

Chapter 29

Health Insurance and Diabetes

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SUMMARY

Among all adults with diabetes, 92.0% have some form of health insurance, including 86.5% of those age 18-64 years and 98.8% of those age ≥ 65 years. However, about 640,000 people with diabetes do not have any form of health care coverage. Among diabetic individuals age 18-64 years, 10.3% are covered by Medicare, 69.3% by private health insurance, 5.5% through military benefits, and 14.1% through Medicaid or other public assistance programs. Among those age ≥ 65 years, 94.7% are covered by Medicare, 69.2% by private health insurance, 4.9% through military benefits, and 15.4% through Medicaid or other public assistance programs. Government-funded programs are responsible for health care coverage for 57.4% of adults with diabetes, including 26.4% of those age 18-64 years and 96.0% of those age ≥ 65 years. There is little difference by type of diabetes—insulin-dependent diabetes mellitus (IDDM) and non-insulin-dependent diabetes mellitus (NIDDM)—in the proportion of individuals covered by each health insurance mechanism. At age 18-64 years, males compared with females have

higher rates of coverage for each insurance type except Medicaid/other public programs; a higher proportion of blacks and Hispanics compared with all whites are covered by Medicare and Medicaid; and whites are more frequently covered by private health insurance. For all adults with diabetes, the proportion covered by Medicaid decreases with increasing family income and the proportion covered by private health insurance increases. Virtually all diabetic persons covered by Medicare or private health insurance have coverage for hospital care and physician/surgeon bills. Coverage for prescription medicines occurs for 62.9% of adults with diabetes. About 41% of persons with diabetes are covered by more than one health insurance mechanism, but 13.5% of those age 18-64 years and 1.2% of those age ≥ 65 years do not have any form of health care coverage. There are only small differences between people with diabetes and those without diabetes in the proportion covered and the types of health care coverage. The costs of private health insurance are also similar for people with and without diabetes.

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SOURCES OF DATA ON HEALTH INSURANCE COVERAGE

Information on health insurance coverage for people with diabetes is contained in several surveys that included national probability samples of the U.S. population. The 1989 National Health Interview Survey (NHIS) is the major data source for this chapter. In this survey, detailed questionnaires on diabetes and health insurance were administered to representative samples of persons with and without diagnosed diabetes in the U.S. population age ≥ 18 years^{1,2}. Diabetic people were classified as having IDDM if they were diagnosed at age < 30 years, were currently taking insulin, had been taking insulin consistently since diagnosis of diabetes, and their percent desirable

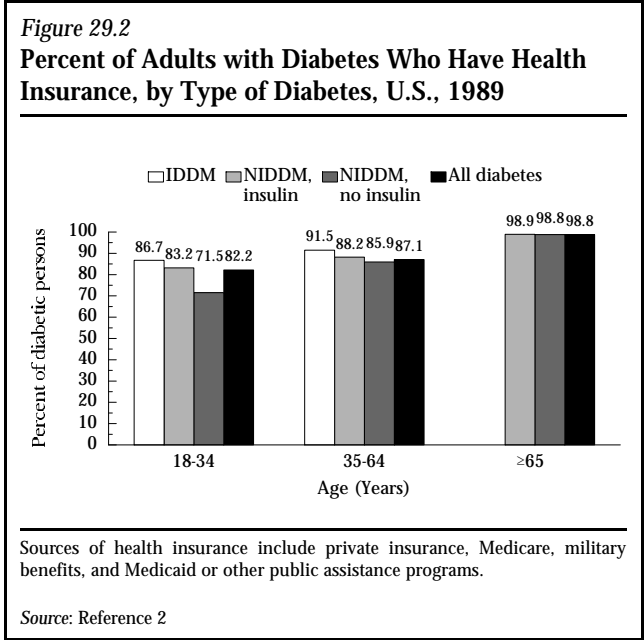
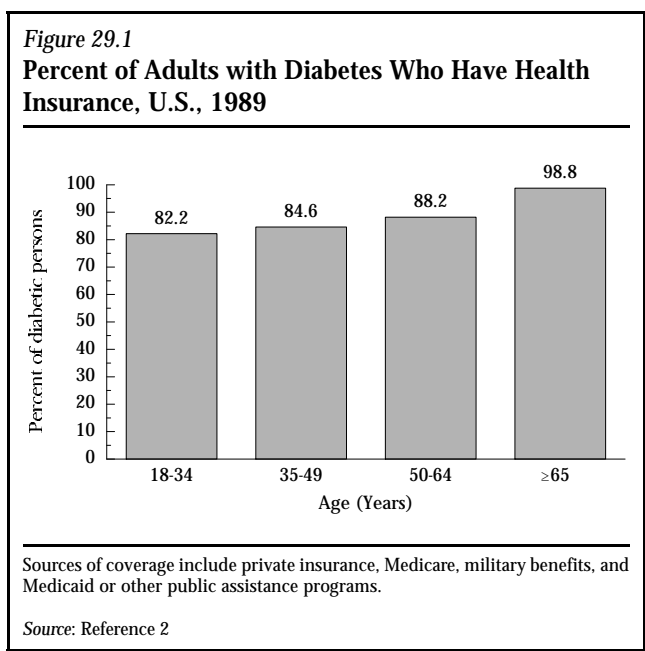
weight was < 120 . All other subjects with diabetes were considered to have NIDDM. In the 1978 NHIS³, a questionnaire on health insurance was administered that was similar to that in the 1989 NHIS. In the 1977 National Medical Care Expenditure Survey (NMCES) and its Health Insurance/Employer Survey, data on health insurance were obtained from five rounds of household interviews and questionnaires to employers, unions, insurance companies, and other organizations identified as sources of private health insurance⁴. The 1987 National Medical Expenditure Survey (NMES) was a successor to the 1977 NMCES and was conducted in a similar fashion, but it oversampled American Indians and Alaska Natives and included a component for persons in nursing and personal care homes and facilities for the mentally retarded⁵. The 1991 National Ambulatory Medical Care Survey

(NAMCS) collected data on ambulatory visits to office-based physicians in the United States⁶. In this survey, physicians or their office staffs completed a patient record form for a sample of visits. Questions about the sources of payment for the visit were included on this form.

PROPORTION COVERED AND TYPES OF HEALTH INSURANCE

PERCENTAGE OF PEOPLE WITH DIABETES WHO HAVE HEALTH INSURANCE

Based on the 1989 NHIS, it is estimated that 92.0% of all adults with diabetes have some form of health insurance, including 86.5% of those age 18-64 years and 98.8% of those age ≥65 years (Figure 29.1). The proportion of persons with diabetes covered by health insurance is very similar by type of diabetes (IDDM, NIDDM) and insulin use (Figure 29.2). Among persons age 18-64 years, 88.8% with IDDM, 87.8% with insulin-treated NIDDM, and 85.1% with NIDDM not treated with insulin have some form of health insurance coverage. Among diabetic people age ≥65 years, the proportion with health insurance coverage is 98.9% for insulin-treated NIDDM and 98.8% for NIDDM not treated with insulin.



NUMBER OF DIABETIC PERSONS WHO HAVE NO HEALTH INSURANCE

There were ~4.5 million people age 18-64 years and 3.2 million age ≥65 years with known diabetes in the United States in 1993⁷. Applying the rates of health insurance coverage (Figure 29.1) to this population, it is estimated that ~640,000 adults with diabetes do not have any health care coverage, including 600,000 people age 18-64 years and 40,000 people age ≥65 years².

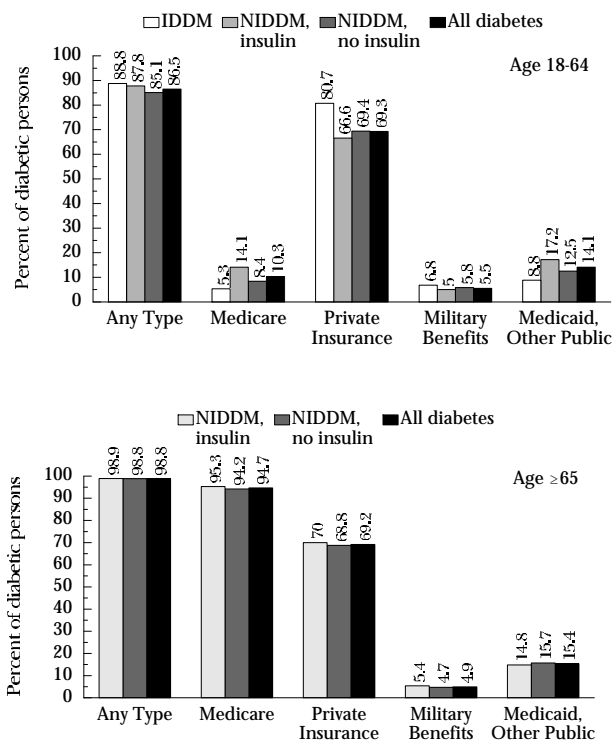
COVERAGE BY TYPE OF HEALTH INSURANCE

Figure 29.3 shows the percentage of diabetic people who are covered by each of the four major types of health insurance. Among those age 18-64 years, 10.3% are covered by Medicare, 69.3% by private health insurance, 5.5% through military benefits, and 14.1% through Medicaid or other public assistance programs. Among those age ≥65 years, 94.7% are covered by Medicare, 69.2% by private health insurance, 4.9% through military benefits, and 15.4% through Medicaid or other public assistance programs. There is little difference by type of diabetes in the proportion of diabetic individuals covered by each of these health insurance mechanisms.

COVERAGE BY GOVERNMENT PROGRAMS

Overall, 57.4% of people with diabetes are covered by government-financed health insurance programs

Figure 29.3
Percent of Adults with Diabetes Who Have Health Insurance, by Type of Insurance, U.S., 1989



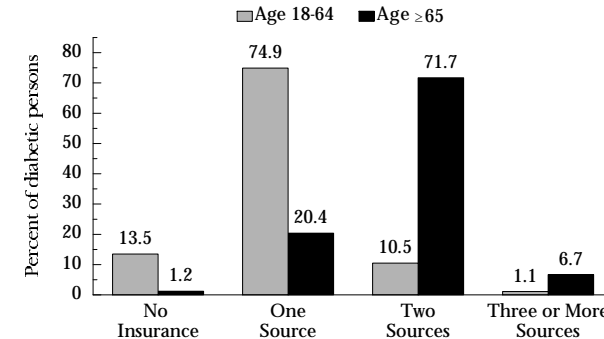
Source: Reference 2

(Medicare, military coverage, Medicaid, and/or other public assistance programs), including 26.4% of those age 18-64 years and 96.0% of those age ≥65 years.

MULTIPLE HEALTH INSURANCE COVERAGE

People with diabetes frequently have multiple health insurance coverage; 41.4% are covered by more than one source. The proportion differs substantially by age (Figure 29.4). Among those age 18-64 years, 11.7% are covered by two or more health insurance mechanisms; among those age ≥65 years, 71.7% have two sources of health insurance and 6.7% have three or more sources. Most of the multiple coverage for diabetic people age ≥65 years is due to people having both Medicare and private insurance. For those age 18-64 years, multiple coverage comes from a variety of sources.

Figure 29.4
Multiple Health Insurance Coverage for Adults with Diabetes, U.S., 1989



Sources of health insurance coverage include private insurance, Medicare, military benefits, and Medicaid or other public assistance programs.

Source: Reference 2

DEMOGRAPHIC CHARACTERISTICS AND HEALTH INSURANCE COVERAGE

Table 29.1 shows the proportion of diabetic persons who have health insurance, by sex, race, and family income. At age 18-64 years and age ≥65 years, males compared with females have higher rates of insurance coverage for Medicare, private insurance, and military benefits. Females have higher rates for Medicaid and other public programs. A higher proportion of blacks and Hispanics compared with all whites are covered by Medicare and Medicaid at age 18-64 years; whites are more frequently covered by private health insurance at all ages. The proportions covered by Medicare and Medicaid decrease with increasing family income while the proportion covered by private health insurance increases.

In a study in San Antonio, TX, of Mexican Americans with NIDDM, 67% of those with lower socioeconomic status and 83% of those with higher socioeconomic status had health insurance⁸. Private health insurance was held by 33% of those with lower socioeconomic status and 73% of those with higher socioeconomic status. About 28% of the patients relied on county- or federally funded clinics as their primary source of medical care⁸.

TYPES OF PRIVATE HEALTH INSURANCE

Figure 29.5 shows the proportions of people with diabetes who are covered by private health insurance. These proportions are similar across all age groups (68%-72%). Figure 29.6 shows the types of private

Table 29.1

Percent of Adults with Diabetes Who Have Health Insurance Coverage, U.S., 1989

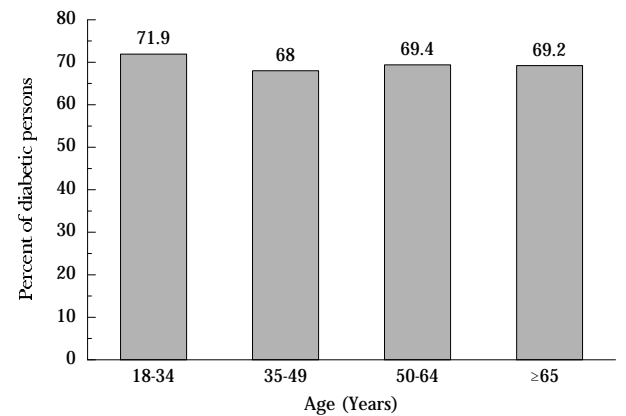
Health insurance type and demographic characteristic	Age 18-64	Age ≥65	Age ≥18
Any health insurance			
All persons	86.5	98.8	92.0
Male	89.0	99.1	93.0
Female	84.4	98.6	91.2
White	87.1	99.2	92.7
Black	85.1	98.0	90.3
All other races	82.7	90.2	84.9
Mexican American	70.3	94.7	76.9
All other Hispanic	85.3	100.0	90.8
Family income <\$15,000	73.8	98.8	88.6
Family income \$15-29,999	90.7	99.1	94.2
Family income ≥\$30,000	95.3	98.8	96.0
Medicare			
All persons	10.3	94.7	47.9
Male	11.5	94.7	44.8
Female	9.3	94.6	50.1
White	9.1	95.4	49.0
Black	15.2	92.4	45.8
All other races	6.9	85.7	30.2
Mexican American	10.4	84.0	30.3
All other Hispanic	11.5	84.8	37.9
Family income <\$15,000	16.0	95.5	62.9
Family income \$15-29,999	11.9	96.1	46.3
Family income ≥\$30,000	4.9	89.7	22.2
Private health insurance			
All persons	69.3	69.2	69.2
Male	74.7	76.1	75.3
Female	64.7	65.0	64.8
White	74.3	75.8	75.0
Black	53.5	40.2	48.3
All other races	57.9	51.2	55.9
Mexican American	47.7	35.6	44.4
All other Hispanic	44.1	47.9	45.5
Family income <\$15,000	29.8	57.4	46.1
Family income \$15-29,999	78.5	84.5	80.9
Family income ≥\$30,000	92.7	84.5	91.1
Military benefits			
All persons	5.5	4.9	5.3
Male	8.9	11.3	9.8
Female	2.8	1.1	2.0
White	5.4	5.0	5.2
Black	6.6	3.7	5.4
All other races	2.4	11.3	5.1
Mexican American	2.5	4.6	3.0
All other Hispanic	7.0	0.0	4.5
Family income <\$15,000	5.4	3.5	4.3
Family income \$15-29,999	7.5	8.2	7.8
Family income ≥\$30,000	5.6	6.3	5.7
Medicaid or other public programs			
All persons	14.1	15.4	14.7
Male	8.2	9.9	8.9
Female	19.0	18.8	18.9
White	11.1	11.9	11.5
Black	22.4	30.1	25.5
All other races	28.4	31.9	29.4
Mexican American	20.2	38.7	25.2
All other Hispanic	32.1	32.4	32.2
Family income <\$15,000	36.8	22.9	28.6
Family income \$15-29,999	8.1	7.6	7.9
Family income ≥\$30,000	1.8	6.9	2.9

White and black includes persons of Hispanic ethnicity.

Source: 1989 National Health Interview Survey

Figure 29.5

Percent of Adults with Diabetes Who Have Private Health Insurance, U.S., 1989

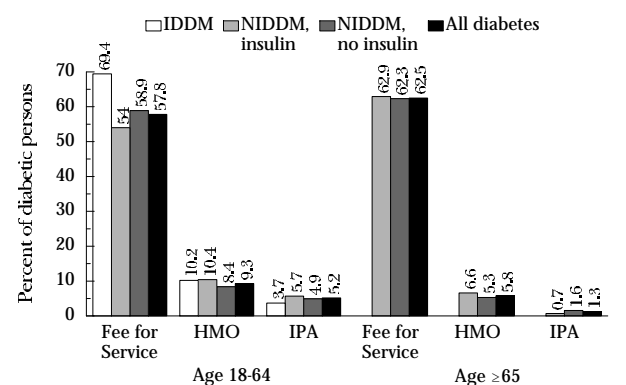


Source: Reference 2

health insurance carried by diabetic people according to age and type of diabetes. Among those age 18-64 years, 57.8% are covered by fee-for-service plans, 9.3% by health maintenance organizations, and 5.2% by individual practice associations. Among people with diabetes age ≥65 years, 62.5% are covered by fee-for-service plans, 5.8% by health maintenance organizations, and 1.3% by individual practice associations. There are no significant differences by type of diabetes in the percentage of individuals covered by each type of private health insurance.

Figure 29.6

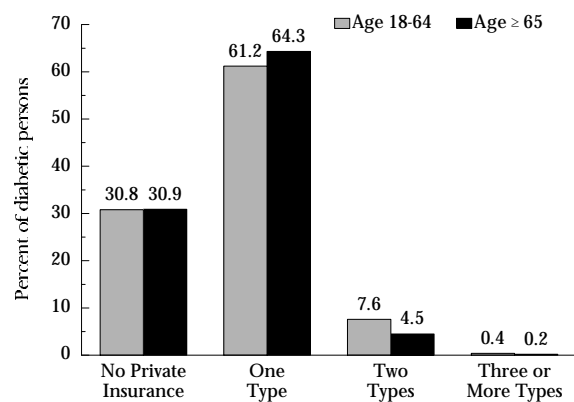
Types of Private Health Insurance Held by Adults with Diabetes, U.S., 1989



HMO, health maintenance organization; IPA, individual practice association.

Source: Reference 2

Figure 29.7
Multiple Types of Private Health Care Coverage for Adults with Diabetes, U.S., 1989



Source: Reference 2

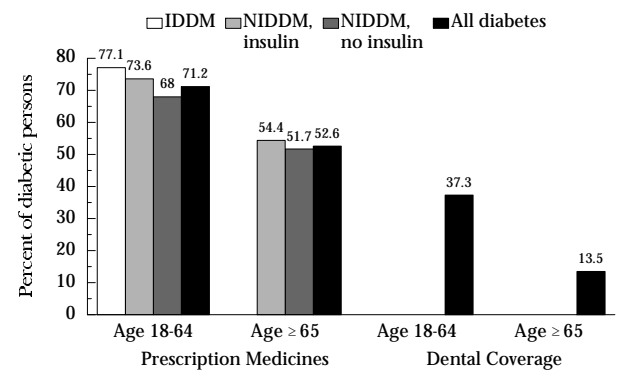
Among diabetic people age 18-64 years, 60.3% are covered by private insurance only and have no other source of health care coverage. Figure 29.7 shows that most diabetic people are covered by only one source of private insurance. However, 8.0% of those age 18-64 years and 4.7% of those age ≥65 years have two or more sources of private health insurance.

IMPLICATIONS FOR HEALTH CARE OF DIABETES

COVERAGE FOR SPECIFIC ASPECTS OF HEALTH CARE

Virtually all (97.2%) diabetic people who are covered by Medicare have both Medicare Part A and Part B². This occurs for those age 18-64 years and for those age ≥65 years. Similarly, of diabetic people with private health insurance, 99.5% have coverage for hospital care and 98.2% have coverage for physician/surgeon bills for operations². Coverage for prescription medicines occurs for 62.9% of people with diabetes through private insurance, Medicaid, and military sources, including 71.2% of those age 18-64 years and 52.6% of those age ≥65 years (Figure 29.8). There is little difference by type of diabetes in the proportion covered. Dental coverage is held through private insurance for 37.3% of people with diabetes age 18-64 years and 13.5% of those age ≥65 years (Figure 29.8).

Figure 29.8
Health Insurance Coverage for Prescription Medicines and Dental Care of Adults with Diabetes, U.S., 1989



Source: Reference 2

LACK OF AND LIMITATIONS IN HEALTH CARE COVERAGE

As presented above, it is estimated that there are ~640,000 people with diabetes who have no health insurance coverage in the United States. Table 29.2 shows the reasons given by diabetic people age 18-64 years who had no private insurance when they were asked why they did not have this type of coverage. The majority stated that health insurance was too expensive and they could not afford it. Indeed, the median family income of diabetic people with private insurance was \$20,000-\$25,000 compared with \$8,000-\$9,000 for those without private insurance. A larger proportion of those with diabetes compared with those without diabetes did not need private insurance

Table 29.2
Reasons Given by Individuals Age 18-64 Years for Not Having Private Health Insurance, U.S., 1989

Reason	Diabetic persons (%)	Nondiabetic persons (%)
Too expensive, cannot afford	66.0	64.4
Have some other type of health care coverage	18.9	11.0*
Cannot obtain because of poor health, illness, or age	16.2	2.0*
Unemployment or job loss	6.8	11.4*
Have been healthy and haven't needed insurance	1.2	7.0*
Dissatisfied with previous insurance	0.3	1.4
Don't believe in insurance	0	1.2
Other reason	9.9	13.9

Columns do not add to 100% because more than one reason was given.
*p<0.01, subjects with diabetes versus subjects without diabetes.

Source: Reference 2

because they had another type of coverage (18.9% versus 11.0%, $p < 0.001$) or could not obtain private insurance because of their health (16.2% versus 2.0%, $p < 0.001$). A small proportion of both groups reported that they did not have private insurance because of unemployment or job loss.

Of the 30.8% of diabetic people who have no private health insurance, 16.2% of those age 18-64 years and 0% of those age ≥ 65 years stated that they had ever been denied insurance because of poor health or illness². In the 1987 NMES, however, only 5% of people with diabetes age < 65 years who were uninsured reported that they had been denied health insurance or offered limited coverage because of their health⁹. In a study in Pittsburgh, PA¹⁰, IDDM subjects were more likely to have been denied a health insurance policy at some time in their adult lives compared with their nondiabetic siblings (23% versus 12%).

Even though the proportion of people with diabetes who have health insurance is high in the United States, there may be limitations in coverage. For example, only 69.2% of diabetic people age ≥ 65 years supplement their Medicare with private insurance (Figure 29.3). Of those age 18-64 years, 9.7% are covered only by Medicaid or other public assistance programs, and the nature of coverage for diabetes through these programs varies widely from state to state. Only 71% of those age 18-64 years and 53% of those age ≥ 65 years have coverage for prescription medicines (Figure 29.8). These possible limitations in coverage may not be restricted to people with diabetes, however. Those who have private insurance appear to have coverage similar to that of people without diabetes. For example, in the 1977 NMCES, the various features of coverage for people with diabetes provided by private insurance policies were very similar to those for the nondiabetic population⁴. There were no significant differences in the proportions with basic and major medical coverage; coinsurance rates and deductibles for hospital care and physician office visits; or the percentages with coverage for dental care, vision care, drugs, routine physicals, and psychiatric care. However, a slightly higher proportion of those with diabetes lacked coverage for office visits (25% versus 17%) and lacked major medical coverage (26% versus 18%)⁴.

ADVERSE EFFECTS ASSOCIATED WITH LACK OF HEALTH INSURANCE

Few studies have investigated whether the lack of health insurance has adverse effects on people with diabetes. Table 29.3, comparing diabetic persons age

Table 29.3
Characteristics of Diabetic Subjects Age 18-64 Years According to Health Insurance Coverage

Characteristic	Subjects with health insurance (%)	Subjects without health insurance (%)
Demographic characteristics		
Non-Hispanic White	68.2	55.0†
Black	20.8	23.4
Mexican American	4.8	13.3†
Other race/ethnicity	6.3	8.3
Education > high school	28.3	20.8*
Family income >\$25,000	51.0	18.8†
Clinical characteristics		
Mean age at diabetes diagnosis (years)	40.4	39.3
Mean diabetes duration since diagnosis (years)	10.1	8.4*
Treated with insulin	49.5	43.5
Retinopathy	27.9	31.4
Kidney disease	7.6	8.5
Angina or heart trouble	24.4	23.5
Stroke	6.7	6.4
Hypertension	56.2	49.0
Amputation	2.0	2.6
Foot/ankle sores	9.2	12.6
Cataract	10.4	5.5*
High blood glucose always/most of the time‡	26.3	38.2†
Glucose in urine always/most of the time‡	31.6	41.6*
Medical care		
Self-test urine glucose \geq once/week	25.5	26.9
Self-test blood glucose \geq once/day	19.1	11.0†
Self-check feet \geq once/week	76.0	64.3†
≥ 4 visits to diabetes physician in past year	55.6	44.5†
Urine glucose checked by health professional \geq twice in past 6 months	46.5	47.1
Blood glucose checked by health professional \geq twice in past 6 months	65.1	57.6
Blood pressure checked by health professional \geq twice in past year	85.9	79.9
Feet examined by health professional \geq twice in past 6 months	29.5	19.2†
Visit to podiatrist in past year	13.9	11.8
Dilated eye exam in past year	47.0	35.8†
Diabetes patient education course	41.4	32.6*

* $p < 0.05$, † $p < 0.001$, subjects with health insurance versus subjects with no health insurance. ‡ Reported by subjects whose urine/blood glucose was tested either by a health professional or by themselves.

Source: Reference 2

18-64 years with and without health insurance, shows few differences between the two groups in the proportion who report complications related to diabetes. A higher proportion of those without insurance report frequent hyperglycemia and glycosuria. The intensity of medical care, including self-care practices, tends to be greater for those who have health insurance. Those without health insurance are less likely to be non-Hispanic white and more likely to have education less than high school and to have a family income <\$25,000.

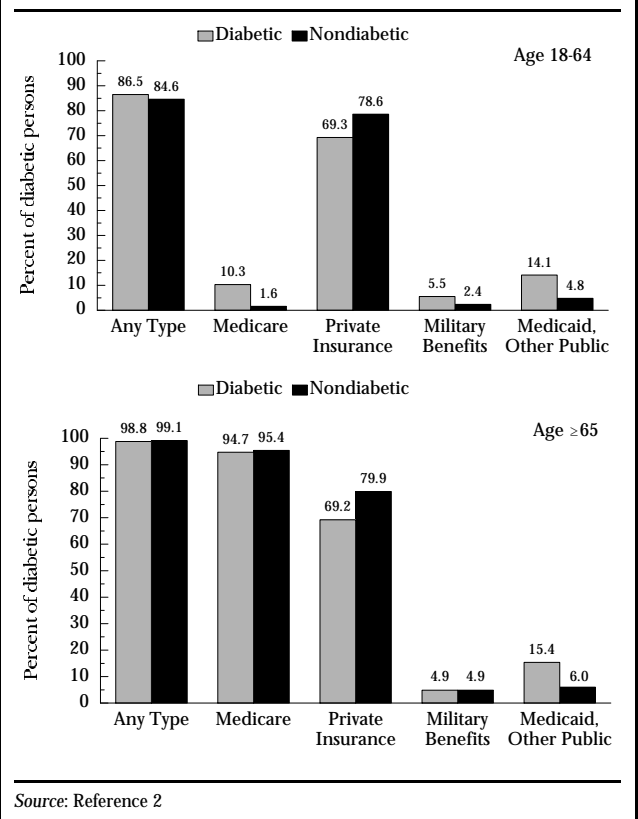
Lack of health insurance in the 1989 NHIS survey was associated with low income but not with an increased rate of diabetic complications (Table 29.3). Among Mexican Americans with NIDDM in San Antonio, the prevalence of microvascular complications was also similar among those with and without health insurance⁸. Microvascular complications were more common, however, among Mexican Americans who lacked health insurance for outpatient physician visits and medications, although this difference was attributable to hyperglycemia, longer duration of diabetes, higher blood pressure, and other risk factors for diabetes complications⁸.

A study of adult diabetic patients in inner-city diabetic clinics found that full third-party reimbursement for health care was associated with a higher frequency of emergency room admissions but not with hospital admissions, use of a diabetes telephone hot line, or number of diabetes clinic visits¹¹. Absence of health insurance has been associated with higher mortality among all adults¹² and a greater frequency of adverse outcomes for women with breast cancer¹³. However, such studies have not been conducted for people with diabetes.

HEALTH INSURANCE COVERAGE FOR DIABETIC PERSONS COMPARED WITH NONDIABETIC PERSONS

Comparison of health insurance coverage for persons with and without diabetes is shown in Figure 29.9. The overall proportions that have any type of health insurance are similar, being 92.0% for those with diabetes and 86.8% for those without diabetes. Among persons age 18-64 years, 86.5% of those with diabetes and 84.6% of those without diabetes have some form of coverage; among those age ≥65 years, the frequencies are 98.8% and 99.1%, respectively. Medicare coverage among people age 18-64 years is more common for those with diabetes compared with people without diabetes (10.3% versus 1.6%, $p < 0.001$). Private insurance is somewhat less common among people with

Figure 29.9
Health Insurance Coverage for Adults with and Without Diabetes, U.S., 1989



diabetes compared with those without diabetes. Among those age 18-64 years, 69.3% of diabetic and 78.6% of nondiabetic individuals have private health insurance coverage ($p < 0.001$). Among those age ≥65 years, 69.2% of those with diabetes and 79.9% of those without diabetes have private insurance ($p < 0.001$). There is little difference in coverage through military sources between those with and without diabetes. Coverage through Medicaid or other public assistance programs is more common for people with diabetes compared with people without diabetes for those age 18-64 years (14.1% versus 4.8%, $p < 0.001$) and for those age ≥65 years (15.4% versus 6.0%, $p < 0.001$). Overall, coverage through any government program for people age 18-64 years is less frequent for people without diabetes (8.3%) compared with people with diabetes (26.4%), but not for those age ≥65 years (96.4% versus 96.0%).

Two previous studies on U.S. national samples in 1977-78 also found that health insurance coverage was similar for people with and without diabetes^{3,4}. Further, in a study in Pittsburgh, the proportion of adults with IDDM covered by health insurance did not differ from the proportion of their nondiabetic siblings who were covered¹⁰. More than 90% had insur-

Table 29.4

Percent Distribution of Payment for Medical Care Expenses for Persons with Diabetes, U.S., 1977 and 1987

	Out-of-pocket expense	Private health insurance	Medicare	Medicaid	Other
1977					
All diabetic patients	22.1	24.2	31.8	11.8	10.2
Age (years)					
<45	19.8	47.4	1.7	20.2	10.9
45-64	22.8	36.0	11.4	15.9	13.9
≥65	22.0	12.0	51.1	7.5	7.5
1987					
All diabetic patients	14.8	24.9	32.2	11.5	16.6
Age (years)					
<30	13.2	32.1	15.6	17.6	21.5
30-64	13.4	35.4	11.6	17.6	22.0
≥65	16.2	15.0	51.7	5.7	11.4

Other includes CHAMPUS/CHAMPVA, Indian Health Service, VA, military, other federal/state/city/county payers, philanthropic institutions, and unknown source of payment.

Source: References 4 and 14

ance through a private third-party source and this insurance did not differ between the siblings by type of policy, type of coverage, or cost of premium. There was also no difference between the siblings in the proportion insured at different income levels.

ECONOMIC ASPECTS OF HEALTH INSURANCE COVERAGE

COST OF HEALTH INSURANCE

In the NMCES study of a representative sample of U.S. residents in 1977, the costs of premiums for private health insurance policies covering people with diabetes were not substantially different from those for the rest of the population⁴. Employers paid for about 67% of these premiums for persons age <65 years for both diabetic and nondiabetic employees. Above age 65 years, employers paid for 38% of the premiums for both diabetic and nondiabetic persons⁴.

PROPORTION OF HEALTH CARE EXPENSES COVERED BY HEALTH INSURANCE

The NMCES study of a representative sample of U.S. residents found that 98.9% of diabetic people had an expense for medical care of diabetes in 1977⁴. In the 1987 NMES survey, this proportion was 99.6%¹⁴. Table 29.4 shows the distribution of sources of payment for this care. There were few differences between the two studies in the percent of health care costs paid by private insurance, Medicare, and Medicaid, but a lower proportion of costs were paid out of pocket and

a higher proportion were paid by other sources in 1987. The 1977 study found that diabetic people paid a lower percent of their health care costs out of pocket compared with people without diabetes (22% versus 31%), although the amount paid was considerably higher for diabetic versus nondiabetic persons (\$335 versus \$184)⁴.

Table 29.5 shows the expected sources of payment for ambulatory visits involving diabetes to office-based physicians in the United States in 1991. For age <65 years, Medicare, Medicaid, and other government sources combined were expected to be sources of payment for about one-third of visits. Private insurance was a payment mechanism for one-third of visits and

Table 29.5
Expected Sources of Payment for Visits Involving Diabetes to Ambulatory Care Physicians, U.S., 1991

Source of payment	Percent of visits		
	Age 0-64	Age ≥65	All ages
Medicare	14.2	83.7	50.5
Medicaid	9.8	13.8	11.9
Other government source	5.5	1.2	3.3
Private insurance	32.6	24.2	28.2
HMO/prepaid plan	17.8	5.9	11.6
Out of pocket	26.5	13.2	19.6
Other source	3.9	4.0	4.0
No charge	1.8	0.0	0.8
Unknown	2.9	3.0	2.9

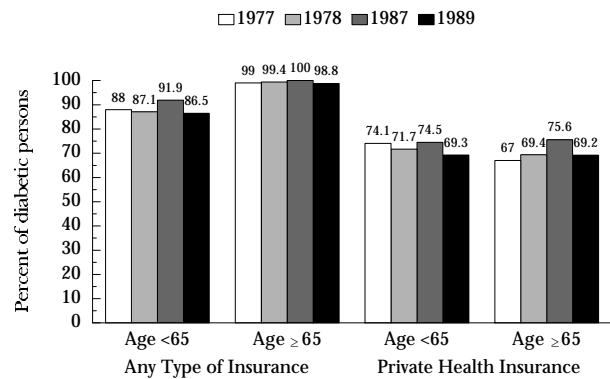
Diabetes visits were those that listed conditions with ICD9-CM codes 250, 251.3, 357.2, 362.0, 366.41, 648.0, or 775.1 as a patient diagnosis on the patient record form. Up to three conditions could be listed. Columns add to more than 100% because more than one source could be listed for each visit.

Source: 1991 National Ambulatory Medical Care Survey

out-of-pocket costs were involved in 27% of visits. For age ≥ 65 years, Medicare was a payment source for 84% of visits and private health insurance for 24%, and out-of-pocket costs were incurred in 13%.

TIME TRENDS IN HEALTH INSURANCE COVERAGE

Figure 29.10
Time Trends in the Percent of Adults with Diabetes Who Have Health Insurance, U.S., 1977-89



Source: References 2, 3, 4, and 14

Figure 29.10 shows the proportion of people with diabetes who had any type of health insurance and who had private health insurance for studies in 1977, 1978, 1987, and 1989. It is apparent that the proportions who have health care coverage have been almost constant during this 12-year period.

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