The Implications of Demographic Changes
for Publicly Funded Medical Insurance Costs

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## 1. Overview

Declines in fertility and mortality in the past two decades
suggest that the population of the United States will age
dramatically in the next several decades. Aging will interact with
social and economic trends to produce effects that we can only dimly
foresee. This paper discusses some possible implications of these
changes for the Medicare and Medicaid programs.

Medicare and Medicaid together cost $79 billion in 1982, $65
billion paid by the federal government. This was 10% of the federal
budget and 2.6 percent of GNP. For the foreseeable future, inflation
will be the dominant factor in driving up these costs in the health
care sector. But, as we will illustrate, even if inflation is
brought under control, demographic elements will significantly push
up public health care expenses under the ceteris paribus assumption.
Of course, all things do not remain equal. Cost pressures produce
reactions: Rising prices have driven state and federal governments
to alter Medicare and Medicaid substantially in just the last several
months. How these changes will play out will not be known for
several years. Perhaps the anticipated demographic changes
considered here will result in similar activities to counteract the
cost implications or perhaps the more slowly emerging demographic
effects will meet with acquiescence especially since the changing
demography carries with it a changing political base.

The population projections by age, sex and marital status used
in this paper are the work of John Wilkin, F.S.A., who has kindly
provided us a pre-publication copy of the paper he is presenting at
this conference.  We use only the central forecast.  The dominant
feature of this projection from the point of view of public medical
care cost is the fact that the population over age 65 increases from
26 million in 1980 to 69 million in 2040, a projected increase of 165
percent, while the population aged 20-64, representing the tax base,
increases only 35 percent.  The net effect of these alone would raise
costs per individual in the tax base by 100%.  The cost for some
subgroups (e.g. nursing home users) can be expected to increase more
because of an extreme tilt to the utilization pattern by age
structure.  For others, such as welfare recipients in families with
children, demographically driven cost changes may be very modest.


## 2. Medicaid

We summarize here those features of the program that are
important to this paper.

Medicaid pays for acute medical care services and long-term care
for certain categories of persons whose income and assets fall below
designated standards.  The program is jointly financed by federal and
state (and sometimes local) government general revenues.  Most
aspects of the program are state administered subject to broad
federal guidelines.


## 2.1 Financing

Title XIX of the Social Security Act (Medicaid) provides for federal payments for a share of the cost of Medicaid services. That share depends on average per capita income in the state. The minimum matching rate of 50 percent applies to those states that account for the vast majority of Medicaid expenditures including New York, California, Pennsylvania and Michigan. The highest rate is 77% for Mississippi. The average over all states is 55%. Most of the remaining payments come from state general revenue with small contributions from county governments in a few states.

## 2.2 Eligibility

In order to be eligible for federal matching payments, a state must provide coverage for some persons and has the option of providing care for others. All states now participate in Medicaid (Arizona, the last holdout joined in 1982). Generally, coverage is required for recipients of money payments from the state administered Aid to Families with dependent children (AFDC) programs and the federal Supplemental Security Income (SSI) program. To receive AFDC money payments, a family must include at least one child and one parent must be absent from the home. In a small number of cases, a parent is deemed missing from the home through disability or unemployment. The vast majority of AFDC families are one parent female headed households. Income and asset standards for AFDC are determined by states and vary significantly. In California, the AFDC income limit is about 75% of the poverty line; in Texas it is about 20% of the poverty line. SSI eligibility is determined by the

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federal government. Only aged, blind and disabled persons are eligible. The income standard is about 75% of the poverty level.

States may, optionally, provide for Medicaid certain other groups of aged, blind and disabled persons and to single parent families. The largest group are the "medically needy." Income and asset tests may be slightly liberalized for the medically needy but are frequently the same as under AFDC. The major liberalization extended to the medically needy is that medical care expenditures are subtracted from income before the means test is applied. This provides catastrophic protection regardless of income but only to single parent families and the aged, blind and disabled and only in states exercising the medically needy option. Some large states including Texas, Ohio and New Jersey do not have medically needy programs. Those persons in two parent families or without children are ineligible (with very minor exceptions) regardless of income. Most of the medically needy are aged, blind or disabled.

Title XIX allows several variations on the above eligibility rules but only a few are financially important enough to discuss here. Generally more liberal coverage is made available for nursing home care. This is accomplished by a provision referred to as an "institutional spend-down." Special income limits can be applied to persons institutionalized either in nursing homes or in hospitals, but as a practical matter applies mostly to nursing homes (including homes for the mentally retarded). The income limits may be much more liberal than the medically needy income limits and run as high as $800 per month. All states have adopted some version of this option.

A second major exception grants coverage to all children below the state's AFDC income limits regardless of family structure. In most states, this is used to provide services for institutionalized and foster children. In a few states (including many of the largest) children in intact households below AFDC income limit are eligible for Medicaid although their parents are not.

Finally, the rules for SSI type persons are somewhat more complex than described above. SSI cash recipients can be excluded at state option where they were ineligible under the Aged. Blind and Disabled (ABD) program that preceded SSI. On the other hand, states may give Medicaid coverage to aged, blind and disabled persons who receive state money payments but not federal payments. Fourteen states have excluded some SSI recipients from Medicaid. California accounts for almost all payments for its own state ABD program. The financial effect of these two provisions is large and almost exactly offsetting (about $500 million annually).

## 2.3 Benefits

Title XIX requires that hospital, physician, nursing home and several other services be provided to all eligibles. States may also include prescription drugs, dental, optometric and a few other services and receive federal matching payments. Optional services can be provided only to money recipients at the states' option. Historically, copayments have not been allowed on required services. Recently, states have been allowed to apply for exceptions to this rule and a few, notably California, have done so. Copayments on

optional services, especially drugs, are common.

## 2.4 Reimbursement Policies

In most states, hospitals are reimbursed under Medicaid according to Medicare reimbursement rules, as dictated by federal law. A few exceptions have been granted but the financial effects seem to be very small. Federal law requires that nursing homes be reimbursed on a "cost related basis." The flexibility of the language has been matched with flexibility of implementation. Federal law does not specify reimbursement policy for professional providers. Generally, states have routinely increased pharmacy dispensing fees. Physician fees are not routinely updated in most states. Medicaid physician fees range from about 30 to 110 percent of Medicare levels with the large states at the low end. The national average is probably about 75% of Medicare.

This institutional bias in reimbursement policy has attracted much attention recently. Many believe that restrictions on physician fees have caused a net increase in program costs because emergency room visits and perhaps inpatient hospital care are substituted for doctors office visits.

## 2.5 AFDC

Here we discuss Medicaid payments for AFDC cash recipients, the related medically needy population and for children who are financially eligible for care but not in single parent families. Two features dominate the demographic expectations of this group: low

fertility rates will tend to stabilize eligibility over time but family dissolution rates will tend to increase dependence on public funds.

Figure 1 shows the conceptual framework underlying this section. Demographic changes in this population are most likely to effect demand for public funds rather than the demand for health care. The size of this population is not changing but the proportion eligible for publicly funded health care is increasing. Medicaid cost for AFDC families (as best we can estimate it) does not vary dramatically by age or marital status of head of household. The cost for adults appears to be U shaped - higher cost related to pregnancy at ages under 25, dropping to a low at ages 25-34, then increasing. The number of children in low income, female headed households is the mirror image of the cost pattern of adults. The net effect is little change in family cost by age. The moderate variation by marital status that we estimate is due to differences in averge number of children per family. The driving force, as we visualize it, is family dissolution, leaving children with a single mother (or in many cases with an aunt or grandmother) with inadequate resources to provide for health care.

## Figure 1

## Medicaid for AFDC Related Families

Age

Employment

Family Structure

Fertility

Demand for
Public Funds
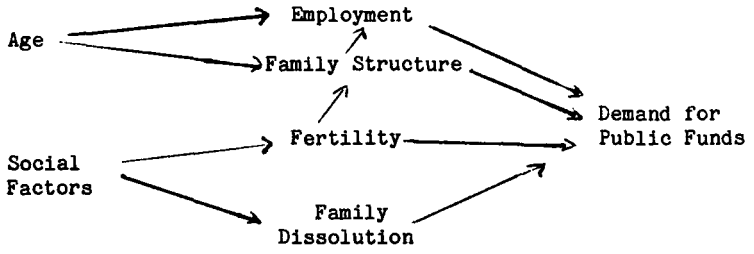
Social
Factors

Family
Dissolution

Table 1, top tier, shows the estimated prevalence of Medicaid
adult recipients per 1000 females in age, and marital status groups.
The estimates are based on data from the Survey of Income and
Education (1975), (SIE), the National Medical Census of Utilization
and Expenditures (NMCUES), the March, 1980 Current Population Survey
(CPS) and data from the Medicaid program.  Surveys of low income
populations are notoriously incomplete.  We have attempted to
compensate by controlling all figures to Medicaid program statistics.
In most cases, marginal values by age or marital status were
available from the sources listed but distribution to interior cells
required some exercise of judgment.

The prevalence rates are somewhat misleading because a few
AFDC-type adult recipients are male (about 5%) and a few are over age
65 (1%).  These have been telescoped into the Female 18-64 population
producing, hopefully, only minor distortions.

The second tier of Table 1 shows Medicaid costs per recipient in
1980 by age and marital status.  Costs are roughly family costs
including children and adults but are distorted by inclusion of small
costs for covered children not in families.  The distribution of
adult costs was estimated from hospital discharges from NMCUES and
HMO data on all service charges. Relatively high costs for ages 18-24
are due to maternity costs.  Child costs are assumed to vary only
with number of children per AFDC adult.  It is based on CPS data for
female headed households in 1980 and controlled to Medicaid program
statistics.  A peak at ages 35-44 is due to the secular peak in
fertility about 1960.  The nature of the program dictates a minimum

of one child per covered adult. The overall average of 2.3 children per adult is inflated by this consideration and by the inclusion of children not in covered families.

Table 1, bottom tier, draws the bland but reassuring conclusion that demographic factors should matter little in the growth of Medicaid costs for AFDC recipients relative to the size of the tax base. The growth of single parent families will increase costs slightly but a stabilizing population in this age group will keep costs modest compared to the potential among aged recipients. The most interesting feature of Table 1 is the increase in divorced women at ages over 45 as current divorce patterns work their way through the age structure. Because AFDC eligibility requires a child in the household, and perhaps because employment is more feasible for older women, there are relatively few participants after age 45. The result is that, while the increased cost within those age cells are striking, the overall impact is fairly modest.

2.6 Nursing Home Care for the Aged

The conceptualization of nursing home costs (Figure 2) is much more complex than that for AFDC costs and we can only deal with a small fraction of the issues here. Aging results in physical deterioration and a rapidly increasing need for support services. It also may result in the death of one's spouse. Married persons use significantly less institutional care than unmarried persons. Social factors also contribute to a growing need for institutional care. Remarriage patterns after divorce or death of spouse compound with
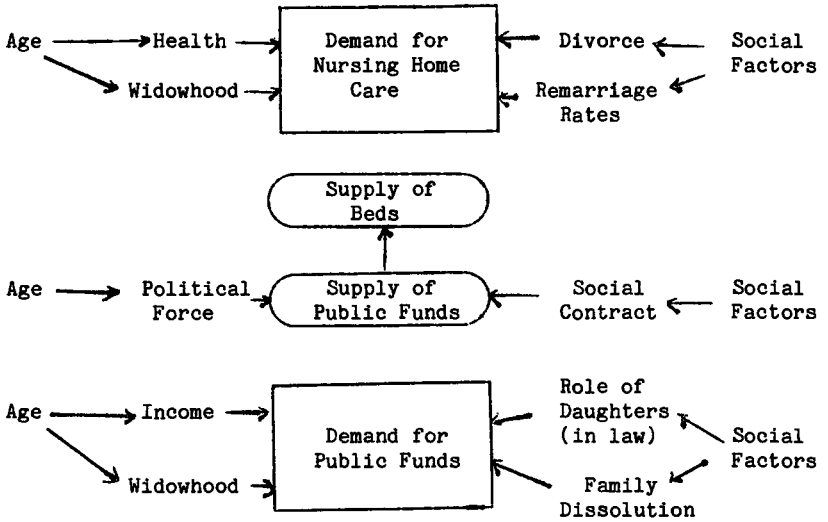
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differential mortality to result in a growing number of single, elderly females. This is because men are more likely than women to remarry when divorced or widowed after age forty and because the age spread between partners is even greater than in first marriages.

Age and social factors affect not only the demand for institutional care but also the demand for public funds for that care. Age is associated with depreciating value of income and widowhood may mean disproportionate loss of pension income. Social changes such as increased female labor participation mean that daughters and daughters in law are less likely to provide care for the elderly, than in former times.

The supply of services and public funds is perhaps affected by these same considerations - the evidence is sketchy and mixed. Generally, nursing home care gets a fairly high priority in Medicaid programs. Virtually every state has a spend-down provision for institutional care. Nursing home costs have historically grown steadily at seven or eight percentage points above the CPI. But the budget crunch faced by many states is causing some rethinking. Some states have at least temporarily stopped certifying new nursing home beds for Medicaid use. Over the long run, of course, an aging population may create its own power base to make a claim on public funds. Whether this constituency will support the "poor" aged remains to be seen.

Figure 2

Nursing Home Care



Age ⟶ Health ⟶ Demand for Nursing Home Care ⟵ Divorce ⟵ Social Factors

Age ⟶ Widowhood ⟶ ⟵ Remarriage Rates ⟵

Supply of Beds

Age ⟶ Political Force ⟶ Supply of Public Funds ⟵ Social Contract ⟵ Social Factors

Age ⟶ Income ⟶ Demand for Public Funds ⟵ Role of Daughters (in law) ⟵ Social Factors

Age ⟶ Widowhood ⟶ ⟵ Family Dissolution ⟵

Nursing home costs under Medicaid are 40 percent of total Medicaid costs and growing about 15 percent per year. We will concentrate here on care for persons over age 65 although there is some (rapidly growing) expenditure for intermediate care facilities for the mentally retarded. Nursing home costs are perhaps more dependent on age than any other medical service. Not surprisingly, then, a continuation of current patterns of utilization will lead to dramatic increases in costs if the population ages as expected over the next few decades. However, nursing home costs also vary substantially with other variables such as marital status and geographic residence. Emerging trends in marriage rates and divorce rates can also be expected to have important implications for the demand for care.

It would be a mistake to assume, however, that demographic changes will translate automatically into changes in long-term care costs. Although we will shortly present some of the implications of these demographic changes if current patterns persist, we think it is very unlikely that current patterns will be maintained. For one thing, the characteristics of demographic groups is changing along with the size of those groups. For example, nursing home use is significantly higher than average among never married persons. Part of this is due to lack of support in carrying out daily activities at home. But another part is due to self selection patterns that results in persons with disabilities that will lead to nursing care not entering the marriage market. If social changes increase the proportion of never married persons, the average morbidity of the

group will probably decline. Moreover, nursing home use is highly dependent on availability of facilities and availability depends in part on the willingness of the public to make funds available. In short, this paper should not be viewed as, in any sense, an estimate of future costs but as an illustration of certain scenarios of how the current demographic trends will force some reaction by administrators of public funded care.

Table 2 illustrates the potential for future change. The top tier of the table is taken from the National Nursing Home Survey conducted by the National Center for Health Statistics in 1977. Institutionalization rates rise very rapidly with age and are markedly higher for the widowed and divorced. Rates are highest for the never married especially at younger ages. Annual costs per resident-year are based on charges but controlled so that Medicaid costs for 1980 are reproduced. We make no effort to project these cost levels to future years. Tier 2 splits costs by payor. The split is very approximate since the only data is highly aggregated. The third tier of the table presents a dependency ratio which is specific to age and marital status. Finally, tiers 4 and 5 show the implied total, public and private cost of nursing home care per person aged 20 to 64 by age and marital status in 1980 and 2040. Cost per worker or per payroll dollar would be equally relevant.

Total cost per person 20-64 rises by a factor of 2.4, about $123 each. Six dollars of this is for persons aged 65 to 74, $37 is for persons 75 to 84, and $80 is for those 85 and over. By marital status the increases are $19 for currently married, $59 for widowed

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persons, $33 for divorced persons and $11 for the never married.  The

$33 increase for the divorced is especially interesting because it

represents a thirteen fold increase.  Public expenditures are shown

to rise somewhat more rapidly than total expenditure because of

higher levels of public expenditures for the extreme aged and for the

unmarried.  The reader is reminded of the sketchy nature of the data

on which those funding patterns are based.

The increase in "burden" (should it occur as shown) is very

unevenly spread among those taxpayers supporting the Medicaid

program.  This occurs because nursing home use varies significantly

by state and because 30 to 50 percent of care is funded by state and

local government instead of the federal government.  Generally, high

use northern states have the lowest federal funding share and low use

southern states have the highest federal share.  Minnesota, for

example, has 70 nursing home beds per 1000 persons over 65,

Mississippi 30.  Minnesota pays 50 percent of its Medicaid costs,

Mississippi 23.


2.7 Other Medicaid Costs

To round out this section we estimate the cost implications of

demographic changes for the remaining segments of Medicaid - the

blind and disabled (Table 3) and non nursing home services for the

aged (Table 4).  Under the assumption that disability prevalence by

age will not change between 1980 and 2040, Medicaid expenditures for

the disabled rise 18% for each person in the 20-64 age group assumed

to represent the tax base.  Table 4 shows the residual costs for the

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aged to rise more than two-fold from about $13 per "taxpayer" to $33.

Table 5 summarizes the overall estimated effect of demographic
changes on the cost of Medicaid relative to persons aged 20-64, the
presumed tax base. Overall costs rise about 50% - costs for the aged
accounting for nearly all the change.


### 3. Medicare Benefits

The Medicare program pays for acute medical care services as
authorized by Title XVIII of the Social Security Act. There are two
basic programs under Medicare:

1. The Hospital Insurance (HI) program which pays for inpatient
   hospital care, skilled nursing facility care, and home
   health care for those aged 65 and over and for the long-term
   disabled, and

2. Supplementary Medical Insurance (SMI) which pays for
   physicians' services, outpatient hospital services, and
   other medical expenses of those aged 65 and for the
   long-term disabled.


### 3.1 Financing

The HI program is financed primarily by payroll taxes, with the
taxes paid by current workers used to pay benefits to current
beneficiaries. However, the HI program maintains a trust fund that
provides a small reserve against fluctuations. This type of
financing is generally known as pay-as-you-go financing. The SMI
program is financed on an accural basis with a contingency margin.
Income to the trust fund is composed primarily of premiums paid by
enrollees and government matching contributions from general
revenues.

## 3.2 Eligibility

HI protection is provided to persons age 65 and over who are entitled to social security benefits or railroad retirement benefits, and to persons under age 65 who are entitled to disability benefits. SMI protection is provided to those entitled to HI and to those over age 65 who choose to enroll in the SMI program.

## 3.3 Reimbursement Policies

Medicare has reimbursed institutional providers of care - hospitals, skilled nursing facilities, and home health agencies - on a reasonable cost basis.  (After October 1, 1983 Medicare will begin phasing in a prospective payment system for hospitals.)  Physician and other health services are reimbursed on a reasonable charge basis, subject to a fee screen based upon customary and prevailing fees in a given area.

## 3.4 Medicare Part A

Unlike the role of Medicaid in financing nursing home care, use of public funds for hospital care has been legitimized by the Medicare program.  This makes it less likely that entitlement to care will be directly threatened by rising cost.  The government's reaction to price driven expenditure rises has been directed towards the hospitals rather than the beneficiaries.  The increasing numbers of persons over aged 65 would seem to guarantee a political base to continue to protect access to hospital services.

Hospital care also differs from nursing home care in that family
support is less of a substitute for hospital services. Therefore, we
shift somewhat the emphasis in this section away from family
structure towards other determinants of the use of services. In
particular, we use income groups to proxy many factors involved in
hospital use. The income groups are defined as "low" (less than
$6000 per year in 1980), "medium" ($6000-$14000) and "high" (above
$14000). Table 6 shows the utilization patterns used in this
analysis. Several data sources were combined to estimate these
relative rates. The results were, of course, forced to average 1.00.
We obtained tabulations by age, sex and income from the NMCUES
survey. Because that survey excludes institutionalized persons, it
seriously understates costs especially at the older ages and perhaps
at lower incomes. To correct for this, we controlled to program data
on utilization by age and made some judgemental corrections for the
assumed understatement at lower incomes at higher ages. Moreover,
the NMCUES data is sufficiently thin to require some smoothing for
sensible results. We were guided in these judgements by Health
Interview Survey data. The U shaped pattern of utilization by income
is actually more pronounced in the Health Interview Survey data but
because NMCUES is more current, we deferred to that source at younger
ages where the exclusion of the institutionalized should be less
significant. The U shaped pattern may be related to supplementary
insurance coverage with many of the low income group having Medicaid
coverage for Part A deductibles and coinsurance and the high income
group having more private supplemental insurance. The NMCUES survey

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found use of Medicare services closely correlated with existence of such Medicaid or private supplemental coverage.

In Table 6 we assume that the income distribution by age group is constant over time. Under this assumption, the cost of HI for the aged as a percent of payroll increases 113 percent from 1980 to 2040 as a result of demographic changes. This is slightly larger than would be expected based on total change in the over 65 group because the largest increases in population occur at the higher ages where the income distribution is most skewed to the low end. This effect is significantly moderated, however, by the sudden flattening of the utilization by females after age 80. In some years, women over 85 actually have used fewer hospital services per capita than women 80-85.

Table 7 presents a similar analysis for Part B costs. Although Part B is financed from a combination of premiums and general revenue, it is convenient for these purposes to relate it to the HI taxable payroll as well. The data used and the modifications to it were similar to those for Part A. The major difference is that the original NMCUES results were much smoother presumably because of the higher frequency of utilization of Part B services. The result is similar to that for Part A, of course, except slightly moderated since Part B costs rise more gently by age for both males and females.

To round out Medicare, ws show in Table 8 the combined Parts A and B costs of disabled beneficiaries as a percent of payroll in 1980 and 2040. Column 1 of the table shows that costs are remarkably

insensitive to age. This appears to be the net effect of a few very expensive institutionalized persons at the younger ages offsetting the normally expected pattern of increasing cost by age. As a result, the demographically related cost change is quite small and due mostly to increases in the general population at ages 55-64. The disability prevalence rates used in the projection are assumed to change little over time for those age groups.

Table 9 summarizes the results for the Medicare programs combined. Because the majority of Medicare costs are for the aged, Medicare costs would double under demographic scenario used here. For the aged costs somewhat more than double because of aging within the over 65 group. That extra little effect is offset by disabled costs growing only slightly.

The results shown here are based on the assumption of no change in income distribution between 1980 and 2040. The OASDI benefit structure is a major determinant of the income distribution. Indexing benefits to wage increases before retirement and the consumer price index after retirement would tend to perpetuate a relatively higher concentration of persons at the highest ages in the lowest income strata. However, the number of aged persons poor enough to receive SSI benefits has been declining steadily over the past several years presumably as a result of the deaths of these oldest OASDI beneficiaries with very low benefits. The most likely income distribution change would seem to be, then, a movement of the very aged from the low income group to the medium income group.

If this should happen, and if their use of Medicare services

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should decline to that of those currently in the medium income group (perhaps because they lose Medicaid as a co pay fill-in), the cost shown in tables 6 and 7 for the year 2040 would decline slightly. For example, if half of those over age 80 moved into the medium income group with corresponding declines in utilization, Part A costs would decline by about .06 percent of payroll and Part B by .02 percent.

## 4. Summary

In order to show a comparison of Medicare and Medicaid costs we have translated Medicaid to a percent of taxable payroll in Table 10. Medicaid increases more slowly than Medicare because significant portions of Medicaid costs are for AFDC and the disabled whose costs are expected to change only slowly due to demographic change. This offsets the very dramatic rise in nursing home and other costs for the aged poor population.

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TABLE 1

MEDICAID COST FOR AFDC

|  | 1980 | | | | | | 2040 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MARITAL | | | AGE GROUP | | | | | | AGE GROUP | | | |
| STATUS | 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | TOTAL | 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | TOTAL |
| AFDC MEDICAID FAMILIES PER 1000 WOMEN | | | | | | | | | | | | |
| MARRIED | 12 | 21 | 18 | 18 | 14 | | 12 | 21 | 18 | 18 | 14 | |
| WIDOWED | 244 | 354 | 286 | 33 | 13 | | 244 | 354 | 286 | 33 | 13 | |
| DIVORCED | 705 | 366 | 199 | 185 | 68 | | 705 | 366 | 199 | 185 | 68 | |
| NEVER MAR | 25 | 102 | 135 | 33 | 21 | | 25 | 102 | 135 | 33 | 21 | |
| ANNUAL COST PER FAMILY FOR MEDICAID SERVICES IN DOLLARS | | | | | | | | | | | | |
| MARRIED | 2275.8 | 2270.3 | 2637.8 | 2054.6 | 1741 | | 2174.4 | 2067.5 | 2282.9 | 2054.6 | 1741 | |
| WIDOWED | 2022.3 | 2067.5 | 2536.4 | 1953.2 | 1741 | | 1920.9 | 1915.4 | 2232.2 | 1953.2 | 1741 | |
| DIVORCED | 2022.3 | 2067.5 | 2536.4 | 1953.2 | 1741 | | 1920.9 | 1915.4 | 2232.2 | 1953.2 | 1741 | |
| NEVER MAR | 1819.5 | 1966.1 | 2485.7 | 1902.5 | 1741 | | 1819.5 | 1864.7 | 2232.2 | 1902.5 | 1741 | |
| WOMEN PER 1000 PERSONS AGED 20-64 | | | | | | | | | | | | |
| MARRIED | 38 | 104 | 82 | 70 | 60 | | 26 | 82 | 84 | 82 | 69 | |
| WIDOWED | 0 | 1 | 2 | 7 | 17 | | 0 | 0 | 1 | 3 | 8 | |
| DIVORCED | 3 | 14 | 12 | 9 | 6 | | 2 | 17 | 21 | 24 | 22 | |
| NEVER MAR | 70 | 24 | 6 | 4 | 4 | | 53 | 18 | 5 | 4 | 3 | |
| ANNUAL AFDC MEDICAID COST PER PERSON AGED 20-64 IN DOLLARS | | | | | | | | | | | | |
| MARRIED | 1.08 | 4.99 | 3.95 | 2.62 | 1.50 | 14.14 | 0.71 | 3.58 | 3.50 | 3.07 | 1.73 | 12.59 |
| WIDOWED | 0.00 | 0.73 | 1.45 | 0.45 | 0.40 | 3.03 | 0.00 | 0.00 | 0.64 | 0.19 | 0.19 | 1.02 |
| DIVORCED | 4.27 | 10.59 | 6.05 | 3.26 | 0.71 | 24.88 | 2.71 | 11.91 | 9.32 | 8.69 | 2.61 | 35.23 |
| NEVER MAR | 3.18 | 4.80 | 2.02 | 0.25 | 0.15 | 10.39 | 2.41 | 3.42 | 1.51 | 0.25 | 0.11 | 7.69 |
| TOTAL | 8.53 | 21.11 | 13.46 | 6.57 | 2.76 | 52.44 | 5.82 | 18.91 | 14.96 | 12.20 | 4.64 | 56.52 |

TABLE 2

NURSING HOME "DEPENDENCY RATIO" CHANGE       1980-2040

| MARITAL | N.H. RES./THOUSAND | | | | COST/RESIDENT-YEAR | | | |
|---|---|---|---|---|---|---|---|---|
| STATUS | 65-74 | 75-84 | 85+ | total | 65-74 | 75-84 | 85+ | total |
| MARRIED | 3.92 | 19.82 | 60.48 | | 11433.00 | 10379.00 | 10155.00 | |
| WIDOWED | 29.23 | 95.42 | 223.10 | | 10217.00 | 9275.00 | 9075.00 | |
| DIVORCED | 30.35 | 69.10 | 129.92 | | 9144.00 | 8301.00 | 8122.00 | |
| NEVER MAR | 50.06 | 129.92 | 229.49 | | 9628.00 | 8740.00 | 8552.00 | |

| | PUBLIC SHARE OF COST | | | | PRIVATE SHARE OF COST | | | |
|---|---|---|---|---|---|---|---|---|
| MARRIED | 0.48 | 0.40 | 0.44 | | 0.52 | 0.60 | 0.56 | |
| WIDOWED | 0.61 | 0.51 | 0.56 | | 0.39 | 0.49 | 0.44 | |
| DIVORCED | 0.70 | 0.58 | 0.64 | | 0.30 | 0.42 | 0.36 | |
| NEVER MAR | 0.69 | 0.57 | 0.63 | | 0.31 | 0.43 | 0.37 | |

NUMBER IN AGE GROUP PER PERSON AGED 20-64

| | 1980 | | | | 2040 | | | |
|---|---|---|---|---|---|---|---|---|
| MARRIED | .0735623 | .0237322 | .0045506 | | .1058572 | .0652329 | .0185524 | |
| WIDOWED | .0321101 | .0292471 | .0133051 | | .0233487 | .0405283 | .0386979 | |
| DIVORCED | .0052738 | .0015897 | 4.370E-4 | | .0266027 | .0247384 | .0141346 | |
| NEVER MAR | .0067806 | .0033526 | .0011376 | | .0104343 | .0082876 | .0035534 | |

ANNUAL COST PER PERSON AGED 20-64

| | 1980 | | | | 2040 | | | |
|---|---|---|---|---|---|---|---|---|
| MARRIED | 3.30 | 4.88 | 2.79 | 10.97 | 4.74 | 13.42 | 11.39 | 29.56 |
| WIDOWED | 9.59 | 25.89 | 26.94 | 62.41 | 6.97 | 35.87 | 78.35 | 121.19 |
| DIVORCED | 1.46 | 0.91 | 0.46 | 2.84 | 7.38 | 14.19 | 14.92 | 36.49 |
| NEVER MAR | 3.27 | 3.81 | 2.23 | 9.31 | 5.03 | 9.41 | 6.97 | 21.41 |
| TOTAL | 17.62 | 35.49 | 32.43 | 85.53 | 24.13 | 72.89 | 111.63 | 208.66 |

PUBLIC COST PER PERSON AGED 20-64

| | 1980 | | | | 2040 | | | |
|---|---|---|---|---|---|---|---|---|
| MARRIED | 1.58 | 1.95 | 1.23 | 4.77 | 2.28 | 5.37 | 5.01 | 12.66 |
| WIDOWED | 5.85 | 13.20 | 15.09 | 34.14 | 4.25 | 18.29 | 43.88 | 66.42 |
| DIVORCED | 1.02 | 0.53 | 0.30 | 1.85 | 5.17 | 8.23 | 9.55 | 22.94 |
| NEVER MAR | 2.26 | 2.17 | 1.41 | 5.83 | 3.47 | 5.36 | 4.39 | 13.23 |
| TOTAL | 10.71 | 17.85 | 18.02 | 46.58 | 15.17 | 37.26 | 62.83 | 115.26 |

Table 3

Medicaid Disabled

| Age | Prevalence of Medicaid Disabled Per 1000 Persons | Cost Per Recipient ($ 1980) | Persons In Age Group Per 1000 Persons Aged 20-64 | | Cost Per Person Aged 20-64 | |
|------|------|------|------|------|------|------|
| | | | 1980 | 2040 | 1980 | 2040 |
| 0-5 | 4 | 1158 | 156 | 136 | $ .72 | $ .63 |
| 6-21 | 5 | 504 | 473 | 363 | 1.19 | .91 |
| 22-44 | 10 | 2846 | 593 | 524 | 16.88 | 14.91 |
| 45-64 | 29 | 3123 | 341 | 430 | 30.88 | 38.94 |
| 65-74 | 23 | 3702 | 117 | 171 | 9.96 | 14.56 |
| 75 + | 1 | 3702 | 79 | 220 | .30 | .81 |
| | | | | | 59.93 | 70.76 |

Table 4

Medicaid Aged Excluding Nursing Homes

| Age | Prevalence of Medicaid Aged Per 1000 Persons | Cost Per Recipient ($ 1980) | Aged Persons Per Person Aged 20-64 | | Cost Per Person Aged 20-64 | |
|---|---|---|---|---|---|---|
| | | | 1980 | 2040 | 1980 | 2040 |
| 65-74 | 97 | 474 | 117 | 171 | 5.38 | 7.86 |
| 75-84 | 152 | 545 | 61 | 145 | 5.05 | 12.01 |
| 85 + | 289 | 627 | 18 | 75 | 3.26 | 13.59 |
| | | | | | 13.69 | 33.46 |

Table 5

Summary of Demographically Related Medicaid
         Cost Changes 1980-2040

|  | Per Person Aged 20-64 | |
| --- | --- | --- |
|  | 1980 | 2040 |
| AFDC | 52.44 | 56.52 |
| Nursing Homes (Aged) | 46.58 | 115.26 |
| SSI Disabled and Blind | 59.93 | 70.76 |
| Other Aged | 13.63 | 33.46 |
| Total | 172.58 | 276.00 |

TABLE 6

MEDICARE PART A COSTS BY AGE AND INCOME

| INCOME GROUP | MALES | | | | | FEMALES | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 65-69 | 70-74 | 75-79 | 80-84 | 85+ | 65-69 | 70-74 | 75-79 | 80-84 | 85+ | |
| | | | | | **1980 POPULATION** | | | | | | |
| LOW | 553.00 | 505.00 | 446.00 | 377.00 | 219.00 | 1111.00 | 1203.00 | 1271.00 | 1035.00 | 709.00 | 7429.00 |
| MED | 1510.00 | 1300.00 | 838.00 | 360.00 | 228.00 | 1956.00 | 1613.00 | 1105.00 | 517.00 | 489.00 | 9916.00 |
| HIGH | 1879.00 | 1102.00 | 644.00 | 330.00 | 271.00 | 1805.00 | 1213.00 | 756.00 | 500.00 | 482.00 | 8982.00 |
| TOTAL | 3942.00 | 2907.00 | 1928.00 | 1067.00 | 718.00 | 4872.00 | 4029.00 | 3132.00 | 2052.00 | 1680.00 | 26327.00 |
| | | | | | **2040 POPULATION** | | | | | | |
| LOW | 1027.00 | 1168.00 | 1384.00 | 1560.00 | 1227.00 | 1853.00 | 2401.00 | 3263.00 | 3562.00 | 3916.00 | 21361.00 |
| MED | 2804.00 | 3006.00 | 2600.00 | 1490.00 | 1278.00 | 3262.00 | 3219.00 | 2837.00 | 1779.00 | 2701.00 | 24976.00 |
| HIGH | 3489.00 | 2548.00 | 1999.00 | 1366.00 | 1519.00 | 3011.00 | 2421.00 | 1941.00 | 1721.00 | 2662.00 | 22677.00 |
| TOTAL | 7320.00 | 6721.00 | 5984.00 | 4416.00 | 4024.00 | 8126.00 | 8040.00 | 8041.00 | 7062.00 | 9279.00 | 69013.00 |
| | | | | | **RELATIVE USE OF PART A SERVICES** | | | | | | |
| LOW | 0.80 | 1.10 | 1.35 | 1.45 | 1.55 | 0.70 | 0.90 | 1.20 | 1.25 | 1.30 | |
| MED | 0.85 | 1.00 | 1.10 | 1.15 | 1.30 | 0.80 | 0.85 | 1.00 | 1.05 | 1.10 | |
| HIGH | 0.80 | 0.95 | 1.05 | 1.60 | 2.25 | 0.70 | 0.80 | 0.95 | 1.50 | 1.90 | |
| | | | | | **1980 COST AS A PERCENT OF PAYROLL** | | | | | | |
| LOW | 0.03 | 0.04 | 0.04 | 0.04 | 0.02 | 0.06 | 0.08 | 0.11 | 0.09 | 0.07 | 0.59 |
| MED | 0.09 | 0.10 | 0.07 | 0.03 | 0.02 | 0.11 | 0.10 | 0.08 | 0.04 | 0.04 | 0.68 |
| HIGH | 0.11 | 0.08 | 0.05 | 0.04 | 0.04 | 0.09 | 0.07 | 0.05 | 0.05 | 0.07 | 0.66 |
| TOTAL | 0.24 | 0.21 | 0.16 | 0.11 | 0.09 | 0.26 | 0.25 | 0.25 | 0.19 | 0.17 | 1.94 |
| | | | | | **2040 COST AS A PERCENT OF PAYROLL** | | | | | | |
| LOW | 0.04 | 0.07 | 0.10 | 0.12 | 0.10 | 0.07 | 0.12 | 0.21 | 0.24 | 0.28 | 1.36 |
| MED | 0.13 | 0.16 | 0.16 | 0.09 | 0.09 | 0.14 | 0.15 | 0.15 | 0.10 | 0.16 | 1.34 |
| HIGH | 0.15 | 0.13 | 0.11 | 0.12 | 0.19 | 0.11 | 0.11 | 0.10 | 0.14 | 0.27 | 1.43 |
| TOTAL | 0.33 | 0.36 | 0.37 | 0.33 | 0.38 | 0.33 | 0.37 | 0.47 | 0.48 | 0.71 | 4.13 |

TABLE 7

MEDICARE PART B COSTS BY AGE AND INCOME

| INCOME GROUP | MALES | | | | | FEMALES | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 65-69 | 70-74 | 75-79 | 80-84 | 85+ | 65-69 | 70-74 | 75-79 | 80-84 | 85+ | |
| | | | | | 1980 POPULATION | | | | | | |
| LOW | 553.00 | 505.00 | 446.00 | 377.00 | 219.00 | 1111.00 | 1203.00 | 1271.00 | 1035.00 | 709.00 | 7429.00 |
| MED | 1510.00 | 1300.00 | 838.00 | 360.00 | 228.00 | 1956.00 | 1613.00 | 1105.00 | 517.00 | 489.00 | 9916.00 |
| HIGH | 1879.00 | 1102.00 | 644.00 | 330.00 | 271.00 | 1805.00 | 1213.00 | 756.00 | 500.00 | 482.00 | 8982.00 |
| TOTAL | 3942.00 | 2907.00 | 1928.00 | 1067.00 | 718.00 | 4872.00 | 4029.00 | 3132.00 | 2052.00 | 1680.00 | 26327.00 |
| | | | | | 2040 POPULATION | | | | | | |
| LOW | 1027.00 | 1168.00 | 1384.00 | 1560.00 | 1227.00 | 1853.00 | 2401.00 | 3263.00 | 3562.00 | 3916.00 | 21361.00 |
| MED | 2804.00 | 3006.00 | 2600.00 | 1490.00 | 1278.00 | 3262.00 | 3219.00 | 2837.00 | 1779.00 | 2701.00 | 24976.00 |
| HIGH | 3489.00 | 2548.00 | 1999.00 | 1366.00 | 1519.00 | 3011.00 | 2421.00 | 1941.00 | 1721.00 | 2662.00 | 22677.00 |
| TOTAL | 7320.00 | 6721.00 | 5984.00 | 4416.00 | 4024.00 | 8126.00 | 8040.00 | 8041.00 | 7062.00 | 9279.00 | 69013.00 |
| | | | | | RELATIVE USE OF PART B SERVICES | | | | | | |
| LOW | 0.70 | 1.05 | 1.20 | 1.25 | 1.45 | 0.65 | 0.90 | 1.00 | 1.05 | 1.35 | |
| MED | 0.90 | 1.00 | 1.10 | 1.15 | 1.20 | 0.80 | 0.85 | 0.95 | 1.00 | 1.05 | |
| HIGH | 0.95 | 1.10 | 1.30 | 1.40 | 1.50 | 0.85 | 0.95 | 1.15 | 1.25 | 1.35 | |
| | | | | | 1980 COST AS A PERCENT OF PAYROLL | | | | | | |
| LOW | 0.01 | 0.02 | 0.02 | 0.01 | 0.01 | 0.02 | 0.03 | 0.04 | 0.03 | 0.03 | 0.22 |
| MED | 0.04 | 0.04 | 0.03 | 0.01 | 0.01 | 0.05 | 0.04 | 0.03 | 0.02 | 0.02 | 0.27 |
| HIGH | 0.05 | 0.04 | 0.02 | 0.01 | 0.01 | 0.04 | 0.03 | 0.03 | 0.02 | 0.02 | 0.28 |
| TOTAL | 0.10 | 0.09 | 0.07 | 0.04 | 0.03 | 0.11 | 0.11 | 0.09 | 0.07 | 0.06 | 0.77 |
| | | | | | 2040 COST AS A PERCENT OF PAYROLL | | | | | | |
| LOW | 0.02 | 0.03 | 0.04 | 0.04 | 0.04 | 0.03 | 0.05 | 0.07 | 0.08 | 0.11 | 0.50 |
| MED | 0.05 | 0.07 | 0.06 | 0.04 | 0.03 | 0.06 | 0.06 | 0.06 | 0.04 | 0.06 | 0.53 |
| HIGH | 0.07 | 0.06 | 0.06 | 0.04 | 0.05 | 0.06 | 0.05 | 0.05 | 0.05 | 0.08 | 0.56 |
| TOTAL | 0.14 | 0.15 | 0.15 | 0.12 | 0.12 | 0.14 | 0.16 | 0.18 | 0.17 | 0.25 | 1.58 |

Table 8

Medicare Disabled

| Age | Relative Cost | Beneficiaries | | Part A and Part B Costs as % of Payroll | |
|-----|---------------|------|------|------|------|
|     |               | 1980 | 2040 | 1980 | 2040 |
| <35 | 1.001 | 168 | 147 | .03 | .02 |
| 35-44 | .977 | 237 | 337 | .04 | .04 |
| 45-54 | .983 | 500 | 856 | .09 | .11 |
| 55-59 | .962 | 521 | 886 | .10 | .13 |
| 60-64 | 1.048 | 730 | 1310 | .15 | .20 |
| Total |  |  |  | .41 | .50 |

Table 9

Medicare Summary

| | Cost as % of Payroll | |
| --- | --- | --- |
| | 1980 | 2040 |
| Part A Aged | 1.93 | 4.13 |
| Part B Aged | .77 | 1.58 |
| Disabled (Parts A + B) | .41 | .50 |
| Total | 3.11 | 6.21 |

Table 10

Overall Summary

Medicare Plus Medicaid is % of Payroll

|  |  | 1980 | 2040 |
|---|---|---|---|
| Medicare |  | 3.11 | 6.22 |
| Medicaid |  | 2.03 | 3.25 |
|  | AFDC | .62 | .67 |
|  | NH Aged | .55 | 1.36 |
|  | Disabled | .70 | .83 |
|  | Other Aged | .16 | .39 |
| Total |  | 5.14 | 9.46 |