is the result of a hyperbolic projection [Y = X/(A + BX)] which has an index of determination of .944, the highest index of determination of the projection methods employed. A logarithmic projection [Y = A + B(ln X)] has virtually the same index of determination (i.e., .943), however the resulting projected value of $1.816 was considered to be excessive in view of the relative stability of the recent actual experience. The remaining projection methods employed produce values and/or indexes of determination that were judged to be inappropriate for consideration.

	FORM OF EQUATION	TYPE OF FUNCTION	EQUATION NUMBER	INDEX OF DETERMINATION	A	B	PROJ. VALUE	ANN. TREND
1.	Y=X/(A+BX)	HYPERBOLIC	6	.944	.265492	.583515	1.679	.7%
2.	Y=A+B*LOG(X)	LOGARITHMIC	7	.943	1.229987	.191130	1.816	4.1%
3.	Y=A*(X^B)	POWER	3	.936	1.237339	.131828	1.854	5.0%
4.	Y=A*EXP(B/X)	EXPONENTIAL	8	.920	1.498744	-.376911	1.669	.5%
5.	Y=A+(B/X)	HYPERBOLIC	4	.910	1.687731	-.539045	1.663	.3%
6.	Y=A+(BX)	LINEAR	1	.736	1.310242	.035399	2.079	10.2%
7.	Y=A*EXP(B*X)	EXPONENTIAL	2	.713	1.317406	.024125	2.213	13.2%
8.	Y=1/(A+B*X)	HYPERBOLIC	5	.609	.759790	-.016557	2.476	18.6%

EXHIBIT 5

MONTHLY PURE PREMIUM
PER CONTRACT FOR FISCAL YEARS ENDING

Benefit Category	ACTUAL 3/31/75	6/30/75	9/30/75	12/31/75	3/31/76	6/30/76	9/30/76	12/31/76	3/31/77	6/30/77	9/30/77	12/31/77	PROJECTED 5/14/80
Physicians' Services and Outpatient Services Annual Deductible	$1.822	$1.851	$1.852	$1.837	$1.975	$2.065	$2.109	$2.134	$2.238	$2.235	$2.242	$2.234	$2.234*

* The most recent observation (i.e., the year ending 12/31/77) has been carried forward to the period of the rates. The three projection methods indicated below have significantly high indexes of determination; however due to the relative stability of the four most recent observations, the projected values were judged to be excessive and therefore rejected.

Projection Method	Form of Equation	Index of Determination	Projected Value
Linear	Y = A + BX	.923	$2.745
Exponential	Y = A(EXP(BX))	.919	$2.876
Hyperbolic	Y = 1/(A + BX)	.914	$3.102

The remaining projection methods employed produce values and/or indexes of determination that were judged to be inappropriate for consideration.

	FORM OF EQUATION	TYPE OF FUNCTION	EQUATION NUMBER	INDEX OF DETERMINATION	A	B	PROJ. VALUE	ANN. TREND
1.	Y=A+(B*X)	LINEAR	1	.923	1.748182	.046357	2.745	9.1%
2.	Y=A*EXP(B*X)	EXPONENTIAL	2	.919	1.761175	.022810	2.876	11.2%
3.	Y=1/(A+B*X)	HYPERBOLIC	5	.914	.564407	-.011259	3.102	14.8%
4.	Y=A*(X^B)	POWER	3	.828	1.719763	.103302	2.361	2.4%
5.	Y=A+B*LOG(X)	LOGARITHMIC	7	.822	1.701871	.208711	2.342	2.0%
6.	Y=X/(A+B*X)	HYPERBOLIC	6	.550	.119619	.460290	2.147	-1.7%
7.	Y=A*EXP(B/X)	EXPONENTIAL	8	.540	2.173125	-.239441	2.149	-1.6%
8.	Y=A+(B/X)	HYPERBOLIC	4	.530	2.173832	-.480788	2.151	-1.6%

ANNUAL SERVICE INCIDENCE
PER 100 CONTRACTS FOR FISCAL YEARS ENDING

Benefit Category	ACTUAL 3/31/75	6/30/75	9/30/75	12/31/75	3/31/76	6/30/76	9/30/76	12/31/76	3/31/77	6/30/77	9/30/77	12/31/77	PROJECTED 6/14/80
Physicians' Services Coinsurance	349.034	361.880	379.235	397.626	405.828	419.269	434.288	447.282	448.633	451.196	445.098	444.293	444.293*

* The most recent observation (i.e., the year ending 12/31/77) has been carried forward to the period of the rates. The two projection methods indicated below have significantly high indexes of determination; however, due to the relative stability of the five most recent observations, the projected values, which represent upward trends, were judged to be inappropriate and therefore rejected.

Projection Method	Form of Equation	Index of Determination	Projected Value
Power	$Y = AX^B$	.955	487.301
Logarithmic	$Y = A + B(\ln X)$	.947	480.797

The remaining projection methods employed produce values and/or indexes of determination that were judged to be inappropriate for consideration.

	FORM OF EQUATION	TYPE OF FUNCTION	EQUATION NUMBER	INDEX OF DETERMINATION	A	B	PROJ. VALUE	ANN. TREND
1.	Y=A*(X^B)	POWER	3	.955	340.755047	.116595	487.301	4.0%
2.	Y=A+B*LOG(X)	LOGARITHMIC	7	.947	337.525093	46.697891	480.797	3.4%
3.	Y=A+(B*X)	LINEAR	1	.877	354.056190	9.422917	556.649	10.0%
4.	Y=A*EXP(B*X)	EXPONENTIAL	2	.868	355.636978	.023301	586.911	12.4%
5.	Y=1/(A+B*X)	HYPERBOLIC	5	.856	.002802	-.000058	641.861	16.8%
6.	Y=X/(A+B*X)	HYPERBOLIC	6	.806	.000769	.002227	441.929	-.2%
7.	Y=A*EXP(B/X)	EXPONENTIAL	8	.783	447.533321	-.303118	441.268	-.3%
8.	Y=A+(B/X)	HYPERBOLIC	4	.759	446.350307	-120.050450	440.767	-.3%

EXHIBIT 7

EXHIBIT 8

Calculation of the Average Cost Per Service
for the Period of these Rates for the Physicians'
Coinsurance Benefit Category

ITEM	AMOUNT	SOURCE
A. Calculation of the cost trend factor to project the average cost per service for physicians' coinsurance benefit category from the year ending 12/31/77 to the year ending 5/14/80.		
1. The economic index applicable to physicians' services announced by the Social Security Administration for the period July 1, 1976 through June 30, 1977.	1.276	Part B Intermediary Letter No. 76-34 from Department of Health, Education and Welfare, dated August 1976. Appendix D1
2. The economic index applicable to physicians' services announced by the Social Security Administration for the period July 1, 1977 through June 30, 1978.	1.357	Part B Intermediary Letter No. 77-24 from Department of Health, Education and Welfare, dated June 1977. Appendix D2
3. Percent of increase for fiscal year 1978 over fiscal year 1977	6.35%	Item A.2. ÷ Item A.1.
4. The economic index applicable to physicians' services announced by the Social Security Administration for the period July 1, 1978 through June 30, 1979	1.426	Part B Intermediary Letter No. 78-23 from Department of Health, Education and Welfare, dated June 1978. Appendix D3
5. Percent of increase for fiscal year 1979 over fiscal year 1978	5.08%	Item A.4. ÷ Item A.2.
6. Expected percent of increase for fiscal year 1980 over fiscal year 1979	5.08%	Judgement
B. Cost trend factor to project the year ending 12/31/77 to the year ending 5/14/80.	1.132	$(1.0635)^{6/12}(1.0508)(1.0508)^{10.5/12}$
C. Cost per service for the physicians' coinsurance benefit category for the year ending 12/31/77.	$7.85	Medicare Complimentary Rate Study Tabulation
D. Expected average cost per service for physicians' coinsurance benefit category for the year ending 5/14/80	$8.89	(Item B) (Item C)

ANNUAL SERVICE INCIDENCE
PER 100 CONTRACTS FOR FISCAL YEARS ENDING

Benefit Category	3/31/75	6/30/75	9/30/75	12/31/75	3/31/76	6/30/76	9/30/76	12/31/76	3/31/77	6/30/77	9/30/77	12/31/77	-PROJECTED- 5/14/80
	ACTUAL												
Outpatient Hospital Services Coinsurance	70.307	74.164	78.924	83.151	85.813	90.761	95.921	99.602	102.056	105.553	108.745	113.426	150.742*

* The projected value is the result of a linear projection [Y = A + BX] which has an index of determination of .996, the highest index of determination of the projection methods employed. This value is considered to be appropriate for inclusion in the rate calculation in view of the extremely high index of determination as well as the fact that the annual trend underlying the projected value is consistent with the decelerating annual rates of increase observed in the recent historical experience. An exponential projection [Y = A(EXP(BX))] and a hyperbolic projection [Y = 1/(A + BX)] also have extremely high indexes of determination (i.e., .987 and .970, respectively), however the resulting projected values (i.e., 173.859 and 257.553, respectively) were considered to be excessive and therefore rejected. The remaining projection methods employed produce values and/or indexes of determination that were judged to be inappropriate for consideration.

FORM OF EQUATION	TYPE OF FUNCTION	EQUATION NUMBER	INDEX OF DETERMINATION	A	B	PROJ. VALUE	ANN. TREND
1. Y=A+(B*X)	LINEAR	1	.996	67.072222	3.891619	150.742	12.7%
2. Y=A*EXP(B*X)	EXPONENTIAL	2	.987	69.133700	.042893	173.859	19.7%
3. Y=1/(A+B*X)	HYPERBOLIC	5	.970	.014183	-.000479	257.553	41.2%
4. Y=A*(X^B)	POWER	3	.942	65.492350	.199877	120.924	2.7%
5. Y=A+B*LOG(X)	LOGARITHMIC	7	.912	62.790400	17.757761	117.272	1.4%
6. Y=X/(A+B*X)	HYPERBOLIC	6	.739	.005724	.009589	101.474	-4.6%
7. Y=A*EXP(B/X)	EXPONENTIAL	0	.688	103.716866	-.490394	101.378	-4.6%
8. Y=A+(B/X)	HYPERBOLIC	4	.636	103.382814	-42.594857	101.402	-4.6%

EXHIBIT 9

AVERAGE COST PER SERVICE

FOR FISCAL YEARS ENDING

Benefit Category	ACTUAL 3/31/76	6/30/76	9/30/76	12/31/76	3/31/76	6/30/76	9/30/76	12/31/76	3/31/77	6/30/77	9/30/77	12/31/77	PROJECTED 5/14/80
Outpatient Hospital Services Coinsurance	$6.66	$6.98	$7.23	$7.36	$7.56	$7.72	$7.92	$8.16	$8.32	$8.47	$8.68	$8.89	$11.03*

* The three projection methods indicated below result in extremely high and nearly equal indexes of determination. The projected value produced by the hyperbolic projection was rejected as being clearly excessive. It was determined to be appropriate to use the mean of the linear projection and the exponential projection [($10.73 + $11.33) ÷ 2 = $11.03] in the rate calculation in consideration of the nearly equal validity of the linear and exponential projection methods, as well as the fact that the annual trend underlying the mean value is consistent with both recent historical experience and reasonable expectations of future hospital cost increases for outpatient services.

Projection Method	Form of Equation	Index of Determination	Projected Value
Linear	Y = A + BX	.996	$10.73
Exponential	Y = A(EXP(BX))	.991	$11.33
Hyperbolic	Y = 1/(A + BX)	.983	$12.43

The remaining projection methods employed produce values and/or indexes of determination that were judged to be inappropriate for consideration.

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FORM OF EQUATION	TYPE OF FUNCTION	EQUATION NUMBER	INDEX OF DETERMINATION	A	B	PROJ. VALUE	ANN. TREND
1. Y=A+(B*X)	LINEAR	1	.996	6.572121	.193392	10.730	8.2%
2. Y=A*EXP(B*X)	EXPONENTIAL	2	.991	6.635739	.024875	11.328	10.7%
3. Y=1/(A+B*X)	HYPERBOLIC	5	.983	.149577	-.003215	12.429	15.2%
4. Y=A*(X^B)	POWER	3	.940	6.434750	.115542	9.172	1.3%
5. Y=A+B*LOG(X)	LOGARITHMIC	7	.919	6.353128	.886190	9.072	.9%
6. Y=X/(A+B*X)	HYPERBOLIC	6	.730	.037955	.118866	8.290	-2.9%
7. Y=A*EXP(B/X)	EXPONENTIAL	8	.695	8.397684	-.285364	8.287	-2.9%
8. Y=A+(B/X)	HYPERBOLIC	4	.660	8.386769	-2.156228	8.286	-2.9%

EXHIBIT 16

ANNUAL CLAIM INCIDENCE

PER 100 CONTRACTS FOR FISCAL YEARS ENDING

Benefit Category	ACTUAL 3/31/75	6/30/75	9/30/75	12/31/75	3/31/76	6/30/76	9/30/76	12/31/76	3/31/77	6/30/77	9/30/77	12/31/77	PROJECTED 5/14/80
Prescription Drugs	45.596	46.638	47.320	48.467	49.514	51.017	53.018	54.695	56.173	57.436	58.618	59.663	72.772*

* The projected value is the result of a linear projection [Y = A + BX] which has an index of determination of .991. This value is considered to be appropriate for inclusion in the rate calculation in view of the extremely high index of determination as well as the fact that the annual trend underlying the projected value is consistent with the decelerating annual rates of increase observed in the recent historical experience. An exponential projection [Y = A(EXP(BX))] and a hyperbolic projection [Y = 1/(A + BX)] have slightly higher indexes of determination (i.e., .992), however the resulting projected values (i.e., 77.042 and 85.039, respectively) were considered to be excessive and therefore rejected. The remaining projection methods employed produce values and/or indexes of determination that were judged to be inappropriate for consideration.

	FORM OF EQUATION	TYPE OF FUNCTION	EQUATION NUMBER	INDEX OF DETERMINATION	A	B	PROJ. VALUE	ANN. TREND
1.	Y=A*EXP(B*X)	EXPONENTIAL	2	.992	44.016928	.026036	77.042	11.4%
2.	Y=1/(A+B*X)	HYPERBOLIC	5	.992	.022510	-.000500	85.039	16.1%
3.	Y=A+(B*X)	LINEAR	1	.991	43.495270	1.361689	72.772	8.7%
4.	Y=A*(X^B)	POWER	3	.866	42.970726	.116049	61.348	1.2%
5.	Y=A+B*LOG(X)	LOGARITHMIC	7	.847	42.342538	6.006066	60.769	.8%
6.	Y=X/(A+B*X)	HYPERBOLIC	6	.595	.005300	.017889	55.141	-3.3%
7.	Y=A*EXP(B/X)	EXPONENTIAL	8	.569	55.903593	-.269983	55.206	-3.2%
8.	Y=A+(B/X)	HYPERBOLIC	4	.544	55.918910	-13.815348	55.276	-3.2%

EXHIBIT 11

AVERAGE NUMBER OF PRESCRIPTIONS

PER PRESCRIPTION DRUG CLAIM FOR FISCAL YEARS ENDING

	ACTUAL												PROJECTED
Benefit Category	3/31/75	6/30/75	9/30/75	12/31/75	3/31/76	6/30/76	9/30/76	12/31/76	3/31/77	6/30/77	9/30/77	12/31/77	5/14/80
Prescription Drugs	9.875	9.760	9.642	9.402	9.277	9.149	9.081	9.011	8.925	8.866	8.788	8.712	8.054*

* The three projection methods indicated below result in extremely high and nearly equal indexes of determination. It was determined to be appropriate to use a mean of the linear, exponential, and hyperbolic projections [(7.877 + 7.778 + 8.508) ÷ 3 = 8.054] in the rate calculation in consideration of nearly equal validity of these three projection methods as well as the fact that the annual trend underlying the mean value is equal to the most recently observed annual rate of decrease (-3.3%).

Projection Method	Form of Equation	Index of Determination	Projected Value
Hyperbolic	Y = 1/(A + BX)	.976	7.877
Exponential	Y = A(EXP(BX))	.971	7.778
Logarithmic	Y = A + B(ln X)	.970	8.508

The remaining projection methods employed produce values and/or indexes of determination that were judged to be inappropriate for consideration.

FORM OF EQUATION	TYPE OF FUNCTION	EQUATION NUMBER	INDEX OF DETERMINATION	A	B	PROJ. VALUE	ANN. TREND
1. Y=1/(A+B*X)	HYPERBOLIC	5	.976	.101054	.001204	7.877	-4.2%
2. Y=A*EXP(B*X)	EXPONENTIAL	2	.971	9.880607	-.011128	7.778	-4.7%
3. Y=A+B*LOG(X)	LOGARITHMIC	7	.970	10.017760	-.492071	8.508	-1.0%
4. Y=A+(B*X)	LINEAR	1	.965	9.867120	-.102916	7.654	-5.3%
5. Y=A*(X^B)	POWER	3	.964	10.037782	-.052904	8.534	-.9%
6. Y=A+(B/X)	HYPERBOLIC	4	.745	8.877872	1.238568	8.935	1.1%
7. Y=A*EXP(B/X)	EXPONENTIAL	8	.733	8.881842	.132370	8.937	1.1%
8. Y=X/(A+B*X)	HYPERBOLIC	6	.720	-.014160	.112545	8.938	1.1%

CALCULATION OF THE AVERAGE CHARGE PER PRESCRIPTION DRUG CLAIM
FOR FISCAL YEARS ENDING

	3/31/75	6/30/75	9/30/75	12/31/75	3/31/76	6/30/76	9/30/76	12/31/76	3/31/77	6/30/77	9/30/77	12/31/77	SOURCE
1. Average cost per claim	$32.00	$32.47	$32.71	$32.97	$32.93	$32.86	$32.86	$33.16	$33.35	$33.68	$33.92	$34.37	
2. Average charge per claim	$65.00	$65.59	$65.89	$66.21	$66.16	$66.08	$66.08	$66.45	$66.69	$67.10	$67.40	$67.96	Drug benefits provide for 80% coinsurance after satisfaction of a $25.00 deductible (Item 1 ÷ .80) + $25.00.
3. Average number of prescription per claim	9.875	9.750	9.542	9.402	9.277	9.149	9.081	9.011	8.925	8.866	8.788	8.712	
4. Average charge per prescription	$6.58	$6.73	$6.91	$7.04	$7.13	$7.22	$7.28	$7.37	$7.47	$7.57	$7.67	$7.80	Item 2 ÷ Item 3

EXHIBIT 13

AVERAGE CHARGE PER PERSCRIPTION
FOR FISCAL YEARS ENDING

Benefit Category	ACTUAL 3/31/75	6/30/75	9/30/75	12/31/75	3/31/76	6/30/76	9/30/76	12/31/76	3/31/77	6/30/77	9/30/77	12/31/77	PROJECTED 5/14/80
Prescription Drugs	$6.58	$6.73	$6.91	$7.04	$7.13	$7.22	$7.28	$7.37	$7.47	$7.57	$7.67	$7.80	$8.86*

* The three projection methods indicated below have extremely high and nearly equal indexes of determination. The value produced by the hyperbolic projection was rejected as being excessive in view of the historical rates of increase. It was determined to be appropriate to use the mean of the linear projection and the exponential projection [($8.77 + $8.95) ÷ 2 = $8.86] in the rate calculation in consideration of the nearly equal validity of the linear and exponential projection methods, as well as the fact that the annual trend underlying the mean value is consistent with recent historical experience.

Projection Method	Form of Equation	Index of Determination	Projected Value
Linear	Y = A + BX	.987	$8.77
Exponential	Y = A(EXP(BX))	.982	$8.95
Hyperbolic	Y = 1/(A + BX)	.976	$9.19

The remaining projection methods employed produce values and/or indexes of determination that were judged to be inappropriate for consideration.

	FORM OF EQUATION	TYPE OF FUNCTION	EQUATION NUMBER	INDEX OF DETERMINATION	A	B	PROJ. VALUE	ANN. TREND
1.	Y=A+(B*X)	LINEAR	1	.987	6.561969	.102902	8.774	5.1%
2.	Y=A*EXP(B*X)	EXPONENTIAL	2	.982	6.580818	.014302	8.950	6.0%
3.	Y=1/(A+B*X)	HYPERBOLIC	5	.976	.151582	-.001991	9.193	7.2%
4.	Y=A*(X^B)	POWER	3	.952	6.457253	.067192	7.936	.7%
5.	Y=A+B*LOG(X)	LOGARITHMIC	7	.941	6.432230	.479468	7.903	.6%
6.	Y=X/(A+B*X)	HYPERBOLIC	6	.742	.023777	.132492	7.485	-1.7%
7.	Y=A*EXP(B/X)	EXPONENTIAL	8	.722	7.542393	-.167905	7.484	-1.7%
8.	Y=A+(B/X)	HYPERBOLIC	4	.701	7.537976	-1.187710	7.483	-1.7%

EXHIBIT 14

Calculation of the Expected Monthly
Pure Premium Increments
for the Period 5/15/79 to 5/14/80

ITEM	AMOUNT	SOURCE
A. Inpatient hospital deductible per admission		
1. Annual claim incidence per 100 contracts	26.968	Exhibit 1
2. Average payment per inpatient hospital deductible	$169.00	Exhibit 2B, Item C
3. Expected monthly pure premium	$ 3.798	[(Item A1)(Item A2) ÷ 1200]
B. Co-payment for the 61st to the 90th inpatient hospital day		
1. Annual day incidence per 100 contracts	19.225	Exhibit 3
2. Average payment per day	$ 42.25	Schedule 2B, Item D
3. Expected monthly pure premium	$ .677	[(Item B1)(Item B2) ÷ 1200]
C. Expected monthly pure premium for the 91st to the 120th inpatient hospital day	$ 1.678	Exhibit 5
D. Expected monthly pure premium for the joint physicians' services and outpatient services annual deductible	$ 2.234	Exhibit 6
E. Physicians' services coinsurance		
1. Annual services incidence per 100 contracts	444.293	Exhibit 7
2. Average payment per service	$ 8.89	Exhibit 8, Item D
3. Expected monthly pure premium	$ 3.291	[(Item E1)(Item E2 ÷ 1200]
F. Outpatient hospital service coinsurance		
1. Annual service incidence per 100 contracts	150.742	Exhibit 9
2. Average payment per service	$ 11.03	Exhibit 10
3. Expected monthly pure premium	$ 1.386	[(Item F1)(Item F2) ÷ 1200]

ITEM	AMOUNT	SOURCE
G. Skilled Nursing Facility		
1. Annual day incidence per 100 contracts	11.257	Exhibit 4
2. Average payment per day	$ 21.13	Exhibit 2, Item E
3. Expected monthly pure premium	$ .198	[(Item G1)(Item G2) ÷ 1200]
H. Prescription Drugs		
1. Average number of prescriptions per claim	8.054	Exhibit 12
2. Average charge per prescription	$ 8.86	Exhibit 14
3. Average charge per claim	$ 71.36	(Item H1)(Item H2)
4. Expected average payment per claim	$ 37.09	[$71.36 - $25.00][.80] = $37.09
5. Annual claim incidence per 100 contracts	72.772	Exhibit 11
6. Expected monthly pure premium	$ 2.249	[(Item H4)(Item H5) ÷ 1200]

Office of the Secretary

MEDICARE PROGRAM

Inpatient Hospital Deductible for 1979

Under the authority in section 1813(b)(2) of the Social Security Act (42 U.S.C. 1395e(b)(2)), I have determined and hereby announce that the medicare inpatient hospital deductible for 1979 shall be $160.

Section 1813 of the Social Security Act provides for an inpatient hospital deductible and certain coinsurance amounts to be deducted from the amount payable for inpatient hospital services and post-hospital extended care services furnished an individual during a spell of illness. Section 1813(b)(2) of the act requires the Secretary to determine and publish, between July 1 and October 1 of each year, the amount of the inpatient hospital deductible for the following calendar year.

Under a formula in the law, the deductible for calendar year 1979 must be equal to $40 multiplied by the ratio of: (1) The current average rate for a day of inpatient hospital services for calendar year 1977 to (2) the average daily rate for such services in 1966. The amount so determined is rounded to the nearest multiple of $4. The average daily rates are determined by the Secretary based on the amounts paid on behalf of insured individuals to the hospitals participating in the medicare program plus the amounts withheld because of the deductible and coinsurance provisions.

Because the applicable coinsurance amounts in section 813 of the Social Security Act are fixed percentages of the inpatient deductible for services furnished in the same spell of illness, the increase in the deductible has the effect of also increasing the amount of coinsurance the Medicare beneficiary must pay. Thus, for spells of illness beginning in 1979, the daily coinsurance for the 61st through 90th days of hospitalization (one-fourth of the inpatient hospital deductible) will be $40; the daily coinsurance for lifetime reserve days (one-half the inpatient hospital deductible) will be $80; and the daily coinsurance for the 21st through the 100th days of extended care services (one-eighth of the inpatient hospital deductible) will be $20.

The data used to make the necessary computations of the current average daily rate for calendar years 1966 and 1977 are derived from individual inpatient hospital bills that are recorded for all beneficiaries in the records of the program. These records show, for each bill, the number of inpatient days of care and the interim cost (the sum of interim reimbursement, deductible, and coinsurance). Tabulations are prepared which summarize the data from these bills by the year in which the care was provided. The resulting average interim daily rate accurately reflects interim costs on an accrual basis.

In order to properly reflect the change in the average daily hospital cost under the program, the average interim cost (as shown in the tabulations) must be adjusted for the effect of final cost settlements made with each provider of services after the end of its accounting year to adjust the reimbursement to that provider from the amount paid during that year on an interim basis to the actual full cost of providing covered services to beneficiaries. To the extent that the ratio of final cost to interim cost for 1977 differs from the ratio of final cost to interim cost for 1966, the increase in average interim daily costs will not coincide with the increase in actual cost that has occurred.

The current average interim daily rate for inpatient hospital services for calendar year 1977, based on tabulated interim costs, is $155.26; the corresponding amount for 1966 is $37.92. These averages are based on approximately 93 million days of hospitalization in 1977 and 30 million days in 1966 (last 6 months of the year). The ratio of final cost to interim cost is approximately 1.035 for 1977 and 1.055 for 1966. Thus, the inpatient hospital deductible is $40 × [(155.26 × 1.035)/(37.92 × 1.055)] = $160.67, which is rounded to $160.

Dated: September 25, 1978.

JOSEPH A. CALIFANO, JR.,
Secretary.

[FR Doc. 78-27363 Filed 9-28-78 8:45 am]

Table M-19.--OASDHI hospital insurance: Number of bills for inpatient short-stay hospital 1/ care approved for payment, covered days, total charges, and amount reimbursed, by type of beneficiary and period approved, as of September 30, 1978 2/

Period approved 3/	Approved bills			Hospital charges				
	Number (in thousands)	Covered days of care		Total (in thousands)	Per bill	Per day	Amount reimbursed 4/	
		Total (in thousands)	Average per bill				Total (in thousands)	Percent of total
Total 5/								
Jan. - Dec. 1973	7,084	78,837	11.1	$8,417,723	$1,188	$106	$6,359,518	75.5
Jan. - Dec. 1974	8,043	87,814	10.9	10,300,656	1,303	120	7,826,618	76.4
Jan. - Dec. 1975	8,530	90,104	10.6	13,084,084	1,536	146	9,831,171	75.1
Jan. - Dec. 1976	9,068	94,077	10.4	16,186,672	1,784	171	12,048,820	74.5
* Jan. - Dec. 1977	9,366	95,820	10.2	18,383,288	1,962	192	13,816,711	75.2
Jan. - June 1978	4,636	49,041	10.6	8,064,818	1,740	164	6,026,681	74.7
July - Dec. 1978	4,143	43,438	10.5	8,115,734	1,959	187	6,023,230	74.2
** Jan. - June 1977	4,761	49,479	10.4	9,439,291	1,983	191	6,944,770	73.6
July - Dec. 1977	4,605	46,341	10.1	8,943,997	1,942	193	6,871,941	73.8
*** Jan. - June 1978	4,809	50,054	10.4	10,872,413	2,261	217	7,863,683	73.6
Persons aged 65 and over 6/								
Jan. - June 1978	4,149	44,478	10.7	7,256,948	1,749	163	5,437,615	75.0
July - Dec. 1978	3,878	41,337	10.6	7,258,808	1,834	176	5,389,740	74.4
Jan. - June 1977	4,255	44,611	10.5	8,410,344	1,976	189	6,209,390	73.8
July - Dec. 1977	4,098	41,487	10.1	8,344,736	2,047	202	6,176,947	73.9
Jan. - June 1978	4,344	46,779	10.8	8,849,887	2,321	216	7,013,749	73.7
Disability beneficiaries 7/								
Jan. - June 1978	417	4,563	10.9	809,872	1,778	177	588,869	72.7
July - Dec. 1978	383	4,198	9.7	858,848	1,866	191	622,338	72.6
Jan. - June 1977	508	4,968	9.8	1,028,747	2,017	205	735,380	72.0
July - Dec. 1977	508	4,846	9.5	1,059,271	2,081	219	745,894	71.4
Jan. - June 1978	465	4,573	9.7	1,228,804	2,643	273	870,434	71.2

1/ General and special hospitals reporting average stays of less than 30 days.
2/ See table M-18, footnote 1.
3/ See table M-18, footnote 2.
4/ See table M-18, footnote 4.
5/ See table M-18, footnote 6.
6/ See table M-18, footnote 8.
7/ See table M-18, footnote 7.

* Average Hospital Charge Per Day for the Period January 1, 1977 to December 31, 1977.
($18,883,288) ÷ 95,820 = $197.07.

** Average Hospital Charge Per Day for the Period January 1, 1977 to June 30, 1977.
($9,439,291) ÷ 49,479 = $190.77.

*** Average Hospital Charge Per Day for the Period January 1, 1978 to June 30, 1978
($10,872,413) ÷ 50,054 = $217.21.

SELECTED DATA FROM THE MEDICARE PROGRAM

Item	1971	1972	1973	1974	1975
Persons enrolled as of January 1 for:					
Hospital insurance (HI)-aged	20,588,456	20,966,767	21,374,693	21,612,003	22,066,910
Hospital insurance (HI)-disabled	NA	NA	NA	1,830,852	2,069,744
Supplementary medical insurance (SMI)-aged	19,738,504	20,145,286	20,544,688	21,105,223	21,620,376
Supplementary medical insurance (SMI)-disabled	NA	NA	NA	1,657,497	1,859,301
HI and/or SMI(2)- aged	20,732,693	21,154,498	21,601,315	21,868,142	22,362,847
Amounts reimbursed during the fiscal year:					
HI: Total (in thousands)	$5,442,971	$6,109,139	$6,749,000	$7,805,000	$10,415,000
SMI: Total (in thousands)	$2,034,999	$2,255,069	$2,439,000	$2,865,100	$3,780,000
HI: Amount per HI enrollee	$264	$291	$316	$333	$432
SMI: Amount per SMI enrollee	$103	$112	$119	$126	$161
Participating facilities as of July)					
Number:					
All hospitals	6,745	6,726	6,757	6,739	6,773
Short-stay	6,153	6,131	6,132	6,102	6,107
Other	592	595	625	631	666
Skilled nursing facilities	4,387	4,041	3,977	3,952	3,932
Home health agencies	2,284	2,222	2,211	2,248	2,242
Independent laboratories	3,751	2,875	2,929	3,029	3,048
Beds:					
All hospitals	1,188,013	1,155,982	1,148,428	1,143,664	1,140,395
Short-stay	834,514	850,070	864,786	882,496	901,757
Other	353,499	305,912	283,642	261,168	238,638
Skilled nursing facilities	307,548	291,636	287,606	294,000	287,479
Beds per 1,000 HI enrollees:					
Short-stay hospitals	40.5	40.5	41.6	37.6	37.4
Skilled nursing facilities	15.2	13.9	13.8	12.5	11.9
Admissions (in thousands) during the fiscal year:					
All hospital inpatient admissions-aged	6,243	6,495	6,781	6,996	7,305
All hospital inpatient admissions-disabled	NA	NA	NA	663	787
Skilled nursing facility admissions-aged	421	397	405	425	436
Skilled nursing facility admissions-disabled	NA	NA	NA	13	15
Admission rate per 1,000 HI enrollees:					
All hospital inpatient admissions-aged	305	313	320	324	331
All hospital inpatient admissions-disabled	NA	NA	NA	362	384
Skilled nursing facility admissions-aged	20	19	19	20	20
Skilled nursing facility admissions-disabled	NA	NA	NA	7	7
Average charges per day (covered):					
Short-stay hospitals-aged	$84	$96	$102	$108	$130
Short-stay hospitals-disabled	NA	NA	NA	$117	$142
Skilled nursing facilities-aged	$30	$32	NA	$34	$39
Skilled nursing facilities-disabled	NA	NA	NA	$38	$45
Average length of stay (covered):					
Short-stay hospitals-aged	12.6	12.1	11.7	11.2	10.7
Short-stay hospitals-disabled	NA	NA	NA	10.3	10.1

(1) Includes U.S. and all outlying areas such as Puerto Rico, Guam and the Virgin Islands.
(2) Equals HI for disabled.
NA Not available.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
SOCIAL SECURITY ADMINISTRATION
BALTIMORE, MARYLAND 21235

REFER TO:
IHI-312

August 1976

PART B INTERMEDIARY LETTER NO. 76- 34

SUBJECT: Announcement of the Economic Index Applicable to Prevailing Charges for Physicians' Services for the Period July 1976 Through June 1977

In accordance with Public Law 94-368, the annual update of Medicare reasonable charge screens will no longer be related to the Federal Government fiscal year (FY), but will continue to be made on July 1 of each year. We will refer to this 12-month period beginning on July 1 as the fee screen year (FSY). This is to inform you that the economic index applicable to prevailing charges for physicians' services for the period July 1976 through June 1977 is 1.275. Accordingly, carrier prevailing charge screens for physicians' services will be permitted to increase for fee screen year 1977 in accordance with established reasonable charge methodology, but not more than 27.6 percent above fiscal year 1973 levels. Pursuant to section 2 of Public Law 94-368, the no-rollback provision of Public Law 94-182, which provides that prevailing charges will not be reduced below FY 1975 levels because of the application of the economic index, will remain in force for FSY 1977 and subsequent years. An announcement of the applicable index has been approved by the Secretary of Health, Education, and Welfare for publication in the Federal Register.

Public Law 94-368, enacted into law on July 16, 1976, besides establishing the July 1 through June 30 fee screen year and continuing the no-rollback provision (section 101(a) of Public Law 94-182), also provides that, for the 12-month period beginning on July 1, 1976, the annual update of prevailing charge levels shall apply to claims filed after June 30, 1976, with a carrier and processed by the carrier after it has made the appropriate changes in the prevailing charge levels. Hence, adjustments retroactive to July 1 will not be made. The economic index for FSY 1977 will also be applicable in the same manner, i.e., from the time of the carrier's update forward.

As you know, the economic index calculated each year consists of two components reflecting (on a cumulative basis) the changes that have taken place since calendar year 1971 in physicians' practice expenses and in

general earnings levels. With the exception of malpractice insurance premium data, the data that have been used to calculate the economic index (see attached chart) were derived from The Monthly Labor Review published by the U.S. Department of Labor. For example, the Bureau of Labor Statistics index for nonsupervisory workers in finance, insurance, and real estate was used as a reasonable approximation of wage trends for persons employed by physicians. For office space, the housing component of the Consumer Price Index (which includes data on rentals as well as costs of home ownership, data on utilities, and other corresponding data) was used. For drugs and supplies, the drugs and pharmaceuticals component of the Wholesale Price Index was used. For physicians' automobile expenses, the private transportation component of the Consumer Price Index was used. For miscellaneous "other expenses," which include attorneys' fees, travel, food and lodging while away from home, and many other items, the entire Consumer Price Index was used. The weights assigned to the various components of the index were derived from Medical Economics (December 8, 1975) and from the Profile of Medical Practice (1974 edition).

When the economic index limitation on increases in prevailing charges for physicians' services was implemented under Medicare in fiscal year 1976, it was expected that the methodology for constructing the index would be refined over time. The changes considered in this regard have included adjustments for regional differences in cost increases, and adjustments for differential practice costs among specialties. However, lack of a sufficiently refined data base on physicians' practice costs has, so far, precluded these changes.

The only substantive change in the methodology for computing the economic index for the 12-month period beginning in July 1976 is the inclusion of a separate element to reflect the effect of malpractice insurance premium increases on physician office expenses. (Previously, malpractice insurance costs were included in the miscellaneous expense category of office practice costs.) The component of the index which measures the rise in malpractice insurance premiums is based on a survey of the premiums charged in 46 States by six major insurers who, collectively, write about 70 percent of all malpractice insurance in the United States and thus provide a representative sample of malpractice premium rates nationwide. It provides a measure of the percentage increase in the premiums in calendar year 1975 over 1974. (Reliable separate data on malpractice insurance costs for earlier periods are not available.)

To accommodate the lack of prior (separate) data on malpractice insurance costs, the other components of the index have been computed on an annual basis to reflect the changes in these components in 1975 over 1974. The calendar year 1974 data used for these components in the calculation of

the economic index, in turn, reflect the cumulative increases since calendar year 1971. Therefore (except for the malpractice insurance data), the economic index (1.276) for the 12-month period beginning in July 1976 reflects the cumulative change in the components of the index since calendar year 1971, as is intended by section 1842(b)(3), as amended by Public Law 94-368, of the Medicare statute and by section 405.504(a)(3)(i) of the regulations.

Also, some of the calendar year 1974 data used reflect information that became available from the Bureau of Labor Statistics after the economic index for fiscal year 1976 (1.179) was calculated last year and put into effect. The economic index for a particular period must necessarily be calculated on the basis of the best information that is available at the time the calculation is made and put into effect. Therefore, the adjusted data have been used to calculate the economic index for the period July 1976 through June 1977 in order to provide the most accurate calculation that is possible at this time of the changes that have taken place in the components of the index since the base year (calendar year 1971).

In view of the urgency of this activity, we request that you take all necessary actions, including appropriate regional office approval, to update the reasonable charge screens no later than September 27, 1976. Please note that the updating of the screens must be in accord with previously issued instructions, including Part B Intermediary Letters No. 76-30 and No. 76-31.

Thomas M. Tierney, Director
Bureau of Health Insurance

Attachment

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
HEALTH CARE FINANCING ADMINISTRATION
BALTIMORE, MARYLAND 21235

REFER TO:
HHI-312

June 1977

PART B INTERMEDIARY LETTER NO. 77-24

SUBJECT: Annual Reasonable Charge Update - Economic Index Applicable to Prevailing Charges for Physicians' Services for the Period July 1, 1977, Through June 30, 1978

This intermediary letter is to inform you that the economic index applicable to prevailing charges for physicians' services for the period July 1977 through June 1978 will be 1.357 (i.e., 35.7 percent above fiscal year 1973 levels). This economic index for the 12 months beginning July 1, 1977, represents a 6.35 percent increase over the economic index (1.276) used for the previous 12 months. Carriers will therefore use a 1.0635 figure where an annualized index is applied in accordance with Part B Medicare Carriers Manual section 5020.3C3. All carriers should, in accordance with the established reasonable charge methodology, continue to develop updated customary and prevailing charge screens for fee screen year 1978 based on calender year 1976 charge data, and implement the indicated economic index limitation on prevailing charge increases. We request that you take all necessary actions, including regional office approval, to update the reasonable charge screens on July 1, 1977.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
HEALTH CARE FINANCING ADMINISTRATION
BALTIMORE, MARYLAND 21235

REFER TO:
1111-312

ADVANCE COPY June 1978

PART B INTERMEDIARY LETTER NO. 78-23

SUBJECT: Annual Reasonable Charge Update - Economic Index Applicable to Prevailing Charges for Physicians' Services for the Period July 1, 1978, Through June 30, 1979

This intermediary letter is to inform you that the economic index applicable to prevailing charges for physicians' services for the period July 1978 through June 1979 will be 1.426 (i.e., 42.6 percent above fiscal year 1973 levels). This economic index for the 12 months beginning July 1, 1978, represents a 5.08 percent increase over the economic index (1.357) used for the previous 12 months. Carriers will therefore use a 1.0508 figure where an annualized index is applied in accordance with Part B Medicare Carriers Manual section 5020.3C3. All carriers should, in accordance with the established reasonable charge methodology, continue to develop updated customary and prevailing charge screens for fee screen year 1979 based on calendar year 1977 charge data, and implement the indicated economic index limitation on prevailing charge increases. We request that you take all necessary actions, including regional office approval, to assure a timely update of reasonable charge screens.

Thomas M. Tierney, Director
Medicare Bureau

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