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[Research Assessment Management Inc Working Group Meeting on Health Insurance Practices and Policies Effecting Disabled Persons] [1988]

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Research
Assessment
Management, Inc.

May 27, 1988

Dear Invitees:

The following materials are enclosed for your review prior to the Working Group meeting on Health Insurance Practices and Policies Effecting Disabled Persons being convened in Washington, DC on June 14-15, 1988:

- . A memorandum from the NIDRR Project Officer setting out the expected outcomes and the meeting plan
- . Four papers developed for the Working Group meeting
- . Three background articles
- . Current List of Invitees

Please be sure to read the enclosed memorandum carefully and in its entirety. It contains information that is crucial to the success of the meeting.

You are also asked to review and evaluate the articles and papers that are enclosed in preparation for the meeting. These materials will serve as the springboard for discussion during the Working group meeting. At the meeting registration, you will be provided with an agenda and an additional paper being prepared for the meeting by Richard Nugent.

The enclosed materials will serve as resources during the meeting. Since they will not be redistributed, you will need to bring them with you to the Working Group meeting.

Your cooperation will contribute significantly to the overall success of the Working Group meeting. I look forward to seeing and working with you at the meeting.

Sincerely,

Angela Peebles

Angela Peebles
Project Director

Enclosures

Discussion Draft for Comments Only
Bob Griss, Consultant to NIDRR

TOPICAL OUTLINE OF ISSUES RELATED TO THE EQUITABLE FINANCING
OF ACCESS TO HEALTH CARE THROUGH PRIVATE AND PUBLIC HEALTH
INSURANCE FOR PERSONS WITH DISABILITIES OR CHRONIC ILLNESS

- I. Health care needs of persons with disabilities or chronic illness
- II. Limitations of private system for financing health care
- III. Limitations of public health insurance programs for persons with special health care needs
- IV. Assessment of various options at federal and state levels for improving access, affordability, and adequacy of health care for persons with disabilities or chronic illness
- V. International comparison of health care systems for financing health care for sickness, disability, or work injury to persons with disabilities or chronic illness in United States, Canada, United Kingdom, Sweden, France, West Germany, The Netherlands, Israel, and Japan

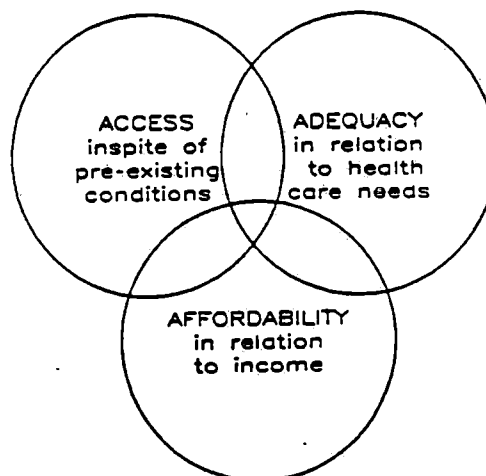
I. Health Care Needs of Persons with Disabilities or Chronic Illness

[Question: How many people with chronic conditions have problems gaining access to affordable and adequate health care?]

A. Definition of the target population

1. persons with severe chronic conditions likely to have a significant effect on their health, to require extensive medical treatment, to result in a reduction in their work capability, or to require out-of-pocket health care expenses which exceed a "catastrophic" threshold of their family income (see Appendix for Narrative and Tables on Disability Statistics)
2. these persons face three distinct but overlapping problems in health insurance availability:
 - a. access to (standard) health insurance plan
 - b. adequacy of standard health insurance to meet the range of their health care needs
 - c. affordability of the health-related services which are covered by health insurance and services which are not covered in relation to their income (see Figure 1)

Figure 1: Three overlapping problems limiting health insurance availability to persons with severe chronic conditions



3. forms which health care financing problems may take for persons with chronic health conditions
 - a. rejection by health insurer for pre-existing conditions
 - b. higher premium for standard coverage because of pre-existing conditions
 - c. exclusion of treatment for pre-existing condition from standard coverage indefinitely or for a specified waiting period (e.g. 6 months to 5 years)
 - d. out-of-pocket expenses for health care needs which consume a significantly greater percentage of their income than for persons without a chronic health condition
 - e. availability of health care services may be provided in a way that unnecessarily limits self-direction and restricts participation in meaningful roles in society
 - f. inadequate health care can adversely affect one's health and accentuate health problems
 - g. total dollar limits on health insurance policy annually or for life-time maximum may discourage or prevent necessary coverage as may dollar limits within the insurance policy on the number or dollar value of specific services allowed for reimbursement
 - h. specific services needed for rehabilitation and long term support may not be included in a standard health insurance plan
 - i. rescission of insurance policy based on alleged failure to provide full disclosure of medical history at the time of application
 - j. cancellation of insurance policy as a result of high usage
4. similarities and differences between persons with chronic conditions and persons with standard risk who are uninsured
 - a. most standard risk persons who are uninsured

are poor lacking discretionary income to purchase health insurance for themselves and their dependents, and they lack an employer who is willing and able to purchase it for them or to contribute to its cost

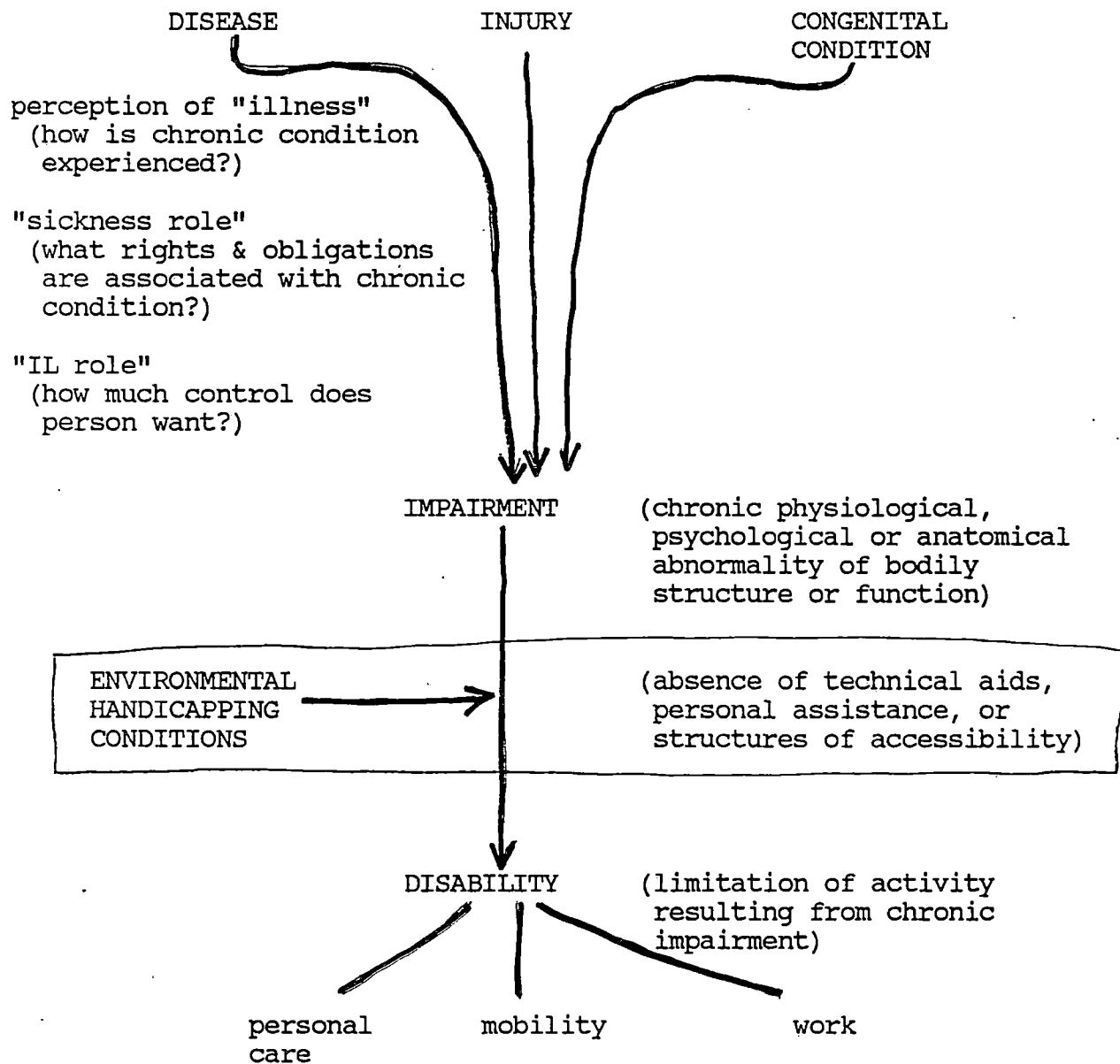
- b. approximately two-thirds of persons with severe chronic health conditions have standard private health insurance but it is often inadequate to meet the range of their health care needs or to offer sufficient protection from catastrophic expenses in relation to their income
- c. some persons with severe chronic conditions lack access to any private health insurance because of pre-existing conditions but they are at most between 6-8 percent of the 37 million uninsured persons in the U.S.
- d the real challenge that persons with chronic conditions represent to the health care system is not whether employers can be made to contribute to the cost of a minimum health care package for their employees and their dependents but how the health care financing mechanisms can shift from acute care to comprehensive health care which includes adequate levels of rehabilitation and long term support

B. Number of persons with chronic health conditions

- 1. growing incidence of chronic conditions as a result of aging of the population, and advances in trauma care, technology, and the treatment of chronic conditions
- 2. conceptual framework for analyzing health-related needs (see Figure 2)
- 3. problems of using data based on persons with major activity limitations attributable to chronic impairments as a proxy for all persons with severe chronic conditions (see Appendix, pp.)
- 4. data sources on disability and chronic illness (see Appendix, pp.)
- 5. prevalence and incidence of selected chronic impairments (see Appendix, pp.)

Griss, 2/12/88

FIGURE 2: Conception of Health-related Needs for Persons with Chronic Health Conditions



- C. Disabled population by age-groups: under 18, 18-64, 65+ (see Appendix, pp.)
- D. Health insurance status of persons with disabilities
 - 1. by diagnostic group (see Tables)
 - 2. by employment status (see Tables)
 - 3. by family income (see Tables)
- E. Health care utilization by type of service and service setting (see Figure 3)
 - 1. survey data for one year: (NMCES, 1977; NMCUES, 1980; NMES, 1988) for persons with major activity limitations
 - 2. medical provider data for acute care, rehabilitation, and long term support (if known) for persons with selected chronic impairments
 - 3. surveys of providers of various long term support services serving persons with chronic impairments (e.g. World Institute on Disability, Attending to America)
 - 4. consumer surveys of specific populations with chronic impairments
- F. Health care costs
 - 1. survey data for one year: (NMCES, 1977; NMCUES, 1980; NMES, 1988) for persons with major activity limitations
 - 2. claims data by diagnostic groups
 - a. HCFA-Medicare utilization for SSDI recipients based on Continuous Medicare History Files; Medicaid utilization for SSI-disabled recipients based on Medicaid Tape-to-Tape file in five states
 - b. Veterans Administration
 - c. private insurance claims data
 - 3. medical provider data from acute care providers, rehabilitation hospitals, free-standing rehabilitation professionals, medical equipment suppliers, drug companies, etc. who can break-out average individual charges by diagnostic groups

Figure 3: Essential Health Care Services Needed by Persons with Severe Chronic Conditions by Possible Service Settings

	<u>Possible Service Settings</u>				
	Acute	Hospital Rehab	Outpatient	Office/ Clinic	Home
<u>Essential Health Care Services</u>					
I. ACUTE CARE to achieve stabilization					
II. REHABILITATION to improve functional capacities					
a. post-acute rehab					
b. continuing rehab					
III. LONG TERM SUPPORT to maintain maximum level of independence and self- sufficiency					
a. personal assistance					
b. durable medical equipment assistive devices, and technical aids					
c. maintenance therapies (OT/PT)					
d. psychological services.					
e. care management and coordination					
f. training for independent living					
g. environmental modification					
h. drugs and biologicals					
i. disposable medical supplies					

4. what are the average costs for specific health related services for acute care, rehabilitation, and long term support in the lifetime of a person with selected severe chronic impairments (see Figure 4); averages be constructed for a profile of selected chronic impairments distinguishing between the period after the onset of the chronic impairment which was necessary for stabilization and annual life-time averages. The average costs for specific services can be based on assumptions about the average number of units of different kinds of services (e.g. number of hospital admissions and average lengths of stay in a hospital) utilized each year, average costs per unit of service, and the estimated number of years a person is likely to live with a specific chronic impairment from the age of onset.
 5. how can health care costs be minimized over the long-run for specific chronic conditions by providing adequate acute care, rehabilitation services (Johnson and Keith, 1983], and long term support services in a cost-effective and timely way to reduce "medical recidivism", prevent family disintegration, and minimize adjustment problems
- G. Sources of payment (private insurance, Medicare, Medicaid, family out-of-pocket expenses, and others including Veterans Administration, State Vocational Rehabilitation program, State Programs for Children with Special Needs, County or Municipal programs for indigent care, or uncompensated care)
1. survey data for one year: (NMCES, 1977; NMCUES, 1980; NMES, 1988) for persons with major activity limitations
 2. medical provider data from acute care providers, rehabilitation hospitals, free-standing rehabilitation professionals, medical equipment suppliers, drug companies, etc. who can break-out costs by diagnostic groups
 3. impairment-specific surveys (e.g. Health Care Financing Project)
 4. what are the sources of payment for specific types of health related services for acute care, rehabilitation, and long term support for a person with selected chronic impairments

Figure 4: Average Health Care Costs for First Year, Annual, and Total Life-time Acute Care, Rehabilitation, and Long Term Support Services for Persons under 65 with Severe Selected Chronic Impairments

Selected Chronic Impairments	ACUTE CARE 1st annual yr.	REHABILI- TATION 1st annual yr.	LONG TERM SUPPORT 1st annual year	1st yr.	TOTAL annual	life- time
CHRONIC ILLNESSES						
Heart disease						
Cancer						
Diabetes						
Stroke						
PHYSICAL DISABILITIES						
Spinal Cord Injury						
Traumatic Brain Injury						
Cerebral Palsy						
Multiple Sclerosis						
Arthritis						
Epilepsy						
MENTAL DISABILITIES						
Mental Retardation						
Mental Illness						
SENSORY DISABILITIES						
Blind						
Deaf						

- H. Limitations of existing data sources [McManus] and strategies for new data collection efforts

II. Limitations of Private System for Financing Health Care

A. Historical origins [Starr; Anderson; Law; Fein; Corning]

[Question: how was private health system created for acute care by medical providers (e.g. AMA and hospitals), commercial insurers, employers (e.g. U.S. Chamber of Commerce, National Association of Manufacturers), and organized labor using public policy to promote their own interests]

1. Blue Cross/Blue Shield
2. commercial insurers
3. self-insured employers (Ruble, 1986)
4. HMOs

B. Medical underwriting practices and trends for individual and small group plans

1. concept and history of medical underwriting as an offshoot of experience-rating
 - a. experience with blindness, diabetes, epilepsy, and AIDS
 - (1) review of contradictory evidence on trends toward greater inclusion vs. exclusion through medical underwriting
 - b. how effectively can insurers predict high users of health care within various diagnostic codes
 - c. implications of future development and use of medical testing and genetic screening for health insurance
 - (1) OTA study [Miike]
 - d. estimate of the size of the insured population who could lose their access to health care as a result of pre-existing conditions if they had to change their health plan
 - (1) HHS estimates 7 million "insured uninsurables" [DHHS, 1987]
 - e. is medical underwriting a response to the difficulty of predicting high users from certain diagnostic categories or a mechanism for limiting liability once it is decided to minimize cost shifting among groups of insureds?
 - (1) to what extent is medical underwriting used not only for screening purposes but as a tool for contesting pre-

existing condition claims?

- C. Range and depth of health care benefits in different types of healthcare plans (see American Psychiatric Association study, The Coverage Catalogue, as a model)
1. focus on the types of health care services needed by persons with disabilities and chronic illness including:
 - a. long term support (non-institutional)
 - (1) durable medical equipment (purchase and repair)
 - (2) assistive devices (e.g. orthotics, prosthetics) and technical aids (e.g. augmentative communication devices)
 - (3) disposable medical supplies
 - (4) drugs and biologicals
 - (5) OT/PT and other therapies on a maintenance or on-going basis which are medically necessary to prevent degeneration
 - (6) attendant services including personal care chore service, supervision, interpreter services, respite services and day care
 - (7) care management and coordination
 - (8) environmental modification for accessibility (e.g., at home, in vehicle, or at workplace)
 - (9) self-care training and training of informal supports for physical disabilities
 - (10) independent living training for psycho-social needs
 - (11) psychological services
 - (12) preventive care (e.g. periodic diagnostic tests)
 - b. rehabilitation services (on inpatient, outpatient, office or home care basis) for restorative and preventive needs
 - (1) occupational therapy
 - (2) physical therapy
 - (3) speech-hearing-language therapy
 - (4) respiratory therapy
 - (5) cognitive remediation for behavioral disorders
 - (6) other
 - c. acute care (on inpatient, outpatient, clinic, or home care basis)
 - (1) hospitalization
 - (2) physician services for primary care, specialty care, and preventive care
 - (3) home health care
 - (4) preventive care (e.g. periodic diagnostic tests)
 2. reimbursement policies and practices which determine the extent of coverage for the above services, as well as the location and the

characteristics of the service providers

- a. standards for "medical necessity" determination vs. convenience
- b. provider standards for reimbursement
- c. service settings for reimbursement which favor inpatient over out-patient or in-home services
- d. criteria for determining when the maximum recovery level has been reached beyond which maintenance care including therapies and other in-home services may no longer be reimbursed for
- e. lifetime maximums and inside limits on the number and dollar amounts of specific services which will be reimbursed within a year
- f. impact of traditional insurance cost containment mechanisms such as utilization reviews on inappropriate service delivery to persons with chronic health care needs

3. trend toward capitation

- a. impact on persons with severe chronic needs being served through an HMO (Schlesinger, 1986; Center for Public Representation, 1987)

D. Affordability of health care coverage (premiums, deductibles, copayments, and stop-loss provisions) in large group, small group, and individual plans

[Question: how many persons with severe chronic conditions eventually lose coverage because they can't continue paying premiums, they exceed their coverage limits, or non-renewal of their insurance policies?]

1. affordability based on risk classification supposedly reflecting probability of health care utilization rather than income level of the health care recipient
2. trend toward cost-shifting from employer to the insured through larger deductibles and co-insurance requirements
 - a. how will employees with chronic impairments be affected by employers placing limits on the amount that will be expended on individual employees?
3. trend away from comprehensive coverage for standard risks which reduces opportunities for cost-shifting between high risks and

standard risks among pool of insured

E. Regulation of health insurers

[Question: how effectively do state regulations prohibit discriminatory practices in issuing, continuing, or cancelling insurance policies for persons with high health care needs?]

1. history of regulation at the state level rather than at the federal level
 - a. federal government provides tax exemption for employer's contribution to health insurance but does not define minimum requirements for health insurance
2. insulation of self-insured employers from state regulation
3. problems in enforcing anti-discrimination in underwriting practices [Greenley]
4. what constraints prevent insurers from disenrolling people on the basis of predictive medical tests or claims experience?
 - a. will use of predictive medical tests have the effect of shutting out many people from having access to private health insurance expanding the need for public sector spending for health care?
5. insurers not obligated to report claims experience data
6. problems with state mandate approach to service benefits and eligibility requirements
 - a. different regulations apply to single employer large groups, multiple employer trusts (METs), small groups, and individual policies
7. legal requirements of employers under Section 503 and 504 of the Rehabilitation Act and State Fair Employment Practices Act
 - a. what discretion do employers have to use predictive medical tests to screen out prospective employees or to use medical tests or the claims experience of employees to terminate high users of health care or those who are expected to consume a disproportionate share of the employer's contribution to employee health care expenses?

F. Supply problems adversely affecting persons with disabilities or chronic illness caused by financing limitations in a for-profit health care system

1. high liability costs for health care providers to protect themselves from malpractice suits that are often brought to reduce the expenses associated with undesirable medical outcomes
2. orphan drug problem
3. contradictory objectives of private insurers providing health insurance, casualty insurance, and long term disability policies
 - a. health insurers are allowed to limit their liability by using medical underwriting and restrictive reimbursement policies in their health insurance contracts
 - b. casualty insurers' exposure to loss (for Workers Compensation and automobile liability insurance) is statutorily defined by necessary policy provisions and mandated benefits
 - c. long term disability insurers face a disincentive to pursue rehabilitation interventions in order to maximize person's opportunity to receive Workers Compensation or Social Security Disability Insurance which reduces long term disability payments dollar for dollar

III. Limitations of Public Health Insurance Programs for Persons with Special Health Care Needs

A. Historical origins

[Question: how were public health insurance programs shaped by the background of Workers Compensation and Veterans Administration health care programs, the constraints of the labor market, and the needs of the private health care system?]

1. Medicare
2. Medicaid
3. state Programs for Children with Special Health Care Needs (formerly Crippled Children's Services)
4. other indigency health care programs at federal, state, and local levels

B. Restrictive eligibility requirements

1. Social Security definition of disability for Medicare and Medicaid based on inability to work rather than health related expenses
 - a. lengthy application processes based on the need to show severe long-term disability

2. lack of uniform income standards for Medicaid among the states
 3. two-year waiting period for Medicare coverage after SSDI eligibility
- C. Inadequate coverage
1. lack of Medicare coverage for long term support except for limited post-acute services following hospitalization
 2. unequal availability of optional Medicaid services across states and lack of minimum requirements for "amount, duration, and scope" of federally mandated services
- D. Reimbursement policies
1. low provider reimbursement levels for Medicaid in many states
 2. institutional bias for reimbursement in Medicare and Medicaid
 3. Congress is considering whether Medicare's DRG-based prospective payment system (PPS), another prospective payment system, or a cost-based retrospective reimbursement system is most appropriate for payment of rehabilitation
 4. HCFA is beginning to consider how a Medicare capitated system would affect disabled persons who represent ten percent of Medicare recipients over 65 but are no longer identified as disabled for capitation purposes
 5. Congress has recently made permanent Section 1619 of the Social Security Act to enable SSI recipients to continue receiving Medicaid coverage while earning over the Substantial Gainful Activity level of \$300 per month if their earnings are less than the combined value of the SSI break-even point and the value of their Medicaid expenses
- E. Problems created by the interaction of public and private systems for insuring persons with chronic conditions
1. competition for secondary payor status (e.g. recent Medicare changes in relation to private insurance)
 2. dual enrollees in Medicare and Medicaid

IV. Assessment of various options at federal and state levels for improving access, affordability, and adequacy of health care for persons with disabilities or chronic illness. (Analysis of advantages, disadvantages, and constraints can be presented for children, working-age persons, and elderly persons separately, or for all persons with disabilities or chronic illness as a single population)

[QUESTION: Private insurers often claim that certain persons with pre-existing

conditions are "uninsurable" because of the predictability of their health care costs. From the insurers' point of view, a person is "uninsurable" if his or her expected health care costs exceed the premium that the insurer is expected to receive. As long as the individual is part of a larger group which can absorb the higher costs of some of its members, the individual, regardless of the severity of pre-existing conditions, is clearly "insurable". However, the private insurer is concerned about "adverse selection" where experience-rating would require raising premium levels which could make the private insurer less competitive. What private and public mechanisms can be used to ensure that higher health care costs are distributed in an equitable way? How do these approaches for persons with pre-existing conditions create precedents for changes in the larger health care system which provides access to health care for all citizens?]

A. PRIVATE APPROACHES

1. Employer mandates via tax laws

a. Kennedy/Waxman's "Minimum Health Benefits for All Workers Act of 1987," S. 1265, H.R. 2508)

- (1) how can a federal mandatory employer sponsored group benefit plan be introduced without undermining state mandates which ensure the provision of certain services that many persons with chronic impairments depend on?

2. Insurance regulations

(1) state mandates (e.g. newborn coverage)

(2) federal mandates?

- (a) should the McCarran-Ferguson Act preventing federal regulation of the insurance industry be renewed?

- (b) should the Employee Retirement Income Security Act (ERISA) be amended to allow for state or federal regulation of the health care plans of self-insured employers?

3. HMO regulations

4. Managed care

- a. private insurance models of individual case management systems to handle claims which exceed a "catastrophic" threshold and allow for flexible funding of services beyond the scope of the insurance plan in order to reduce patient dependence on the health care delivery system over the long-run (e.g. Aetna)

- b. demonstration pilots using managed care approach to disabled population in an Independent Living model (e.g. Urban Medical Group in Boston)
- c. evaluation of Medicaid-funded HMOs serving persons with disabilities (e.g. Wisconsin)

B. PUBLIC RESIDUAL APPROACHES

1. High risk pool

- a. how effective are high risk pools in creating access to affordable health care, providing benefits which meet on-going maintenance needs, and avoiding the danger of precipitating the dumping of insured persons out of group plans into a high risk pool?

2. Public subsidy for private premiums

- a. is this an effective strategy for getting private insurers to provide insurance to persons with pre-existing conditions who they would have otherwise rejected, or for expanding the benefit package available to persons with severe chronic conditions?

3. State pool for universal access

- a. below 185% of poverty (e.g. Washington State)
- b. employer mandate (e.g. Massachusetts)

4. Public reinsurance

C. EXISTING PUBLIC

1. Medicare expansion

a. Catastrophic insurance

- (1) Medicare catastrophic acute care insurance financed with income-adjusted premium
 - (a) with drug benefit

b. Long term home care

- (1) extension and expansion of Medicare Part A benefits for home care (e.g. Pepper/Simon bills, H.R. 3436, S. 1616)

c. SSDI eligibility

- (1) eliminate two year waiting period for Medicare for SSDI beneficiaries
- (2) Medicare buy-in
 - (a) Durenberger (S. 936)
 - (b) Bartlett (to be introduced)

2. Medicaid expansion

- a. Infant Mortality Amendments (e.g. Waxman/Bradley (H.R. 4072/S. 2122)
 - (1) implementation of 1986 SOBRA Amendments
- b. Medicaid buy-in
 - (1) Med-America (e.g. Chafee (S. 1139)
 - (2) state-financed Medicaid buy-in (e.g. Wisconsin, Massachusetts)
 - (3) Durenberger's Medicaid for Chronically Ill and Disabled Children Amendment, S. 1740
 - (4) Weicker's Medicaid Catastrophic Coverage for Children, S. 1283
- c. Welfare to work transition
 - (1) 6 mo. Medicaid extension plus 18 mo. Medicaid buy-in
- d. SSI eligibility
 - (1) deeming
 - (2) medical listings
- e. expansion of benefits (e.g. federal mandates, Medicaid waivers)

3. Federal block grant

- a. Maternal & Child Health
 - (1) Chafee's Care Management and Limited Catastrophic Health

Care for Children, S. 1537

- b. Vocational Rehabilitation
- c. Older Americans Act

D. NEW PUBLIC

- 1. National Health Insurance
 - a. Canadian model
- 2. "Pedicare"
- 3. concept of Medicare-Part D (for disabilities and chronic illness) which modifies Social Security Disability program by allowing for wrap-around health insurance coverage for persons meeting a certain level of health care needs
- 4. Other types of pools
 - a. AMA proposal for combined risk pool of uninsured, under-insured, and persons with pre-existing conditions, (Dec. 1986)
 - b. concept of a school pool (Freedman)

V. Social objectives which can be promoted by improving access to health care for persons with disabilities

- A. reduction of disincentives to work by modifying requirement that access to health care is contingent on not being able to work
 - 1. reduction of income maintenance payments which may not be necessary when earned income is possible
 - 2. increase in income and tax contributions generated by employment of persons with severe impairments who were previously out of the labor force
- B. promotion of independent living
 - 1. avoidance of unnecessary institutionalization
 - 2. maximization of opportunities for self-direction
- C. prevention of deterioration of minor health problems into major health

problems which can require costly rehospitalization

- D. protection from additional burden of severe financial hardship created by costs associated with disabilities or chronic illness
 - 1. promotion of equitable distribution of health and disability related costs
 - E. expansion of employment mobility for people with pre-existing conditions or their family members who may feel trapped in inappropriate and unsatisfactory jobs to maintain existing health insurance benefits which may not be available through other employers
- VI. International comparison of health care systems for financing health care for sickness, disability, or work injury to persons with disabilities or chronic illness in United States, Canada, United Kingdom, Sweden, France, West Germany, Israel, and Japan
- A. eligibility
 - B. types of services provided
 - 1. acute care
 - 2. rehabilitation
 - 3. long term support
 - 4. prevention
 - C. levels of quality of service (e.g. frequency, waiting lists, nature of technology)
 - D. reimbursement policies
 - E. financing sources
 - F. administrative structure
 - G. rationing policies (e.g. unmet needs)
 - H. outcomes for persons with specific chronic conditions at different ages
- VII. Appendix: Narrative and Tables on Disability Statistics
- VIII. Bibliography (to be added)

**The Payors of Medical Rehabilitation Services:
Eligibility, Coverage, and Payment Policies**

Andrew I. Batavia, J.D., M.S.
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National Rehabilitation Hospital
Washington, D.C.

NIDRR Working Group on Insurance Policies and Practices
Effecting Persons with Disabilities and Chronic Conditions
June 14 and 15, 1988

I. The Payors of Medical Rehabilitation Services

- A. Medicare
- B. Medicaid
- C. The Veterans Administration
- D. Vocational Rehabilitation Agencies
- E. Private Health Insurers, Disability Insurers, and HMOs
- F. Private Casualty Insurers and Workers' Compensation

II. Rehabilitation Financing Policy

- A. Eligibility Rules
- B. Coverage Rules
- C. Payment Mechanisms

III. Implications for Public Policy

- A. Eligibility
 - 1. National Health Insurance
 - 2. Modifications to Current System
- B. Coverage
 - 1. Mandated Benefits
 - 2. Voluntary Expansion
- C. Payment
 - 1. HHS Report to Congress on Prospective Payment
 - 2. Potential Payment Models
 - a. Modified DRG-based system
 - b. Functional status-based system
 - c. Capitation-based system
 - d. Preferred Provider Arrangements

I. THE PAYORS OF MEDICAL REHABILITATION

Sources of Gross Inpatient Revenues

	Rehab hospital revenue %	Rehab Unit revenue %
Medicare	39.57	52.57
Medicaid	16.11	13.94
Vocational Rehabilitation	1.29	.74
Other Fed, State and Local	3.12	1.43
Blue Cross/ Blue Shield	10.86	9.95
Commercial Insurance	16.20	9.29
Workers' Compensation	1.62	.63
HMOs, PPOs, and PPAs	.36	.90
Self Pay	3.00	2.31
Other	7.87	8.23
TOTAL	100.00	100.00

Sources of Gross Outpatient Revenues

	Rehab hospital revenue %	Rehab Unit revenue %
Medicare	24.73	22.68
Medicaid	15.62	8.76
Vocational Rehabilitation	1.11	2.69
Other Fed, State and Local	.82	6.97
Blue Cross/ Blue Shield	13.46	13.00
Commercial Insurance	23.62	13.19
Workers' Compensation	4.16	8.84
HMOs, PPOs, and PPAs	.51	3.62
Self Pay	7.34	9.89
Other	8.63	12.88
TOTAL	100.00	100.00

* These percentages were derived from the results of the American Hospital Association's 1986 Survey of Medical Rehabilitation Hospitals and Units.

II. REHABILITATION FINANCING POLICY

A. Eligibility - Who may receive benefits under a program?

Eligibility Rules
Derivative Eligibility

B. Coverage - What rehabilitation benefits are paid for under a program?

- | | |
|------------------------------|---------------------------|
| o physicians' services | o orthotics |
| o physical therapy | o social services |
| o occupational therapy | o psychological services |
| o speech pathology | o rehabilitation nursing |
| o respiratory therapy | o drugs and biologicals |
| o prosthetics | o supplies and appliances |
| o rehabilitation engineering | o dietary services |

C. Payment - How are the rehabilitation benefits paid for?

Payment Models

- o Cost-based Retrospective Reimbursement
- o Per diem or per service-based Prospective Payment
- o DRG-based Prospective Payment
- o DRG-based Prospective Payment with Severity of Illness Adjustment
- o Functional-status-based payment
- o Per Capita Payment
- o Preferred Provider Arrangements

ELIGIBILITY

A. Medicare

- Derivative Eligibility
 - Social Security (OASI)
 - Social Security Disability (SSDI)
 - Certain other Title II Beneficiaries

B. Medicaid

- Derivative Eligibility
 - Supplemental Security Income (SSI)
 - Aid for Families With Dependent Children (AFDC)
- Optional Groups
 - Medically Needy
 - Optional Categorically Needy

C. Veterans Administration

- Category A Veterans - service-connected disabilities
- Category B Veterans - means test
- Category C Veterans - don't qualify under A or B

D. Vocational Rehabilitation

- Disability
- Employment Potential

E. Private Health Insurance, Disability Insurance, and HMOs

- Primarily Employment-based
- Also Self-Pay Plans, but Pre-existing Conditions Clauses

F. Casualty Insurance and Workers' Compensation

- Disability Caused by Third Party
- Casualty - Out-of-Court Settlement or Finding of Liability
- Workers' Compensation - Arising out of Employment

COVERAGE

A. Medicare

Broad Range of Inpatient and Outpatient Rehab Care
But not Extended Care, Rehab Engineering

B. Medicaid

Federally required benefits for State plans
Optional benefits for State plans

C. Veterans Administration

All rehabilitation services on a service availability
basis

D. Vocational Rehabilitation

Payor of Last Resort for Medical Rehabilitation

E. Private Health Insurance, Disability Insurance, and HMOs

Vary substantially among plans
Affected by Preferred Risk Selection and Adverse
Selection

F. Casualty Insurance and Workers' Compensation

Determined by Court or Out-of-Court Settlement

PAYMENT

A. Medicare

PPS Exemption for Rehabilitation Hospitals/Units
Cost-based retrospective reimbursement

B. Medicaid

Cost-based retrospective reimbursement
Prospective payment systems (e.g., New York, New Jersey)
Rehab Hospitals Exempted but Rehab Units Included

C. Veterans Administration

Direct Provision of Services
DRG-based System for Resource Allocation
Copayments by Category C Veterans

D. Vocational Rehabilitation

Cost-based retrospective reimbursement
Direct Provision of Some Services

E. Private Health Insurance, Disability Insurance, and HMOs

Health and Disability - Cost-based retrospective
reimbursement
HMOs - Per Capita Payment

F. Casualty Insurance and Workers' Compensation

Cost-based retrospective reimbursement

III. IMPLICATIONS FOR PUBLIC POLICY

A. Eligibility

1. National Health Insurance
2. Modifications to Current System

B. Coverage

1. Mandated Benefits
2. Voluntary Expansion

C. Payment

1. HHS Report to Congress on Prospective Payment
2. Potential Payment Models
 - a. Adjusted DRG-based system
 - b. Functional status-based system
 - c. Capitation-based system
 - d. Preferred Provider Arrangements

WORKING GROUP MEETING ON
PUBLIC AND PRIVATE HEALTH INSURANCE
PRACTICES AND POLICIES FOR THE DISABLED

List of Invitees

John P. Ambrose
Manager of Public Policy
National Mental Health Association
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As manager of public policy, Mr. Ambrose is responsible for the Association's public policy, advocacy, and litigation activities. He provides assistance to the Association's state and local affiliates on policy and advocacy issues in such areas as protection and advocacy, homelessness, patients' rights, state health insurance policy, state systems of care, deinstitutionalization policy, and state service planning.

Ambrose was a practicing attorney in Burlington and Montpelier, VT, from 1972 to 1982. During this time he was active in local, state and national organizations serving disabled persons, including serving as Chairman of the Vermont Developmental Disabilities Council from 1978-1981, and President of the National Council of Community Mental Health Centers in 1979.

Odin W. Anderson
Department of Sociology
University of Wisconsin
Madison, WI 53706
608/262-2133

Emeritus Professor of Sociology, Center for Health Administration Studies, Graduate School of Business, University of Chicago, Chicago, IL 60637, still teaching there part-time.

Current responsibilities are teaching courses in cross-national comparisons of health services delivery systems and health policy, need/demand and the health services infrastructure, general medical sociology current research and writing. The Worth of Medicine; Its Contribution to the Quality of Life; HMO Developments and Competition in Minneapolis, St. Paul and Chicago. Special Editor for International Journal of Technology Assessment In Health Care for two issues of international trends in medical technology policies and adoption.

Andrew Batavia, J.D., M.D.
National Rehabilitation Hospital
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Andrew I. Batavia, J.D., M.S. is a health care attorney and policy analyst, specializing in the economics and finance of medical rehabilitation and other health care services for the disabled population. From 1984 to 1986, Mr. Batavia served as an attorney with the Health Care Financing Administration (HCFA) and developed an expertise in issues concerning Medicare's Prospective Payment System for in-patient hospital care. He has published articles in the areas of health care finance and antitrust law. In 1986, he was awarded the Mary Switzer Distinguished Research Fellowship in Medical Rehabilitation Finance from NIDRR. Since October, 1987, Mr. Batavia has served as Project Director for a study sponsored by the Robert Wood Johnson Foundation to determine the feasibility of developing a capitation finance, managed health care program for persons with severe disabilities. Mr. Batavia is the Program Manager for Health Services Research at the National Rehabilitation Hospital in Washington, DC.

Robert Demichelis
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Associate General Counsel, American Council of Life Insurance (ACIL),
Washington, D.C. 1960 - 1973, 1976 - 1988

Associate General Counsel, American Republic Insurance Company, Des
Moines, Iowa 1973 - 1976

Paren of son who suffered traumatic brain injury in 1980.

Chair, Insurance Committee of national head Injury Foundation,
1986 - 1988

Virginia Head Injury Foundation, Advisory Board of Directors
1984 - 1988

Virginia Head Injury Council, 1987 - 1988

Northwestern university School of Law, 1956--J.D.

Carleton College, 1953--Cum Laude.

Lex Frieden
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Lex Frieden is Executive Director of the National Council on the handicapped, an independent Federal agency located in Washington, D.C. The National Council is a fifteen member body appointed by the President and confirmed by the Senate. The council is charged by law with reviewing all laws, policies and programs affecting people with disabilities and making recommendations to the President and the Congress.

Prior to assuming his present position, Mr. Frieden was Director of the independent Living Research Utilization project at the Institute for Rehabilitation at Baylor College of Medicine, Houston Texas.

A graduate of Tulsa University, Mr. Frieden has been honored as Distinguished Alumnus. He also holds a master's degree in social psychology from the University of Houston. He has done additional graduate work in rehabilitation psychology at the University of Houston with support from an SRS doctoral fellowship, and he has been awarded a World Rehabilitation Fund Fellowship to study programs for disabled people in Europe.

Mr. Frieden, a quadriplegic due to spinal cord injury, has been involved in the organization of several groups of disabled individuals including the American Coalition of Disabilities, and the Houston Coalition for Barrier Free Living.

Working in the independent living movement by severely disabled people since the early 1970's, Mr. Frieden has published several books and papers on independent living. he served as a consultant panel member for the united States House of Representatives Committee on Science and Technology from 1976 through 1978, and he prepared the background paper on community and Residential Based Housing for the White House Committee on Handicapped individuals in 1977. He was honored by the U.S. Jaycees in 1983 as one of America's Ten Outstanding Young Men.

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Mitchell P. LaPlante
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Dr. Mitchell LaPlante is a medical sociologist at the Institute for Health and Aging, University of California, San Francisco, CA. His research interests are in the social epidemiology and demography of chronic illness and disability, and disability policy. He has published several articles in these areas and has recently authored a report. Data on Disability from the Health Interview Survey, 1983-85, published by the National Institute on Disability and Rehabilitation research (NIDRR). He is Director of a three-year grant from NIDRR to conduct research and disseminate information on several major social and epidemiological aspects of disability, including its incidence, prevalence, sociodemographic distribution, and health conditions responsible. Other policy related aspects include benefits received from government and private programs by persons with disabilities, their employment and earnings and use of medical and rehabilitative services. The research is being accomplished through statistical analysis of several large national survey and program databases.

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Douglas Martin, Ph.D., founder and past director of Westside Center for Independent Living (1976); played a key role in development of Section 1619 Work Incentives for SSI recipients (1980); one of the chief architects of H.R.5595, the Employment Opportunities for Disabled Americans Act, (1986); member California Governors' Advisory Task Force on Long Term Care (1983); AARP, OWL, And Villers Foundation Long Term Care Advisory Committee member (1987); Chair, Social Security Subcommittee, National Council on Independent Living (1988).

Larry Miike
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Lawrence Miike is a senior associate with the Office of Technology Assessment (OTA), United States Congress, where he has directed assessments of health-related issues for the past ten years. During this time, OTA--and the field of technology assessment generally--has become established as providing objective policy analyses on technological issues. In the health care area especially, "technology" has been broadly defined, and thus OTA's Health Program has been involved in a wider range of analyses than in most, if not all, of the other OTA program areas. For example, OTA, through the Health Program, appoints the members and reviews the activities of the Prospective Payment Assessment Commissions that have been established by congress to monitor and advise the Health Care Financing Administration on Medicare issues.

Dr. Miike grew up in Hawaii, is a graduate of Amherst College, and holds degrees in medicine from the University of California, San Francisco, and in law from the university of California, Los Angeles. While he has had opportunities to assume administrative duties, his preference has been in formulating and examining the specific content of the wide range of health policy issues that face the U.S. Congress. He currently directs OTA's AIDS related activities, monitors drug-testing issues, and is completing an assessment of the use of medical tests by health insurers. Past OTA studies which Dr. Miike has directed or participated in include Indian Health Care, Blood Policy and Technology, Federal Policies and the Medical Devices Industry, Compensation for Vaccine-Related Injuries, Postmarketing Surveillance of Prescription Drugs and Cancer Testing Technology and Saccharin. he is also assistant author of the 1982 book, Dichotomies of the Mind: A Systems Science Model of the Mind and Personality (John Wiley and Sons, Inc.) with Walter Lowen of the Thomas J. Watson School of Engineering, Applied Science and Technology at S.U.N.Y.-Binghamton.

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Penny Pine is a senior mathematical statistician in the Office of research at the health Care Financing Administration. She has been involved in health services and financing research of the Medicare and Medicaid program since their inception. Recently she has been the manager of a project to develop a uniform person level multi-state data base from state Medicaid Management Information Systems. This project has included studies on institutionalized Medicaid recipients, psychotropic drug use and the risk of hip fracture, outcomes of surgery, disabled Medicaid recipients under a work incentive program, and utilization and expenditures of Medicaid for the disabled. She is a member of the HCFA AIDS work group and serves as the agency's liaison on Aids information and research. Also, she is the chairperson on the Committee on Disabled Adults for the Medical Care Section of the American Public Health Association.

Thomas Stripling
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Thomas E. Stripling is the Associate Director of Health Studies and Analysis of the Paralyzed Veterans of America, a nonprofit veterans service organization with a membership of 11,000 veterans with a spinal cord injury or disease.

Stripling joined the Paralyzed Veterans of America in February, 1981. In working with PVA's Medical and Research Affairs Department, Stripling is concerned with demographics, health care utilization and health studies for the veteran population, in general, and SCI veterans, in specific.

Prior to coming to Paralyzed Veterans of America, Stripling was associated with the Association for Retarded Citizens for ten years.

Stripling holds memberships in such organizations as the National Association of Health Data Organizations, the Association of Public Data Users, RESNA, etc. He interacts with the Coalition for Injury Prevention and Control, the National Foundation for Long Term Health Care, the Rehabilitation Engineering Task Force, and the Alliance for Aging Research.

In 1972 Stripling graduated from Providence College, Providence, Rhode Island with a B.S. Degree in Sociology.

Mr. Stripling was born in Teaneck, New Jersey. He is married to Laura Jenner and they reside at 418 St. Lawrence Drive, Silver Spring, MD.

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Dr. A. Frank Thompson is Associate Professor of Finance, Insurance and Actuarial Science at the University of Cincinnati. He has served in actuarial consulting positions with the Federal Government in 1980-81 and 1986-87. In 1985, Dr. Thompson was the actuarial and financial expert to the policyholders in the Baldwin United Rehabilitation case, the largest insurance restructuring in the history of the United States. Over the last ten years, Dr. Thompson's research articles have appeared in the Transactions of the Society of Actuaries, the Journal of Risk and Insurance, the Journal of Insurance Issues and Practices, the American Journal of Economics and Sociology, the International Journal of Employee Benefits, Financial Management, the Journal of Middle Eastern Studies, and the Journal of Consumer Affairs. Dr. Thompson has been a member of the faculty at Iowa State University, and the University of Nebraska Lincoln. In 1980, Dr. Thompson was designated a Federal Faculty Fellow by the American Association of College Schools of Business (AACSB). In addition to his current tenured position with the University of Cincinnati, Dr. Thompson is senior associate to the consulting firm of Z. Lew Melnyk & Co., Inc., Cincinnati, Ohio.

Nancy Turnbull
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Nancy Turnbull is Deputy Commissioner for Health Policy at the Massachusetts Division of Insurance. Her responsibilities included overseeing the Division's regulation of Blue Cross and Blue Shield, health maintenance organizations and other health insurance plans sold in Massachusetts, and coordinating the Division's activities in such areas as AIDS, long-term care insurance and mental health. Ms. Turnbull worked previously for Blue Cross and Blue Shield of Massachusetts, the National Blue Cross and Blue Shield Association and the Massachusetts Rate Setting Commission. She has an M.B.A. in health care policy and management from the Wharton School of the University of Pennsylvania and a degree in economics from Mount Holyoke College.

Myrl Weinberg
American Diabetes Association
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Myrl Weinberg is the Director of Government Relations for the American Diabetes Association (ADA). A top priority of the Association is ensuring adequate, affordable insurance coverage for persons with diabetes. Currently, the ADA is negotiating an insurance package to be offered to Association members, planning a series of meeting with representatives of major private insurance carriers, gathering information to document the particular insurance needs of people with diabetes and, through representation in the National Health Council, promoting cooperative efforts between the country's voluntary health agencies and the insurance industry.

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WORKING GROUP MEETING ON PUBLIC AND PRIVATE HEALTH INSURANCE

PRACTICES AND POLICIES EFFECTING DISABLED INDIVIDUALS

June 14 - 15, 1988
Capitol Holiday Inn
Washington, D.C.

INTRODUCTION

This memorandum is being provided to participants of the June 14-15, 1988 "Working Group Meeting on Public and Private Health Insurance Practices and Policies Effecting Disabled Individuals".

The following narrative is divided into three parts. The first part provides a short description and background of the Congressional mandate and the general study approach for development of the Final Report to Congress. The second part describes the purpose of the Working Group Meeting and the outcomes expected from the meeting. The third part sets out the meeting plan for the two days.

Each participant will receive this memorandum and a packet of materials and articles for review and evaluation. It is specifically requested that each participant of the Working Group carefully read this memorandum, review the expected outcomes and the meeting plan. Further, it is requested that you read and evaluate the following specific reports and articles in preparation for this meeting:

- o "Topical Outline of Issues Related to Equitable Financing of Access to Health Care Through Public and Private Health Insurance for Persons with Disabilities or Chronic Illness"
- o "Appendix: Narrative and Tables on Disability Statistics"
- o "Disability and Health Insurance in the United States"
- o "Underwriting and Actuarial Considerations Associated with Providing Health Care Coverage to Special Risk Groups"
- o "Limitations of Public Health Insurance in the United States"

It is requested that you read and review the following specific articles for background information.

- o "A Review of Gaps and Problems in Insurance Coverage and Their Relationship to Traumatic Head Injury"
- o "Health Services in the United States: A Growth Enterprise Since 1875"

BACKGROUND

For the last decade and one-half Congress has considered and enacted a series of efforts to remove disincentives to employment and community living for persons with disabilities. This includes the enactment in 1986 of legislation to permanently establish section 1619 of the Social Security Act to provide public health insurance to eligible individuals on Supplemental Security Income who wish to undertake substantial gainful employment.

Congress is also considering a range of policy options to improve access to health care for various population groups including uninsured workers, unemployed workers, Medicare beneficiaries with catastrophic expenses, low income uninsured families, and persons with pre-existing conditions.

In 1986 Congress amended the Rehabilitation Act of 1973 to mandate that:

The Director (NIDRR) shall conduct a study of health insurance practices and policies which effect individuals with handicaps. Not later than February 1, 1990 the Director shall submit a report of the study to the appropriate committees of the Congress. (Section 202(m) of the Rehabilitation Act Amendments of 1986).

A review of literature, legislative history and individual interviews indicates that this statutory mandate resulted from a Congressional awareness of the extent to which the integration of disabled people into productive employment and community living is directly affected by existing policies and practices in the provision of health insurance in the private and public sectors.

To respond to Congressional concerns, it is expected that the 202 (m) report will:

1. Analyze and discuss the range of problems, policies and practices in the provision of health insurance in the private and public sector which affect the ability of persons with disabilities to obtain adequate and appropriate health care;
2. Analyze and discuss potential solutions to resolve the problems disabled persons and their families face in obtaining necessary health care coverage; and,
3. Propose recommendations that Congress may undertake to address these health insurance issues.

Development of the report for submission to Congress is proceeding through the following four general phases.

PHASE I: (Through March 31, 1988)

With the assistance of consultants, conduct literature reviews, data analysis and interviews with experts to (a) develop an understanding of the extent of the knowledge and data that exists in the area of private and public health insurance as it relates to disabled people; and (b) develop an outline/report of the scope of the problem and the projected Report to Congress.

PHASE II: (April 1 Through November 30, 1988)

Continue reviewing, revising and clarifying the Phase I outline/report and obtain substantive input and analysis by individuals with expertise in health insurance, health policy and the health care needs of persons with disabilities at a "Working Group Meeting." Develop RFP for major contract to conduct research and write Final Report to Congress.

PHASE III: (December 1, 1988, Through November 30, 1989)

Award a contract to convene advisory panels, conduct research, evaluate solutions and recommendations, and complete the development of the Final Report to Congress.

PHASE IV: (September 1, 1989 Through February 1, 1990)

Conduct internal Executive Agency review of the Final Report prior to submission to Congress.

PURPOSE/OUTCOMES

The Working Group Meeting is being convened to bring together experts in public and private health insurance, disability statistics, health policy and the health care and health related needs of persons with disabilities.

Attendance at the Working Group Meeting is by invitation only and is limited to twenty participants. Individual writers will be selected from among the participants and will be requested to prepare and present a paper in their area of expertise that evaluates and/or expands upon the Phase I Outline/Report.

The papers, the Phase I Outline/Report, and related materials will be provided to all twenty participants in advance of the Meeting for their review and meeting preparation.

Specifically the Working Group shall:

1. Discuss and evaluate the scope and content of the Phase I Outline/Report;

2. Discuss and evaluate papers and presentations by participant/writers; and,
3. Develop and make recommendations of methods and resources that will assist in completing the Final Report to Congress.

Outcomes expected from the Working Group Meeting include:

1. Consensus on the definition of "individuals with handicaps" that is appropriate for purposes of the Report to Congress. It is expected that the target population will include (a) those individuals with functional limitations; (b) those individuals with invisible "handicaps" that may not result in functional limitations; and, (c) those individuals who are handicapped because of a severe chronic condition.
2. Consensus on the scope of health care that is appropriate for purposes of this Report. It is expected that this will include acute care, general medical care, rehabilitation, and continuing care and support services.
3. Consensus and prioritizing of research topics and areas that are appropriate for purposes of this Report.
4. Consensus on the projected topical outline for the Final Report.
5. Discussion and evaluation of equitable federal and state policy options that may address the problems raised by this Report.

The deliberations, recommendations, presentations and papers of this Working Group Meeting will be compiled in a meeting report. This Meeting Report, the revised Phase I Outline/Report and other related research will form the basis for the Final Report to Congress. The Final Report to Congress will be completed by the Phase III contractor, as noted above.

MEETING PLAN

Meeting Moderator/Chair: Robert Funk, NIDRR

Meeting Facilitator: Robert Griss, Study Consultant

DAY 1

- A. Welcome and Introductions (30 minutes)

B. Mission of Working Group (45 minutes)

Overview of the study, the Phase I Outline/Report and expected outcomes of the Meeting. Includes question and comment period.

C. Demographics/Health Care Needs and Utilization

Presentation by Writer - Mitchell P. LaPlante, Ph.D.

Writer shall provide a 20 minute synopsis of his paper and discussion of the topic area. The purpose is to evaluate the Phase I Outline/Report sections: Definition of the Population; Health Care Status; Health Care and Health Related Needs; and Health Care Utilization

Discussion Period

Presentation is followed by a 75 minute discussion period. During this period participants can ask questions, provide reactions to the paper and presentation, evaluate the relevant Phase I Outline/Report sections, and identify additional information. The purpose is to evaluate the definition and data provided; clarify terms; and, gather recommendations for inclusion in the Final Report to Congress.

D. Private Health Insurance

Presentation by Writer - A. Frank Thompson, Ph.D.

Writer shall provide a 20 minute synopsis of his paper and a discussion of the topic area. The purpose is to describe the private health insurance system and underwriting practices and discuss its strengths and limitations for meeting the health care and related needs of persons with disabilities.

Discussion Period

Presentation is followed by a 60 minute discussion period. During this period the participants can ask questions, provide reactions to the paper and presentations, and discuss additional information that will assist in understanding the strengths and limitations of the private health insurance system for meeting the needs of persons with disabilities. The purpose is to evaluate and clarify important issues and gather recommendations for inclusion in the Final Report to Congress.

E. Public Health Insurance - Richard Nugent

Presentation by Writer

Writer shall provide a 20 minute synopsis of his paper and discussion of the topic area. The purpose is to describe the existing public health insurance system and its strengths and limitations for meeting the health care and health related needs of persons with disabilities.

Discussion Period

Presentation is followed by 60 minute discussion period. During this period the participants can ask questions, provide reactions to the paper and presentation, and discuss additional information that will assist in understanding the strengths and limitations of the existing public health care financing system for meeting the health care and health related needs of persons with disabilities. The purpose is to evaluate and clarify important issues and gather recommendations for inclusion in the Final Report to Congress.

DAY 2

A. Evolution of Health Insurance in the U.S.

Discussion Period

Group will participate in a 60 minute discussion of the evolution of health insurance (public and private) and the forces which have operated to shape existing health care programs and public and private insurance policy in the United States. The purpose is to assist the Working Group to understand the context of existing health care programs and insurance policy. The Working Group will evaluate this topic for inclusion in the Final Report to Congress.

B. Participant Generated Issues/Recommendations/Expected Outcomes

Discussion Period - Establish Priority List

Group will participate in a 90 minute discussion to review the deliberations and presentations from Day 1. The Group shall generate issues and recommendations for Working Group evaluation and discussion. The Group shall establish a priority list for discussion, review and consensus development that includes the Expected Outcomes.

The issues and recommendations generated by the participants will be listed on flip charts and posted for continued review. The Expected Outcomes will also be listed for review.

- o Definition of "individuals with handicaps".
- o Scope of health care.
- o Research topics/areas.
- o Projected topical outline for Report.
- o Federal and state policy options.

Discussion Period - Evaluate Priority List

Group shall participate in a 75 minute discussion of the priority list of issues generated in the above session. The purpose is to discuss the issues and recommendations raised by the participants and the Expected Outcomes and evaluate them for inclusion in developing the Final Report to Congress.

The Group will review each issue, recommendation and Expected Outcomes listed on the flip charts and conduct a Group discussion, analysis and evaluation as a method of reaching a consensus and, if appropriate, developing minority opinions. The points discussed and conclusions reached during this process will be listed on the flip chart with the appropriate issue, recommendation and Expected Outcome. This information will be recorded for inclusion in the Meeting Report.

Discussion Period - Evaluate Priority List

Continue above - 60 minutes.

Discussion Period - Wrap-up and Consensus

Group shall participate in a 45 minute discussion to clarify the Group consensus of the priority list of issues, recommendations and the Expected Outcomes.

The Group will review the consensus statements and potential minority opinions for each issue, recommendation and Expected Outcome. These statements will be recorded for inclusion in the Meeting Report.

June 14, 1988
Discussion Draft for Comments Only
Bob Griss, Consultant to NIDRR

VII. APPENDIX: NARRATIVE AND TABLES ON DISABILITY STATISTICS

An analysis of the health care costs and utilization patterns of persons with disabilities or chronic illness depends ultimately on two critical definitions. One is the definition of the **target population** including types of impairments and levels of severity, and the second is the definition of the **scope of health care services**. Among chronic conditions a distinction is sometimes made between disabilities and chronic illness. Disabilities refer to chronic conditions which limit an individual's ability to perform certain activities, while chronic illness refers to chronic conditions which are caused by an active disease which is threatening the equilibrium of the individual's health. This distinction actually confuses the etiology or cause of a chronic condition and its functional consequences. In fact, many disabilities are caused by chronic diseases or may increase the individual's vulnerability to developing certain illnesses or infections that may undermine the individual's health. And many chronic illnesses can produce functional limitations such as mobility or sensory impairments. Nevertheless, the distinction is significant because it implies that many persons with disabilities are not sick. The significance of this claim is less a matter of empirical description than a normative claim that an individual with disabilities should have the right to exercise as much control as possible over the services which he or she needs to function. A persuasive case can also be made that many persons with chronic illnesses are also in a better position to be in control of their health care needs based on their intimate knowledge of their often repetitive chronic conditions than are persons with acute care needs which are more irregular and which the person is not likely to be familiar with.

While disabilities and chronic illness can refer to specific chronic conditions, an estimate of the number of persons who have those conditions depends on the definition of the chronic conditions, the measures of the level of severity, and the methods of data collection. It makes a difference whether the information is collected by household surveys, facility surveys, administrative records, or clinical examinations; whether the information is based on self-reported health status, clinically diagnosed health status, or administrative categories created for other purposes; as well as how the sample is selected from the universe of persons with certain chronic conditions. Because certain disabilities and chronic illness represent extremely low prevalence conditions in the general population, the sources of data which provide reliable estimates for the general population are often inadequate for describing the characteristics of low

prevalence sub-groups such as persons with certain disabilities or chronic illness. To illustrate the magnitude of the discrepancies between federal surveys estimating the number of persons with a work disability consider the following example. The 1978 SSA survey reported that there were 21.9 million persons 18 to 64 years of age with a work disability while the 1980 census reported only 12.3 million persons 16 to 64 years of age with a work disability. This huge discrepancy between two federal surveys conducted two years apart cannot be readily explained by assuming that the SSA survey included persons with only marginal disabilities because the labor force participation rate in both of these surveys was fairly close. (cite: U.S. Bureau of the Census, Current Population Reports, Series P-23, No. 127, Labor Force Status and Other Characteristics of Persons With a Work Disability: 1982, U.S. Government Printing Office, Washington, D.C. 1983, pp. 43-46) With such wide variance in prevalence estimates of work disabilities generated by supposedly representative samples of household surveys, it is no wonder that there are widely varying estimates of the number of persons with disabilities and chronic illness.

There are at least five ways to examine chronic conditions which might be useful for studying health insurance status and health care needs. One way is to look at the prevalence of specific chronic conditions: These include diseases, injuries, or congenital conditions which are expected to last for an extended period of time. Federal surveys often consider a condition to be chronic if it is expected to last for more than three months. A health condition can be measured by observable signs or by self-reported symptoms. Signs are observable health characteristics such as lumps, elevated blood pressure, etc. which are clinically diagnosed. Symptoms, on the other hand, are not directly observable but are self-reported by the affected individual. Some conditions which might be detectable by clinical diagnosis may not be reported by the affected individual who is not aware of the condition, is not troubled by the condition, or may want to avoid possible stigmatization associated with the condition.

A second way to consider chronic conditions is to measure impairments which create functional limitations for an extended period of time. Impairments are chronic conditions which affect the body's structure or function and can be measured in terms of physiological, psychological, sensory or anatomical dimensions. Impairments can be classified in terms of the normal bodily functions which are impaired such as: mental impairments (mental illness and mental retardation), physical impairments (spinal cord injury, etc.), sensory impairments (e.g. blindness, deafness) and chronic diseases (e.g. heart disease, diabetes, cancer).

A third and fourth way to consider chronic conditions is to look at the number of persons with activity limitations or work

disabilities due to chronic impairments. This classifies people in terms of the extent to which their chronic impairments interfere with their performance of activities normally associated with persons of a certain age. For children over five years old the normal activities would be going to school, for working-age persons work is the expected major activity, and for elderly persons the major activity is expected to be self-care.

Activity limitations and disabilities are often used as proxies for the severity of an impairment. It is assumed that the greater the severity of the impairment, the more likely a person is to experience a major activity limitation or a work disability. However, this assumption overlooks the fact that major activity limitations and work disabilities are not caused directly by chronic impairments but by the interaction of the individual with his or her environment. If the environment contains certain technical aids, personal assistance from another person, or various structures of accessibility, the impairment may not create a major activity limitation or a work disability. In other words, the impact of an impairment on the individual's capacity to perform certain activities has more to do with the availability of environmental supports than with the severity of the individual's impairment level.

A fifth way to identify persons with chronic conditions is to look at health care utilization, health care costs, and sources of payment. Many persons with chronic conditions may require more health care services and therefore generate higher health care costs than non-disabled persons. The health care needs will include both acute care for chronic and non-chronic health conditions as well as a range of rehabilitation and on-going maintenance needs related to the chronic health condition. This is likely to depend not only on the severity of the impairment but also on the definition of the scope of health care services.

One major limitation of many surveys of health care utilization and costs is that the scope of health care services is arbitrarily limited to what has traditionally been covered by standard health insurance plans. This limitation reflects an historic financing bias toward acute care services which inadvertently discriminates against persons with chronic long term care needs. As a result, "uncovered" services are often ignored even when they are essential for the maintenance of persons with chronic conditions, especially in non-institutional settings. The distinction between "medical necessity" and "convenience" which insurers have used to limit their liability is often experienced as highly arbitrary by persons with chronic conditions. At the same time, it may be entirely appropriate to distinguish between health care and other disability-related needs such as represented by income maintenance, housing, non-medical transportation, and vocational rehabilitation services.

While health care utilization patterns and costs can be used to define a population of persons with chronic conditions, out-of-pocket expenses can also be used to identify persons whose health care needs create a catastrophic expense in relation to their family incomes.

The Congressional mandate is to study "health insurance practices and policies which affect individuals with handicaps". In the absence of a standard definition of individuals with handicaps, it seems reasonable to construct a definition of severe chronic conditions in which the definition of **severity** is based on interference with access to adequate and affordable health care in one of three ways:

1. interferes with full time employment which is the primary route to private group insurance [this group should be included in estimate of persons with activity limitations]
2. increases anticipated or actual health care utilization beyond an accepted measure of "standard" utilization in society [this group may not be included in persons with functional limitations but reflects the criteria which health insurers use to determine "insurability"]
3. increases out-of-pocket expenses for health-related needs beyond an accepted catastrophic level of family income (e.g. 10 percent) [this group may not be included in persons with functional limitations but reflects type of criteria which are used in catastrophic insurance programs or Medicaid programs for the medically indigent]

Primary sources of national survey data on persons with severe chronic conditions:

There are various federal surveys which provide information on the characteristics and health care needs of persons with disabilities or chronic illness. These include the annual Health Interview Surveys, the 1984 Survey of Income and Program Participation, the Social Security Administration's Disability Survey '72: Disabled and Nondisabled Adults, and the 1978 Survey of Disability and Work, and the various national medical expenditure surveys in 1977, 1980, and 1987. These surveys provide some basic parameters within which other data sources can be used to flesh out important details. These other sources should include the claims experience of public insurance systems such as Medicare, Medicaid, and the Veterans Administration systems of CHAMPVA and CHAMPUS, the claims experience of a representative sample of private insurers, the experience of selected health care providers, and consumer surveys of the membership of various disability or chronic disease organizations. In addition, it may be possible to conduct

additional surveys utilizing the Health Interview Survey as a sampling frame to examine the health care needs of a representative sample of persons with selected chronic conditions.

The National Center for Health Statistics conducts the Health Interview Survey (HIS), an annual household survey to collect prevalence data on various chronic conditions in the non-institutionalized population in the U.S. HIS uses a large sample (51,000 households) which provides a reliable measure of the general population. However, the HIS has some drawbacks, especially in how it captures information on low prevalence chronic conditions. One drawback is that it collects only self-reported information on health care status which may not be accurately known or reported by the individual. Secondly, in covering only persons in households, the HIS inadvertently and unsystematically ignores many persons in institutions which includes many community-based residential facilities such as group homes, etc. Thirdly, to reduce the standard error associated with low prevalence conditions, the HIS combines many chronic conditions together which has the effect of losing information on specific impairments. This limitation can be minimized by reporting on the averages for specific impairments over a number of years (see LaPlante). Fourthly, to cover the wide range of possible health conditions in a single survey, the HIS divides the total sample into six groups and asks each group about different conditions. As a result, HIS can estimate the number of conditions in the general population, but cannot report on the total number of persons who have chronic conditions. Using a one-sixth sample, it is not known how many persons with multiple conditions are already included in the estimates generated by the survey questions asked of the other five-sixths of the sample. Nevertheless, HIS provides invaluable baseline information on various chronic conditions, activity limitations, and health insurance status for all ages in the population.

A second data source which has recently become available is the Bureau of the Census's Survey of Income and Program Participation (SIPP) which included questions on disability status in its third wave supplement conducted during May-August 1984. This smaller sample (21,000 households of the U.S. civilian noninstitutionalized population) permits an analysis of persons with work disabilities, functional limitations and need for personal assistance by employment, health insurance status, and specific health conditions responsible for the work disability or the functional limitation. The SIPP data does not collect information on children under 5, but is a unique source of data on the working-age disabled population 18-64.

The third set of data sources for health care costs, utilization, and sources of payment are the household surveys conducted by the National Center for Health Services Research.

These include the 1977 National Medical Care Expenditure Survey (NMCES) and the recently conducted 1987 National Medical Expenditure Survey (NMES) which will not be available for analysis until 1990. In addition, the National Center for Health Statistics conducted the 1980 National Medical Care Utilization and Expenditure Survey (NMCUES). These national surveys provide some baseline data for a representative sample of the general non-institutionalized population including a small percentage of persons with major activity limitations. Although the small size of the sample with disabilities precludes meaningful comparisons within this group, it does provide a baseline for health care utilization, costs, and out-of-pocket expenses.

Chronic conditions:

Most national survey data do not provide prevalence information on chronic conditions. The Health Interview Survey attempts to do this but is subject to the limitations identified above. It is not possible to identify the total number of persons with chronic conditions for two reasons. The HIS uses a one-sixth sample for measuring different kinds of conditions and there are many persons with multiple conditions. If one added the total number of persons with chronic conditions in each of the six categories generated by the HIS in 1979, the total unduplicated counts for each of the six categories would be 254.1 million persons which is more than the total national population. (cite Digest of Data on Persons with Disabilities, Table 1.A.2, pp. 5-7, prepared by Mathematica Policy Research, June 1984.) The reason for this is that many persons have multiple chronic conditions, so that even if duplicate counts are eliminated within each of the one-sixth samples, there is an indeterminate number of duplicate counts among the six groups. Combining different years of the HIS creates a larger sample that permits a finer comparison of different conditions. Laplante has just completed an analysis of the HIS for 1983-85 which indicates the prevalence of different chronic conditions. (see "Data on Disability from the National Health Interview Survey, 1983-85", prepared for NIDRR by InfoUse)

The SSA survey of 1972 provides an interesting perspective on chronic conditions by disability status for the working-age population. From Table B (see Table 1 in appendix) it appears that approximately 48 percent of the entire working-age population aged 20-64 have some chronic condition, although 70.6 percent of those with a chronic condition report being without a disability. If we look at certain chronic conditions that are generally associated with higher health care needs, we see that a significant percentage of persons still report that they are "nondisabled". For example, 59.2 percent of persons with neoplasm (cancer) report being nondisabled, as do 63.7 percent of persons with cardiovascular conditions, and 54.0 percent of persons with diabetes. (see Social Security Administration,

Disability Survey '72: Disabled and Nondisabled Adults, April 1981, pp.51-52) If their chronic conditions do not interfere with their work or other major activities, these individuals would not be counted as having chronic conditions, even though they are likely to have higher health care needs and may even be considered as "uninsurable" if they had to change their health insurance policies. The Department of Health and Human Services has recently estimated that the number of insured persons who would not be able to qualify for a new health insurance plan because of pre-existing conditions is approximately 7 million so-called "insured uninsurable" persons. [cite Department of Health and Human Services, "Insuring Catastrophic Illness for the General Population", Technical Report, Office of Health Policy and Office of the Assistant Secretary for Planning & Evaluation, 1987, p. i]

HIS permits one to see the percentage of persons with selected chronic conditions who have no activity limitation. LaPlante will be analyzing this data for a combination of years 1983-85 to permit a finer differentiation among chronic conditions (expected May, 1988). LaPlante has already analyzed the HIS survey data for 1983-85 to show the percentage of persons with a primary condition only vs. other conditions for selected health conditions. (see "Data on Disability from the National Health Interview Survey, 1983-85", prepared for NIDRR by InfoUse)

HIS also provides information on the respondent's self-reported health status. While this is not published by health condition, it could be easily provided. HIS does indicate the number of persons without any health insurance by respondent-assessed health status (see Table 2). It would probably be useful to look at poor and fair health status by persons with major activity limitations for persons without any health insurance. SIPP (1984) data provide an overview of the self-reported health status of working-age persons with a work disability by the health condition mainly responsible for the work limitation. From Table 18 (see Table 3 in appendix) it appears 24.6 percent of working-age persons with a work disability report that their health status is "poor" and another 32.5 percent report their health status as "fair". The health conditions which most appear to be associated with poor health status are cancer and other tumors, senility, diabetes, and heart trouble followed by stomach trouble and high blood pressure. Among the 16 percent of the working-age disabled population who reported "excellent" or "very good" health status are persons with mental retardation, missing appendages, deafness, blindness, paralysis, and thyroid trouble.

In other sections of this paper we will consider how condition level data can be useful in examining costs and utilization patterns in the public and private health insurance

systems as well as among providers of health care.

Functional limitations:

Both HIS and SIPP provide estimates of the number of persons with various functional limitations due to chronic conditions. In 1979 and 1980, a Home Care Supplement to the HIS was used to obtain information on the need for assistance in certain essential activities including basic physical activities and home management activities. Basic physical activities included walking, going outside, bathing, dressing, using the toilet, getting in or out of a bed or a chair, or eating. Home management activities included shopping for personal items, doing routine household chores, preparing meals, and handling their own money. The number of adults 18 and over who needed help in one or more basic physical activities was 3.4 million persons. This was slightly less than the 4.1 million adults who reported needing help with home management activities because of a chronic health problem. [cite National Center for Health Statistics, "Americans Needing Help to Function at Home", Advancedata, No. 92, September 14, 1983]

SIPP data provide an estimate of the number of persons 15 years of age and over who were limited in their ability to perform specific functional activities. These activities included seeing, hearing, speaking, lifting or carrying, walking, using stairs, getting around outside, getting around inside, and getting into and out of bed. According to estimates from SIPP data, 37.3 million persons had a functional limitation including 13.5 million persons who were unable to perform at least one functional activity. Among those with a severe limitation who were unable to perform at least one functional activity were 6.0 million persons ages 15-64 and 7.5 million persons ages 65 and over.

Interestingly, while working-age persons constitute approximately 60 percent of all persons with major activity limitations and elderly persons only 30 percent (see Table 10), it appears that the number of elderly persons unable to perform a specific activity of daily living may be higher than the number of working-age persons with a comparable level of functional limitation. For the purposes of this study, it is important to focus on the larger group of persons with activity limitations who need access to a wide range of health care rather than concentrate on the much smaller group of persons who need assistance with activities of daily living.

SIPP data also indicate that 3.3 million persons 15-64 need assistance from another person in performing activities such as getting around inside or outside the home, doing housework or preparing meals, or taking care of personal needs compared to 4.5 million persons 65 and over. Table 1 (see Table 4 in appendix)

breaks out the types of personal assistance needed by working-age persons 18-64 with a work disability by the specific health conditions mainly responsible for the work disability. Among the 17.9 million working-age persons with a work disability, 2.7 million or 15.3 percent need some type of personal assistance in meeting their self-care needs. As many as 12.1 percent needed assistance with housework, 8.1 percent needed assistance with meals, 6.1 percent needed assistance in getting around, and 4.7 percent needed assistance in personal care. These data provide some indication of the number of persons living in households who have long term care needs. At the same time, they clearly reveal that the number of persons with functional limitations is substantially lower than the number of persons with severe chronic conditions.

Activity Limitations:

Another way to estimate the size of the target population is to consider the number and characteristics of persons with limitations of activity due to chronic conditions. HIS differentiates the degree of activity limitation into three categories: (1) "unable to carry on major activity", (2) "limited in amount or kind of major activity", and (3) "limited, but not in major activity". Not included in this classification are persons with chronic conditions who do not report any activity limitations. Table 5 in the Appendix indicates that approximately 9.3 million persons (3.9%) of the total non-institutionalized population are "unable to carry on major activity", 13.0 million persons (5.5%) are "limited in amount or kind of major activity", and 10.7 million persons (4.5%) are "limited, but not in major activity" (see Table 5).

Recognizing that many persons are able to participate in major activity in spite of severe chronic conditions, it is necessary to decide whether the target population should be limited to those with major activity limitations (22.3 million persons) or those with any activity limitations (33.0 million persons) due to chronic conditions. This classification does not include persons with severe chronic conditions who do not report any activity limitations because they have been able to overcome the limiting effects of their chronic conditions. While there would probably be a higher percentage of persons with severe chronic conditions among persons "unable to carry on major activity" than among persons who are "limited, but not in major activity", there are also many persons in the less limited group who have higher health care needs due to chronic conditions.

To the extent that access to support services can be purchased with income which can reduce the activity limiting effects of chronic impairments, it is not surprising that the percentage of persons who are "unable to carry on major activity" decreases from 8.8% for those with family incomes under \$10,000

to 5.5% for those with family incomes between \$10,000-\$19,999, to 2.3% for those with family incomes between \$20,000-\$34,999, to 1.5% for those with family incomes \$35,000 or more. (see HIS, 1986, Table 67, p. 110, Series 10, No. 164) (see Table 6 in appendix). While higher income levels can increase access to services which can make employment and greater earnings possible, it must also be recognized that low income often reflects existing obstacles to employment which limit access to services that could help overcome functional limitations.

Another HIS publication entitled "Health Characteristics of Persons with Chronic Activity Limitation: United States, 1979" provides some indication of the extent to which degree of activity limitation is associated with health care utilization. (see Table 7) On all indicators of health care utilization including the number of physician visits, discharges from short-stay hospitals, average lengths of stay in short-term hospitals, percent of persons with one or more short-stay hospital episodes within one year of the interview, restricted-activity days, and bed-disability days, persons "limited, but not in major activity" were often twice as likely to need health care services than persons with no limitation in activity while health care utilization was considerably higher for persons limited in amount or kind of major activity and highest for persons "unable to carry on major activity". For example, HIS (1979) data reveal that the number of physician visits per person per year varies from 3.9 visits for persons with no limitation of activity, to 6.5 visits for persons "limited, but not in major activity", to 9.8 visits for persons "limited in amount or kind of major activity" to 11.9 visits for persons "unable to carry on major activity".

Work Disabilities:

Another indicator of the size of the target population can be gleaned from statistics on work disability. Although work disability statistics are collected by the Social Security Administration, Current Population Survey, Census, and other surveys, the Survey on Income and Program Participation permits a detailed analysis of health insurance status by employment status, functional limitations, family income, and specific health conditions for persons with a work disability. Like the variable degree of activity limitation, work disability can be divided into persons prevented from working because of a chronic condition, persons able to work, but not full time because of a chronic condition, or persons able to work full time but not in the work they did before becoming disabled. Table 8 reveals that there are approximately 17.9 million persons with a work disability ages 18-64 of whom 10.3 million are prevented from working, 5.6 million are working full time but are limited in the kind of work they can do, and 2.0 million are working part-time

due to the chronic impairment. These statistics on work disability do not include persons with chronic conditions who report no limitation in the amount or kind of work they can do.

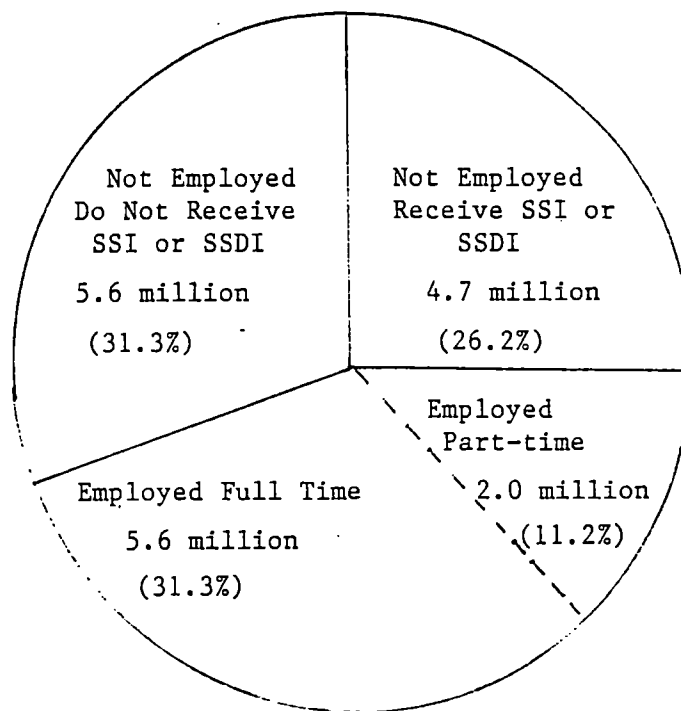
To try to estimate the percentage of persons with a chronic impairment which interferes with performing activities of daily living without assistance but who do not report a work disability, see Table 12(a) from SIPP (see Table 9 in appendix). Although SIPP data can only reflect what respondents reported, questions were asked about whether chronic impairments interfered with the ability to get around in the home as well as about the ability to work. Approximately 1.1 million working-age persons with work disabilities reported needing assistance getting around. Most were not working (86.6 percent), 5.3 percent were working part-time, and 4.1 percent were working full time. Among those not reporting a work limitation and working full time were 1.5 percent of the total needing assistance getting around. This low figure, however, does not come close to estimating the number of persons with severe chronic conditions who do not identify themselves as work disabled or limited in major activities.

Administrative records of the Social Security Administration reveal that there are approximately 4.6 million persons who currently receive one or both of the two federal income maintenance programs available to persons who meet the SSA legal definition of disabilities because they are determined to be permanently and totally disabled. (cite Committee on Ways and Means, Background Material and Data on Programs within the Jurisdiction of the Committee on Ways and Means, 1988 Edition, March 24, 1988) In 1987, there were 2.7 million disabled workers, 550,000 disabled adult children, and 107,000 disabled widows or widowers (50-64) receiving Social Security Disability Insurance (SSDI) because of their own disabilities. In addition, there were 2.1 million disabled or blind working-age persons on SSI (Supplemental Security Income) and 250,000 disabled or blind children. The total number of "dual enrollees" of SSI and SSDI was approximately 1.1 million persons. The numbers from SSA administrative records are slightly higher than the estimates from the SIPP sample which is limited to non-institutionalized persons living in households.

At the same time, LaPlante estimates that there may be at least 3.3 million persons who report being unable to work because of chronic conditions who do not currently receive federal disability benefits. (Dorothy P. Rice and Mitchell P. LaPlante, "Chronic Illness, Disability, and Increasing Longevity", draft p. 4) In the tables on health insurance below, we will divide up the working-age population with work disabilities into three distinct groups (see figure 5) including persons who are employed either full time or part-time, persons who are not employed but on SSI or SSDI, and persons who are not employed but do not

receive SSI or SSDI in order to examine the health insurance status of persons in each group.

Figure 5: Working-age persons, 18-64, with a work disability by health insurance status (N= 17.9 million persons)



Summary:

The above sections have described a number of different dimensions for defining the target population of persons with disabilities or chronic illness. Each dimension provides a different estimate of the number of persons with disabilities or chronic conditions. In the absence of survey research on the total number of persons with severe chronic conditions which require greater health care utilization, result in greater out-of-pocket expenses, or interfere with the ability to work or to qualify for group insurance plans, we are limited to existing data on activity limitations and work disabilities to establish the parameters for the size of the target population. While there may not be sufficient information to describe the characteristics of all persons with severe chronic conditions, it may be tempting to expand the target population to include persons with any activity limitation rather than to limit the target population to persons with major activity limitations. Nevertheless, this attempt to cast a wider net to approximate the total population with chronic conditions may actually diminish the strength of the relationships among persons with severe functional limitations. For example, problems of access to health insurance may be much more visible among persons with major activity limitations used

as a surrogate for severe health care needs than among persons with any activity limitation due to chronic conditions. There is a clear trade-off between using a broader or a more restricted definition of the target population in highlighting the health insurance problems of persons with disabilities or chronic illness.

Disabilities or chronic illness by Age-group:

Disability statistics clearly show that activity limitations increase with age. According to HIS (1986) data (see Table 5 in appendix), 3.6 percent of children under 18 have a major activity limitation compared to 5.7 percent of persons 18-44, 17.8 percent of persons 45-64, and 22.7 percent of persons 65 years and over. (cite Tables 67, Series 10, No. 164) To some extent, it is easier to collect disability information through surveys about the population over 65 than about the under 65 population because of the higher prevalence rate of disabilities among the elderly. Nevertheless, the greater size of the working-age population in relation to the number of children and elderly persons in the total population accounts for the fact that working-age persons account for approximately 60 percent of the disabled population, while children account for approximately 10 percent and elderly persons account for approximately 30 percent. (see Table 10 in appendix) These percentages will depend on the criteria which are used for determining disabilities or functional limitations.

Although health care needs are clearly related to age, it is important to consider that working-age persons account for the greatest percentage of the disabled population. This has important implications for health insurance policy because it is this group which can not be readily attached to the family insurance coverage of working parents unless the disabled working-age person is totally financially dependent on his or her parents, in which case he or she would likely be eligible for Medicaid. Moreover, unlike the elderly person who is at least 65 years old, the working-age person is not eligible for the federally financed health insurance program of Medicare unless he or she has contributed a sufficient amount in payroll taxes and is currently unable to work or is a dependent of a retired, disabled, or deceased Medicare recipient. Therefore, working-age persons with disabilities or chronic illness are likely to be more vulnerable in their access to health care in the public system unless they are unable to work and in the private system unless they are employed in a large group.

While children with activity limitations are a small percentage of the total number of children, they often lack access to appropriate health care if their parents are uninsured. Ironically, parents with the lowest incomes are the ones who are likely to be uninsured even when they are employed. Many parents

with health insurance cannot afford coverage for their children if it is not subsidized by their employer. In addition, there are many parents who cannot afford to purchase any health insurance for the family because of the special health care needs of their children.

Finally, the acute care needs of the elderly are financed through the federally administered Medicare program, but this program does not provide coverage for long term care needs of the elderly or disabled population.

In summary, it is useful to consider the prevalence of disabilities and chronic illness by age group not primarily because people of different ages have different levels and types of needs, but because health care financing systems relate differently to persons of different ages. Having attempted to estimate the size of the target population of persons with disabilities or chronic illness, it is now possible to describe the characteristics of this population in terms of health insurance status, health care utilization, health care costs, and sources of payment. The following sections will briefly review what is known about each of these topics.

Health insurance status:

National survey data can provide an estimate of the number of persons with different types of health insurance and the number of persons who are uninsured, but it does not provide a measure of the adequacy or affordability of health insurance for persons with disabilities or chronic illness.

There are three major approaches to studying health insurance coverage. One is to measure the types of health insurance which people have in the general population. This approach has made us aware that 37 million persons are uninsured at least part of the year. It has also indicated that almost two-thirds of persons with disabilities have some form of private insurance, and that public insurance is also available to a disproportionate share of the disabled population (Health Care Coverage by Sociodemographic and Health Characteristics, United States, 1984: Data From the National Health Interview Survey, Series 10, No. 162). The total number of uninsured persons with disabilities is probably around 3-5 million persons which is a small percent of the total uninsured population. This is one of the primary reasons that persons with disabilities have not driven the agenda for health insurance reform. Nevertheless, existing surveys of the types of insurance which people have do not measure the adequacy of health insurance coverage in the general population nor can they reveal the unique health insurance problems facing persons with chronic needs.

The second approach to measuring health insurance adequacy

is to collect information about health care needs, health care utilization, and sources of payment. This approach has been utilized by three national surveys of the general population and is beginning to be used for studying specific populations with chronic conditions. The three surveys of the general population are the National Medical Care Expenditure Survey (NMCES, 1977), National Medical Care Utilization and Expenditure Survey (NMCUES, 1980), and National Medical Expenditure Survey (NMES, 1987) the data for which is currently being collected.

These national surveys have utilized personal interviews with a representative sample of the general population for which they can provide an accurate health care profile. However, the sample size of low prevalence conditions like disabilities or chronic illness is so small in a national representative survey that, without over-sampling; the standard error is too great for analyzing the characteristics of persons with chronic conditions. This limitation with NMCES and NMCUES has been reduced, to some extent, in the current NMES with some over-sampling of the disabled population, but the total sample size in NMES of noninstitutionalized persons under 65 with one or more deficits in activities of daily living is only 460 persons. NMES has also oversampled persons in medical institutions, and information has been collected about medical treatments for various conditions in the general population. Nevertheless, the small size of the disabled population in the NMES sample precludes a meaningful comparison among specific chronic conditions within the disabled population, and more importantly, it reduces the opportunity for examination of variance between persons within a specific chronic condition group.

Recognizing that persons are often not aware of the costs of the health care services which they consume, especially when the services are paid for by a third party, and that health care utilization data can be easily distorted by faulty recall over time, the NMCES and NMES surveys have utilized a complex methodology to verify self-reported data by retrieving the records of the individual's insurers and medical providers. This verification procedure provides a much more reliable measure of health care costs and utilization than was available through NMCUES.

The health care costs and utilization which were measured in NMCES and MNCUES also tended to reflect acute care needs rather than a comprehensive range of services needed by many persons with chronic conditions. NMES, on the other, has attempted to probe for a wide range of health related services including home health services, and special equipment or aids, medical supplies needed for self-care, therapies, personal assistance, chore services, etc. (see "Long Term Care Supplement, Section U., "Other Medical Expenses, Section P., and "Home Health Services", Section H in NMES). This information is essential to assess the

adequacy of health insurance to address the health related needs of persons with chronic conditions.

One of the first research efforts to examine the health care financing problems of a national sample of persons with selected chronic conditions is being conducted by the Health Care Finance Project at the Albert Einstein College of Medicine in New York City. Using a telephone survey and verifying health care utilization and cost data from insurers and medical providers, the Health Care Finance Project has targeted the health care needs of a national sample of children with severe mental retardation, autism, and hemophilia. Selecting children from special education programs around the country, this research project will be able to measure the adequacy of health insurance coverage for 713 children ages 0-21. The Health Care Finance Project will soon begin targeting children 0-18 with cystic fibrosis, spina bifida, and ventilator dependency. While this research design is very useful for measuring the health insurance adequacy of selected groups of children with chronic needs, it is very expensive to conduct and it does not address the health care needs of working-age adults with disabilities. This latter population comprises at least 60 percent of the disabled population, and in many ways is more vulnerable than children with disabilities who as dependents can often be covered in the health insurance policies of their parents.

Another national survey of health care utilization and costs is being planned for adults with spinal cord injury. This research effort conducted by Monroe Berkowitz for the Paralyzed Veterans of America will randomly sample households in 120 geographic areas throughout the U.S. in order to identify 800 persons with spinal cord injury. On the basis of this survey, it will be possible to assess the adequacy of their health insurance.

A third approach to measuring the adequacy of health insurance coverage is represented by surveys of health insurance plans which measure the types of services which they cover and the depth of the coverage. From these surveys we have learned how many health insurance plans cover such services as inpatient hospital services, inpatient physician services, and physician office and home visits. In addition, attention has been focused on stop-loss protection for annual out-of-pocket expenses. This research has contrasted group plans and individual plans, self-insured employers and group plans, and group plans with different size firms. (Bureau of Labor Statistics, U.S. Department of Labor; Deborah J. Chollet, Employer-Provided Health Benefits: Coverage, Provisions, and Policy Issues, Employee Benefits Research Institute, 1984; Health Insurance Association of America, "A Profile of Group Medical Expense Insurance in the United States, 1980; Wyatt Company, "Group Benefits Survey: A Survey of Group Benefit Plans Covering Salaried Employees of U.S.

Employers", 1984.

A few surveys have attempted to measure the availability of specific services which are likely to be needed by persons with disabilities or chronic illness. The most notable example is the extensive effort of the American Psychiatric Association which surveyed the availability and depth of coverage for mental health services in employer-sponsored benefit plans, Federal Employees Health Benefits Program, HMOs, Medicare, Medicaid, State Employee Insurance Plans, County Employee Insurance Plans, Municipal Employee Insurance Plans in addition to reviewing State mandates of psychiatric insurance coverage (APA, The Coverage Catalog, 1986). On a smaller scale, Fox examined the availability of a wide range of services needed by persons with disabilities which were provided by a sample of 60 employers (Harriette Fox, "Private Health Insurance Coverage of Chronically Ill Children", March 1986). In addition to hospitalization, surgery, inpatient physician and outpatient physician services, Fox compared the health insurance benefits listed in the insurance plan for medical equipment, medical supplies, X-Ray and laboratory tests, prescription drugs, occupational therapy, physical therapy, speech therapy, mental health counseling, home health aide, and home care, skilled nursing home, visiting nurses, individual benefits management, lifetime maximum benefits, and annual out-of-pocket limits. Surprisingly, these surveys of health insurance plans tend to reinforce the impression that private health insurance is getting more comprehensive in the services which are covered and in the financial protections which are provided. Although there is some recognition that there is a growing cost shifting to the consumer which can adversely affect high users of health care, the impact of this factor cannot be estimated from an analysis of specific health insurance plans. Moreover, surveys of health insurance plans, even when they are describing the limits of insurance benefits, often do not reveal the sometimes hidden and subjective conditions under which "covered" services may not be covered.

Findings on the increasing adequacy of private health insurance in the general population are at sharp variance with a growing awareness of the inadequacies about health insurance for persons with disabilities and chronic illness. In the shadow of a growing crisis of uncompensated care, spiraling health care costs, and employer pressure for cost containment, many persons with chronic conditions are finding it difficult to get access to affordable and appropriate care. Although disability organizations have not systematically documented the trends, anecdotes abound about the barriers to access through inappropriate underwriting criteria, the riders on treatment for pre-existing conditions, and the catastrophic costs associated with chronic health care needs.

These problems cannot be studied through household surveys

of the general population because persons with specific disabilities and chronic illness constitute too small a percentage of the total population to generate enough cases without "oversampling". Secondly, these problems will only become visible when questions about actual limitations of health insurance policies are asked of persons who are keenly aware of how their needs are not being met. It is not enough to estimate how many persons have a health insurance policy which appears to meet certain minimum standards based on average levels of health care utilization and costs in the general population (as was estimated from the NMCES data (Pam Farley, "Who Are the Underinsured?", 1984). The most valid measure of the adequacy of health insurance for persons with chronic conditions is a survey of their actual experiences in using their health insurance coverage for the services which they need. An examination of benefits covered in a health insurance plan will not reveal how the insurance company interprets its policy to provide certain services utilizing such controlling clauses such as when "medically necessary" or subject to conditions such as the service being provided only after hospitalization or only in a medical setting.

Current estimates of the uninsured population are reported in the March Current Population Survey. This survey measures insurance status at a single point in time. A smaller estimate would occur if a person is considered uninsured only if the individual lacks insurance for the entire twelve month period, and a higher estimate would occur if a person is considered uninsured if he or she lacked health insurance at any time during the past year. (see table 11a in appendix "Estimates of the number of uninsured less than 65 years of age in the late 1970s and early 1980's from different national surveys" from Margaret B. Sulvetta and Katherine Swartz, "The Uninsured and Uncompensated Care: A Chartbook, June 1986, National Health Policy Forum, George Washington University, Washington, D.C.)

HIS (1984) data provide an overview of the health insurance status of persons with major activity limitations. (cite "Health Care Coverage by Sociodemographic and Health Characteristics" Series 10, No. 162, November 1987.) Table 11b presents the number of persons with a major activity limitation due to chronic conditions with and without private health insurance coverage by age group. It appears that approximately two-thirds of this population have some form of private insurance for each of the age groups. This compares with a moderately higher 78 percent of the population with no activity limitations who have some form of private insurance.

Table 12 presents the number of persons with major activity limitations with different types of public insurance by age group. According to this table there are 8.2 million persons covered by Medicare, 3.2 million persons covered by Medicaid, and

1.7 million persons covered by Military-VA health coverage among the 22.2 million persons with major activity limitations. These numbers, of course, reflect the criterion of major activity limitation used to define the target population and would vary with different definitions of the target population. This table indicates that approximately 22.7 percent of children under 18 with major activity limitations receive Medicaid while among working-age persons with major activity limitations approximately 14.1 percent receive Medicaid, 14.8 receive Medicare, and 8.1 percent receive Veterans Administration health coverage. Among the elderly with major activity limitations, 95.4 percent receive Medicare, 12.3 percent receive Medicaid, and 7.7 percent receive Veterans health coverage.

It should be pointed out that all applicants for SSDI are required to wait two years after receiving SSDI benefits before they become eligible for Medicare. An undetermined number of adults who become eligible for SSDI benefits because they can no longer work as a result of their disability are totally uninsured at the very time that they are most in need of health care coverage. The Social Security Administration has reported that a certain percentage of these SSDI applicants die before becoming eligible for Medicare benefits [cite Social Security Bulletin], but there has been no survey of the health insurance status of SSDI beneficiaries who are expected to wait two years to be eligible for Medicare. A recent table from the Social Security Administration's analysis of wave 1 of the SIPP data indicates that 6 percent of all disabled worker beneficiaries are uninsured. [Social Security Bulletin, Annual Statistical Supplement, 1987, p. 92, Table 18] With 2.4 million disabled worker beneficiaries, the total uninsured would be approximately 143,280. If the number of new beneficiaries who are on their two year waiting period is approximately 449,748 persons [twice the number of disabled worker new beneficiaries reported by SSA between July 1980 and June 1981 in the General Accounting Office report Social Security Disability: Demographic and Economic Characteristics of New Beneficiaries, January 1988], then the number of uninsured disabled workers could be as high as one-third.

Table 13(a) provides an overview of the health insurance status of all persons with major activity limitations by age group. According to this table, 2.4 million persons are uninsured accounting for approximately 10.8 percent of the 22.2 million persons with major activity limitations. Among these uninsured persons with major activity limitations 87.5 percent are working-age, 12.5 percent are children, and 2.9 percent are 65 and over. Persons with major activity limitations account for approximately 8.3 percent of the total uninsured population. This figure would be much higher if it was not for the availability of public health insurance programs.

Table 13(b) provides an overview of the health insurance status of all persons without any activity limitations by age group. This population has a higher percentage of private insurance, a lower percentage of public insurance, and a slightly higher percentage of uninsured persons. The higher percentage of private insurance among persons without limitations is easily explained by a combination of higher rates of employment, higher incomes, and fewer medical underwriting barriers to private insurance. The lower percentage of public insurance among the under 65 population reflects the fact that persons without limitations are less likely to be eligible for public insurance unless they are veterans or meet the categorical eligibility criteria for Medicaid based on the poverty status of their children. Over two-thirds of the uninsured have incomes below 200 percent of poverty and yet are not eligible for public programs that would enable them to purchase health insurance on an ability to pay basis. (cite EBRI?) Finally, the claim that persons without limitations are more likely to be uninsured than are persons with major activity limitations must be examined more closely.

Table 14 in the appendix clearly reveals that 13.4 percent of all persons not limited are uninsured compared to 11.0 percent of persons with a major activity limitation based on the 1984 Health Interview Survey. However, this disproportionate percentage of uninsured persons among those without limitations holds only for two age groups, children under 18 and young adults ages 18-24, which happen to account for a significant percentage of the uninsured population. Approximately one-third of the uninsured are children, most of whom come from low income families where their parents do not receive health insurance even when they work full time. The other group without limitations, young adults ages 18-24, are more likely to be uninsured because they may no longer be eligible for coverage in their parents' family insurance policy, or they may not have secured a job yet which offers employment-linked health insurance, and they are still likely to be single and without children and therefore not responsible for the health care of family members. In addition, it is often recognized that young adults are relatively healthy, still feel invulnerable, and are less likely to voluntarily invest scarce discretionary income in health insurance than in other needs if given the choice. Except for these two age groups, the percentage of uninsured persons is actually considerably greater among those with major activity limitations than among persons who are not limited. For example, 19.0 percent of persons with major activity limitations are uninsured compared to 13.6 percent among persons without limitations ages 25-44, while 12.8 percent of persons with major activity limitations are uninsured compared to 8.5 percent among persons without limitations among persons 45-64 years old. This finding begins to reveal the special vulnerability especially among working-age persons with disabilities or chronic illness

who face enormous barriers to affordable health care.

There is no reliable estimate of the number of persons with disabilities or chronic illness who remain uninsured as a result of their pre-existing conditions. Representatives of the Health Insurance Association of America have suggested that the so-called "uninsurable" population is around 3 percent of the uninsured population or around 1 million persons. According to HIS (1986) data only 1 percent of the uninsured population under 65 or 0.3 million persons identified "poor health or illness" as the main reason for not having health care coverage. (see Table 15) It remains to be seen how many uninsured persons with disabilities or chronic illness chose to report that the main reason for not having health care coverage was because it was "too expensive". Many health insurance companies will charge a higher premium rather than rejecting a person with certain pre-existing conditions. SIPP (1984) data similarly indicate that at least 8.5 percent of uninsured working-age persons with a work disability (256,472 persons) claim that they lack private health insurance because of "poor health" while 73 percent report that private health insurance is "too costly" for them to afford. (see Table 16a) A 1986 Louis Harris survey of disabled Americans for the International Center for the Disabled (ICD) found that "thirteen percent say that they have been refused health insurance, or had it cancelled, because of their disability". ("The ICD Survey of Disabled Americans: Bringing Disabled Americans into the Mainstream", p. 86) It is not known what percentage of these disabled persons may have been able to subsequently obtain insurance from another private or public insurer. Nevertheless, it should be remembered that the Department of Health and Human Services estimates that there are at least 7 million persons with private insurance who would have difficulty finding a new health insurance policy because of pre-existing conditions.

The greatest barriers to access appear to be related to family income, age, and unemployment. Persons with low family incomes are much more likely to be without health care coverage than persons with higher family incomes. (see Table 16b in appendix) There is a slight exception to this among persons with family incomes below \$5000 which in many states qualifies them for Medicaid coverage if they meet all categorical conditions.

SIPP (1984) data provide a unique opportunity to examine the relationship between health insurance status and employment status for working-age persons with a work disability due to various chronic conditions. This information is presented in Table 17 for all chronic conditions grouped together and in Table 18a-d for selected chronic conditions. Private health insurance covers 82.1 percent of full time employees compared to 65.0 percent of part-time employees, and only 38.8 percent of working-age persons who are not working. As might be expected for a

public health insurance program targeted to persons with low income, Medicaid covers 24.3 percent of working-age persons with a work disability who are not working, while covering 10.5 percent of those working part-time, and 4.1 percent of those working full time. Meanwhile, among working-age persons with disabilities the uninsured comprise 20 percent of those not working or working part-time and 12.5 percent of those working full time. Table 19a will present health insurance status of working-age persons with a work disability who are on SSI or SSDI, and Table 19c will show the health insurance status of working-age persons with a work disability who are not on SSI or SSDI and are not employed.

Among the 3.2 million working-age persons with work disabilities who report being uninsured are 2.1 million persons who are not working, .4 million who are employed part-time, and .7 million who are employed full time.

In examining the pathways to health insurance accessibility, the SIPP data also provide an indication of how the onset of a disabling condition is likely to affect one's health insurance status. Table 17a (see Table 20 in appendix) indicates that 87.7 percent of working-age persons with a work disability developed their disabilities during working age. The major exceptions to this are persons with mental retardation or deafness whose conditions causing work disabilities are likely to begin at birth or in childhood. Among the 15.7 million persons who developed work disabilities as adults, 11.3 million or 71.9 percent were employed at the time of onset their disability (see Table 21). Among the 17.9 million working-age persons with disabilities approximately 5.1 million or 28.3 percent reported disabilities caused by accidents (see Table 22). Over half of those accidents occurred on the job and expenses related to the accident would probably have been covered by workers compensation or by its equivalent in the military-VA system. The remaining accidents occurred in the home (10.6 percent) or somewhere else (34.4 percent) (see Table 23) with a certain percentage covered by casualty insurance programs. Nevertheless, most of the work disabilities are not caused by accidents (71.6 percent) and, occurring during working-age, they may cause a person to lose both his or her job and employment-linked health insurance.

Before leaving the subject of health insurance status, it is important to consider how family income affects access to health insurance. Both HIS and SIPP data on health insurance status should be examined by family income. This has important implications for the individual's ability to purchase affordable health care.

This section has focused on the types of health insurance which a person has, not on the adequacy of that health insurance. Questions of adequacy are much harder to measure in the existing

national surveys because of the difficulty of measuring health care utilization, costs, and sources of payment from self-reported survey data. In the sections which follow, we will attempt to review what is known about the health care utilization, costs, and sources of payment for persons with major activity limitations.

Health care utilization:

National surveys of health care utilization are limited by the same problems of measuring low prevalence conditions as was discussed in the section on defining the target population. The problem is intensified by the lack of standardized measures of the severity of a chronic condition which is an important predictor of the need for different types of health care services. Moreover, there is the additional problem of accurately quantifying the multi-dimensional utilization of health care from self-reported responses. In contrast to most private insurers who view their liability mostly in terms of acute care services provided in restricted medical settings, it is crucial to examine the full range of health care needs for acute care, rehabilitation, and long term support provided at home, as well as in medical institutions on an inpatient or outpatient basis, or in offices and clinics. Despite these limitations, HIS (1979) data cited above in Table 7 provide some gross comparative indicators of various dimensions of health care utilization for persons with and without major activity limitations.

Table 24 provides a comparison of various indicators of health care utilization for persons with severe limitations (i.e. unable to perform major activity or limited in amount or kind of major activity because of chronic condition) compared to persons without limitations from various national surveys conducted 1972-1980. [cite Bob Griss, Report on Health Care Coverage for Working-Aged Persons with Physical Disabilities: A Key to Reducing Disincentives to Work, p. 29) Besides the National Medical Expenditure Survey (1987) which is still being collected, the only national survey which verified the accuracy of the self-reported data was the 1977 National Medical Care Expenditure Survey (NMCES) which contacted both the health care providers and the health insurers identified by the respondents.

Table 25 presents annual health care utilization by degree of activity limitation for selected health services for persons between 19-64 years from NMCES. (Ibid., p. 26). Like the previous table, table 25 also indicates that health care utilization increases with the degree of activity limitation which serves as a proxy for the severity of a chronic impairment. However, unlike the previous table, Table 25 reveals that only a small fraction of persons even with the most severe chronic impairments is likely to need hospitalization or medical equipment and supplies during the course of a year. This finding

suggests that an analysis of health care utilization must go beyond group averages for all persons with a major activity limitation to different levels of severity for specific chronic conditions. In addition, the categories of health care utilization should not be limited to what private health insurance has traditionally covered, but should explore the range of health-related services which are still uncovered in most private insurance plans.

To overcome the limitations of these national surveys, there are various strategies which can be pursued to collect accurate information on the health care utilization, costs, and sources of payment for persons with different diagnostic groups and levels of impairment. One set of strategies is to tap into existing information systems which would permit an analysis of health care utilization by diagnostic groups. Among these information systems are the Health Care Financing Administration (HCFA), the Veterans Administration, private insurance claims data from a representative sample of private insurers, and medical provider data from a representative sample of different types of medical providers. Continuous Medicare History Files on a sample of SSDI recipients from HCFA can be linked with the classification of body systems recorded by the Social Security Administration (SSA) to improve our knowledge of the health care utilization of persons with disabilities which are severe enough to qualify for SSDI. Similarly, Medicaid utilization data from HCFA's Medicaid Tape-to-Tape file can be linked with SSA data on the diagnostic codes of SSI-disabled recipients in five of the largest states. In addition, the Veterans Administration can

Data from a representative sample of the largest private health insurers can likewise provide useful data on the health care utilization patterns of persons with selected chronic conditions who are enrolled in group plans and in individual plans. In a similar way, a survey of medical providers including general hospitals, physicians, HMOs, rehabilitation hospitals, free-standing rehabilitation professionals, medical equipment suppliers, drug companies, etc. can be conducted to learn about the health care utilization, expenses, and sources of payment for persons from selected diagnostic groups.

The second strategy is to collect new information from health care recipients to measure their health care needs and the adequacy of their health insurance. This can be conducted by utilizing the Health Interview Survey as a sampling frame for revisiting persons with specific chronic impairments identified by previous Health Interview Surveys and then verifying the self-reported information with providers and third party payors as was done for NMCES. Another approach which I am presently exploring is to assist national disability organizations to sample their own constituencies in order to begin to collect the type of

information about health care needs, utilization, expenses, and source of payment for persons with different chronic conditions. With this information in hand, it should be easier to convince the federal government to modify its national surveys to collect this information in a more regular way.

Health care costs:

Data on health care expenses reflect all of the problems described above associated with measuring health care utilization. In addition, health care costs cannot be reliably measured by unverified self-reported data because most people do not know the costs of the health care services which they utilize, especially when they are paid by a third party payor. Moreover, instead of looking for an average cost for all persons with major activity limitations, or even an average cost for all persons with a certain level of severity for selected chronic conditions, it is useful to try to distinguish between acute care costs, rehabilitation costs, and long term support costs on a first year basis as well as for an annual average after the first year, and for a projected life-time from the on-set of the chronic impairment. With this type of information it may be possible to begin to identify unnecessary costs attributable to inadequate health care coverage. Rather than assume that all the health care costs associated with a chronic condition are necessary, an effort should be made to estimate the potential cost savings over the long-run associated with the timely delivery of appropriate health care services including adequate primary care, preventive care, rehabilitation, and long term support. Since the greatest problem for persons with disabilities and chronic illness is not access to standard health insurance coverage, but the inadequacy of health insurance to respond to the range and depth of their health care needs, information on the cost-effectiveness of improving access to adequate and affordable health care is essential.

Although it was collected in 1977, NMCES data provides the best source of survey information on the health care costs of a representative sample of the U.S. population. Table 26 provides an overview of the annual health care expenses by degree of activity limitation for selected health services for persons between 19-64 (in 1977 prices). [Ibid., p. 26] As was pointed out above, these figures refer to non-institutionalized persons in the U.S. and reflect only "covered" services in standard health insurance plans. A recent report by the Department of Health and Human Services entitled "Insuring Catastrophic Illness for the General Population" has suggested a methodology for "aging" the NMCES data taking into account both demographic changes in the population and changes in medical prices in order to estimate the current per person costs for health care. The National Medical Expenditure Survey (1987) which should be available for public use by 1990 will provide very useful information, but may not be

available in time for the Report to Congress. NMES utilized the same methodology as NMCES for verifying health care cost and utilization data, but also oversampled to some extent persons with functional limitations, sampled persons in medical institutions, and probed for a wide range of health-related services which an individual would use in his or her own home.

An unpublished paper by Steven Yates analyzes medical expenditure data from NMCUES (1980) by selected health conditions (see Table 27) and by degree of functional limitation for working-age persons who are disabled (see Table 28) and non-disabled (see Table 29). [cite Steven Yates, "Selected Health Findings for Disabled Persons from NMCUED: Alternative Measures of Health Restrictions, Main Disabling Conditions, and Medical Care Expenditures and Utilization", Bureau of Economic Research, Rutgers University, October 3, 1985.] Table 27 indicates that the average total medical cost for all disabling conditions in 1980 was \$2,272 which ranged from \$4,132 for trauma disabling conditions and \$4,067 for circulatory conditions down to \$308 for skin problems. The most common conditions among working-age disabled persons were musculoskeletal conditions (accounting for 38 percent) which generated an average total medical cost of \$1,728. Hospital costs were the most significant component of total medical costs averaging a higher amount among those persons who entered hospitals than the total medical costs among all persons with disabilities. Table 28 reveals how medical care costs increase with functional limitations providing a measure of the severity of a chronic impairment among persons with a work disability. A similar pattern exists among persons with functional limitations who do not identify themselves as disabled (see Table 29) although the pattern is somewhat obscured by the unequal size of the functional limitation groups.

Sources of Payment:

The health care expenses of persons with disabilities or chronic illness are either paid by third party payors, private or public, or they are paid out-of-pocket by the health insurance recipient. Out-of-pocket expenses consist of premiums, deductibles, and co-payments on "covered" services as well as the personal expenses associated with "non-covered" services or services which exceed the limits of the insurance policy. The critical issue here is what are the out-of-pocket expenses of persons with disabilities or chronic illness in relation to their family incomes?

Both NMCES (1977) and NMCUES (1980) data provide a basis for measuring the "catastrophic" impact of out-of-pocket expenses on persons with major activity limitations compared to persons without activity limitations. These surveys can be complemented with impairment-specific surveys and medical provider data identified above under health care costs to provide a better

measure of the full range of out-of-pocket expenses. The criterion for the "catastrophic" threshold can be a flat rate for all income levels (e.g. over 10 percent), a variable rate which is lower for persons with low incomes, or an absolute amount (e.g. \$5,000 or more) regardless of a person's family income. Tables can be run for out-of-pocket expenses associated with the different "catastrophic" thresholds comparing persons with disabilities or chronic illness and persons without activity limitations. These tables provide one measure of the adequacy of health insurance for persons with disabilities or chronic illness. In addition, they begin to address the larger question about the equity with which health care costs are distributed within the larger community.

NMCUES (1980) data presented in Table 27 appears to indicate that out-of-pocket medical expenses for working-age disabled persons average \$409 per year out of a total average medical cost of \$2,272. It is necessary to look at this data for high and low users separately in order to measure the actual effect of a catastrophic stop-loss, and it is important to include out-of-pocket expenses for "non-covered" health-related services as well.

LIST OF TABLES

- Table 1: Chronic conditions and impairments: Number and percentage of adult population aged 20-64, by condition and disability status, (SSA, 1972)
- Table 2: Number of persons with and without health-care coverage, by age and health characteristics: United States, (HIS, 1984)
- Table 3: Working-age persons with a work disability by self-reported health status and by health condition (SIPP, 1984)
- Table 4: Type of assistance needed by health condition responsible for work disability for working-age persons (SIPP, 1984)
- Table 5: Percent distribution of persons with limitation of activity due to chronic conditions, by degree of limitation according to sociodemographic characteristics: United States, (HIS, 1986)
- Table 6: Degree of limitation of activity due to chronic conditions by family income and age (HIS, 1986)
- Table 7: Health care utilization by degree of activity limitation for all persons in the United States, (HIS, 1979)
- Table 8: Type of employment status for working age persons with a work disability, (SIPP, 1984)
- Table 9: All working-age persons who need assistance getting around by health condition and by employment status, (SIPP, 1984)
- Table 10: Number of persons with limitation in major activity due to chronic condition by age group compared to persons unable to carry on major activity or to persons with some activity limitation, (HIS, 1986)
- Table 11a: Estimates of the number of uninsured less than 65 years of age in the late 1970s and early 1980s from different national surveys (NMCES, 1977; HIS, 1978; NMCUES, 1980; CPS, 1980, 1982, 1983, 1984; SIPP, 1983).
- Table 11b: Number and percent of persons with major activity limitations due to chronic conditions with and without private health insurance coverage by age group, (HIS,

1984)

- Table 12: Type of public health insurance coverage for persons with major activity limitations by age group, (HIS, 1984)
- Table 13a Profile of health insurance status of persons with limitation of major activity due to chronic condition by age group, HIS, 1984)
- Table 13b Profile of health insurance status of all persons without limitations of activity by age group, (HIS, 1984)
- Table 14: Percent of persons with and without health care coverage. by limitation in major activity due to chronic conditions and age group compared to persons without limitation in any activity, (HIS, 1984)
- Table 15: Estimate of all uninsured persons under 65 by main reason reported for not having health care coverage, (HIS, 1984)
- Table 16a: Working-age persons with a work disability who do not have any private health insurance by the reported reason for the lack of coverage, (SIPP, 1984)
- Table 16b: Percent of persons without health insurance coverage by family income (HIS, 1984)
- Table 17: Type of health insurance by employment status for working-age persons with a work disability, (SIPP, 1984)
- Table 18a: Working-age persons with a work disability by employment status and health condition, (SIPP, 1984)
- Table 18b: Health insurance status of working-age persons with a work disability who are not employed, (SIPP, 1984)
- Table 18c: Health insurance status of working-age persons with a work disability who are employed less than full time (SIPP, 1984)
- Table 18d: Health insurance status of working-age persons with a work disability who are employed full time, (SIPP, 1984)
- Table 19a: Health insurance status of working-age persons with a work disability who are on SSI or SSDI (SIPP, 1984) to be added

Table 19b: Health insurance status of persons 18-61 with a work disability who are on SSDI as disabled workers but do not receive Medicare presumably because of the two year waiting period (SIPP, 1984) to be added

Table 19c: Health insurance status of working-age persons with a work disability who are not on SSI or SSDI and are not employed, (SIPP, 1984) to be added

Table 20: Age of onset for chronic health condition responsible for a work disability among all working-age persons with a work disability, (SIPP, 1984)

Table 21: Employment status at age of onset for chronic health condition responsible for a work disability among all working-age persons with a work disability (SIPP, 1984)

Table 22: Number and percent of work disabilities caused by an injury due to an accident among all working-age persons with a work disability by health condition, (SIPP, 1984)

Table 23: Place of occurrence for injuries resulting in a work disability among all working-age persons with a work disability by health condition, (SIPP, 1984)

Table 24: Health care utilization per person per year for severely disabled persons compared to non-disabled persons as reported in various national surveys conducted 1972-1980

Table 25: Annual health care utilization by degree of activity limitation for selected health services for persons 19-64 years old, (NMCES, 1977)

Table 26: Annual health care expenses by degree of activity limitation for selected health services for persons 19-64 years old, (NMCES, 1977)

Table 27: Medical care expenditures and utilization for disabling conditions for disabled persons, (NMCUES, 1980)

Table 28: Medical care expenditures and utilization for functional limitations battery for disabled persons, (NMCUES, 1980)

Table 29: Medical care expenditures and utilization for functional limitations battery for nondisabled persons, (NMCUES, 1980)

Table 1

TABLE B.—Chronic conditions and impairments: Number and percentage distribution of adult population aged 20-64, by condition and disability status, 1972

Chronic condition	Total number (in thou- sands)	Percentage distribution, by disability status					
		Total	Non- disabled	Currently disabled			
				Total	Severe	Occupational	Secondary work limitations
Total number reporting	104,914	100.0	85.7	14.3	7.0	3.2	4.1
With condition	50,840	100.0	70.6	29.4	14.5	6.6	8.3
With no condition	54,074	100.0	99.8	.2	(1)	(1)	.1
Musculoskeletal	20,325	100.0	55.1	44.9	22.0	10.9	12.0
Arthritis or rheumatism	11,224	100.0	56.2	43.8	24.3	9.7	9.7
Trouble with back or spine	9,529	100.0	51.4	48.6	20.5	12.5	15.6
Other	3,605	100.0	38.3	61.7	33.5	15.5	12.6
Missing legs/feet	98	100.0	21.9	78.1	41.0	15.0	22.1
Missing arms/hands	215	100.0	75.9	24.1	6.1	12.0	6.1
Chronic stiffness	3,053	100.0	39.7	60.3	33.1	15.6	11.6
All other	276	100.0	1.0	99.0	55.8	17.5	25.7
Cardiovascular	20,739	100.0	63.7	36.3	20.8	7.8	7.7
Any heart trouble	11,267	100.0	52.9	47.1	29.3	9.4	8.4
Rheumatic fever	659	100.0	55.0	45.0	25.3	12.4	7.3
Heart attacks	1,251	100.0	28.0	72.0	49.2	12.5	10.3
Heart trouble	3,192	100.0	33.2	66.8	44.6	11.9	10.4
High blood pressure	7,745	100.0	58.2	41.8	25.5	8.3	7.9
Stroke	439	100.0	16.4	83.6	73.6	8.7	1.4
Other arterial/vascular	11,337	100.0	71.6	28.4	14.7	6.3	7.4
Hardening of arteries	976	100.0	38.6	61.4	44.6	9.9	6.9
Varicose veins	4,533	100.0	70.2	29.8	14.2	6.9	8.7
Hemorrhoids or piles	6,683	100.0	76.5	23.5	11.8	5.1	6.6
Other	67	100.0	24.9	75.1	40.3	5.9	28.9
Respiratory	10,731	100.0	63.0	37.0	19.8	7.2	10.0
Tuberculosis	316	100.0	37.6	62.4	40.8	7.4	14.2
Chronic bronchitis	1,912	100.0	47.7	52.3	35.5	8.1	8.6
Emphysema	1,102	100.0	38.5	61.5	36.6	13.3	11.7
Other chronic lung trouble	650	100.0	30.2	69.8	40.8	16.0	13.0
Asthma	3,282	100.0	62.9	37.1	16.9	6.8	13.4
Respiratory allergies	5,534	100.0	71.8	28.2	12.0	5.7	10.5
Digestive	8,680	100.0	61.6	38.4	21.4	8.8	8.3
Gallbladder or liver trouble	1,329	100.0	50.3	49.7	31.7	8.8	9.2
Stomach ulcer	3,596	100.0	66.9	33.1	19.7	8.1	5.3
Other chronic stomach trouble	2,321	100.0	57.4	42.6	24.8	8.1	9.7
Hernia or rupture	1,977	100.0	62.2	37.8	15.7	12.2	9.9
Other	130	100.0	28.3	71.7	38.3	2.9	30.4
Mental	4,742	100.0	36.4	63.6	45.1	9.4	9.1
Mental illness	629	100.0	20.3	79.7	71.5	2.1	6.0
Mental retardation	329	100.0	3.9	96.1	76.6	1.2	18.3
Alcohol or drug problem	287	100.0	53.4	46.6	19.6	12.9	14.2
Chronic nervous trouble	3,765	100.0	38.7	61.3	42.5	10.7	8.2
Other	1	100.0	—	100.0	100.0	—	—
Neurological	759	100.0	19.3	80.7	61.4	7.9	11.4
Epilepsy or seizures	491	100.0	27.0	73.0	59.0	3.3	10.7
Multiple sclerosis	87	100.0	11.7	88.3	78.7	7.5	2.1
Other	189	100.0	1.8	98.2	60.2	20.4	17.6
Urogenital	2,380	100.0	54.7	45.3	25.9	11.9	7.6
Kidney stones or kidney trouble	2,241	100.0	57.4	42.6	26.3	11.4	4.9
Other	140	100.0	11.6	88.4	19.5	19.1	49.8
Neoplasm	2,557	100.0	59.2	40.8	25.1	9.1	6.7
Tumor, cyst or growth	1,926	100.0	66.0	34.0	20.8	6.2	7.0
Cancer	704	100.0	37.1	62.9	41.1	16.8	5.1
Other	29	100.0	83.7	16.3	8.8	4.0	3.6

Table 1 (con't)

TABLE B.—Chronic conditions and impairments: Number and percentage distribution of adult population aged 20–64, by condition and disability status, 1972—*Continued*

Chronic condition	Total number (in thousands)	Percentage distribution, by disability status					
		Total	Non-disabled	Currently disabled			
				Total	Severe	Occupational	Secondary work limitations
Endocrine	4,678	100.0	67.4	32.6	19.6	7.6	5.4
Diabetes	2,162	100.0	54.0	46.0	27.9	11.8	6.3
Thyroid trouble or goiter	2,561	100.0	78.5	21.5	12.5	4.4	4.6
Other	10	100.0	9.5	90.5	90.5	—	—
Other	10,808	100.0	75.3	24.7	11.7	5.7	7.3
Nonrespiratory allergies	7,618	100.0	84.9	15.1	5.6	4.1	5.3
Deafness/hearing problem	2,030	100.0	64.8	35.2	17.9	7.1	10.2
Visual impairment	1,293	100.0	35.1	64.9	39.2	11.2	14.4
Other specified	181	100.0	31.7	68.3	34.5	27.6	6.2

¹ Less than 0.05 percent.

particular chronic disease or condition will produce disability. Apart from the uncertainties produced by the reporting problems discussed earlier, the disabling propensity of various diseases will depend on such elements as the cause and natural history of the disease itself, the characteristics of those it affects, the efficacy of current medical practice in preventing or ameliorating any long-term impact on functional capacities, and the nature of the work environment and the labor market. Nevertheless, the data do show that the association between disability and various types of chronic disease is much higher than would be expected just on the basis of the frequency with which the same condition is present in the general population.

Demographic Differences

Effect of Age

Age is an important factor in explaining not only the prevalence of chronic conditions and impairments in the population but also their disabling effects. Most chronic conditions and impairments take years to develop. They are the result of slow disease processes that depend on continued and sustained exposure to inimical physical environments, on long-term nutritional inadequacies, or on slow and gradual physiological changes in the body's response to infection and disease.

It is not surprising, therefore, that both the prevalence of chronic diseases in the population and the frequency of the associated disability increase substantially with age.

The prevalence of chronic conditions in the adult population increased markedly with age—by two-thirds from a rate of 398.8 per 1,000 persons aged 20–44 to 658.7 per 1,000 persons aged 55–64. The prevalence of disability also rose with age, but the increase was much steeper; it went up about three and one-half times, from 84.4 per 1,000 persons aged 20–44 to 287.9 per 1,000 aged 55–64.

A similar pattern existed for all types of chronic conditions and impairments individually. According to table C, however, both the frequency with which specific chronic conditions occurred in the adult population in general and the extent to which disability was associated with any specific condition varied substantially with age.

Table D shows, for specific disease groups, the differences in total prevalence rates and in disability prevalence rates. Obviously, prevalence rates increase with age regardless of the type of disease involved. For any condition group examined, the rates for persons aged 55–64 were from one and one-half to three times higher than they were for persons under age 45. Furthermore, the increase in prevalence rate with age was evident for conditions with relatively low rates as well as for those with relatively high rates in the population in general.

Table 2

Table 18. Number of persons with and without health-care coverage, by age and health characteristics: United States, 1984

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix 1. Definitions of terms are given in appendix II.]

Characteristic	All ages	Under 65 years					65 years and over
		Total	Under 18 years	18-24 years	25-44 years	45-64 years	
			Number of persons in thousands				
COVERED, ALL PERSONS ^{1,2}	199,253	173,144	53,025	20,703	59,800	39,616	26,109
Respondent-assessed health status							
Excellent	79,598	75,475	28,873	9,631	26,201	10,770	4,123
Very good	52,247	46,940	13,116	6,189	17,625	10,010	5,307
Good	45,107	36,889	9,208	4,010	12,154	5,517	8,217
Fair	15,403	9,970	1,314	731	3,026	4,899	5,433
Poor	6,138	3,225	172	110	675	2,268	2,913
Limitation of activity due to chronic conditions							
Limited	28,456	18,283	2,728	1,217	5,464	8,875	10,172
In major activity	19,704	13,295	1,937	866	3,696	6,797	6,408
In other activity	8,752	4,988	791	352	1,767	2,078	3,764
Not limited	170,797	154,861	50,298	19,485	54,337	30,741	15,936
Annual bed days							
None	107,230	90,663	24,559	10,632	30,336	25,136	16,567
1-7 days	67,485	63,365	23,315	8,145	23,016	8,888	4,120
8-30 days	17,496	14,222	4,396	1,548	4,759	3,519	3,274
31 days or more	5,768	3,931	439	297	1,429	1,766	1,837
Annual physician contacts							
None	47,898	43,264	10,615	5,651	16,751	10,247	4,634
1-3 contacts	95,470	85,477	28,925	10,184	28,647	17,721	9,993
4-7 contacts	31,926	25,488	8,927	2,562	7,681	6,318	6,439
8 contacts or more	23,538	18,607	4,498	2,272	6,606	5,231	4,931
Annual hospital episodes ³							
None	181,695	160,741	50,545	19,419	55,675	35,102	20,954
1 episode	13,633	10,017	2,139	1,080	3,376	3,422	3,616
2 episodes or more	3,925	2,386	341	203	750	1,092	1,539
Annual hospital days ³							
1-6 days	10,008	7,928	1,868	1,012	2,720	2,328	2,060
7-15 days	4,671	2,870	415	187	964	1,303	1,802
16 days or more	2,826	1,572	185	80	435	871	1,255
NOT COVERED, ALL PERSONS ^{1,2}	29,784	29,555	8,662	6,943	9,740	4,210	229
Respondent-assessed health status							
Excellent	10,382	10,334	3,672	2,628	3,168	865	48
Very good	7,071	7,033	2,009	1,881	2,465	677	38
Good	8,666	8,605	2,439	1,950	2,942	1,274	51
Fair	2,676	2,626	416	379	904	928	49
Poor	786	758	59	57	206	435	28
Limitation of activity due to chronic conditions							
Limited	3,305	3,215	400	320	1,157	1,338	90
In major activity	2,430	2,359	273	223	865	998	71
In other activity	874	856	128	97	291	340	18
Not limited	26,479	26,340	8,262	6,623	8,584	2,872	139
Annual bed days							
None	17,812	17,644	4,880	4,205	5,791	2,768	168
1-7 days	8,646	8,628	2,999	2,120	2,748	761	17
8-30 days	2,222	2,203	568	451	799	385	20
31 days or more	735	716	103	93	304	216	19

Source: National Center for Health Statistics, "Health Care Coverage by Sociodemographic and Health Characteristics, United States, 1984", Data From the National Health Survey, Series 10, No. 162, p. 44.

See footnotes at end of table.

Table 3

Survey of Income and Program Participation

Table 18: Working-age persons with a work disability
by self-reported health status and by health condition

Health Condition Mainly Responsible for Work Limitation	Self-reported Health Status											
	Total	column pct	Excellent	row pct	column pct	Very good	row pct	column pct	Good	row pct	column pct	
Arthritis or rheumatism	1,799,570	10.03	20,742	1.15	2.18	160,153	8.90	8.35	442,350	24.64	9.20	
Back or spine problems	3,880,419	21.63	211,902	5.46	22.31	559,504	14.42	29.18	1,192,000	30.72	24.73	
Blindness or vision problems	480,673	2.68	73,144	15.22	7.70	51,165	10.64	2.67	130,847	27.22	2.71	
Cancer	327,452	1.83	4,923	1.50	0.52	8,034	2.45	0.42	49,291	15.05	1.02	
Deafness	295,141	1.65	48,301	16.37	5.08	79,216	26.84	4.13	123,872	41.97	2.57	
Diabetes	605,230	3.37	1,027	0.17	0.11	32,827	5.42	1.71	75,661	12.50	1.57	
Heart trouble	2,271,992	12.66	35,816	1.58	3.77	102,741	4.52	5.36	467,742	20.59	9.70	
Hernia	161,172	0.90	8622	5.35	0.91	36,714	22.78	1.91	31,682	19.66	0.66	
High blood pressure	665,562	3.71	18,883	2.84	1.99	37,562	5.64	1.96	154,940	23.28	3.21	
Kidney stones or problems	222,603	1.24	4,177	1.88	0.44	0	0.00	0.00	64,008	28.75	1.33	
Lung or respiratory problems	1,202,101	6.70	56,408	4.69	5.94	122,269	10.17	6.38	282,304	23.48	5.86	
Mental illness	408,526	2.28	15,389	3.77	1.62	45,252	11.08	2.36	119,572	29.27	2.48	
Mental retardation	519,325	2.89	100,297	19.31	10.56	67,530	13.00	3.52	195,454	37.64	4.05	
Missing appendages	156,565	0.87	27,507	17.57	2.90	32,793	20.95	1.71	46,979	30.01	0.97	
Nervous or emotional problems	560,652	3.13	22,272	3.97	2.34	41,164	7.34	2.15	132,604	23.65	2.75	
Paralysis (any type)	254,827	1.42	29,564	11.60	3.11	24,980	9.80	1.30	86,719	34.03	1.80	
Senility	31,568	0.18	0	0.00	0.00	0	0.00	0.00	9,881	31.30	0.20	
Stiffness of appendage	926,052	5.16	66,027	7.13	6.95	148335	16.02	7.74	356,341	38.48	7.39	
Stomach trouble	274,280	1.53	4,808	1.75	0.51	6,697	2.44	0.35	29,910	10.90	0.62	
Stroke	383,428	2.14	4,908	1.28	0.52	19,214	5.01	1.00	65,091	16.98	1.35	
Thyroid trouble	36,481	0.20	4,162	11.41	0.44	0	0.00	0.00	17,496	47.96	0.36	
Tumor, cyst, or growth	104,457	0.58	5,055	4.84	0.53	18316	17.53	0.96	14,329	13.72	0.30	
Other	2,372,335	13.22	186,038	7.84	19.58	323,173	13.62	16.85	730,365	30.79	15.15	
Total	17,940,411	100%	949,972	5.3%	100%	1,917,639	10.7%	100%	4,820,438	26.9%	100%	

Source: Data generated by Bureau of Economic Research, Rutgers University, from
SIPP (1984) data.

Table 3 (con't)

Survey of Income and Program Participation

Table 18: Working-age persons with a work disability
by self-reported health status and by health condition

Health Condition Mainly Responsible for Work Limitation	Self-reported Health Status								
	Total	column pct	Fair	row pct	column pct	Poor	row pct	column pct	
Arthritis or rheumatism	1,799,570	10.03	721,560	40.10	12.38	453,765	25.22	10.26	
Back or spine problems	3,880,419	21.63	1,132,000	29.17	19.42	785,013	20.23	17.75	
Blindness or vision problems	480,673	2.68	135,273	28.14	2.32	90,244	18.77	2.04	
Cancer	327,452	1.83	98,714	30.15	1.69	166,490	50.84	3.77	
Deafness	295,141	1.65	38,918	13.19	0.67	4,834	1.64	0.11	
Diabetes	605,230	3.37	260,587	43.06	4.47	235,128	38.85	5.32	
Heart trouble	2,271,992	12.66	795,811	35.03	13.65	869,882	38.29	19.67	
Hernia	161,172	0.90	35,917	22.28	0.62	48,237	29.93	1.09	
High blood pressure	665,562	3.71	301,696	45.33	5.17	152,481	22.91	3.45	
Kidney stones or problems	222,603	1.24	81,438	36.58	1.40	72,980	32.78	1.65	
Lung or respiratory problems	1,202,101	6.70	379,725	31.59	6.51	361,395	30.06	8.17	
Mental illness	408,526	2.28	147,512	36.11	2.53	80,801	19.78	1.83	
Mental retardation	519,325	2.89	108,244	20.84	1.86	47,800	9.20	1.08	
Missing appendages	156,565	0.87	35,724	22.82	0.61	13,562	8.66	0.31	
Nervous or emotional problems	560,652	3.13	223,425	39.85	3.83	141,187	25.18	3.19	
Paralysis (any type)	254,827	1.42	68,817	27.01	1.18	44,747	17.56	1.01	
Senility	31,568	0.18	3,803	12.05	0.07	17,884	56.65	0.40	
Stiffness of appendage	926,052	5.16	232,779	25.14	3.99	122,570	13.24	2.77	
Stomach trouble	274,280	1.53	174,772	63.72	3.00	58,093	21.18	1.31	
Stroke	383,428	2.14	122,691	32.00	2.10	171,524	44.73	3.88	
Thyroid trouble	36,481	0.20	4,575	12.54	0.08	10,248	28.09	0.23	
Tumor, cyst, or growth	104,457	0.58	8,830	8.45	0.15	57,927	55.46	1.31	
Other	2,372,335	13.22	717,628	30.25	12.31	415,131	17.50	9.39	
Total	17,940,411	100%	5,830,439	32.5%	100%	4,421,923	24.6%	100%	

Table 4

Survey of Income and Program Participation

Table 1: Type of assistance needed by health condition responsible for work disability for working-age persons

Health Condition Mainly Responsible for Work Limitation	Total		Getting		Housework		Meals		Personal		Number of persons needing assistance by health						
	Group	column pct	Around	row pct	column pct	row pct	column pct	row pct	Care	column pct	condition	row pct	column pct				
Arthritis or rheumatism	1,800,000	10.03	107,085	5.95	9.71	255,307	14.18	11.77	140,449	7.80	9.71	103,532	5.75	12.30	305,307	16.96	11.11
Back or spine problems	3,880,000	21.61	166,377	4.29	15.08	423,142	10.91	19.50	204,074	5.26	14.11	100,289	2.58	11.92	487,340	12.56	17.74
Blindness or vision problems	480,675	2.68	69,585	14.48	6.31	54,549	11.35	2.51	40,663	8.46	2.81	11,928	2.48	1.42	91,425	19.02	3.33
Cancer	327,454	1.82	49,064	14.98	4.45	97,049	29.64	4.47	68,881	21.04	4.76	47,615	14.54	5.66	110,791	33.83	4.03
Deafness	295,144	1.64	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Diabetes	614,478	3.42	29,580	4.81	2.68	59,776	9.73	2.76	49,969	8.13	3.45	25,749	4.19	3.06	76,736	12.49	2.79
Heart trouble	2,274,000	12.67	87,048	3.83	7.89	230,674	10.14	10.63	113,706	5.00	7.86	59,765	2.63	7.10	277,611	12.21	10.11
Hernia	161,174	0.90	0	0.00	0.00	2,085	1.29	0.10	2,085	1.29	0.14	3,966	2.46	0.47	6,052	3.75	0.22
High blood pressure	665,564	3.71	19,421	2.92	1.76	76,129	11.44	3.51	15,335	2.30	1.06	3,521	0.53	0.42	84,049	12.63	3.06
Kidney stones or problems	222,604	1.24	31,873	14.32	2.89	34,186	15.36	1.58	23,605	10.60	1.63	15,760	7.08	1.87	38,292	17.20	1.39
Lung or respiratory problems	1,202,000	6.70	45,086	3.75	4.09	119,863	9.97	5.52	60,474	5.03	4.18	7,554	0.63	0.90	137,893	11.47	5.02
Mental illness	408,528	2.28	24,810	6.07	2.25	32,832	8.04	1.51	51,318	12.56	3.55	20,539	5.03	2.44	71,156	17.42	2.59
Mental retardation	519,326	2.89	41,277	7.95	3.74	115,088	22.16	5.30	167,282	32.21	11.56	97,864	18.84	11.63	199,814	38.48	7.27
Missing appendages	156,567	0.87	17,504	11.18	1.59	22,637	14.46	1.04	22,637	14.46	1.56	14,179	9.06	1.68	39,207	25.04	1.43
Nervous or emotional problems	560,653	3.12	20,869	3.72	1.89	46,980	8.38	2.17	42,968	7.66	2.97	16,875	3.01	2.01	55,966	9.98	2.04
Paralysis (any type)	254,829	1.42	78,567	30.83	7.12	76,176	29.89	3.51	61,433	24.11	4.25	49,948	19.60	5.93	101,509	39.83	3.70
Senility	31,568	0.18	13,703	43.41	1.24	13,703	43.41	0.63	23,343	73.95	1.61	12,983	41.13	1.54	23,343	73.95	0.85
Stiffness of appendage	926,054	5.16	33,221	3.59	3.01	70,322	7.59	3.24	39,743	4.29	2.75	31,893	3.44	3.79	96,581	10.43	3.52
Stomach trouble	274,283	1.53	10,722	3.91	0.97	17,290	6.30	0.80	17,290	6.30	1.20	0	0.00	0.00	21,051	7.67	0.77
Stroke	383,431	2.14	86,133	22.46	7.81	133,919	34.93	6.17	95,209	24.83	6.58	90,639	23.64	10.77	151,187	39.43	5.50
Thyroid trouble	36,482	0.20	0	0.00	0.00	4,361	11.95	0.20	4,361	11.95	0.30	0	0.00	0.00	4,361	11.95	0.16
Tumor, cyst, or growth	104,459	0.58	26,261	25.14	2.38	39,194	37.52	1.81	36,212	34.67	2.50	25,519	24.43	3.03	47,243	45.23	1.72
Other	2,372,000	13.21	145,173	6.12	13.16	244,286	10.30	11.26	165,439	6.97	11.44	101,497	4.28	12.06	320,247	13.50	11.66
Total	17,951,273	100%	1,103,359	6.1%	100%	2,169,548	12.1%	100%	1,446,476	8.1%	100%	841,615	4.7%	100%	2,747,161	15.3%	100%

Source: Data generated by Bureau of Economic Research, Rutgers University, from SIPP (1984) data.

Table 5

TABLE 67. PERCENT DISTRIBUTION OF PERSONS WITH LIMITATION OF ACTIVITY DUE TO CHRONIC CONDITIONS, BY DEGREE OF LIMITATION ACCORDING TO SOCIODEMOGRAPHIC CHARACTERISTICS: UNITED STATES, 1986

(DATA ARE BASED ON HOUSEHOLD INTERVIEWS OF THE CIVILIAN NONINSTITUTIONALIZED POPULATION. THE SURVEY DESIGN, GENERAL QUALIFICATIONS, AND INFORMATION ON THE RELIABILITY OF THE ESTIMATES ARE GIVEN IN APPENDIX I. DEFINITIONS OF TERMS ARE GIVEN IN APPENDIX II)

CHARACTERISTIC	DEGREE OF ACTIVITY LIMITATION						
	ALL PERSONS	WITH NO ACTIVITY LIMITATION	WITH ACTIVITY LIMITATION	WITH LIMITATION IN MAJOR ACTIVITY	UNABLE TO CARRY ON MAJOR ACTIVITY	LIMITED IN AMOUNT OR KIND OF MAJOR ACTIVITY	LIMITED, BUT NOT IN MAJOR ACTIVITY
	PERCENT DISTRIBUTION						
ALL PERSONS ¹	100.0	86.0	14.0	9.4	3.9	5.5	4.5
AGE							
UNDER 18 YEARS.....	100.0	95.0	5.0	3.6	0.4	3.2	1.4
18-44 YEARS.....	100.0	91.3	8.7	5.7	2.2	3.5	2.9
45-64 YEARS.....	100.0	76.8	23.2	17.8	8.6	9.1	5.4
65 YEARS AND OVER.....	100.0	61.2	38.8	22.7	10.7	12.1	16.1
65-69 YEARS.....	100.0	61.6	38.4	30.0	16.5	13.5	8.4
70 YEARS AND OVER.....	100.0	60.9	39.1	18.9	7.6	11.3	20.2
SEX AND AGE							
MALE							
ALL AGES.....	100.0	86.6	13.4	9.5	4.4	5.1	3.9
UNDER 18 YEARS.....	100.0	94.2	5.8	4.4	0.4	4.0	1.4
18-44 YEARS.....	100.0	90.8	9.2	6.5	2.7	3.8	2.7
45-64 YEARS.....	100.0	78.0	22.0	18.2	10.6	7.6	3.8
65-69 YEARS.....	100.0	61.4	38.6	33.6	21.2	12.4	5.0
70 YEARS AND OVER.....	100.0	63.6	36.4	13.5	5.4	8.1	22.9
FEMALE							
ALL AGES.....	100.0	85.5	14.5	9.4	3.5	5.8	5.1
UNDER 18 YEARS.....	100.0	95.8	4.2	2.9	0.4	2.5	1.3
18-44 YEARS.....	100.0	91.9	8.1	5.0	1.8	3.3	3.1
45-64 YEARS.....	100.0	75.8	24.2	17.3	6.8	10.5	6.9
65-69 YEARS.....	100.0	61.8	38.2	27.1	12.8	14.3	11.1
70 YEARS AND OVER.....	100.0	59.1	40.9	22.5	9.0	13.4	18.4
RACE AND AGE							
WHITE							
ALL AGES.....	100.0	85.9	14.1	9.3	3.7	5.6	4.8
UNDER 18 YEARS.....	100.0	95.0	5.0	3.5	0.3	3.2	1.4
18-44 YEARS.....	100.0	91.4	8.6	5.6	1.9	3.6	3.0
45-64 YEARS.....	100.0	77.2	22.8	17.2	8.0	9.2	5.6
65-69 YEARS.....	100.0	62.6	37.4	29.0	15.5	13.6	8.4
70 YEARS AND OVER.....	100.0	61.3	38.7	18.3	7.0	11.2	20.4
BLACK							
ALL AGES.....	100.0	85.4	14.6	11.1	5.8	5.3	3.5
UNDER 18 YEARS.....	100.0	94.5	5.5	4.5	0.7	3.8	1.0
18-44 YEARS.....	100.0	90.1	9.9	7.3	4.1	3.2	2.6
45-64 YEARS.....	100.0	70.3	29.7	24.9	15.2	9.6	4.8
65-69 YEARS.....	100.0	50.4	49.6	40.8	26.6	14.2	8.8
70 YEARS AND OVER.....	100.0	53.7	46.3	26.3	12.7	13.6	19.9

SEE FOOTNOTE AND NOTES AT END OF TABLE.

Source: National Center for Health Statistics, "Current Estimates From the National Health Interview Survey, United States, 1986", Series 10, No. 164, p. 109, 111.

Table 5 (con't)

TABLE 68. NUMBER OF PERSONS WITH LIMITATION OF ACTIVITY DUE TO CHRONIC CONDITIONS, BY DEGREE OF LIMITATION ACCORDING TO SOCIODEMOGRAPHIC CHARACTERISTICS: UNITED STATES, 1980

(DATA ARE BASED ON HOUSEHOLD INTERVIEWS OF THE CIVILIAN NONINSTITUTIONALIZED POPULATION. THE SURVEY DESIGN, GENERAL QUALIFICATIONS, AND INFORMATION ON THE RELIABILITY OF THE ESTIMATES ARE GIVEN IN APPENDIX I. DEFINITIONS OF TERMS ARE GIVEN IN APPENDIX II)

CHARACTERISTIC	DEGREE OF ACTIVITY LIMITATION						
	ALL PERSONS	WITH NO ACTIVITY LIMITATION	WITH ACTIVITY LIMITATION	WITH LIMITATION IN MAJOR ACTIVITY	UNABLE TO CARRY ON MAJOR ACTIVITY	LIMITED IN AMOUNT OR KIND OF MAJOR ACTIVITY	LIMITED, BUT NOT IN MAJOR ACTIVITY
	NUMBER IN THOUSANDS						
ALL PERSONS ¹	236,348	203,375	32,972	22,281	9,270	13,011	10,692
AGE							
UNDER 18 YEARS.....	63,132	59,964	3,168	2,292	251	2,042	876
18-44 YEARS.....	100,980	92,243	8,738	5,795	2,232	3,563	2,943
45-64 YEARS.....	44,698	34,329	10,369	7,935	3,854	4,081	2,434
65 YEARS AND OVER.....	27,538	16,840	10,698	6,258	2,933	3,325	4,440
65-69 YEARS.....	9,461	5,829	3,632	2,838	1,562	1,276	793
70 YEARS AND OVER.....	18,077	11,011	7,066	3,420	1,371	2,049	3,647
SEX AND AGE							
MALE							
ALL AGES.....	114,330	98,999	15,331	10,865	4,978	5,887	4,466
UNDER 18 YEARS.....	32,291	30,424	1,867	1,407	128	1,279	460
18-44 YEARS.....	49,372	44,830	4,542	3,196	1,311	1,885	1,346
45-64 YEARS.....	21,310	16,612	4,698	3,882	2,262	1,620	817
65-69 YEARS.....	4,224	2,594	1,630	1,419	894	525	212
70 YEARS AND OVER.....	7,132	4,539	2,593	962	383	579	1,631
FEMALE							
ALL AGES.....	122,018	104,377	17,641	11,416	4,292	7,124	6,226
UNDER 18 YEARS.....	30,841	29,540	1,301	885	123	763	415
18-44 YEARS.....	51,608	47,413	4,195	2,599	921	1,678	1,596
45-64 YEARS.....	23,388	17,718	5,670	4,054	1,592	2,462	1,617
65-69 YEARS.....	5,237	3,235	2,001	1,420	668	751	582
70 YEARS AND OVER.....	10,945	6,471	4,473	2,458	988	1,470	2,015
RACE AND AGE							
WHITE							
ALL AGES.....	200,247	172,029	28,218	18,701	7,407	11,294	9,517
UNDER 18 YEARS.....	51,377	48,825	2,551	1,810	178	1,632	742
18-44 YEARS.....	85,127	77,824	7,303	4,742	1,654	3,088	2,561
45-64 YEARS.....	38,989	30,095	8,894	6,711	3,116	3,596	2,183
65-69 YEARS.....	8,497	5,319	3,178	2,467	1,315	1,152	711
70 YEARS AND OVER.....	16,257	9,965	6,291	2,971	1,144	1,826	3,321
BLACK							
ALL AGES.....	28,549	24,393	4,156	3,161	1,660	1,502	995
UNDER 18 YEARS.....	9,649	9,116	534	433	69	364	101
18-44 YEARS.....	12,109	10,910	1,199	889	502	387	310
45-64 YEARS.....	4,492	3,159	1,333	1,117	684	433	217
65-69 YEARS.....	811	409	402	331	216	115	71
70 YEARS AND OVER.....	1,487	799	688	391	189	202	296

SEE FOOTNOTE AND NOTES AT END OF TABLE.

Table 6

TABLE 67. PERCENT DISTRIBUTION OF PERSONS WITH LIMITATION OF ACTIVITY DUE TO CHRONIC CONDITIONS, BY DEGREE OF LIMITATION ACCORDING TO SOCIODEMOGRAPHIC CHARACTERISTICS: UNITED STATES, 1986—CON.

(DATA ARE BASED ON HOUSEHOLD INTERVIEWS OF THE CIVILIAN NONINSTITUTIONALIZED POPULATION. THE SURVEY DESIGN, GENERAL QUALIFICATIONS, AND INFORMATION ON THE RELIABILITY OF THE ESTIMATES ARE GIVEN IN APPENDIX I. DEFINITIONS OF TERMS ARE GIVEN IN APPENDIX II)

CHARACTERISTIC	DEGREE OF ACTIVITY LIMITATION						
	ALL PERSONS	WITH NO ACTIVITY LIMITATION	WITH ACTIVITY LIMITATION	WITH LIMITATION IN MAJOR ACTIVITY	UNABLE TO CARRY ON MAJOR ACTIVITY	LIMITED IN AMOUNT OR KIND OF MAJOR ACTIVITY	LIMITED, BUT NOT IN MAJOR ACTIVITY
FAMILY INCOME AND AGE							
UNDER \$10,000							
				PERCENT DISTRIBUTION			
ALL AGES.....	100.0	74.7	25.3	18.0	8.8	9.2	7.3
UNDER 18 YEARS.....	100.0	93.1	6.9	5.6	*0.8	4.8	1.3
18-44 YEARS.....	100.0	84.6	15.4	10.9	5.2	5.8	4.5
45-64 YEARS.....	100.0	45.2	54.7	45.7	28.7	17.1	9.0
65-69 YEARS.....	100.0	43.5	56.5	45.6	28.6	17.0	10.9
70 YEARS AND OVER.....	100.0	54.6	45.4	24.0	8.1	15.9	21.4
\$10,000-\$19,999							
ALL AGES.....	100.0	82.7	17.3	12.0	5.5	6.4	5.3
UNDER 18 YEARS.....	100.0	94.2	5.8	4.3	*0.5	3.9	1.5
18-44 YEARS.....	100.0	89.8	10.2	7.4	3.4	4.0	2.8
45-64 YEARS.....	100.0	68.6	31.4	24.6	13.0	11.6	6.9
65-69 YEARS.....	100.0	57.6	42.3	33.7	18.7	14.9	8.7
70 YEARS AND OVER.....	100.0	63.4	36.6	16.4	7.4	9.0	20.2
\$20,000-\$34,999							
ALL AGES.....	100.0	89.6	10.4	7.0	2.3	4.7	3.4
UNDER 18 YEARS.....	100.0	95.7	4.3	3.0	*0.3	2.7	1.2
18-44 YEARS.....	100.0	92.7	7.3	4.9	1.4	3.5	2.5
45-64 YEARS.....	100.0	80.7	19.3	14.4	5.3	9.2	4.8
65-69 YEARS.....	100.0	71.4	28.6	21.9	10.7	11.1	6.8
70 YEARS AND OVER.....	100.0	69.6	30.4	13.1	6.4	6.7	17.3
\$35,000 OR MORE							
ALL AGES.....	100.0	91.4	8.6	5.2	1.5	3.7	3.3
UNDER 18 YEARS.....	100.0	95.5	4.5	2.9	*0.2	2.6	1.6
18-44 YEARS.....	100.0	93.4	6.6	3.7	0.9	2.8	2.9
45-64 YEARS.....	100.0	86.7	13.3	9.9	3.1	5.8	4.5
65-69 YEARS.....	100.0	71.0	28.9	22.8	8.7	12.1	8.2
70 YEARS AND OVER.....	100.0	67.2	32.8	15.8	8.2	7.6	17.0
GEOGRAPHIC REGION							
NORTHEAST.....	100.0	87.3	12.7	8.4	3.9	4.5	4.3
MIDWEST.....	100.0	85.6	14.4	9.7	3.6	6.2	4.7
SOUTH.....	100.0	84.9	15.1	10.5	4.6	5.9	4.7
WEST.....	100.0	87.3	12.7	8.4	3.3	5.1	4.3
PLACE OF RESIDENCE							
MSA.....	100.0	86.9	13.1	8.8	3.7	5.2	4.3
CENTRAL CITY.....	100.0	85.8	14.2	9.8	4.5	5.3	4.4
NOT CENTRAL CITY.....	100.0	87.6	12.4	8.3	3.2	5.1	4.2
NOT MSA.....	100.0	83.3	16.7	11.3	4.7	6.6	5.3

1 INCLUDES OTHER RACES AND UNKNOWN FAMILY INCOME.

NOTES: THE STANDARD ERRORS (SE'S) AND RELATIVE STANDARD ERRORS (RSE'S) FOR AGE, SEX AND AGE, AND RACE AND AGE CAN BE COMPUTED BY USING PARAMETER SET X OF TABLE I. THE FREQUENCIES OF TABLE 68 AND THE FORMULA PRESENTED IN RULE 2 OF APPENDIX I. THE SE'S AND RSE'S FOR FAMILY INCOME AND AGE, GEOGRAPHIC REGION, AND PLACE OF RESIDENCE CAN BE COMPUTED BY USING PARAMETER SET X OF TABLE I. THE FREQUENCIES OF TABLE 68 AND THE FORMULA PRESENTED IN RULE 3 OF APPENDIX I. ESTIMATES FOR WHICH THE NUMERATOR HAS AN RSE OF MORE THAN 30 PERCENT ARE INDICATED WITH AN ASTERISK.

Source: National Center for Health Statistics, "Current Estimates From the National Health Interview Survey, United States, 1986", Series 10, No. 164, p. 110.

Table 7

Health Care Utilization by Degree of Activity Limitation for all Persons in the United States, 1979

	No Limitation of Activity	Limited, but not in major Activity	Limited in Amount or kind of major Activity	Unable to Carry on major Activity
No. of physician visit per person per year	3.9	6.5	9.8	11.9
No. of discharges from short-stay hospitals per 100 persons per year	9.8	20.8	34.3	64.1
Average length of stay for discharges from short-stay hospitals	5.5	8.2	10.2	13.6
Percent of persons with one or more short- stay hospital episodes within a year of interview	8.1	15.2	21.9	34.3
No. of restricted-activity days per person per year	10.5	33.9	63.8	115.4
No. of bed-disability days per person per year	4.2	7.6	16.9	44.6

Source: National Center for Health Statistics, "Health Characteristics of Persons with Chronic Activity Limitation: United States, 1979", Data from the National Health Survey, Series 10, No. 137; Tables 2, 7, 8, 9, 10, 11

Table 8

Type of Health Insurance by Employment Status for Working Age Persons with a Work Disability, 1984

<u>Health Insurance Status</u>	<u>Employment Status</u>			
	Not Working	Part-Time	Full-Time	Total
Private only	4.0 (38.8%)	1.3 (65.0%)	4.6 (82.1%)	9.9 (55.3%)
Private and Medicare	0.8 (7.8%)	.03 (1.5%)	.05 (0.9%)	0.9 (5.0%)
Private and Medicaid	0.2 (1.9%)	.02 (1.0%)	.06 (1.1%)	0.3 (1.7%)
Medicare only	0.7 (6.8%)	.03 (1.5%)	.01 (0.2%)	0.7 (3.9%)
Medicaid only	2.1 (20.4%)	0.2 (10.0%)	0.2 (3.6%)	2.5 (14.0%)
Medicaid and Medicare	0.4 (3.9%)	.01 (0.5%)	.03 (0.5%)	0.4 (2.2%)
Other	0.2 (1.9%)	.03 (1.5%)	0.1 (1.8%)	0.3 (1.7%)
No Insurance	2.1 (20.4%)	0.4 (20.0%)	0.7 (12.5%)	3.2 (17.9%)
Total	10.3 (100%)	2.0 (100%)	5.6 (100%)	17.9 (100%)

Numbers here do not come to 100% because of rounding.

Source: Calculated from SIPP (1984)

Table 9

Survey of Income and Program Participation

Table 12: All working-age persons who need assistance getting around
by health condition and by employment status

Health Condition Mainly Responsible for Functional Limitation	Employment Status														
	Total	column pct	Not Working	row pct	column pct	Worked less than full-time	row pct	column pct	Worked full- time	row pct	column pct	Number not reporting a work disability	row pct	column pct	
Arthritis or rheumatism	104,625	9.10	91,969	87.90	9.24	9,353	8.94	15.35	3,301	3.16	7.04	0	0.00	0.00	
Back or spine problems	221,905	19.30	173,288	78.09	17.41	18,090	8.15	29.69	21,251	9.58	45.32	9,274	4.18	20.00	
Blindness or vision problems	24,844	2.16	24,844	100.00	2.50	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Cancer	35,767	3.11	35,767	100.00	3.59	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Deafness	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Diabetes	48,887	4.25	48,887	100.00	4.91	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Heart trouble	56,152	4.88	51,411	91.56	5.16	0	0.00	0.00	0	0.00	0.00	4,741	8.44	10.23	
Hernia	13,167	1.15	4,396	33.39	0.44	0	0.00	0.00	0	0.00	0.00	8,770	66.61	18.92	
High blood pressure	15,755	1.37	9,255	58.74	0.93	0	0.00	0.00	0	0.00	0.00	6,500	41.26	14.02	
Kidney stones or problems	75,587	6.57	75,587	100.00	7.59	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Lung or respiratory problems	12,954	1.13	12,954	100.00	1.30	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Mental illness	20,452	1.78	14,476	70.78	1.45	6,065	29.65	9.95	0	0.00	0.00	0	0.00	0.00	
Mental retardation	49,508	4.31	42,490	85.82	4.27	0	0.00	0.00	7,018	14.18	14.97	0	0.00	0.00	
Missing appendages	5,444	0.47	5,444	100.00	0.55	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Nervous or emotional problems	17,981	1.56	17,981	100.00	1.81	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Paralysis (any type)	81,643	7.10	70,791	86.71	7.11	6,776	8.30	11.12	4,074	4.99	8.69	0	0.00	0.00	
Senility	15,398	1.34	15,398	100.00	1.55	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Stiffness of appendage	26,661	2.32	23,220	87.09	2.33	3,441	12.91	5.65	0	0.00	0.00	0	0.00	0.00	
Stomach trouble	10,722	0.93	10,722	100.00	1.08	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Stroke	76,802	6.68	69,057	89.92	6.94	0	0.00	0.00	7,745	10.08	16.52	0	0.00	0.00	
Thyroid trouble	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Tumor, cyst, or growth	46,137	4.01	41,819	90.64	4.20	0	0.00	0.00	0	0.00	0.00	4,318	9.36	9.31	
Other	189,240	16.46	155,774	82.32	15.65	17,207	9.09	28.24	3,497	1.85	7.46	12,761	6.74	27.52	
Total	1,149,631	100%	995,530	86.6%	100%	60,932	5.3%	100%	46,886	100%	46,364	4.0%	100%	100%	

Source: Data generated by Bureau of Economic Research, Rutgers University, from SIPP (1984) data.

Table 9 (con't)

Survey of Income and Program Participation

Table 12(a): Working-age persons who need assistance getting around who do not report
a work limitation by health condition and by employment status

Health Condition Mainly Responsible for Functional Limitation	Employment Status											
	Total (Did not report a work limitation)	column pct	Not Working	row pct	column pct	Worked less than full-time		Worked full- time		row pct	column pct	
						row pct	column pct	row pct	column pct			
Arthritis or rheumatism	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Back or spine problems	9,274	20.00	4,757	51.29	19.11	0	0.00	0.00	0	0.00	0.00	
Blindness or vision problems	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Cancer	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Deafness	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Diabetes	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Heart trouble	4,741	10.23	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Hernia	8,770	18.92	4,813	54.88	19.34	0	0.00	0.00	4,741	100.00	27.96	
High blood pressure	6,500	14.02	6,500	100.00	26.11	3,956	45.11	23.33	0	0.00	0.00	
Kidney stones or problems	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Lung or respiratory problems	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Mental illness	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Mental retardation	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Missing appendages	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Nervous or emotional problems	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Paralysis (any type)	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Senility	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Stiffness of appendage	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Stomach trouble	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Stroke	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Thyroid trouble	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	
Tumor, cyst, or growth	4,318	9.31	4,318	100.00	17.35	0	0.00	0.00	0	0.00	0.00	
Other	12,761	27.52	4,503	35.29	18.09	0	0.00	0.00	8,257	64.70	48.70	
Total	46,364	100%	24,891	100%		0			16,954		100%	

1.5% of all needing assistance getting around

Table 10

Number of persons with limitation in major activity due to chronic conditions by age group

All Persons	Under 18	18-64	65 +
22.3 million (100%)	2.3 million (10.3%)	13.7 million (61.4%)	6.3 million (28.3%)

Number of persons unable to carry on major activity by age group.

All Persons	Under 18	18-64	65 +
9.3 million (100%)	0.3 million (3.2%)	6.1 million (65.6%)	2.9 million (31.2%)

Number of persons with some activity limitation due to chronic condition by age-group.

All Persons	Under 18	18-64	65+
33.0 million (100%)	3.2 million (9.7%)	19.1 million (57.9%)	10.7 million (32.4%)

Source: National Center for Health Statistics, "Current Estimates From the National Health Survey, Series 10, No. 164, Table 68, p. 111 (1986).

Table 1

ESTIMATES OF THE NUMBER OF UNINSURED LESS THAN 65 YEARS OF AGE IN THE LATE 1970s AND EARLY 1980s FROM DIFFERENT NATIONAL SURVEYS

Survey and Time Frame	Number of Uninsured (in millions)	Uninsured as % of Pop. Less Than 65
Uninsured at a Point in Time:		
1977 NMCES - Round 1	26.2	13.8%
Round 2	23.7	12.5%
Round 3	24.5	12.9%
Round 4	24.7	13.0%
Round 5	26.2	13.8%
1978 HIS	26.0	13.65%
1980 NMCUES - Round 1	28.2	14.6%
1980 CPS	28.6	14.6%
1982 CPS	30.7	15.2%
1983 CPS	32.7	16.05%
1984 CPS	35.1	17.1%
1983 SIPP - 4th Quarter	35.0	17.1%
Uninsured for an Entire Year:		
1977 NMCES	18.3	9.2%
1980 NMCUES	18.3	9.7%

NMCES is the National Medical Care Expenditure Survey; HIS is the National Health Interview Survey; NMCUES is the National Medical Care Utilization and Expenditure Survey; CPS is the Current Population Survey and the March Supplement is the version used in each of the years cited; and SIPP is the Survey of Income and Program Participation.

Sources: Swartz (April 1985), and U.S. Bureau of the Census, Current Population Reports, P-70-83-4.

Table 11b

HEALTH INSURANCE STATUS

Table 6(i): Number and percent of persons with major activity limitations due to chronic conditions with and without private health insurance coverage by age group

(HIS, 1984)

No. 162

Table 4

p. 23

	All Ages	Under 18	18-64	65 +	under 65
Covered by private insurance	(63%) 14.0 million	(64%) 1.4 million	(62%) 8.4 million	(65%) 4.2 million	(62%) 9.8 million
Not covered by private insurance	(37%) 8.2 million	(36%) 0.8 million	(38%) 5.1 million	(35%) 2.3 million	(38%) 6.0 million
Total	(100%) 22.2 million	(100%) 2.2 million	(100%) 13.5 million	(100%) 6.5 million	(100%) 15.8 million

Source: National Center for Health Statistics, "Health Care Coverage by Sociodemographic and Health Characteristics, United States, 1984", Data From the National Health Survey, Series 10, No. 162, Table 4, p. 23.

Table 12

Type of Public Health Coverage for Persons with Major Activity Limitations by Age Group

<u>Types of Health Coverage</u>	<u>All Ages</u>	<u>Under 18</u>	<u>18-64</u>	<u>65+</u>	<u>Under 65</u>
Medicare	8.2 million (36.9%)	X	2.0 million (14.8%)	6.2 million (95.4%)	(12.7%) 2.0 million
Medicaid	3.2 million (14.4%)	0.5 million (22.7%)	1.9 million (14.1%)	0.8 million (12.3%)	(15.2%) 2.4 million
Military - VA	1.7 million (7.6%)	.009 million (0.4%)	1.1 million (8.1%)	0.5 million (7.7%)	(7.6%) 1.2 million
Total	22.2 million (100%)	2.2 million (100%)	13.5 million (100%)	6.5 million (100%)	(100%) 15.8 million

Source: National Center for Health Statistics, "Health Care Coverage by Sociodemographic and Health Characteristics, United States, 1984"; Data from the National Health Survey, Series 10, No. 162; Tables 6, 10, 14

Table 13

Table 13(a) Profile of Health Insurance Status of Persons with Limitation of Major Activity due to Chronic Condition by Age GroupDerived
from (HIS, 1984)

No. 162	All Ages	Under 18	18-64	65 +	Under 65
Private Insurance	14.0 million (63.1%)	1.4 million (63.6%)	8.4 million (62.2%)	4.2 million (64.6%)	9.8 million (62.0%)
Table 4					
Public Insurance (calculated as residual)	5.8 million (26.1%)	0.5 million (22.7%)	3.0 million (22.2%)	2.2 million (33.8%)	3.6 million (22.8%)
[I need unduplicated count for recipients of public insurance here]					
Tables 6, 9, 13					
Uninsured	2.4 million (10.8%)	0.3 million (13.6%)	2.1 million (15.6%)	.07 million (1.1%)	2.4 million (15.2%)
Table 18					
Total	22.2 million (100%)	2.2 million (100%)	13.5 million (100%)	6.5 million (100%)	15.8 million (100%)

Table 13b: Profile of Health Insurance Status of All Persons without Limitations of Activity by Age Group

(HIS, 1984)

No. 162	All Ages	Under 18	18-64	65 +	Under 65
Table 4					
p. 23					
Private Insurance	154.5 million (78.3%)	43.0 million (73.4%)	99.2 million (80.9%)	12.4 million (77.0%)	142.2 million (78.5%)
Public Insurance (calculated as residual)	16.3 million (8.3%)	7.3 million (12.5%)	5.3 million (4.3%)	3.6 million (22.4%)	12.7 million (7.0%)

(HIS, 1984)

[I need unduplicated count for recipients of public insurance here]

No. 162

Table 6, 9, 13

Uninsured	26.5 million (13.4%)	8.3 million (14.2%)	18.1 million (14.8%)	0.1 million (0.6%)	26.3 million (14.5%)
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(HIS, 1984)

No. 162

Table 18

Total	197.3 million (100%)	58.6 million (100%)	122.6 million (100%)	16.1 million (100%)	181.2 million (100%)
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Source: Derived from Data From the National Health Survey, Series 10, No. 162
Tables, 4, 6, 9, 13, 18.

Table 14

Table 17. Percent of persons with and without health-care coverage, by age and health characteristics: United States, 1984—Con.

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix II.]

Characteristic	All ages	Total	Under 65 years				65 years and over
			Under 18 years	18-24 years	25-44 years	45-64 years	
Annual bed days							
			Percent covered				
None	85.8	83.7	83.4	71.7	84.0	90.1	99.0
1-7 days	88.6	88.0	88.6	79.3	89.3	92.1	99.6
8-30 days	88.7	86.6	88.6	77.4	85.6	90.1	99.4
31 days or more	88.7	84.6	81.1	76.2	82.4	89.1	99.0
Annual physician contacts							
None	79.9	78.4	78.4	66.8	79.4	84.7	97.6
1-3 contacts	88.6	87.4	87.1	77.7	88.5	92.8	99.4
4-7 contacts	91.1	89.2	89.8	78.5	89.9	92.3	99.6
8 contacts or more	91.3	89.4	91.2	81.8	89.1	92.0	99.4
Annual hospital episodes ³							
None	86.5	85.1	85.8	74.6	85.8	90.1	99.1
1 episode	91.9	89.5	90.6	79.6	89.0	93.1	99.3
2 episodes or more	93.0	89.4	85.3	83.2	88.8	92.6	99.2
Annual hospital days ³							
1-6 days	91.7	89.8	90.5	82.4	89.8	92.9	99.7
7-15 days	92.8	89.2	87.0	73.0	88.4	93.5	99.0
16 days or more	92.9	88.4	88.5	71.4	85.0	92.2	99.2
			Percent not covered				
NOT COVERED, ALL PERSONS ^{1,2}	13.0	14.6	14.0	25.1	14.0	9.6	0.9
Respondent-assessed health status							
Excellent	11.5	12.0	11.3	21.4	10.8	7.4	1.2
Very good	11.9	13.0	13.3	23.3	12.3	6.3	*0.7
Good	16.1	18.9	20.9	32.7	19.5	10.0	0.7
Fair	14.8	20.8	24.0	34.2	23.0	15.9	0.9
Poor	11.4	19.0	25.4	34.1	23.4	16.1	*1.0
Limitation of activity due to chronic conditions							
Limited	10.4	15.0	12.8	20.8	17.5	13.1	0.9
In major activity	11.0	15.1	12.4	20.5	19.0	12.8	1.1
In other activity	9.1	14.6	13.9	21.6	14.1	14.1	*0.5
Not limited	13.4	14.5	14.1	25.4	13.6	8.5	0.9
Annual bed days							
None	14.2	16.3	16.6	28.3	16.0	9.9	1.0
1-7 days	11.4	12.0	11.4	20.7	10.7	7.9	*0.4
8-30 days	11.3	13.4	11.4	22.6	14.4	9.9	*0.6
31 days or more	11.3	15.4	19.0	23.8	17.5	10.9	*1.0
Annual physician contacts							
None	20.1	21.6	21.6	33.2	20.6	15.3	2.4
1-3 contacts	11.4	12.6	12.9	22.3	11.5	7.2	0.6
4-7 contacts	8.9	10.8	10.2	21.5	10.1	7.7	*0.4
8 contacts or more	8.7	10.6	8.8	18.2	11.0	8.0	*0.6
Annual hospital episodes ³							
None	13.5	14.9	14.2	25.4	14.2	9.9	0.9
1 episode	8.1	10.5	9.4	20.4	11.1	6.9	*0.7
2 episodes or more	7.0	10.6	15.0	16.8	11.2	7.4	*0.8
Annual hospital days ³							
1-6 days	8.3	10.2	9.5	17.6	10.2	7.1	*0.3
7-15 days	7.2	10.8	13.0	26.6	11.6	6.4	*1.0
16 days or more	7.1	11.6	*11.0	*28.6	15.0	7.8	*0.9

¹Excludes persons with unknown health-care coverage status.

²Includes persons with unknown respondent-assessed health status, annual bed days, and annual physician contacts; and persons with no annual hospital days.

³Excludes hospitalizations for delivery.

Source: National Center for Health Statistics, "Health Care Coverage by Sociodemographic and Health Characteristics, United States, 1984", Data From the National Health Survey, Series 10, No. 162, Table 17, p. 43.

Table 15

Estimate of all uninsured persons under 65 by main reason reported
for not having health care coverage

All main reasons	29.6 million	(100%)
Too expensive	17.9 million	(63%)
Job layoff, job loss	4.2 million	(15%)
Healthy - haven't needed it	1.8 million	(6.2%)
Don't believe in insuranc	0.5 million	(1.7%)
Dissatisfied with previous ins.	0.4 million	(1.3%)
<u>Can't obtain because of poor health or illness*</u>	0.3 million	(1.0%)
Other reasons	3.3 million	(11.8%)
Unknown	1.3 million	

Source: National Center for Health Statistics, "Health Care Coverage by
Sociodemographic and Health Characteristics, United States, 1984",
Data From the National Health Survey, Series 10, No. 162, Table C, p. 11.

Table 16a

Table 15: Working-age persons with a work disability who do not have any private health insurance and the reason for the lack of coverage

Health Condition Mainly Responsible for Work Limitation	Reason for lack of coverage											
	Total		Not	row	column	Poor	row	column	Too	row	column	
		column	working	pct	pct	health	pct	pct	costly	pct	pct	
Arthritis or rheumatism	282,476	9.31	14,241	5.04	7.09	26,849	9.50	10.47	218,743	77.44	9.88	
Back or spine problems	677,350	22.33	80,607	11.90	40.15	31,551	4.66	12.30	500,743	73.93	22.62	
Blindness or vision problems	85,733	2.83	0	0.00	0.00	0	0.00	0.00	67,825	79.11	3.06	
Cancer	38,561	1.27	0	0.00	0.00	8,237	21.36	3.21	25,940	67.27	1.17	
Deafness	24,231	0.80	0	0.00	0.00	0	0.00	0.00	19,397	80.05	0.88	
Diabetes	133,821	4.41	10,152	7.59	5.06	36,316	27.14	14.16	77,917	58.22	3.52	
Heart trouble	297,037	9.79	2,329	0.78	1.16	25,965	8.74	10.12	223,852	75.36	10.11	
Hernia	47,145	1.55	0	0.00	0.00	2,085	4.42	0.81	40,192	85.25	1.82	
High blood pressure	156,965	5.17	0	0.00	0.00	22,355	14.24	8.72	134,610	85.76	6.08	
Kidney stones or problems	51,366	1.69	10,357	20.16	5.16	20,394	39.70	7.95	12,257	23.86	0.55	
Lung or respiratory problems	169,992	5.60	10,763	6.33	5.36	11,277	6.63	4.40	125,072	73.58	5.65	
Mental illness	83,977	2.77	6,471	7.71	3.22	8,787	10.46	3.43	56,637	67.44	2.56	
Mental retardation	72,382	2.39	0	0.00	0.00	1,852	2.56	0.72	65,141	90.00	2.94	
Missing appendages	36,446	1.20	0	0.00	0.00	0	0.00	0.00	30,793	84.49	1.39	
Nervous or emotional problems	140,488	4.63	8,289	5.90	4.13	9,065	6.45	3.53	96,783	68.89	4.37	
Paralysis (any type)	38,914	1.28	0	0.00	0.00	7,065	18.16	2.75	31,849	81.84	1.44	
Senility	4,535	0.15	0	0.00	0.00	4,535	100.00	1.77	0	0.00	0.00	
Stiffness of appendage	196,599	6.48	26,824	13.64	13.36	7,737	3.94	3.02	133,588	67.95	6.04	
Stomach trouble	49,689	1.64	0	0.00	0.00	0	0.00	0.00	39,521	79.54	1.79	
Stroke	59,390	1.96	26,824	45.17	13.36	9,436	15.89	3.68	23,130	38.95	1.05	
Thyroid trouble	4,388	0.14	0	0.00	0.00	0	0.00	0.00	4,388	100.00	0.20	
Tumor, cyst, or growth	19,110	0.63	0	0.00	0.00	0	0.00	0.00	10,223	53.50	0.46	
Other	362,777	11.96	3,894	1.07	1.94	22,966	6.33	8.95	274,649	75.71	12.41	
Total	3,033,372	100%	200,751	6.6%	100%	256,472	8.5%	100%	2,213,250	73.0%	100%	

Source: Data generated by Bureau of Economic Research, Rutgers University, from SIPP (1984) data.

Table 16a (con't)

Survey of Income and Program Participation

Table 15: Working-age persons with a work disability who do not have any private health insurance and the reason for the lack of coverage

Reason for lack of coverage

Health Condition Mainly Responsible for Work Limitation	Distrust of system			Healthy			VA or military coverage			Other		
	row pct	column pct		row pct	column pct		row pct	column pct		row pct	column pct	
Arthritis or rheumatism	0	0.00	0.00	6,402	2.27	11.71	16,241	5.75	6.11	0	0.00	0.00
Back or spine problems	7,231	1.07	21.76	16,652	2.46	30.46	40,566	5.99	15.25	0	0.00	0.00
Blindness or vision problems	8,420	9.82	25.34	0	0.00	0.00	9,488	11.07	3.57	0	0.00	0.00
Cancer	0	0.00	0.00	4,384	11.37	8.02	0	0.00	0.00	0	0.00	0.00
Deafness	0	0.00	0.00	0	0.00	0.00	4,834	19.95	1.82	0	0.00	0.00
Diabetes	0	0.00	0.00	819	0.61	1.50	3,894	2.91	1.46	4,723	3.53	52.61
Heart trouble	5,351	1.80	16.10	5,122	1.72	9.37	34,418	11.59	12.94	0	0.00	0.00
Hernia	0	0.00	0.00	0	0.00	0.00	4,868	10.33	1.83	0	0.00	0.00
High blood pressure	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Kidney stones or problems	0	0.00	0.00	0	0.00	0.00	4,103	7.99	1.54	4,255	8.28	47.39
Lung or respiratory problems	0	0.00	0.00	7,218	4.25	13.20	15,662	9.21	5.89	0	0.00	0.00
Mental illness	0	0.00	0.00	0	0.00	0.00	12,082	14.39	4.54	0	0.00	0.00
Mental retardation	5,389	7.45	16.22	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Missing appendages	0	0.00	0.00	0	0.00	0.00	5,653	15.51	2.13	0	0.00	0.00
Nervous or emotional problems	0	0.00	0.00	0	0.00	0.00	26,351	18.76	9.91	0	0.00	0.00
Paralysis (any type)	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Senility	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Stiffness of appendage	5,913	3.01	17.79	3,518	1.79	6.43	19,019	9.67	7.15	0	0.00	0.00
Stomach trouble	0	0.00	0.00	0	0.00	0.00	10,168	20.46	3.82	0	0.00	0.00
Stroke	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Thyroid trouble	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Tumor, cyst, or growth	0	0.00	0.00	0	0.00	0.00	8,887	46.50	3.34	0	0.00	0.00
Other	930	0.26	2.80	10,557	2.91	19.31	49,781	13.72	18.71	0	0.00	0.00
Total	33,234	1.1%	100%	54,672	1.8%	100%	266,015	8.8%		8,978	0.3%	

Table 16b

Table 15. Percent of persons with and without health-care coverage, by age and sociodemographic characteristics: United States, 1984—Con.

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in appendix I. Definitions of terms are given in appendix III.]

Characteristic	All ages	Under 65 years					65 years and over
		Total	Under 18 years	18-24 years	25-44 years	45-64 years	
Geographic region		Percent covered					
Northeast	90.8	89.6	90.9	80.0	89.4	93.5	99.3
North Central	89.9	88.7	90.0	78.9	89.4	92.2	99.3
South	84.2	82.3	81.7	71.4	83.7	88.1	99.0
West	83.6	81.8	82.8	70.1	81.8	88.0	99.0
Place of residence		Percent covered					
SMSA	87.7	86.4	87.0	75.8	86.8	91.4	99.1
Central city	85.0	83.2	84.2	71.5	83.4	89.2	98.9
Not central city	89.5	88.4	88.8	78.8	89.0	92.8	99.3
Not SMSA	85.5	83.4	83.8	72.8	84.0	88.2	99.1
NOT COVERED, ALL PERSONS ^{1,2}		Percent not covered					
	13.0	14.6	14.0	25.1	14.0	9.6	0.9
Sex		Percent not covered					
Male	13.9	15.3	14.1	28.0	15.4	8.7	0.7
Female	12.2	13.9	14.0	22.3	12.7	10.4	0.9
Race		Percent not covered					
White	12.0	13.6	13.4	23.8	13.1	8.6	0.8
Black	18.7	20.2	16.7	32.7	19.5	17.8	*1.7
Other	18.7	19.5	17.2	26.4	20.2	16.2	*4.0
Family income		Percent not covered					
Less than \$5,000	25.8	31.1	24.0	27.9	40.6	36.5	2.0
\$5,000-\$9,999	28.0	36.6	33.0	45.2	42.1	27.1	1.2
\$10,000-\$19,999	17.4	20.3	20.5	28.0	21.2	12.4	*0.3
\$20,000-\$34,999	6.7	7.1	6.2	17.4	6.3	4.7	*0.8
\$35,000-\$49,999	3.5	3.6	2.5	12.2	3.4	1.4	*0.4
\$50,000 or more	3.1	3.2	2.8	10.2	2.9	1.2	*0.3
Poverty status		Percent not covered					
In poverty	30.9	34.4	29.5	35.3	41.3	35.7	2.6
Not in poverty	9.3	10.3	9.1	21.0	10.0	6.4	0.5
Employment status ³		Percent not covered					
Currently employed	12.2	12.5	...	22.2	11.8	7.4	1.3
Unemployed	37.2	38.3	...	44.1	37.9	28.1	*1.0
Not in the labor force	10.3	16.8	...	26.2	17.2	12.2	0.8
Education ³		Percent not covered					
Less than 12 years	17.8	25.6	...	38.8	29.1	17.1	1.2
12 years	13.0	14.6	...	26.1	14.2	7.3	*0.4
More than 12 years	8.3	9.0	...	15.7	8.7	4.5	*0.5
Geographic region		Percent not covered					
Northeast	9.2	10.4	9.1	20.0	10.6	6.5	0.7
North Central	10.1	11.3	10.0	21.1	10.6	7.8	0.7
South	15.8	17.7	18.3	28.6	16.3	11.9	1.0
West	16.4	18.2	17.2	29.9	18.2	12.0	1.0
Place of residence		Percent not covered					
SMSA	12.3	13.6	13.0	24.2	13.2	8.6	0.9
Central city	15.0	16.8	15.8	28.5	16.6	10.8	1.1
Not central city	10.5	11.6	11.2	21.2	11.0	7.2	0.7
Not SMSA	14.5	16.6	16.2	27.2	16.0	11.8	0.9

¹Excludes persons with unknown health-care coverage status.

²Includes persons with unknown family income, poverty status, or education.

³Persons 18 years of age and over only.

Source: National Center for Health Statistics, "Health Care Coverage by Sociodemographic and Health Characteristics, United States, 1984", Data From the National Health Survey, Series 10, No. 162, Table 15, p. 40.

Table 17

Type of Health Insurance by Employment Status for Working Age Persons with a Work Disability, 1984
(in millions)

<u>Health Insurance Status</u>	<u>Employment Status</u>			
	Not Working	Part-Time	Full-Time	Total
Private only	4.0 (38.8%)	1.3 (65.0%)	4.6 (82.1%)	9.9 (55.3%)
Private and Medicare	0.8 (7.8%)	.03 (1.5%)	.05 (0.9%)	0.9 (5.0%)
Private and Medicaid	0.2 (1.9%)	.02 (1.0%)	.06 (1.1%)	0.3 (1.7%)
Medicare only	0.7 (6.8%)	.03 (1.5%)	.01 (0.2%)	0.7 (3.9%)
Medicaid only	2.1 (20.4%)	0.2 (10.0%)	0.2 (3.6%)	2.5 (14.0%)
Medicaid and Medicare	0.4 (3.9%)	.01 (0.5%)	.03 (0.5%)	0.4 (2.2%)
Other	0.2 (1.9%)	.03 (1.5%)	0.1 (1.8%)	0.3 (1.7%)
No Insurance	2.1 (20.4%)	0.4 (20.0%)	0.7 (12.5%)	3.2 (17.9%)
Total	10.3 (100%)	2.0 (100%)	5.6 (100%)	17.9 (100%)

Numbers here do not come to 100% because of rounding.

Source: Calculated from SIPP (1984)

Table 18 a

Survey of Income and Program Participation

Table 10: Unduplicated count of working-age persons ~~who need assistance~~ *with a work disability* by health condition and by employment status

Health Condition Mainly Responsible for Work Limitation	Employment Status											
	Total	column pct	Not Working	row pct	column pct	Worked less than full-time	row pct	column pct	Worked full-time	row pct	column pct	
Arthritis or rheumatism	1,799,273	10.02	1,086,000	60.36	10.50	219,981	12.23	11.12	493,292	27.42	8.76	
Back or spine problems	3,880,265	21.62	1,870,000	48.19	18.09	480,265	12.38	24.28	1,530,000	39.43	27.16	
Blindness or vision problems	480,673	2.68	301,114	62.64	2.91	48,008	9.99	2.43	131,551	27.37	2.34	
Cancer	327,452	1.82	212,516	64.90	2.06	43,985	13.43	2.22	70,951	21.67	1.26	
Deafness	295,143	1.64	105,688	0.00	1.02	45,985	0.00	2.32	143,470	0.00	2.55	
Diabetes	614,477	3.42	428,518	69.74	4.14	30,392	4.95	1.54	155,567	25.32	2.76	
Heart trouble	2,271,867	12.66	1,404,000	61.80	13.58	182,593	8.04	9.23	685,274	30.16	12.17	
Hernia	161,172	0.90	76232	0.00	4.30	5,910	0.00	0.30	79,030	0.00	1.40	
High blood pressure	665,563	3.71	444,153	66.73	1.26	64,371	9.67	3.25	157,039	23.59	2.79	
Kidney stones or problems	222,604	1.24	130,765	58.74	ERR	42,488	19.09	2.15	49,351	22.17	0.88	
Lung or respiratory problems	1,202,101	6.70	595,958	49.58	5.76	163,031	13.56	8.24	443,112	36.86	7.87	
Mental illness	408,527	2.28	339,516	83.11	3.28	29,626	7.25	1.50	39,385	9.64	0.70	
Mental retardation	519,686	2.90	348,024	66.97	3.37	75,621	14.55	3.82	96,041	18.48	1.70	
Missing appendages	156,566	0.87	85,710	54.74	0.83	9,880	6.31	0.50	60,976	38.95	1.08	
Nervous or emotional problems	560,652	3.12	414,549	73.94	4.01	62,319	11.12	3.15	83,784	14.94	1.49	
Paralysis (any type)	254,828	1.42	183,527	72.02	1.78	11,738	4.61	0.59	59,563	23.37	1.06	
Senility	31,567	0.18	27,387	86.76	0.26	0	0.00	0.00	4,180	13.24	0.07	
Stiffness of appendage	926,053	5.16	444,325	47.98	4.30	103,854	11.21	5.25	377,874	40.80	6.71	
Stomach trouble	274,282	1.53	170,262	62.08	1.65	23,228	8.47	1.17	80,792	29.46	1.43	
Stroke	383,430	2.14	322,525	84.12	3.12	19,317	5.04	0.98	41,588	10.85	0.74	
Thyroid trouble	36,482	0.20	32,320	0.00	0.31	4,162	11.41	0.21	0	0.00	0.00	
Tumor, cyst, or growth	104,457	0.58	67,122	64.26	0.65	4,748	4.55	0.24	32,587	31.20	0.58	
Other	2,372,055	13.22	1,248,000	52.61	12.07	306,473	12.92	15.49	817,582	34.47	14.51	
Total	17,949,175	100%	10,338,211		100%	1,977,975		100%	5,632,989		100%	

Source: Data generated by Bureau of Economic Research, Rutgers University, from SIPP (1984) data.

Survey of Income and Program Participation

Table 10: Working-age persons with a work disability by employment status
and insurance coverage-(a) Did Not Work

Health Condition Mainly Responsible for Work Limitation	Total	column pct	Private only row pct	column pct	Private & Medicare row pct	column pct	Private & Medicaid row pct	column pct			
Arthritis or rheumatism	1,086,000	10.50	574,339	52.89	14.48	60,763	5.60	7.46	22,320	2.06	9.77
Back or spine problems	1,870,000	18.09	763,583	40.83	19.25	130,016	6.95	15.97	29,320	1.57	12.84
Blindness or vision problems	301,114	2.91	93,615	31.09	2.36	33,909	11.26	4.17	8,239	2.74	3.61
Cancer	212,516	2.06	12,681	5.97	0.32	15,969	7.51	1.96	0	0.00	0.00
Deafness	105,688	1.02	41,515	39.28	1.05	0	0.00	0.00	3,964	3.75	1.74
Diabetes	428,518	4.14	187,053	43.65	4.72	27,844	6.50	3.42	4,721	1.10	2.07
Heart trouble	1,404,000	13.58	612,682	43.64	15.45	196,104	13.97	24.09	21,220	1.51	9.29
Hernia	76,232	0.74	29,568	38.79	0.75	0	0.00	0.00	0	0.00	0.00
High blood pressure	444,153	4.30	171,744	38.67	4.33	4,660	1.05	0.57	3,594	0.81	1.57
Kidney stones or problems	130,765	1.26	35,225	26.94	0.89	18,036	13.79	2.22	0	0.00	0.00
Lung or respiratory problems	595,958	5.76	197,795	33.19	4.99	71,311	11.97	8.76	17,936	3.01	7.85
Mental illness	339,516	3.28	66,492	19.58	1.68	20,747	6.11	2.55	4,941	1.46	2.16
Mental retardation	348,024	3.37	56,671	16.28	1.43	5,340	1.53	0.66	46,064	13.24	20.17
Missing appendages	85,710	0.83	23,109	26.96	0.58	6,981	8.14	0.86	0	0.00	0.00
Nervous or emotional problems	414,549	4.01	90,205	21.76	2.27	18,201	4.39	2.24	0	0.00	0.00
Paralysis (any type)	183,527	1.78	59,240	32.28	1.49	5,067	2.76	0.62	0	0.00	0.00
Senility	27,387	0.26	12,491	45.61	0.31	4,535	16.56	0.56	0	0.00	0.00
Stiffness of appendage	444,325	4.30	197,308	44.41	4.98	17,170	3.86	2.11	3,378	0.76	1.48
Stomach trouble	170,262	1.65	75,104	44.11	1.89	8,465	4.97	1.04	0	0.00	0.00
Stroke	322,525	3.12	127,883	39.65	3.22	47,007	14.57	5.77	0	0.00	0.00
Thyroid trouble	32,320	0.31	17,469	54.05	0.44	0	0.00	0.00	0	0.00	0.00
Tumor, cyst, or growth	67,122	0.65	25,435	37.89	0.64	0	0.00	0.00	4,370	6.51	1.91
Other	1,248,000	12.07	494,544	39.63	12.47	121,984	9.77	14.98	58,348	4.68	25.54
Total	10,338,211	100%	3,965,751		100%	814,109		100%	228,415		100%

Survey of Income and Program Participation

Table 10: Working-age persons with a work disability by employment status
and insurance coverage: (a) Did Not Work

Health Condition Mainly Responsible for Work Limitation	Medicare only			Medicaid only			Medicaid & Medicare			Other			No Insurance		
	row pct	column pct		row pct	column pct		row pct	column pct		row pct	column pct		row pct	column pct	
Arthritis or rheumatism	44,889	4.13	6.36	140,602	12.95	6.69	36,703	3.38	8.27	24,093	2.22	11.51	208,267	19.18	9.83
Back or spine problems	95,374	5.10	13.50	340,124	18.19	16.18	83,332	4.46	18.78	50,223	2.69	23.99	412,175	22.04	19.45
Blindness or vision problems	5,631	1.87	0.80	83,364	27.69	3.97	25,903	8.60	5.84	0	0.00	0.00	70,209	23.32	3.31
Cancer	12,761	6.00	1.81	27,424	12.90	1.30	8,132	3.83	1.83	0	0.00	0.00	21,408	10.07	1.01
Deafness	14,654	13.87	2.07	25,366	24.00	1.21	4,225	4.00	0.95	0	0.00	0.00	19,926	18.85	0.94
Diabetes	18,424	4.30	2.61	66,744	15.58	3.17	3,980	0.93	0.90	9,238	2.16	4.41	105,322	24.58	4.97
Heart trouble	132,523	9.44	18.77	140,694	10.02	6.69	57,046	4.06	12.86	32,163	2.29	15.36	236,278	16.83	11.15
Hernia	4,104	5.38	0.58	6,084	7.98	0.29	0	0.00	0.00	0	0.00	0.00	36,474	47.85	1.72
High blood pressure	3,747	0.84	0.53	116,262	26.18	5.53	14,058	3.17	3.17	8,679	1.95	4.15	128,111	28.84	6.05
Kidney stones or problems	8,438	6.45	1.19	22,580	17.27	1.07	15,883	12.15	3.58	1,320	1.01	0.63	29,280	22.39	1.38
Lung or respiratory problems	22,434	3.76	3.18	192,410	32.29	9.15	17,651	2.96	3.98	7,886	1.32	3.77	88,098	14.78	4.16
Mental illness	26,282	7.74	3.72	108,551	31.97	5.16	32,353	9.53	7.29	10,713	3.16	5.12	77,864	22.93	3.67
Mental retardation	34,156	9.81	4.84	150,262	43.18	7.15	58,574	16.83	13.20	0	0.00	0.00	30,043	8.63	1.42
Missing appendages	22,837	26.64	3.23	5,269	6.15	0.25	5,518	6.44	1.24	0	0.00	0.00	21,993	25.66	1.04
Nervous or emotional problems	44,763	10.80	6.34	122,213	29.48	5.81	16,717	4.03	3.77	3,907	0.94	1.87	118,540	28.59	5.59
Paralysis (any type)	34,134	18.60	4.83	32,774	17.86	1.56	23,677	12.90	5.34	0	0.00	0.00	23,679	12.90	1.12
Senility	10,360	37.83	1.47	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Stiffness of appendage	13,619	3.07	1.93	76,521	17.22	3.64	4,161	0.94	0.94	3,880	0.87	1.85	128,284	28.87	6.05
Stomach trouble	52,566	30.87	7.44	43,282	25.42	2.06	0	0.00	0.00	4,231	2.48	2.02	43,503	25.55	2.05
Stroke	0	0.00	0.00	42,435	13.16	2.02	3,870	1.20	0.87	4,706	1.46	2.25	44,130	13.68	2.08
Thyroid trouble	4,575	14.16	0.65	10,275	31.79	0.49	0	0.00	0.00	0	0.00	0.00	4,388	13.58	0.21
Tumor, cyst, or growth	17,446	25.99	2.47	8,802	13.11	0.42	0	0.00	0.00	0	0.00	0.00	11,068	16.49	0.52
Other	82,506	6.61	11.68	250,194	20.05	11.90	31,841	2.55	7.18	48,330	3.87	23.08	260,201	20.85	12.28
Total	706,223	100%		2,102,232	100%		443,624			209,369			2,119,241		

Table 18 c
Survey of Income and Program Participation

Table 10: Working-age persons with a work disability by employment status
and insurance coverage (b) Employed less than full-time

Health Condition Mainly Responsible for Work Limitation	Total	column pct	Private only	row pct	column pct	Private & Medicare	row pct	column pct	Private & Medicaid	row pct	column pct
Arthritis or rheumatism	219,981	11.12	178,806	81.28	13.73	0	0.00	0.00	0	0.00	0.00
Back or spine problems	480,265	24.28	363,922	75.78	27.94	0	0.00	0.00	0	0.00	0.00
Blindness or vision problems	48,008	2.43	35,748	74.46	2.74	0	0.00	0.00	0	0.00	0.00
Cancer	43,985	2.22	39,048	88.78	3.00	0	0.00	0.00	0	0.00	0.00
Deafness	45,985	2.32	30,654	66.66	2.35	0	0.00	0.00	4,919	10.70	19.54
Diabetes	30,392	1.54	6,884	22.65	0.53	0	0.00	0.00	0	0.00	0.00
Heart trouble	182,593	9.23	161,000	88.17	12.36	0	0.00	0.00	0	0.00	0.00
Hernia	5,910	0.30	5,910	100.00	0.45	0	0.00	0.00	0	0.00	0.00
High blood pressure	64,371	3.25	25,208	39.16	1.94	0	0.00	0.00	0	0.00	0.00
Kidney stones or problems	42,488	2.15	13,712	32.27	1.05	5,632	13.26	18.79	0	0.00	0.00
Lung or respiratory problems	163,031	8.24	103,328	63.38	7.93	0	0.00	0.00	3,066	1.88	12.18
Mental illness	29,626	1.50	7,747	26.15	0.59	4,167	14.07	13.91	4,167	14.07	16.55
Mental retardation	75,621	3.82	26,940	35.63	2.07	5,894	7.79	19.67	11,837	15.65	47.02
Missing appendages	9,880	0.50	4,282	43.34	0.33	0	0.00	0.00	0	0.00	0.00
Nervous or emotional problems	62,319	3.15	5,630	9.03	0.43	0	0.00	0.00	1,184	1.90	4.70
Paralysis (any type)	11,738	0.59	7,349	62.61	0.56	0	0.00	0.00	0	0.00	0.00
Senility	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Stiffness of appendage	103,854	5.25	46,150	44.44	3.54	7,975	7.68	26.61	0	0.00	0.00
Stomach trouble	23,228	1.17	21,293	91.67	1.63	1,934	8.33	6.45	0	0.00	0.00
Stroke	19,317	0.98	19,317	100.00	1.48	0	0.00	0.00	0	0.00	0.00
Thyroid trouble	4,162	0.21	4,162	0.00	0.32	0	0.00	0.00	0	0.00	0.00
Tumor, cyst, or growth	4,748	0.24	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Other	306,473	15.49	192,347	62.76	14.76	4,365	1.42	14.57	0	0.00	0.00
Total	1,977,975	100%	1,302,737		100%	29,967		100%	25,173		100%

Table 18c(con't)

Survey of Income and Program Participation

Table 10: Working-age persons with a work disability by employment status
and insurance coverage (b) Employed less than full-time

Health Condition Mainly Responsible for Work Limitation	Medicare			Medicaid			Medicaid & Medicare			Other			No Insurance		
	only	row pct	column pct	only	row pct	column pct	only	row pct	column pct	only	row pct	column pct	only	row pct	column pct
Arthritis or rheumatism	6,550	2.98	21.00	11,290	3.68	7.03	0	0.00	0.00	0	0.00	0.00	23,334	10.61	5.55
Back or spine problems	0	0.00	0.00	20,465	6.68	12.75	0	0.00	0.00	3,307	0.69	11.43	92,569	19.27	22.02
Blindness or vision problems	0	0.00	0.00	8,827	2.88	5.50	0	0.00	0.00	0	0.00	0.00	3,432	7.15	0.82
Cancer	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	4,937	11.22	1.17
Deafness	0	0.00	0.00	5,972	1.95	3.72	0	0.00	0.00	0	0.00	0.00	5,530	12.03	1.32
Diabetes	3,441	0.00	11.03	0	0.00	0.00	0	0.00	0.00	5,049	16.61	17.44	15,017	49.41	3.57
Heart trouble	0	0.00	0.00	2,467	0.80	1.54	4,592	2.51	31.34	0	0.00	0.00	14,533	7.96	3.46
Hernia	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
High blood pressure	0	0.00	0.00	14,585	4.76	9.09	0	0.00	0.00	6,415	9.97	22.16	22,315	34.67	5.31
Kidney stones or problems	0	0.00	0.00	5,485	1.79	3.42	0	0.00	0.00	0	0.00	0.00	17,658	41.56	4.20
Lung or respiratory problems	0	0.00	0.00	13,482	4.40	8.40	0	0.00	0.00	4,301	2.64	14.86	41,918	25.71	9.97
Mental illness	0	0.00	0.00	12,853	4.19	8.01	4,167	14.07	28.44	0	0.00	0.00	4,858	16.40	1.16
Mental retardation	6,768	8.95	21.70	11,238	3.67	7.00	5,894	7.79	40.22	0	0.00	0.00	22,792	30.14	5.42
Missing appendages	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Nervous or emotional problems	5,187	8.32	16.63	9,880	3.22	6.15	0	0.00	0.00	5,452	8.75	18.84	30,021	48.17	7.14
Paralysis (any type)	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	4,388	37.38	1.04
Senility	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Stiffness of appendage	0	0.00	0.00	19,905	6.49	12.40	0	0.00	0.00	4,420	4.26	15.27	31,749	30.57	7.55
Stomach trouble	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Stroke	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Thyroid trouble	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Tumor, cyst, or growth	0	0.00	0.00	3,603	1.18	2.24	0	0.00	0.00	0	0.00	0.00	1,144	24.09	0.27
Other	9,247	3.02	29.64	20,473	6.68	12.75	0	0.00	0.00	0	0.00	0.00	84,254	27.49	20.04
Total	31,193	100%	100%	160,525	100%	100%	14,653	100%	100%	28,944	100%	100%	420,449	100%	100%

Survey of Income and Program Participation

Table 10: Working-age persons with a work disability by employment status
and insurance coverage (c) Employed full-time

Health Condition Mainly Responsible for Work Limitation	Total	column pct	Private only	row pct	column pct	Private & Medicare	row pct	column pct	Private & Medicaid	row pct	column pct
Arthritis or rheumatism	493,292	8.76	408,000	82.71	8.78	4,695	0.95	9.22	0	0.00	0.00
Back or spine problems	1,530,000	27.16	1,301,000	85.03	28.01	0	0.00	0.00	4,349	0.28	7.46
Blindness or vision problems	131,551	2.34	91,793	69.78	1.98	10,880	8.27	21.36	10,666	8.11	18.30
Cancer	70,951	1.26	54,044	76.17	1.16	0	0.00	0.00	0	0.00	0.00
Deafness	143,470	2.55	129,693	90.40	2.79	5,117	3.57	10.05	5,117	3.57	8.78
Diabetes	155,567	2.76	140,089	90.05	3.02	1,992	1.28	3.91	1,992	1.28	3.42
Heart trouble	685,274	12.17	588,287	85.85	12.66	8,833	1.29	17.34	6,376	0.93	10.94
Hernia	79,030	1.40	63,506	80.36	1.37	0	0.00	0.00	0	0.00	0.00
High blood pressure	157,039	2.79	137,378	87.48	2.96	0	0.00	0.00	0	0.00	0.00
Kidney stones or problems	49,351	0.88	40,464	81.99	0.87	0	0.00	0.00	0	0.00	0.00
Lung or respiratory problems	443,112	7.87	358,355	80.87	7.71	0	0.00	0.00	0	0.00	0.00
Mental illness	39,385	0.70	33,336	84.64	0.72	0	0.00	0.00	0	0.00	0.00
Mental retardation	96,041	1.70	33,978	35.38	0.73	10,981	11.43	21.56	4,677	4.87	8.02
Missing appendages	60,976	1.08	41,694	68.38	0.90	0	0.00	0.00	0	0.00	0.00
Nervous or emotional problems	83,784	1.49	71,230	85.02	1.53	4,036	4.82	7.92	4,036	4.82	6.92
Paralysis (any type)	59,563	1.06	43,438	72.93	0.94	0	0.00	0.00	0	0.00	0.00
Senility	4,180	0.07	4,180	100.00	0.09	0	0.00	0.00	0	0.00	0.00
Stiffness of appendage	377,874	6.71	313,448	82.95	6.75	0	0.00	0.00	0	0.00	0.00
Stomach trouble	80,792	1.43	69,882	86.50	1.50	0	0.00	0.00	4,782	5.92	8.20
Stroke	41,588	0.74	37,121	89.26	0.80	0	0.00	0.00	0	0.00	0.00
Thyroid trouble	0	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Tumor, cyst, or growth	32,587	0.58	20,742	63.65	0.45	0	0.00	0.00	0	0.00	0.00
Other	817,582	14.51	663,727	81.18	14.29	4,405	0.54	8.65	16,299	1.99	27.96
Total	5,632,989	100%	4,645,385		100%	50,939		100%	58,294		100%

Table 18d (con't)

Survey of Income and Program Participation

Table 10: Working-age persons with a work disability by employment status
and insurance coverage (c) Employed full-time

Health Condition Mainly Responsible for Work Limitation	Medicare only			Medicaid only			Medicaid & Medicare			Other			No Insurance		
	row pct	column pct		row pct	column pct		row pct	column pct		row pct	column pct		row pct	column pct	
Arthritis or rheumatism	0	0.00	0.00	7,070	0.86	2.85	0	0.00	0.00	13,674	2.77	14.15	59,852	12.13	8.89
Back or spine problems	0	0.00	0.00	13,524	1.65	5.44	0	0.00	0.00	24,780	1.62	25.65	195,771	12.80	29.08
Blindness or vision problems	0	0.00	0.00	2,308	0.28	0.93	0	0.00	0.00	0	0.00	0.00	18,211	13.84	2.70
Cancer	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	4,690	6.61	4.85	12,217	17.22	1.81
Deafness	0	0.00	0.00	4,397	0.54	1.77	5,117	3.57	14.49	0	0.00	0.00	4,263	2.97	0.63
Diabetes	0	0.00	0.00	0	0.00	0.00	1,992	1.28	5.64	0	0.00	0.00	13,484	8.67	2.00
Heart trouble	0	0.00	0.00	141,155	17.26	56.83	4,502	0.66	12.75	12,932	1.89	13.38	52,151	7.61	7.75
Hernia	0	0.00	0.00	4,851	0.59	1.95	0	0.00	0.00	0	0.00	0.00	10,672	13.50	1.59
High blood pressure	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	19,661	12.52	2.92
Kidney stones or problems	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	8,886	18.01	1.32
Lung or respiratory problems	0	0.00	0.00	11,578	1.42	4.66	0	0.00	0.00	13,909	3.14	14.40	55,119	12.44	8.19
Mental illness	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	6,049	15.36	0.90
Mental retardation	8,644	9.00	62.93	12,297	1.50	4.95	15,268	15.90	43.23	0	0.00	0.00	19,548	20.35	2.90
Missing appendages	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	4,828	7.92	5.00	14,453	23.70	2.15
Nervous or emotional problems	0	0.00	0.00	5,472	0.67	2.20	4,036	4.82	11.43	0	0.00	0.00	3,045	3.63	0.45
Paralysis (any type)	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	16,125	27.07	2.40
Senility	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Stiffness of appendage	0	0.00	0.00	11,288	1.38	4.54	0	0.00	0.00	0	0.00	0.00	53,138	14.06	7.89
Stomach trouble	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	6,186	7.66	0.92
Stroke	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	4,466	10.74	4.62	0	0.00	0.00
Thyroid trouble	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
Tumor, cyst, or growth	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	4,948	15.18	5.12	6,897	21.16	1.02
Other	5,092	0.62	37.07	34,454	4.21	13.87	4,405	0.54	12.47	12,393	1.52	12.83	97,508	11.93	14.48
Total	13,736	100%		248,394	100%		35,320			96,620			673,236		

Table 19a: Health insurance status of working-age persons with a work disability who are on SSI or SSDI

Type of health insurance							
Private only	Private & Medicare	Private & Medicaid	Medicare only	Medicaid only	Medicaid & Medicare	Other	No Insurance

Health condition
mainly responsible for
work limitation

Total

Source: SIPP (1984) to be added

Table 19b: Health insurance status of persons 18-61 with a work disability who are on SSDI as disabled workers but do not receive Medicare presumably because of the two year waiting period

Health condition mainly responsible for work limitation	Type of health insurance							Other	No Insurance
	Private only	Private & Medicare	Private & Medicaid	Medicare only	Medicaid only	Medicaid & Medicare			
Total									

Source: SIPP (1984) to be added

Table 19c: Health insurance status of working-age persons with a work disability who are not on SSI or SSDI and are not employed

	Type of health insurance							No Insurance
	Private only	Private & Medicare	Private & Medicaid	Medicare only	Medicaid only	Medicaid & Medicare	Other	
Health condition mainly responsible for work limitation								

Total

Source: SIPP (1984) to be added

Table 20

Survey of Income and Program Participation

Table 17(a): All working-age persons with a work disability by health condition and time of occurrence: before working age or during working age

Health Condition Mainly Responsible for Work Disability	Time of occurrence						Total
	Before working age	row percent	column percent	During working age	row percent	column percent	
Arthritis or rheumatism	35,394	1.97	1.60	1,764,000	98.03	11.21	1,799,394
Back or spine problems	169,762	4.37	7.69	3,711,000	95.63	23.58	3,880,762
Blindness or vision problems	129,503	26.94	5.86	351,171	73.06	2.23	480,674
Cancer	10,573	3.23	0.48	316,881	96.77	2.01	327,454
Deafness	176,934	59.95	8.01	118,210	40.05	0.75	295,144
Diabetes	50,927	8.29	2.31	563,551	91.71	3.58	614,478
Heart trouble	126,222	5.56	5.72	2,146,000	94.44	13.63	2,272,222
Hernia	10,147	6.30	0.46	151,026	93.70	0.96	161,173
High blood pressure	41,700	6.27	1.89	623,864	93.73	3.96	665,564
Kidney stones or problems	21,010	9.44	0.95	201,594	90.56	1.28	222,604
Lung or respiratory problems	227,379	18.92	10.30	974,722	81.08	6.19	1,202,101
Mental illness	41,683	10.20	1.89	366,844	89.80	2.33	408,527
Mental retardation	459,684	88.52	20.82	59,641	11.48	0.38	519,325
Missing appendages	24,996	15.97	1.13	131,571	84.03	0.84	156,567
Nervous or emotional problems	93,196	16.62	4.22	467,457	83.38	2.97	560,653
Paralysis (any type)	77,266	30.32	3.50	177,563	69.68	1.13	254,829
Senility	5,837	18.49	0.26	25,731	81.51	0.16	31,568
Stiffness of appendage	93,003	10.08	4.21	830,051	89.92	5.27	923,054
Stomach trouble	15,986	5.83	0.72	258,296	94.17	1.64	274,282
Stroke	9,590	2.50	0.43	373,841	97.50	2.38	383,431
Thyroid trouble	0	0.00	0.00	36,482	100.00	0.23	36,482
Tumor, cyst, or growth	4,370	4.15	0.20	100,888	95.85	0.64	105,258
Other	383,158	16.15	17.35	1,989,000	83.85	12.64	2,372,158
Total	2,208,320	12.3%	100%	15,739,384	87.7%	100%	17,947,704

Source: Data generated by Bureau of Economic Research, Rutgers University, from SIPP (1984) data.

Table 21

Survey of Income and Program Participation

Table 17(b): All working-age persons with a work disability by health condition and by employment status at time of occurrence: employed or unemployed

Health Condition Mainly Responsible for Work Disability	Employment status at time of occurrence						Total
	Employed	row percent	column percent	Unemployed	row percent	column percent	
Arthritis or rheumatism	1,146,000	64.96	10.12	618,181	35.04	13.99	1,764,181
Back or spine problems	2,996,000	80.74	26.47	714,562	19.26	16.17	3,710,562
Blindness or vision problems	224,696	63.98	1.99	126,474	36.02	2.86	351,170
Cancer	200,929	63.41	1.78	115,962	36.59	2.62	316,891
Deafness	69,816	59.06	0.62	48,394	40.94	1.10	118,210
Diabetes	355,111	63.01	3.14	208,439	36.99	4.72	563,550
Heart trouble	1,690,000	78.77	14.93	455,404	21.23	10.31	2,145,404
Hernia	99,218	65.70	0.88	51,807	34.30	1.17	151,025
High blood pressure	352,212	56.46	3.11	271,651	43.54	6.15	623,863
Kidney stones or problems	137,567	68.24	1.22	64,026	31.76	1.45	201,593
Lung or respiratory problems	744,975	76.43	6.58	229,747	23.57	5.20	974,722
Mental illness	202,923	55.32	1.79	163,921	44.68	3.71	366,844
Mental retardation	10,328	17.32	0.09	49,313	82.68	1.12	59,641
Missing appendages	90,817	69.03	0.80	40,754	30.97	0.92	131,571
Nervous or emotional problems	297,941	63.74	2.63	169,515	36.26	3.84	467,456
Paralysis (any type)	114,261	64.35	1.01	63,301	35.65	1.43	177,562
Senility	17,042	66.23	0.15	8,688	33.77	0.20	25,730
Stiffness of appendage	648,367	78.11	5.73	181,684	21.89	4.11	830,051
Stomach trouble	179,894	69.65	1.59	78,401	30.35	1.77	258,295
Stroke	267,906	71.66	2.37	105,934	28.34	2.40	373,840
Thyroid trouble	23,044	63.17	0.20	13,438	36.83	0.30	36,482
Tumor, cyst, or growth	70,794	70.73	0.63	29,293	29.27	0.66	100,087
Other	1,379,000	69.34	12.18	609,826	30.66	13.80	1,988,826
Total	11,318,841	63.1%	100%	4,418,715		100%	17,950,704

Source: Data generated by Bureau of Economic Research, Rutgers University, from SIPP (1984) data.

Table 22

Survey of Income and Program Participation

Table 17(c): All working-age persons with a work disability by health condition and whether the injury was due to an accident

Health Condition Mainly Responsible for Work Disability	Injury due to accident?						Total
	Yes	row percent	column percent	No	row percent	column percent	
Arthritis or rheumatism	335,906	18.66	6.60	1,464,000	81.34	11.38	1,799,906
Back or spine problems	2,508,000	64.64	49.28	1,372,000	35.36	10.67	3,880,000
Blindness or vision problems	86,931	18.09	1.71	393,743	81.91	3.06	480,674
Cancer	6,046	1.85	0.12	321,408	98.15	2.50	327,454
Deafness	48,856	16.55	0.96	246,288	83.45	1.92	295,144
Diabetes	9,753	1.59	0.19	604,724	98.41	4.70	614,477
Heart trouble	53,741	2.37	1.06	2,218,000	97.63	17.25	2,271,741
Hernia	48,914	30.35	0.96	112,259	69.65	0.87	161,173
High blood pressure	32,869	4.94	0.65	632,694	95.06	4.92	665,563
Kidney stones or problems	42,812	3.52	0.84	179,792	14.80	1.40	1,214,812
Lung or respiratory problems	29,706	2.47	0.58	1,172,000	97.53	2.65	1,201,706
Mental illness	68,052	12.25	1.34	340,476	61.31	2.65	555,320
Mental retardation	32,058	6.17	0.63	487,268	93.83	3.79	519,326
Missing appendages	115,344	73.67	2.27	41,222	26.33	0.32	156,566
Nervous or emotional problems	67,850	12.10	1.33	492,802	87.90	3.83	560,652
Paralysis (any type)	104,282	40.92	2.05	150,546	59.08	1.17	254,828
Senility	4,523	14.33	0.09	27,045	85.67	0.21	31,568
Stiffness of appendage	660,170	71.29	12.97	265,884	28.71	2.07	926,054
Stomach trouble	6,962	2.54	0.14	267,321	97.46	2.08	274,283
Stroke	18,594	4.85	0.37	364,836	95.15	2.84	383,430
Thyroid trouble	0	0.00	0.00	36,482	100.00	0.28	36,482
Tumor, cyst, or growth	8,042	7.70	0.16	96,417	92.30	0.75	104,459
Other	799,640	33.70	15.71	1,573,000	66.30	12.23	2,372,640
Total	5,089,051	28.3%	100%	12,860,207	71.6%	100%	17,949,258

Source: Data generated by Bureau of Economic Research, Rutgers University, from SIPP (1984) data.

Table 23

Survey of Income and Program Participation

Table 17(d): All working-age persons with a work disability by health condition and cause of accident

Health Condition Mainly Responsible for Work Disability	Place of occurrence												Total
	On the job	row pct	column pct	Military service	row pct	column pct	In the home	row pct	column pct	Somewhere else	row pct	column pct	
Arthritis or rheumatism	158,569	47.20	6.84	28,069	8.35	5.84	43,559	12.97	8.05	105,761	31.48	6.05	335,958
Back or spine problems	1,385,000	55.22	59.72	143,037	5.70	29.75	229,337	9.14	42.39	750,961	29.94	42.95	2,508,335
Blindness or vision problems	12,876	14.81	0.56	0	0.00	0.00	16,061	18.48	2.97	57,994	66.71	3.32	86,931
Cancer	1,108	18.33	0.05	4,937	81.67	1.03	0	0.00	0.00	0	0.00	0.00	6,045
Deafness	3,318	6.79	0.14	20,660	42.29	4.30	4,573	9.36	0.85	20,304	41.56	1.16	48,855
Diabetes	5,111	52.40	0.22	0	0.00	0.00	0	0.00	0.00	4,642	47.60	0.27	9,753
Heart trouble	8,473	15.77	0.37	12,590	23.43	2.62	4,025	7.49	0.74	28,652	53.32	1.64	53,740
Hernia	33,129	67.73	1.43	0	0.00	0.00	6,084	12.44	1.12	9,700	19.83	0.55	48,913
High blood pressure	12,752	38.80	0.55	9,867	30.02	2.05	10,250	31.18	1.89	0	0.00	0.00	32,869
Kidney stones or problems	4,255	9.94	0.18	0	0.00	0.00	15,858	37.04	2.93	22,698	53.02	1.30	42,811
Lung or respiratory problems	9,816	33.04	0.42	0	0.00	0.00	3,229	10.87	0.60	16,660	56.08	0.95	29,705
Mental illness	31,256	45.93	1.35	12,298	18.07	2.56	2,322	3.41	0.43	22,175	32.59	1.27	68,051
Mental retardation	8,313	25.93	0.36	0	0.00	0.00	5,236	16.33	0.97	18,508	57.73	1.06	32,057
Missing appendages	34,755	30.13	1.50	16,079	13.94	3.34	0	0.00	0.00	64,509	55.93	3.69	115,343
Nervous or emotional problems	13,207	19.46	0.57	21,067	31.04	4.38	13,141	19.36	2.43	20,463	30.15	1.17	67,878
Paralysis (any type)	19,872	19.06	0.86	18,504	17.74	3.85	4,645	4.45	0.86	61,260	58.75	3.50	104,281
Senility	4,523	100.00	0.20	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	4,523
Stiffness of appendage	264,877	40.12	11.42	90,608	13.72	18.84	75,527	11.44	13.96	229,156	34.71	13.11	660,168
Stomach trouble	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	6,962	100.00	0.40	6,962
Stroke	9,157	49.25	0.39	0	0.00	0.00	0	0.00	0.00	9,437	50.75	0.54	18,594
Thyroid trouble	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0
Tumor, cyst, or growth	1,144	14.23	0.05	6,897	85.77	1.43	0	0.00	0.00	0	0.00	0.00	8,041
Other	297,523	37.21	12.83	96,259	12.04	20.02	107,128	13.40	19.80	298,729	37.36	17.08	799,639
Total	2,319,034	45.6%	100%	480,872	9.4%	100%	540,975	10.6%		1,748,571	34.4%		5,089,452

Source: Data generated by Bureau of Economic Research, Rutgers University, from SIPP (1984) data.

Table 3: Health Care Utilization Per Person Per Year For Severely Disabled Persons Compared to Non-Disabled Persons
As Reported in Various National Surveys Conducted 1972-1980

	Mean for Severely Disabled	Mean for Non-disabled	Ratio of Severely Disabled to Non-disabled	Age Range	Survey	Reference
I. Hospital care						
A. Mean no. of hospital visits for persons with one or more hospital episodes	4.1 visits	1.9 visits	2.2	18-64	NMCUES (1980)	Table 3, pg. 8
B. Average no. of hospital days per person for persons with one or more hospital episodes	6.6 days	.7 days	9.4	18-64	NMCUES (1980)	Table 3, pg. 8
C. % males with one or more short-stay hospital episodes	32.3%	5.4%	6.0	17-44	NHIS (1979)	Table 9, pg. 20
D. % males with one or more short-stay hospital episodes	30.8%	7.6%	4.1	45-64	NHIS (1979)	Table 9, pg. 20
E. % females with one or more short-stay hospital episodes	44.8%	14.4%	3.1	17-44	NHIS (1979)	Table 9, pg. 20
F. % females with one or more short-stay hospital episodes	44.6%	7.6%	5.9	45-64	NHIS (1979)	Table 9, pg. 20
G. Average length of stay for males with at least one event	20.2 days	5.3 Days	3.8	17-44	NHIS (1979)	Table 8, pg. 19
H. % not hospitalized within year	72.4%	90.2%	0.8	20-64	SSA (1972)	Table F, pg. 87
I. % hospitalized for one stay only	18.4%	9.1%	2.0	20-64	SSA (1972)	Table F, pg. 87
J. % hospitalized for three or more stays	3.5%	0.1%	35.0	20-64	SSA (1972)	Table F, pg. 87
K. % hospitalized for 31 days or more	17.7%	1.5%	11.8	20-64	SSA (1972)	Table 1, pg. 96
II. Physician Care						
A. Mean no. of physician visits	11.5 visits	4.7 visits	2.4	18-64	NMCUES (1980)	Table 4, pg. 9
	16.0 visits	4.0 visits	4.0	17-44	NHIS (1979)	Table 2, pg. 13
B. Mean no. of physician office visits	10.1 visits	2.8 units	3.6	17-44	NHIS (1979)	Table 3, pg. 14
C. % persons with one or more physician visits	88.0%	64.0%	1.4	17-44	NHIS (1979)	Table 4, pg. 15
III. Prescribed Medicines						
A. Mean no. of prescribed medicines (weighted sum of the product of individual type of medicines and their corresponding quantities consumed (purchased))	21.5	5.9	3.6	18-64	NMCUES (1980)	Table 5, pg. 10

Sources:

NMCUES (1980), reported in Dean, David and Yates, Steven, "Medical Care Costs of Disabled Persons," unpublished paper, Bureau of Economic Research, Rutgers University, August 16, 1984.

NHIS (1979) reported in Vital and Health Statistics, "Health Characteristics of Persons with Chronic Activity Limitation: United States, 1979, Data from National Health Survey, Series 10, No. 137.

SSA (1972) reported in Social Security Administration, Disability Survey '72: Disabled and Nondisabled Adults, Research Report No. 56, April 1981.

Table 25

Annual Health Care Utilization by Degree of Activity Limitation
for Selected Health Services for Persons between 19-64 Years (1977)

Health Services	Not Limited	Not limited in major activity but otherwise limited	Limited in amount or kind of major activity	Unable to carry on major activity
Hospital admissions				
% with at least one event	11.8%	19.3%	24.6%	30.1%
% with three or more events	0.4%	1.2%	2.0%	3.9%
Ambulatory physician contacts				
% with at least one event	74.4%	89.8%	89.4%	86.2%
mean events per person with event	4.9 visits	8.0 visits	9.0 visits	11.1 vists
Non-physician health care personnel contacts				
% with at least one event	24.5%	36.6%	33.9%	29.8%
mean events per person with event	4.5 visits	5.3 visits	7.9 visits	8.9 visits
Prescribed medicines				
% with at least one event	60.5%	80.0%	83.7%	85.0%
mean events per person with event	6.1 drugs	12.4 drugs	15.7 drugs	20.4 drugs
Medical equipment and supplies				
% with at least one event	5.7%	10.7%	14.2%	13.8%
mean events per person with event	1.3	1.4	1.6	1.5

*Data from National Medical Care Expenditures Study (1977) analyzed by special request by National Center for Health Services Research.

Table 26

Table 1: (A) Annual Health Care Expenses by Degree of Activity Limitation
for Selected Health Services for Persons between 19-64 Years (1977)*

Health Services	Not Limited	Not limited in major activity but otherwise limited	Limited in amount or kind of major activity	Unable to carry on major activity
Inpatient hospital	\$154	\$519	\$622	\$936
Ambulatory physician contacts	\$ 98	\$187	\$215	\$269
Non-physician ambulatory care	\$ 17	\$ 27	\$ 37	\$ 58
Prescribed medicines	\$ 22	\$ 62	\$ 87	\$112
Medical equipment and supplies	\$ 3	\$ 9	\$ 12	\$ 18

Source: Data from National Medical Care Expenditures Study (1977) analyzed by special request by National Center for Health Services Research.

Table 27

Medical Care Expenditures and Utilization for Disabled Persons

MEDICAL EXPENDITURES	UTILIZATION										NUMBER OF PERSONS			
	Total Medical Cost	Post-hospital Cost	Hospital Out-of-Pocket Cost	Post-hospital Cost	Post-hospital Cost	Post-hospital Cost	Post-hospital Cost	Post-hospital Cost	Post-hospital Cost	Post-hospital Cost	Hospital Visits	Post-hospital Visits	Post-hospital Visits	Post-hospital Visits
ALL COND.	12,772.12	12,166.27	11,567.42	11,728.46	11,745.08	11,728.46	11,745.08	11,728.46	11,745.08	11,728.46	11,728.46	11,745.08	11,728.46	11,745.08
NO COND.	1407.26	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46
CIRCULTRY	12,772.12	12,166.27	11,567.42	11,728.46	11,745.08	11,728.46	11,745.08	11,728.46	11,745.08	11,728.46	11,728.46	11,745.08	11,728.46	11,745.08
DISECTIVE	1407.26	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46
MUSCULTRY	12,772.12	12,166.27	11,567.42	11,728.46	11,745.08	11,728.46	11,745.08	11,728.46	11,745.08	11,728.46	11,728.46	11,745.08	11,728.46	11,745.08
NEUROPLASTIC	1407.26	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46
RESPIRTRY	12,772.12	12,166.27	11,567.42	11,728.46	11,745.08	11,728.46	11,745.08	11,728.46	11,745.08	11,728.46	11,728.46	11,745.08	11,728.46	11,745.08
SENSORY	1407.26	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46
SKIN	12,772.12	12,166.27	11,567.42	11,728.46	11,745.08	11,728.46	11,745.08	11,728.46	11,745.08	11,728.46	11,728.46	11,745.08	11,728.46	11,745.08
TRAUMA	1407.26	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46
UNIDENT.	12,772.12	12,166.27	11,567.42	11,728.46	11,745.08	11,728.46	11,745.08	11,728.46	11,745.08	11,728.46	11,728.46	11,745.08	11,728.46	11,745.08
BACTERIAL	1407.26	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46
CARDIOVASC.	12,772.12	12,166.27	11,567.42	11,728.46	11,745.08	11,728.46	11,745.08	11,728.46	11,745.08	11,728.46	11,728.46	11,745.08	11,728.46	11,745.08
OTHER	1407.26	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46	1427.46

Source: Steven Yates, "Selected Health Findings for Disabled Persons from NMCUES: Alternative Measures of Health Restrictions, Main Disabling Conditions, and Medical Care Expenditures and Utilization", Bureau of Economic Research, October 3, 1985, unpublished paper, p. 14.

Table 28

TABLE III

Medical Care Expenditures and Utilization for Functional Limitations Battery for DISABLED PERSONS

	ALL	1	2	3	4	5	6	7	8
MEDICAL EXPENDITURES									
Total Medical Cost	\$2,243.39	\$1,005.83	\$0.00	\$1,173.46	\$2,369.73	\$1,910.57	\$2,781.91	\$4,785.58	\$8,592.97
Total Out-of-Pocket Cost	\$414.20	\$179.65	\$0.00	\$304.89	\$359.15	\$421.21	\$525.16	\$518.29	\$1,169.62
Hospital Cost	\$2,727.08	\$1,365.78	\$0.00	\$1,292.69	\$2,676.48	\$2,141.33	\$3,143.08	\$5,147.73	\$11,205.09
Hospital Out-of-Pocket Cost	\$293.14	\$16.89	\$0.00	\$193.30	\$242.13	\$262.08	\$360.53	\$298.46	\$1,144.57
Doctor Cost	\$587.32	\$259.00	\$0.00	\$405.81	\$752.97	\$575.16	\$662.91	\$983.14	\$947.21
Doctor Out-of-Pocket Cost	\$150.19	\$60.91	\$0.00	\$127.85	\$122.64	\$177.98	\$170.03	\$195.89	\$244.44
Other Visits and Expenses Cost	\$200.74	\$253.57	\$0.00	\$178.03	\$153.37	\$134.60	\$174.12	\$234.38	\$767.35
Other Visits and Expenses Out-of-Pocket Cost	\$87.64	\$105.93	\$0.00	\$91.68	\$79.21	\$70.82	\$83.72	\$50.42	\$196.35
Prescribed Drugs Cost	\$144.08	\$72.45	\$0.00	\$101.03	\$135.52	\$152.62	\$202.73	\$220.79	\$244.44
Prescribed Drugs Out-of-Pocket Cost	\$76.46	\$52.59	\$0.00	\$54.29	\$75.43	\$81.60	\$106.41	\$110.82	\$107.12
UTILIZATION									
Hospital Visits	1.88	1.30	0.00	1.46	1.73	1.68	1.99	4.00	5.05
Doctor Visits	8.70	6.48	0.00	7.17	8.10	8.90	12.06	12.27	9.84
Other Visits	2.51	3.00	0.00	2.20	1.93	1.87	2.69	5.49	7.29
Number of Prescribed Drugs	15.01	9.78	0.00	10.31	13.75	15.49	24.39	22.21	23.18
NUMBER OF PERSONS	936	23	0	333	168	206	129	39	38

Source: Steven Yates, "Selected Health Findings for Disabled Persons from NMCUES: Alternative Measures of Health Restrictions, Main Disabling Conditions, and Medical Care Expenditures and Utilization", Bureau of Economic Research, October 3, 1985, unpublished paper, p. 18.

Table 29

TABLE IV

Medical Care Expenditures and Utilization for Functional Limitations Battery for NONDISABLED PERSONS

	ALL	1	2	3	4	5	6	7	8
MEDICAL EXPENDITURES									

Total Medical Cost	\$617.84	\$501.20	\$858.43	\$2,931.18	\$981.25	\$1,015.61	\$587.90	\$694.00	\$9,095.50
Total Out-of-Pocket Cost	\$161.59	\$144.71	\$190.31	\$287.00	\$251.17	\$270.01	\$277.40	\$15.00	\$478.00
Hospital Cost	\$1,029.15	\$785.97	\$1,268.98	\$4,704.00	\$1,039.69	\$1,536.08	\$850.33	\$66.00	\$16,323.00
Hospital Out-of-Pocket Cost	\$121.15	\$93.62	\$111.25	\$126.38	\$139.49	\$261.58	\$311.33	\$0.00	\$0.00
Doctor Cost	\$232.04	\$209.56	\$309.89	\$548.58	\$390.36	\$449.46	\$255.00	\$520.00	\$763.00
Doctor Out-of-Pocket Cost	\$79.40	\$76.07	\$81.83	\$126.38	\$116.31	\$111.73	\$117.00	\$0.00	\$367.00
Other Visits and Expenses Cost	\$113.60	\$112.67	\$117.59	\$131.60	\$108.69	\$115.66	\$95.67	*	\$66.00
Other Visits and Expenses Out-of-Pocket Cost	\$74.17	\$75.14	\$73.08	\$68.60	\$55.44	\$73.34	\$50.33	*	\$6.00
Prescribed Drugs Cost	\$44.96	\$38.30	\$72.76	\$158.96	\$87.61	\$101.61	\$111.22	\$108.00	\$105.00
Prescribed Drugs Out-of-Pocket Cost	\$30.41	\$27.06	\$47.91	\$60.23	\$55.78	\$60.21	\$83.67	\$15.00	\$105.00
UTILIZATION									

Hospital Visits	0.52	0.45	0.79	1.87	0.97	1.12	0.33	1.00	1.00
Doctor Visits	3.25	2.94	5.26	8.96	6.68	5.95	3.93	12.00	5.00
Other Visits	0.95	0.87	1.96	1.29	1.54	1.27	0.13	0.00	0.00
Number of Prescribed Drugs	3.54	2.99	6.84	12.42	9.76	10.00	8.00	9.00	8.00
NUMBER OF PERSONS									
	8,926	7,991	549	69	160	95	15	1	2

Source: Steven Yates, "Selected Health Findings for Disabled Persons from NMCUES: Alternative Measures of Health Restrictions, Main Disabling Conditions, and Medical Care Expenditures and Utilization", Bureau of Economic Research, October 3, 1985, unpublished paper p. 20.



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Underwriting and Actuarial Considerations
Associated with Providing Health Care
Coverage to Special Risk Groups

by

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ABSTRACT

The purpose of this paper is to outline the underwriting and actuarial issues related to offering health care coverage to disabled individuals. This study is divided into three parts. The first section provides an introduction to private health insurance and the methods used to underwrite, administer, finance, and settle policies. The second part of this investigation reports on the history and regulatory framework that impacts on the provision of health care coverage. The last part concludes with an analysis of the issue currently proposed solutions related to underwriting health insurance risks on disabled individuals.

INTRODUCTION TO HEALTH INSURANCE UNDERWRITING

The Insurance Mechanism:

Health insurance is an economic device whereby a person makes a relatively small certain payment (premium) in exchange for the service of indemnification against large uncertain losses (health care costs). Insurance is one method for distributing health care costs among individuals. Insurance companies, as well as, state regulators require the apportionment of costs be equitable in light of premiums, benefits, administrative costs, risk and investment return on policyholder contracts (Guertin, and Hooker [1941], and Unruh [1976]). The concept of policyholder equity implies that health risks where only sparse data is available or data shows a higher than average morbidity experience will be rated (Huebner and Black [1982]). Individuals with special disabilities have difficulty obtaining health care coverage for two major reasons. First, insurers lack sufficient information about health care risks associated with those having special ailments to develop credible premiums. In addition, insurers having limited information about those with special disabilities group them together in broad categories for underwriting purposes. Such general risk classification schemes may obscure favorable improvements in morbidity experience over time for disabled individuals.

Surveys of insurance underwriting for special disabilities over the last several years (Eilers, and Malone [1965], HEW [1978], Thompson [1988] and OTA [1988]) indicate the difficulties associated with obtaining current, consistent and reliable loss experience. Several underwriting studies by Eilers and Malone [1965], HEW [1978] and Thompson [1988] have noted the lack of current actuarial loss

experience information as a major obstacle in analyzing insurer behavior towards those with epilepsy. Both Eilers and Malone [1965] and Thompson [1988] found that insurers rely heavily upon the Society of Actuaries Medical Impairment Study for determining premiums and risk classifications for those with special disabilities. However, the current 1983 Society of Actuaries Medical Impairment Study utilizes loss experience data on insured lives prior to 1976. The Society of Actuaries (SOA) medical impairment experience covers those insured between 1956 and 1976. Improvements in the medical classification and treatment of those with special disabilities since 1976 will not be included until the 1992 Society of Actuaries Medical Impairment Study. A recent survey by the Office of Technology Assessment (OTA [1988]) indicates that health care insurers are having trouble assigning claim costs to current, as well as, prospective AIDS coverage cases. Nevertheless, insurers may be required to assign contingent claim costs for these cases in valuing the adequacy of insurance reserves for every state in which they are admitted to sell policies (SOA [1988]). In the absence of reliable underwriting and claim information, insurers can only impute experience based on theoretical actuarial models (Cowell and Hoskins Report in SOA [1988]).

Risk Classification and Insurance Organizations:

Insurance can be classified by the types of risks covered and the structure of the organization offering policies. Pure, static, particular risks are considered to be readily insurable. A pure risk represents a contingency that may result in either a loss or no loss

to the insured. A static risk is one where the risk of occurrence does not change appreciably over time. A particular risk denotes an event that only effects a small portion of the population at one time. Risks that do not have these characteristics are either not covered by insurance or are insured on a severely limited basis. Risks that vary substantially in frequency of occurrence, impact on a large group of lives all at once, or can be induced by individual behavior are not easily insured.

The rationale behind these restrictions lies in the development of premium underwriting. If loss statistics are not stable over time, an actuary can not reliably set premium and developmental reserves to adequately cover future experience. Events that may be altered from being unlikely to certain to occur are subject to adverse selection by policyholders. For example, maternity benefits under individual health care coverage may present selection problems for the insurer. Individuals knowing that they will require maternity benefits within the next year may attempt to obtain coverage at more favorable standard rates. Given a large preponderance of individual maternity cases in the underwriting pool the insurer will be forced to charge higher premiums for all policyholders. As noted in both the OTA [1988] and the SOA [1988] investigations, insurance industry concerns about AIDS relate to the catastrophic loss potential of the disease. Actuarial studies (SOA [1988], p. I-5 and 6) project the following impacts on health care carriers from the AIDS epidemic: (1) claim experience may be geographically concentrated in certain cities and states leading to disproportionate losses on insurers operating in those regions, (2) insured losses may vary by line of business - disability and medical

claims may increase overtime as medical treatment (such as AZT) extends the life expectancy for those having AIDS, (3) antiselection bias may become prevalent for insurers that grow rapidly without underwriting and pricing for the claims experience associated with AIDS, and (4) marketing and underwriting philosophies may also affect the level of AIDS claims - companies engaged in direct marketing activities without examining applicant risks may be subject to antiselection. The OTA [1988] found that all surveyed health care carriers (Commercial insurers, HMOs and Blue Cross/Blue Shield organizations) were using applicant information, and Attending Physician Statements (APS) to underwrite medical coverage. In addition, insurance carriers were keenly interested in utilizing HIV testing to supplement underwriting information on policy applicants.

The type of insurance organization providing health care coverage also may influence the underwriting of those with disabilities. Commercial insurers may be organized as either mutual or stock concerns. The stock insurers report and are accountable to their stockholders. Because they are for-profit business enterprises, stock companies may be reluctant to cover insurance risks where little loss experience data exist. Mutual insurers are run for the benefit of the policyholders who own the company. Policyholders may influence a mutual company's underwriting standards. Over the last several years, the American Association of Retired Persons (AARP) has been able to secure improved group medical insurance coverages for their members by negotiating directly with carriers. Federal regulation on qualification standards shapes underwriting standards for HMOs (OTA [1988], p. 9).

If an HMO accepts non-Medicare individual members, they must be either included at a community rate or rejected altogether. Exclusions, rated premiums and waiting periods are prohibited. Unfortunately, such rules may contribute to HMOs having higher applicant rejection rates than other health care carriers (OTA [1988], p. 22). The Blue Cross/Blue Shield plans (BC/BS) attempt to provide health insurance for a broad segment of the population and, as such, concentrate on group underwriting. BC/BS associations are nonprofit, tax-exempt, unincorporated, voluntary organizations set up in most states under special enabling legislation (Bickelhaupt [1979], p. 117). BC/BS plans appear to have less complex underwriting rules for insuring health risks than their health care counterparts (OTA [1988], p. 17). The OTA [1988] survey found that BC/BS respondents utilized brief medical histories produced in the application process to determine insurability and premium ratings. Under "open enrollment" underwriting, BC/BS plans limit coverage by including preexisting conditions qualification or waiting period riders.

Figure 1 outlines the types of health insurance by carrier and underwriting standard. Group underwriting may afford those with disabilities the best opportunity for adequate health coverage at reasonable rates. Group insurance offered through an employer carries a rate based on loss experience attributable to the business. However, employers may hesitate to hire individuals with known disabilities out of fear of what might happen to their health insurance rates and coverages. A report from the Epilepsy Foundation (EFA [1980], preface and pp. 8-13) indicates that:

Figure 1.

Classification of Health Insurers by Carrier
Coverage and Underwriting Conditions

Underwriting Standard:	Individual - preexisting conditions, waiting period exclusions, coinsurance, benefit reductions
	Group - open/closed enrollment, coinsurance, indemnity vs. major medical, size of deductible, renewability
Types of Insurers:	Governmental - Workers' compensation (State Administered) OASDHI - Social Security (Federal)
	Private - Life Insurers, Casualty Insurers, Health Insurers
	Nonprofit - Blue Cross/Blue Shield Associations, HMOs
Types of Contracts:	Renewable at option of insurer, noncancelable with guaranteed premium, noncancelable with right to increase premium

Employers may hesitate to hire the individual with an active seizure disorder (or a controlled one) for several reasons. They often fear increased accident rates, increased absenteeism and increased insurance and worker's compensation costs. However, studies show that people with epilepsy have slightly better safety records than other workers. These studies show people with epilepsy to be reliable and conscientious workers who often rate better in job performance, attendance and job stability than other workers. And they show that accident insurance rates stay about the same when someone with epilepsy is employed.

Despite the existence of the Rehabilitation Act of 1973, and state law that may prohibit discrimination of handicapped individuals, a large segment of the disabled population may be either underemployed or without work. Sections 501, 503 and 504 of the Rehabilitation Act applies to employers that are in some way connected to the federal government either as an agency, contractor or grant recipient. State laws vary as to the types of handicaps, grievance procedures and employer/employee obligations in dealing with workplace discrimination of disabled individuals (see, EFA [1980], pp. 18-35).

In general, individual health care contracts are likely to be less liberal than group plans with respect to benefits, cost of coverage and acceptance for those with disabilities (Williams and Heins [33], pp. 468-470). Individual underwriting of those with disabilities may be constrained by the information and experience of the insurer. Since many commercial insurers have not underwritten

medical policies for special disabled individuals in the past, they are reluctant to offer coverage in an unfamiliar area. Table 1 shows the results of an OTA [27] survey of individual health underwriting for various special risks.

The last column of Table 1 shows that many disabilities fall into an underwriting category where commercial insurers deny health insurance. For those conditions that are not underwritten by commercial carriers, specialized insurers offer limited coverage. Reinsurers generally will provide a market for special health insurance risks (Kulp and Hall (1966)). Reinsurers are insurers that will accept a portion of the insurance contracts issued by other companies in return for a negotiated premium. Reinsurance companies act as insurers for other insurance firms. One of the purposes of reinsurance is to help spread the risk of loss from insurance coverages out among other carriers.

Thompson (1988) found that insurers may rely heavily on a reinsurer's underwriting standards for covering those with special ailments. In addition, commercial insurers indicated that reinsurers had better information on the actuarial risks associated with conditions such as epilepsy. As insurers gain better information about the medical conditions and health risks associated with disabled individuals, there may be an expansion in the number of carriers offering coverage. Table 2 gives a recent listing of underwriting standards of those companies currently covering those with epilepsy. The number of insurers is substantially greater than the companies surveyed in an earlier study by Eilers and Malone (1965). However, Table 2 also shows that despite the medical profession's use of the more refined international classification of

TABLE 1

Classification of Health Insurers by Carrier
Coverage and Underwriting Conditions

Issue at Higher Premium	Add Exclusion Waiver	Denial Coverage
Allergies	Cataract	AIDS
Asthma	Gallstones	Ulcerative colitis
Back strain	Fibroid Tumor (uterus)	Cirrhosis of liver
Hypertension (controlled)	Hernia (hiatal/inguinal)	Diabetes mellitus
Arthritis	Migraine headaches	Leukemia
Gout	Pelvic Inflammatory Disease	Schizophrenia
Glaucoma	Chronic Otitis media	Hypertension (uncontrolled)
Obesity	Spine/Back Disorders	Emphysema
Psychoneurosis (mild)	Hemorrhoids	Stroke
Kidney stones	Knee Impairment	Obesity (severe)
Emphysema (mild-moderate)	Asthma	Angina (severe)
Alcoholism/drug abuse	Allergies	Coronary artery disease
Heart murmur	Varicose veins	Epilepsy
Peptic ulcer	Sinusitis (chronic or severe)	Lupus
Colitis	Fractures	Alcoholism/drug abuse

SOURCE: Office of Technology Assessment, 1988.

TABLE 2

Insurers Currently Writing Standard or Near Standard Life Insurance
Coverage on Epileptics by Company and Underwriting Requirements

Insurance Carrier	Home Office Telephone Number	Ordinary Life Insurance =====						Term Insurance =====	
		Petit Mal Epilepsy			Jacksonian		5 :	6 :	
		1	2	3	4				
		Youths <5	Youths <15	Adults	Children	Hazardous	5 & 10 Year	Term Coverage	
						Sports			
Alexander Hamilton Life	313-553-2000	: Yes	Yes	Yes	: Yes	: Yes	:	:	:
American Mayflower Life	212-949-9090	: Yes	Yes	Yes	: Yes	: Yes	:	:	:
American Int'l Life	212-770-7000	:			:	: Yes	:	:	:
American National Ins.	409-763-4661	:		Yes	:	:	:	:	:
American Pioneer	305-628-1776	:	Yes	Yes	:	:	:	:	:
Capital Bankers Life	414-277-9998	:	Yes	Yes	:	:	:	:	:
Century Life of Iowa	319-352-5671	:	Yes	Yes	:	:	:	:	:
College Life	317-871-4200	:		Yes	:	:	:	:	:
Commercial Bankers, Calif.	714-833-8450	:		Yes	:	:	:	:	:
Confederation Life	404-953-5100	:	Yes	Yes	:	:	:	:	:
Connecticut Mutual Life	203-727-6500	:		Yes	:	:	:	:	:
Constitution Life	312-825-0900	:		Yes	:	:	:	:	:
Continental American Life	302-454-5000	:	Yes	Yes	:	:	:	:	:
Federal Home Life	616-986-5500	:		Yes	:	:	:	:	:
Fidelity Bankers Life	804-649-8411	:	Yes	Yes	: Yes	: Yes	:	:	:
First Colony Life	804-845-0911	: Yes	Yes	Yes	: Yes	: Yes	:	:	:
Guarantee Trust Life	312-699-0600	: Yes		Yes	: Yes	:	:	:	:
E.F. Hutton Life	619-452-9060	: Yes		Yes	:	:	:	:	:
Illinois Mutual Life	309-674-8255	:		Yes	:	:	:	:	:
Integon Life	919-770-2000	:		Yes	:	:	:	:	:
Intercontinental Life	201-351-1400	:		Yes	:	:	:	:	:
Inter-Ocean Ins.	513-771-2000	:		Yes	:	:	:	:	:
Jackson National	517-394-3400	:		Yes	: Yes	: Yes	: Yes	:	:
Jefferson National Life	317-635-7676	:		Yes	:	:	:	:	:
John Hancock Mutual Life	617-421-6000	:	Yes	Yes	:	:	:	:	:
Liberty Life of S.Carol.	803-268-8111	: Yes			: Yes	:	:	:	:
Manufacturers Life	416-926-0100	:		Yes	:	:	:	:	:
Massachusetts Mutual Life	413-788-8411	: Yes		Yes	:	:	:	:	:
Midland Mutual Life	614-228-2001	:		Yes	:	:	:	:	:
Modern American Life	303-779-1111	: Yes	Yes	Yes	:	:	:	:	:
Mutual of New York	212-708-2000	:		Yes	:	:	:	:	:
National Fidelity Life	913-676-5800	: Yes	Yes	Yes	:	: Yes	:	:	:
National Guardian Life	608-257-5611	:		Yes	:	:	:	:	:
New Jersey Life	201-843-0700	:	Yes	Yes	:	:	:	:	:
North American Life & Cas.	612-347-6500	: Yes	Yes	Yes	: Yes	:	:	:	:
North American Life Assur.	416-362-6011	:	Yes	Yes	:	:	:	:	:
Pan-American Life	504-566-1300	:	Yes	Yes	:	:	:	:	:
Praetorian Mutual Life	214-741-5181	:		Yes	:	:	:	:	:
Providence Life	401-751-5600	:		Yes	:	:	:	:	:
Prudential Ins. Co.	201-877-6000	: Yes			:	:	:	:	:
Reliable Life	314-968-4900	:		Yes	:	:	:	:	:
Reliance Standard Life	215-787-4000	: Yes		Yes	:	:	:	:	:
Reserve Life	214-670-9700	:		Yes	:	:	:	:	:
Resources Life	201-461-0606	:		Yes	:	:	:	:	:

TABLE 2

Insurers Currently Writing Standard or Near Standard Life Insurance
Coverage on Epileptics by Company and Underwriting Requirements

		Ordinary Life Insurance						Term Insurance			
		=====						=====			
		Petit Mal Epilepsy			Jacksonian						
	Home Office	:	1	2	3	:	4	:	5	:	6
Insurance	Telephone	:	Youths <5	Youths <15	Adults	:	Children	:	Hazardous	:	5 & 10 Year
Carrier	Number	:				:		:	Sports	:	Term Coverage

Security-Connecticut Life	203-677-8621	:			Yes	:		:		:	
Security Mutual Life	607-723-3551	:			Yes	:		:		:	
Southland Life	214-922-1200	:	Yes			:		:		:	
Southwestern Life	214-655-5111	:			Yes	:		:		:	
Sun Life of America	301-7270400	:	Yes	Yes	Yes	:	Yes	:	Yes	:	
United Life of Iowa	319-399-5700	:	Yes	Yes	Yes	:		:		:	
United of Omaha	402-342-7600	:			Yes	:		:	Yes	:	
United Presidential	317-453-0602	:			Yes	:		:		:	
United States Life	212-709-6000	:	Yes		Yes	:		:		:	
Unity Mutual	315-469-7751	:			Yes	:		:	Yes	:	
Western Life Ins.	612-738-4000	:	Yes	Yes	Yes	:		:		:	
Wisconsin National Life	608-238-5841	:			Yes	:		:		:	
Washington National Ins.	312-570-5500	:				:		:	Yes	:	
Woodman of the World	303-534-7623	:			Yes	:		:		:	
Zurich American Life	312-843-6300	:			Yes	:		:		:	

Source: The National Underwriter Company, Cincinnati, Ohio, 45202 and A.M. Best's
Guide to Life Insurance Companies, Oldwick, New Jersey 08858.

1

These companies will underwrite youthful (under age 5), petit mal epileptics on a standard basis or with minimal rating.

2

These companies will underwrite children under age 15, history of grand mal attacks, but none within 3 years on a standard basis or with minimal rating. No hazardous sports or hobbies.

3

These companies will underwrite adults on a standard basis if there has been no seizure within 3 years.

4

The companies will underwrite children on a substandard life basis, if operated in the last year with no seizure recurrence.

5

These companies will consider who engage in extra hazardous sports or hobbies - sports or hobbies that would cause even an otherwise standard risk to be rated. The insurers will consider: Jacksonian, Petit Mal and Grand Mal Epilepsy.

6

This company will consider term on risks rated above 500% mortality.

epileptic seizures, life and health insurers continue to employ an older risk categorization scheme based on identifying Grand Mal, Petit Mal and Convulsive seizures. The use of the older and broader risk classification method by insurers may obscure recent advances in the identification, treatment and control of epilepsy in present and future Society of Actuaries medical impairment studies (SOA (1983)).

In conclusion, several characteristics emerge concerning the medical risks private insurers are willing to underwrite. Elements of what insurers view as an insurable health risk are: (1) there must be a large number of similar individuals subject to the same medical risks, (2) the medical losses to be insured must be accidental and unintentional in nature, (3) the medical losses from determinable, measurable and definite in time, (4) the losses must not be catastrophic, (5) the insurer must be able to calculate both the severity and frequency of loss associated with medical coverage, and (6) the offering of coverage should be at a reasonable price that prospective insureds can afford to pay. Where one of these elements fails to exist, alternative methods of underwriting need to be developed. An important ingredient in developing new underwriting options is the availability of loss experience and health care information on disabled individuals.

THE HISTORY AND REGULATION OF HEALTH INSURERS

Regulation of insurers has developed from legislative statute and legal precedents that are an outgrowth of the historical evolution of coverages in the U.S. The general purpose of government

regulation is to protect the public against the insolvency or unfair treatment by insurers. The insurance concept in the United States was derived from English companies that offered coverages to the colonies in the late 1700s (Bickelhaupt [1979]). Today, a part of that English tradition continues in the examination and certification process utilized within the U.S. actuarial profession. European insurers wrote policies on all types of risks within the same firm. However, in the aftermath of the 1906 San Francisco earthquake and fire, when several large New York insurers went bankrupt, the industry was compartmentalized according to line of business. Life insurance coverages had to be offered by companies other than casualty insurers and vice versa. The rationale behind this regulation was to protect life policyholders who had developed equity within their policies from losing benefits as a result of poor casualty underwriting. Medical and disability benefits may be provided by either casualty or life insurance companies. Casualty insurers were the first to offer disability coverage to railroad workers (i.e., worker's compensation), and other forms of health insurance emerged from this development. Life carriers provided medical and disability coverages as additional benefits (disability income settlement option) available to their life insurance policyholders.

State regulation of the U.S. insurance industry makes insurers unique from other financial institutions. Since 1851, when New Hampshire and New York set up the first departments of insurance, insurers have been regulated at the state level. Court cases and legislation have served over the years to establish this regulatory relationship. In 1869, in the case of Paul v. Virginia (8 Wall 168,

L.ED. 357), the U.S. Supreme Court ruled that the insurance transactions did not fall within the definition of interstate commerce and, therefore, insurers could not be regulated at the federal level.

In the absence of federal regulation, New York became the chief regulator of the insurance industry from 1910 to 1950. As a result of two New York investigations in the early 1900s (i.e., Armstrong and Merrit Investigations), a new insurance code was developed. The state of New York applied this code to all companies admitted to do business in their state. In addition, the New York superintendent applied what was known as the Appleton rule to these insurers to make New York code effective in other states. The Appleton rule stated that insurers desiring to do business in the state of New York had to adhere to New York regulation in all other states in which they were writing coverages. Since New York was a prized insurance market during this period, most insurers viewed New York law as the standard for the entire industry. Adding to this perception, state insurance commissioners utilized New York regulation to form model bills for their own state legislatures. However, state regulatory oversight was not uniformly administered; some states were more effective than others in regulating insurers, and few were as active in insurance regulation as New York.

The question of federal regulation of insurance is still a hotly debated issue. In 1944, the U.S. Supreme Court, in United States v. South-Eastern Underwriters Association et al., reversed its earlier position and declared that insurance does represent interstate commerce falling under the purview of federal regulation. Shortly after the South-Eastern Underwriters decision had been

handed down, the insurance industry successfully lobbied Congress for legislation limiting the scope of the Supreme Court decision. Public Law 15 (i.e., McCarran-Ferguson Act), passed in 1945, delegates to the states the power to regulate insurance, permitting federal regulation only in areas vacated by the states. More recent Supreme Court decisions have made it clear that if insurers engage in services other than insurance, the antitrust immunity found in Public Law 15 no longer applies to these business activities. In 1979, the U.S. Supreme Court, in Blue Shield of Texas et al. v. Royal Drug Company, decided that Blue Shield's provisions relating to pre-paid provider prescription services was not an insurance agreement and therefore, not exempt under Public Law 15 from federal antitrust laws. Within the last year, Senator Howard Metzenbaum has proposed new legislation that would lead to a much greater federal role in the regulation of insurance (i.e. S.1299). Currently, the Federal Trade Commission has the authority to collect data from insurers in whatever way is considered appropriate.¹

At present, state regulation is intended to promote insurer solvency and fair treatment of policyholders seeking to obtain coverages. Each insurer must file a statutory statement with the state insurance commissioner in every state where insurance is being sold. Information on the statutory statements are used to determine the financial condition of each insurer. If an insurer is unable to meet the state's defined solvency requirements (i.e., reserve and surplus conditions), the company then may be placed under the commissioner's supervision for either liquidation or rehabilitation.

¹See, "There is Something More to Fear Than Repeal of McCarran-Ferguson According to Former Fed Official," The Ohio National Underwriter, (October 1987), p. 33.

State insurance guarantee funds exist to supplement funds available for reimbursing policyholders in the event of insurer bankruptcy. However, as was discovered in the 1984 Rehabilitation of the Baldwin-United Insurance subsidiaries, state assessment insurance guarantee funds are woefully inadequate to meet large insurer bankruptcies.

State regulation of the sale of insurance concerns: (1) the activities of the agent operating as a representative of the insurer, (2) the setting of premium rates, and (3) the inclusion of mandatory provisions within the insurance contract. The licensing of insurance companies and individual agents allows state insurance commissioners to regulate the activities of companies selling policies in their states. An insurer engaging in unsafe or unsound practices may lose its license. Two approaches have been taken to regulate premium rates. Prior approval rate regulation requires that an insurer file new premium rates with the commissioner for approval before their use. File and use rate procedures permits the insurers to utilize new premium rates with the understanding that the commissioner has the right to rescind their use upon examination. The overall objective of premium rate regulation is to produce premiums that are fair, adequate and not unfairly discriminatory. Fair in the sense that the rates are not too high relative to the insured risks; adequate in that the premiums can cover the insured losses; and not unfairly discriminatory meaning that similar risks will be charged the same rates and dissimilar risks different premiums. Unfortunately, the interpretation of what is fair, adequate and nondiscriminatory for insurance premiums varies among state commissioners. Another feature of state regulation is the

development of mandatory provisions for insurance contracts that serve to protect policyholder interests. In 1974, the National Association of Insurance Commissioners adopted minimum standards applicable for individual health insurance policies. Figure 2 gives these mandatory provisions that were approved by the various state governments.

Current Issues Affecting Health Coverage for Disabled Individuals

Recent developments in the regulation of health care underwriting at both the state and federal level have concerned the extension of health benefits to a variety of groups. In 1985, Congress enacted the Consolidated Omnibus Budget Reconciliation Act (COBRA) which mandated medical coverage be offered to employees or dependents losing group coverage for any reason other than termination of the entire group plan or termination of employment for gross misconduct. The coverage may last for a period of between 18 to 36 months. The extension of coverage must offer the same benefits enjoyed by continuing group members and must be priced no higher than 102% of the premiums charge continuing group insureds. A disabled employee may extend coverage for a period of between 3 to 12 months. After the COBRA extension period, the employee may convert to a permanent individual health policy provided by the insurance carrier. However, medical conversion plans usually have lower benefits than were available under the group plan and premiums charged for medical conversions are significantly higher than group premiums (SOA [1988]). The group medical plan may convert from major medical down to a daily indemnity hospitalization coverage.

Figure 2

National Association of Insurance Commissioners Minimum
Standards Regulation for Individual Health Insurance

The following regulations apply to the issuance of both disability and medical health insurance:

1. Under a noncancelable or guaranteed renewable policy covering the insured and spouse, if the insured dies, the spouse must become the insured.
2. Under family policies, coverage for mentally retarded or physically handicapped children must be continued beyond the normal termination date if such children are not employable.
3. After three years from the date of issue of the contract an insurer cannot deny a claim on the ground that the condition existed prior to the date of the claim unless the condition is specifically excluded under the contract. A condition can not be so excluded unless (a) the condition manifested itself within five years prior to the effective date of the coverage in such a manner as to cause a prudent person to seek diagnosis, care, or treatment, or (b) medical advice or treatment was recommended within that five years.
4. Daily room-and-board charges insured under a basic hospital expense insurance policy must be covered for not less than either 80 percent of semiprivate room charges or \$30 per day; miscellaneous hospital expenses must be covered for not less than either 80 percent of the charges insured up to \$1,000 or 10 times the daily room-and-board charges.
5. Surgical services must be covered for not less than 80 percent of reasonable charges or those provided by certain acceptable fee schedules.
6. Aggregate maximum limits under major medical expense insurance policies must be at least \$10,000; the participation percentage must not exceed 25 percent; and the deductible must not exceed 5 percent of the aggregate maximum limit unless the policy complements some basic coverage.

Source: Williams and Heins [1981], pp. 470-471.

Under the Technical Corrections Act of 1988, COBRA benefits may be extended beyond the one- to three-year period. An extension could provide longer medical benefits to disabled individuals terminating employment. However, in order for COBRA benefits to apply, one must have been employed. Consequently, employment with group coverage is an important condition for securing adequate health coverage for disabled individuals.²

A number of federal, state and local government proposals exist for addressing the some health insurance issues related to covering uninsured populations. According to Census Bureau figures, at least 31 million people had no insurance as of January 1986. The state of Washington this year established a health insurance plan for low-income people, including workers who have no insurance. Michigan, Maine, Oregon and Denver County, Colorado are providing subsidies, financial or tax incentives to encourage small businesses to provide workers with health coverage. New Jersey set up a trust fund this year to pay hospitals for care provided to those unable to pay their medical costs. Under the New Jersey plan, each hospital adds a mark-up of almost 10% to its rates. The hospital then keeps what it needs for indigent care and sends the remainder to the trust fund for use by other hospitals (Geisel [1988]). Within the last year, Illinois, Iowa, Maine, Montana, New Mexico, Oregon, Tennessee, and Washington have created insurance pools to cover those individuals denied health insurance due to pre-existing conditions. An additional seven states, Connecticut, Florida, Indiana, Minnesota, Nebraska, North Dakota and Wisconsin, have had operational programs

²About 90% of the uninsured working population does not have employer provided medical care coverage. See Intergovernmental Health Policy Project (IHPP [1988]).

for several years. Legislative proposals for statewide risk plans exist in Alaska, California, Georgia, Mississippi, Missouri, New York, Ohio, South Carolina, South Dakota, Texas, Vermont and West Virginia.³

State assigned health insurance pools operate as risk sharing associations. In general, each health insurance carrier is required to offer eligible customers an insurance policy that provides a standard set of benefits. The risk plans pay claims out of premium income from issued policies and assessments made on member carriers. Assessments are applied to health carriers in proportion to each insurers share of the state insurance market. Table 3 gives the administrative and eligibility features of current state risk insurance programs.

Despite the apparent advantages associated with assigned risk pools for covering uninsured individuals, the state programs may become very costly to administer over time. Although there have been substantial increases in plan premiums recently, all of the existing plans have lost money over the years, the largest deficits occurring in Indiana (\$5.1 million in 1986) and Minnesota (\$9 million in 1986). Several factors may impact on the financial viability of these plans. First, the process of insuring individuals who are not covered through group or private plans inherently produces risk antiselection. The poorer than average health risks will insure in the pool, and the state plans will have a difficult time spreading the losses out (Bovbjerg and Koller [1986]). Second, as premiums rise to meet the higher loss experience, individuals may not be able to afford the coverage. In 1986, the annual premiums for the risk

³IHPP [1988], p.3.

Table 3.

Administrative and Eligibility Features of State Health
Insurance Risk Plans

State & Date of Operation	Eligibility Requirements	Benefits	Premium Cap	1 Deductibles	2 Deductibles	Pool Funding
Connecticut (1976)	All residents ineligible for Medicare	\$1,000,000	125%-150%		\$400 \$1,000 \$1,500	insurers assessed no tax credit
Florida (1983)	Residents ineligible for Medicaid plus Rejected by two insurers Received notice benefit reduction or Premium increase exceeded pool rate	\$500,000	200%		\$1,000 \$1,500 \$2,000	insurers assessed - tax credit offsets 100%
Illinois (1987)	Residents ineligible for Medicaid plus Rejected by one insurer Premium increase exceeded pool rate or Certain conditions covered automatically Also groups of 10 or less if one or more meet above criteria	\$500,000	135%		\$250/ind. \$500 \$1,000 \$500/fam. \$1,000 \$1,500	general revenues
Indiana (1982)	Residents ineligible for Medicaid plus Rejected by two insurers Received notice benefit reduction Premium increase exceeded pool rate or Certain conditions covered automatically	No limit	150%		\$200 \$500 \$1,000	insurers assessed - tax credit offsets 100%
Iowa (1987)	Residents ineligible for Medicaid plus Rejected by one insurer or Premium exceeded pool rate or	NA	150%		\$500 \$1,000	insurers assessed - tax credit offsets 100%
Maine (1987)	Residents ineligible for Medicare or Medicaid Plus Premium exceeded	NA	150%		\$500-\$1,000	new tax on hospital gross patient services revenue

Table 3.

Administrative and Eligibility Features of State Health
Insurance Risk Plans

State & Date of Operation	Eligibility Requirements	Benefits	1		Pool Funding
			Premium Cap	Deductibles	
	pool rate				
Minnesota (1976)	Rejected by one insurer Restrictive rider limits coverage or Certain conditions covered automatically	\$250,000	125%	\$500 \$1,000	insurers assessed - tax credit offsets 100%
Montana (1987)	Rejected by two insurers or Restrictive rider limits coverage	\$250,000	150-400%	\$1,000 maximum	insurers assessed - tax credit offsets 100%
Nebraska (1986)	Residents ineligible for Medicare or Medicaid Plus Rejected by one insurer Restrictive rider limits coverage or Premium exceeded pool rate	\$500,000	135-165%	\$250 \$500 \$1,000	insurers assessed - tax credit offsets 100%
New Mexico (1/1/88)	Residents ineligible for Medicare or Medicaid Plus Rejected by one insurer Restrictive rider limits coverage or Premium exceeded pool rate	No limit	150%	\$500 \$1,000	insurers assessed - tax credit offsets 100%
North Dakota (1982)	Rejected by one insurer or Restrictive rider limits coverage	\$250,000	135%	\$150 \$500 \$1,000	insurers assessed - tax credit offsets 100%
Oregon (4/1/88)	Residents ineligible for Medicare or Medicaid Plus Rejected by one insurer Premium exceeded pool rate or Certain conditions covered automatically	NA	150%	NA	NA
Tennessee (1987)	Residents ineligible for Medicaid plus	\$500,000	135%	\$500 \$2,000	insurers assessed - tax credit offsets

Table 3.

Administrative and Eligibility Features of State Health
Insurance Risk Plans

State & Date of Operation	Eligibility Requirements	Benefits	Premium Cap	1	2	Pool Funding
				Deductibles		
	Rejected by one insurer					100%
Washington (1987)	Residents ineligible for Medicaid plus Rejected by one insurer or Restrictive rider limits coverage	\$500,000	150%		\$500 \$1,000	insurers assessed - tax credit offsets 100%
Wisconsin (1981)	Residents ineligible for Medicaid Received notice of benefit reduction Premium exceeded pool rate	\$500,000 (as of 1/1/88)	150%		\$1,000	insurers assessed no tax credit (eff. 1/1/88 \$200,000 in tax relief from general revenues

1

These percentages represent the maximum allowable levels state health risk pool premiums may reach in relation to the average premium rates for individual standard health risks in the state for comparable coverage.

2

In addition, a coinsurance is required (generally at a level of 20%).

insurance plans ranged from \$362 in Indiana for applicants under 19, to \$7,650 in Florida for those 75 and older. Deductibles may be increased to make the premiums lower, however, such a benefit reduction only serves to obscure the higher cost of coverage. Increasing premiums or deductibles results in covered individuals paying more and getting less in benefits. Third, there is an absence of cost containment incentives with the risk pooling concept. The payment of claims is on a cost-plus arrangement, whereby administrative expenses, in addition to losses, are paid from premiums and assessments (IHPP [1988]). If the state assigned risk plans are to become viable, better actuarial and financial information will have to be developed on insured policyholders.

Actuarial and Underwriting Considerations Related to AIDS

AIDS may have a profound impact on health insurance underwriting because of its unique actuarial features. Currently available mortality information indicates the AIDS virus is 98% fatal with life expectancy 10 years or less. A person testing HIV positive today has a level of mortality 50 times that of a standard insurance risk and 10 times higher than the worst insurable substandard policyholder (SOA [1988]). Concern within the insurance industry arises in two areas that impact on health care coverage for disabled individuals. First, the existence of unidentified AIDS claims within an insurance company may lead to an inequitable distribution of loss among policyholders. If insurance companies experience large, catastrophic losses from AIDS cases, they may be forced to: (1) discontinue lines of business that expose them to such losses (i.e. health care coverage), (2) price premiums higher

for all policyholders in order to absorb these losses, or (3) ultimately, go bankrupt, leaving policyholders with the problem of finding coverage elsewhere. Since a large number of life insurers also offer health care coverages, AIDS experience could increase the cost or dry up health insurance for all disabled persons. Second, group health coverage may become much more difficult to price due to uncertainties about the frequency and severity of the claims experience related to AIDS. As new drugs, such as AZT, become available there may be an improvement in the life expectancy of AIDS patients. However, the benefits of increased longevity will also push up the claim cost for covering those with AIDS. In addition, should the AIDS infection spread to large segments of the heterosexual population, there could be a substantial increase in the frequency of AIDS claims (SOA [1988]). Risks that may be characterized as having a high frequency and severity of loss are not easily insured within the private sector.

A study needs to be made of how AIDS will impact the availability and pricing of health care coverage for those with other disabilities. One's initial perspective might be to include AIDS coverage in with all other uninsured applicants. However, given the fragile financing structure of state assigned risk plans, adding additional AIDS claim experience could render the programs too costly. In addition, insurer concern over examining applicants for the AIDS risk raises insurance issues for those with other disabilities. Blood testing, widespread use of pre-existing conditions exclusions and APS forms may limit private health insurance coverage for those with other disabilities.

REFERENCES

- [1] Baruch, Berliner. (1982). Limits of insurability of risks. Englewood Cliffs, New Jersey: Prentice-Hall.
- [2] Best's life and health insurance reports (1987). Oldwick, New Jersey: Alfred M. Best, Inc.
- [3] Bickelhaupt, David L. (1979). General insurance. Homewood, Ill.: Richard D. Irwin, Inc.
- [4] Bradford, Michael. (Feb. 9, 1988). AIDS to hike group health costs: insurer. Business Insurance, 14.
- [5] Bykerk, Cecil D. and Thompson, A. Frank. (1979). Economic analysis of the policy loan privilege. Transactions of the Society of Actuaries, 31, 47-67.
- [6] Carroll, William. (December 31, 1987). AIDS-related claim survey-claims paid in 1986. American Council on Life Insurance.
- [7] Cereghino, James J., McNamara, James, Goldensohn, Eli S., Porter, Roger, and Wannamaker, Braxton. (1981). How to recognize and classify seizures. Washington, D.C.: The Epilepsy Foundation.
- [8] Cowell, Michael J., Hoskins, Walter H. (Aug. 1987). AIDS, HIV mortality, and life insurance. Chicago, Ill.: The Society of Actuaries.
- [9] DiBlase, Donna. Worker sues marriott for AIDS discrimination. Business Insurance, 1.
- [10] DiBlase, Donna. (1988). Benefit foundation unveils health care cost database. Business Insurance, March 7, 2.

- [11] Dorfman, Mark S. (1987). Introduction to insurance. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.
- [12] Dorfman, Mark S. and Adelman, Saul W. (1986). Life insurance and financial planning. Homewood, Ill.: Richard D. Irwin, Inc.
- [13] Eilers, Robert D. and Melone, Joseph J. (1965). The underwriting and rating for life and health insurance coverage of persons afflicted with epilepsy. Washington, D.C.: The Epilepsy Foundation.
- [14] Epilepsy Foundation of America. (1980). Employment discrimination and epilepsy: a handbook on federal and state law. Washington, D.C.: The Epilepsy Foundation.
- [15] Epilepsy Foundation of America. (1987). Legal rights/legal issues. Washington, D.C.: The Epilepsy Foundation.
- [16] Fletcher, Meg. (1988). More states offer high-risk health plans. Business Insurance, 1.
- [17] Geisel, Jerry. (1988). Kennedy bill moves to full senate. Business Insurance, February 22, 1.
- [18] Geisel, Jerry (1988). Proposal would increase employers' COBRA costs. Business Insurance, April 11, 1.
- [19] Guertin, Alfred N. and Hooker, Russell O. (1941). Reports and statements on non-forfeiture benefits and related matters. Chicago, Ill.: The Society of Actuaries.
- [20] Huebner, S. S. and Black, Kenneth, Jr. (1982). Life insurance. Engle-wood Cliffs, New Jersey: Prentice-Hall, Inc.
- [21] Intergovernmental Health Policy Project. (1988). The risk pool strategy: comprehensive health insurance associations. Focus on, 20, 1-20.

- [22] Keith, Thomas A., III, (1969). Prognosis: clinical factors in risk appraisal. Cincinnati, Ohio: The National Underwriter.
- [23] Koller, Christopher F., and Bovbjerg, Randall R. (1986). State health insurance pools: current performance, future prospects. Inquiry, 23, 111-121.
- [24] Kulp, C. A. and Hall, John W. (1966). Casualty insurance. New York: John Wiley & Sons, Inc.
- [25] Singer, Richard B. and Levinson, Louis. (1976). Medical risks: patterns of mortality and survival. Lexington, Mass.: Lexington Books.
- [26] Society of Actuaries and Association of Life Insurance Medical Directors of America. (1986). 1983 medical impairment study. Chicago, Ill.: Recording and Statistical Corp.
- [27] Society of Actuaries and Association of Life Insurance Medical Directors of America. (1988). Report of the society of actuaries task force on AIDS. Chicago, Ill.: The Society of Actuaries.
- [28] Thompson, A. Frank. (1988). An examination of current underwriting and loss experience information used to insure those with epilepsy. Interim report to the epilepsy foundation of america. Washington, D.C.: The Epilepsy Foundation.
- [29] Technology Assessment/Health Program, Office of, Jill Eden, Study Director. (1988). AIDS and health insurance: an OTA survey. Washington, D.C.: OTA Staff Paper.
- [30] Unruh, Henry. (1976). Report on actuarial principles and practical problems with regard to non-forfeiture requirements. Chicago, Ill.: The Society of Actuaries.

- [31] U.S. Department of Health, Education and Welfare, National Institutes of Health. (1978). Plan for nationwide action on epilepsy. Washington D.C.: NIH.
- [32] Wickman, J. M. (1965). Evaluating the health insurance risk. Cincinnati, Ohio: The National Underwriter Company.
- [33] Williams, C. A., Jr. and Heins, R.M. (1981). Risk management and insurance. St. Louis, Mo.: McGraw-Hill Publishing.

TRAUMATIC HEAD INJURY

A REVIEW OF GAPS AND PROBLEMS IN INSURANCE COVERAGES

NATIONAL HEAD INJURY FOUNDATION
INSURANCE COMMITTEE

February, 1988

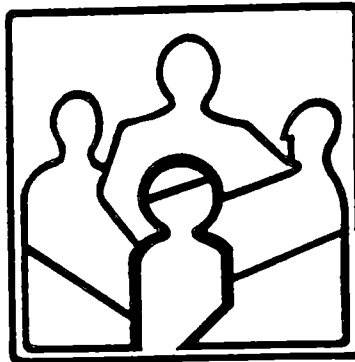


TABLE OF CONTENTS

INTRODUCTION.....	1
Overview of Financial Implications.....	3
A GENERAL REVIEW OF INSURANCE COVERAGES AS IT PERTAINS TO THE HEAD INJURED.....	4
Workers Compensation Coverages.....	4
Auto No-Fault and Liability Systems.....	6
Accident and Health Insurance.....	8
Preferred Provider Organizations.....	10
Health Maintenance Organizations.....	11
Short and Long Term Disability.....	13
Reinsurance.....	14
Self Insurance.....	14
DETERMINATION OF GAPS AND PROBLEMS IN COVERAGES.....	15
Workers Compensation.....	15
No-Fault and Liability Systems.....	18
Accident and Health Policies.....	19
Short and Long Term Disability Policies.....	25
HMO's and PPO's.....	26
RECOMMENDATIONS FOR CHANGE.....	27
Individual Case Management.....	27
Auto No-Fault.....	32
Catastrophic Riders.....	33
State Health Insurance Pools.....	33
Mandatory Employer Sponsored Group Benefit Programs.....	35
Medicare/Medicaid.....	36
Medical I.R.A.'s.....	37
Attendant Care.....	37
ADVOCACY.....	38
SUMMARY AND CONCLUSION.....	39
BIBLIOGRAPHY.....	41

I. INTRODUCTION

The Insurance Committee of the National Head Injury Foundation has been charged to develop a White Paper examining insurance issues that impact the head injured population, both in terms of patient and family needs. Our purpose is: (1) to review insurance coverages as they exist for persons with a head injury; (2) determine gaps in coverages; and (3) propose recommendations to effectively augment and interpret policy provisions in the most advantageous way to address the needs of persons with a head injury.

To set the stage for this discussion, we include the following quotation from a specialist in neuropsychological rehabilitation.

"A critical dissociation plagues the insurance industry, and this conflict ultimately limits the care which can be provided the patient. On the one hand, the insurance industry universally covers acute care for the brain injured as the services fall within the purview of the medical model. On the other hand, by facilitating the patient's survival, the insurance company has created the need for more long-term services, many of which are poorly understood by the medical and insurance industries. Further, even if the typical insurance company appreciates the need for post-acute services, the provisions, and possibly the premiums, of the policy frequently do not cover the necessary services. Many companies will, consequently, not feel able to cover services that are not clearly within the scope of the policy. Since many policies were written prior to the emergence of increased brain injury survivability, the patient and family are often left with minimal coverage for post-acute care. On a corporate level, many reimbursers are reluctant to listen to non-medical professionals advocating non-medical services, despite the fact that appropriate post-acute services typically represent only a fraction of the costs associated with the patient's acute care while showing substantial economic benefits."

As a preface to this discussion, it may be helpful to identify the approach we have taken as our general format, first by identifying the dichotomy within the insurance industry (the Casualty Insurance Industry and the Health Insurance industry). The

Casualty Insurance Industry represents those companies writing Workers Compensation, along with Auto Liability and Auto No-Fault. The Health Insurance Industry provides coverage for hospital, medical and surgical expenses, as well as short and long term disability. Casualty insurers' exposures to loss are usually statutory, in the sense that each state enacts legislation that clearly defines the necessary policy provisions and mandated benefits. Health insurers' liabilities result from a contractual relationship between the individual company and their insured, primarily an employer, but also to individual purchasers. More frequently coverages are being mandated by statute. Keep in mind that the types of coverages discussed throughout this paper can also be self-insured.

This White Paper will approach global funding issues, and seek to clarify them for the reader across different lines of insurance. Bear in mind that as the recovery pattern of the head injured person changes, the types of programming appropriate for the individual's needs must also accommodate those changes. Several modes of treatment and environmental settings are required, ranging the entire spectrum from acute rehabilitation to independent living centers. Rehabilitation issues vary, often contingent upon the setting. A simplified framework for a general understanding of the types of program progression through the stages of recovery might include the following:

- 1) Trauma and Acute Care
- 2) Acute Rehabilitation
- 3) Transitional Living and Behaviorally Oriented Programs
- 4) Independent Living Centers or Community Living Arrangements
- 5) Home Care

These categories will be referred to throughout this paper when referring to reimbursement of such head injury rehab programs.

Overview of Financial Implications

To fully understand the enormity of the financial consequences following traumatic brain injury (TBI), a brief discussion of some of the rehabilitation norms and costs follows. Recognizing that each situation is unique, this example is used for illustration purposes only, and will serve to establish a framework for the remainder of this paper.

I. Acute Medical Care

- A. Average Length of Stay - 60 to 90 days
- B. Average Cost Per Diem - \$2,000
- C. Total (75 x \$2,000) = \$150,000

II. Acute Rehabilitation Costs

- A. Average Length of Stay - 90 to 120 days
- B. Average Cost Per Diem - \$550-\$600
- C. Total (105 x \$575) = \$60,365

III. Extended Rehabilitation

- A. Average Length - 15 months
- B. Average Cost Per Month - \$13,000
- C. Total = \$195,000

IV. Residential Program for Remainder of Life (Average Age of Head Injured - 15 to 25 years)

- A. Average Length - 30 to 60 years
- B. Average Cost Per Annum - \$60,000-\$125,000
- C. Total (45 x \$92,500) = \$4,162,500
- D. Total Lifetime Average = \$4,567,875

This scenario presents the appropriate type of programming, given that a funding stream exists to support it. Experience to date has revealed only precious few head injury cases, which have

had adequate resources to support the appropriate level of programming throughout the various phases of the recovery process.

Insurance funding as it relates to trauma, is usually predicated on how the accident occurred. The mechanism could be an automobile, a fall, a gunshot wound, a blow to the head at the worksite, a sports injury, child abuse or a victim of a violent crime. The damage to the brain in all of these situations may be severe, yet the questions of who gets rehab, and for how long, may be quite different, based upon the type of insurance system involved.

II. A GENERAL REVIEW OF INSURANCE COVERAGES PERTAINING TO PERSONS WITH A HEAD INJURY

A. Workers Compensation Coverage

This form of insurance is provided by an employer without financial contributions by employees. Its purpose is to provide statutorily defined benefits to employees injured on the job, in exchange for a limitation of an employee's right to sue for compensatory damages, such as pain and suffering. Benefits include disability, providing for loss of income, and medical benefits. Some states provide specific rehabilitation benefits targeted toward vocational rehabilitation and survivor's benefits for the spouse and children in the event of the employee's death.

To be eligible for Workers Compensation benefits, an employee must meet three criteria:

- 1) The employee must be working in a covered employment setting under the jurisdiction of the Workers Compensation laws.

- 2) Disability must be compensable in nature.
- 3) There must be a causal relationship between the employment and the disability.

Payment criteria, as it pertains to medical and rehabilitation services, usually hinges on a "reasonable and necessary" medical treatment test. Taking existing medical documentation along with the type of service request made, the insurance carrier will then decide whether it will authorize the care. From the medical standpoint, the carrier's exposures are in most states unlimited in dollar maximums, as long as the medical treatment is warranted as a result of the disabling event.

The employer is required to pay wage replacement benefits when an injured worker has satisfied a short waiting period, such as one or two weeks. Normally, the wage replacement benefit will be two-thirds of the injured party's average weekly wage, not to exceed a stated maximum weekly benefit. As the length of disability increases, the status of benefits may change from temporary total disability, to some form of partial disability status, contingent on the provisions of state laws. As might be expected, laws in each state will vary.

State statutes have made provisions for medical and vocational rehabilitation. Most forms of medical rehabilitation focus on achieving the maximum medical improvement, and will usually seek to achieve the highest outcomes possible, based on the type of injury the worker has sustained. At the point in which the physician

and other medical examiners believe the person has reached a plateau in the recovery, vocational rehabilitation will be considered.

Of course, the best possible results would be that the injured worker could return to his former position, either without any modifications, or with those environmental worksite changes that allow the worker to perform competitively. If this is not possible, then efforts must be initiated to determine future employment options, if any. These vocational rehabilitation interventions may include:

- Interest inventories and personality testing to evaluate vocational interest and aptitude
- Workshop evaluations to determine physical tolerance and to develop new work skills and attitudes
- Educational training, possibly to meet the minimum requirements for some positions
- On-the-job training and other job placement assistance

These options for the most part, are geared toward the most efficient and expeditious return to gainful employment. Also taken into consideration are the employee's education and past employment history, so that easily transferable skills can be identified and put to use.

B. Auto No-Fault and Liability Insurance

Along with the development of Auto No-Fault systems in the early 1970's, came increases in minimum limits for auto liability coverages. Both types of coverage are combined here, since they arise out of the exposure of driving a motor vehicle. No-Fault benefits are provided on a first party basis by the insurance

carrier representing the insured party, regardless of fault. Auto liability coverage is a third party benefit, meaning the insurer representing the negligent driver is responsible for damages sustained by the injured party.

No-Fault benefits are paid through the individual's own insurance carrier, regardless of fault or tort liability. Benefits will usually include medical expenses, lost wages, and funeral or survivor's benefits in those cases where the accident results in a fatality. The No-Fault concept was designed to provide prompt payment for lost wages and medical expenses as they are incurred, and to eliminate long delays in recovering economic losses in a tort liability system. Benefits are provided, not on pain and suffering criteria, but rather in economic terms, based on medical expenses and lost wages. The system permits payment of the costs for rehabilitation at the appropriate stage of recovery thereby improving chances for a better overall outcome.

A form of No-Fault Auto insurance currently exists in 24 states. The closer a state system gets toward elimination of lawsuits and the provision of high first party benefit levels, it moves toward the ideal of "pure No-Fault". Each of the states that currently have enacted No-Fault statutes provide for different levels of benefits. Michigan and New Jersey are the two most progressive states providing unlimited medical coverages. Lost wages in all states currently under No-Fault are capped. As under Workers Compensation, medical benefit payments are contingent on the "reasonable and necessary" test. Other variations exist, such as

Pennsylvania which enacted a Catastrophic Loss Trust Fund in 1984. Using a modified form of No-Fault insurance administered and directed by the State, benefits are provided at a threshold of \$100,000, and extend with inside limits to \$1,000,000.

Liability coverages, as they pertain to automobile accident victims, provide for compensation resulting from negligent acts of civil wrongs of the insured operator for injuries to innocent third parties. Auto liability coverage is not mandatory except in a few states, and even in those states that require liability insurance, there are significant problems with uninsured motorists. Minimum liability limits start at \$15,000 per person. These minimums are woefully insufficient when dealing with a catastrophic injury, such as brain injury. However, business auto policies covering corporate fleets and most trucking organizations have higher limits, many in excess of \$1,000,000.

C. Health Insurance

Health insurance is predominantly a group type of insurance purchased primarily by an employer for the benefit of its employees, and its employees' dependents. Health insurance may also be purchased on an individual basis. Employers provide benefits on a contractual basis for their employees, who may also bear a certain percentage of the cost. The extent of the benefits provided in such group plans represent the levels of risk and cost an employer is willing to assume. Very often, the larger the employer, the more generous the benefit plan. Labor unions have played an important role in negotiations involving employee insurance benefits.

Group policies will usually incorporate a basic hospital insurance plan, along with a Major Medical component. Some employers are using what is known as a Comprehensive Health Insurance Program in which the basic and major medical components are combined into a single program. Not only will a policy contain an aggregate limit from anywhere between \$25,000 to \$1,000,000, but also includes inside limits such as a specific number of hospital days, skilled nursing facility days, or limits on the number of therapy sessions. Health insurance policies rarely specify benefits for rehabilitation, other than by reference to speech or physical therapy.

As in most forms of insurance, deductibles exist that require the employee, along with any dependent, to cover expenses up to a prescribed threshold, usually of \$100 to \$200. In addition, there may exist a corridor deductible between the basic and the major medical portions that must be met prior to major medical benefits being provided. Aside from deductibles as a risk sharing device, most health insurance plans use some form of coinsurance. Coinsurance requires that the employee share part of the cost of treatment along with the insurer. Percentages may range from 10-20% up to a stated maximum out-of-pocket expense. Such stated maximum coinsurance limits range between \$500 and \$2,000 as part of major medical coverage.

The health insurance industry views deductibles and coinsurance provisions as cost containment efforts which will limit medical expenses to the most necessary services. Since employees are

sharing part of the cost, they may be less inclined to use medical services that are unnecessary. The form of health insurance that has been described can be termed an "indemnity" type of health insurance.

As a part of many health insurance programs, there are certain other cost containment procedures. Examples include pre-certification prior to hospital admission, mandatory second surgical opinions for selected types of elective services, length of stay reviews, and early discharges to lesser costly environments. These programs may at some point in the recovery process, have an impact on either the type of rehabilitation setting for persons with a head injury or the duration, amount, or type of therapeutic services received. Any discussion of health insurance coverages must include new managed health care options, such as PPO's and HMO's. These programs have at their core, cost containment, while trying to maintain the quality of care and ease of access to proper medical treatments. Enhanced utilization review programming, along with price discounting, helps to achieve demonstrable and identifiable cost savings.

D. Preferred Provider Organizations (PPO)

A PPO is an entity that contracts with both providers of health care and payors of health care to establish preferred rates of compensation that contractors or preferred providers will accept as payment in full for the services provided to patients. The providers of health care services join together as a group to form a system of care that will provide in a limited geographic area, the

entire range of health care services necessary. This provider network, under one corporate name, agrees contractually on a fee for service basis to provide treatment, and only those treatment services specified in the contract, on a discounted basis.

This hybrid between indemnity plans and capitated ones maintains the integrity of the fee for service system and the right of the employee to choose the provider of his choice. However, incentives are built into the program in the form of coinsurance penalties for not using listed providers in the network. This channelling provision, along with some utilization review controls, help the employer to realize tangible cost savings in the form of discounted services and some limits on non-emergency services.

As these networks expand and grow, hopefully they will become more involved in specialized rehabilitation. At the present time, recognition of the long term nature of head injury rehab for those moderately to severely impaired on an in-patient basis is rather limited. Equally as important and just as problematic, is the issue of transitional and independent living programs in more functional settings.

E. Health Maintenance Organizations (HMO)

An HMO is often described as a managed care option, as a result of an established group of providers already in place serving as the health care network. Describing and defining HMO's is often difficult in the sense that there can be great disparity in the types of HMO's and the services they provide. There are however, three elements that generally characterize most HMO's:

- 1) Pre-payment of a capitated funding mechanism
- 2) Accent on preventative treatment
- 3) Comprehensive treatment

Generally stressed are preventative treatments, such as periodic physicals and other types of screening. In an effort to maintain financial viability, HMO's seek to enroll healthier people to maintain a high healthy/sick ratio. Networks of providers are established with an eye toward enlisting those physicians in hospitals that are willing to practice within the rules and provisions of the plan, especially with respect toward using low cost facilities. Utilization review and other cost containment practices are very important components.

Service provision usually centers around primary care physicians who have the authority to refer when necessary to the appropriate specialists. These physicians are also the "gate keepers" in terms of approving or denying pre-authorization of acute rehabilitation stays. Frequently, some risk sharing mechanisms are built into the provider's agreement with the HMO in achieving certain cost and utilization goals. There is much less use of co-payments and deductibles, and in some situations both may be completely eliminated. Also reduced is claim form paperwork.

Rehabilitation as such, is in its early stage of development, and normally extends to approximately two months of in-patient rehabilitation, which coincides with the Federal HMO Act Provisions of 1973. There does, however, seem to be a discernible trend toward broadening these provisions.

These alternative service delivery systems (PPO's and HMO's) have recently grown in importance, as employers and their employee benefit managers begin to apply business principles and cost management techniques to the provision of health care for their employees. PPO's and HMO's blur the distinction between providers and reimbursers. Not only are they bearing the risk of treatment as in traditional group insurance, but they are also making arrangements for provision of treatment.

F. Short and Long Term Disability

This form of health insurance coverage looks at injury or illness from the perspective of lost wages exclusively. An employer may provide short term disability for an employee who cannot return to his/her former employment for a short period of time, such as 26 weeks. As the length of disability increases past the expiration of short term disability, the employee will be covered under long term disability for as long as he/she is unable to return to any type of gainful employment based on education, background, and experience. Limited rehabilitation benefits may be provided, but the benefits appear to be nebulous, at the best.

This form of indemnity coverage seeks to provide a portion of the employee's salary, (i.e. 50-60% of his gross wages), keeping in mind that the injury or illness must be non-work related. The insurance benefits payable are normally coordinated with disability income benefits which become payable under Social Security.

G. Reinsurance

Traumatic brain injury, because of the catastrophic nature of moderate to severe impairments, often makes it difficult to predict the ultimate financial exposure on an individual case basis. As a result, an insurance carrier may want to limit the overall dollar payment, (cap the exposure) by purchasing a reinsurance contract. A primary insurer can enter into a reinsurance contract that will allow another company, (usually another insurer), to assume risks above a pre-determined threshold.

A reinsurer has been called an "insurer's insurer", and in some situations there may be many different companies involved, with numerous layers of reinsurance on a single risk. Normally reinsurance companies develop expertise in handling catastrophic injuries, such as traumatic brain injury. Frequently, they have rehabilitation departments or programs designed to handle these types of injuries. Their understanding of rehab centers that specialize in head injury has become recognized.

Some families of head injured persons which have worked with reinsurance carriers have been well served in terms of rehabilitation needs, as well as the long term needs of those left with moderate to severe residuals. It can be expected that reinsurers will continue to be creative in their approach to administering claims involving traumatic brain injury.

H. Self Insurance

All the various types of insurance discussed, other than reinsurance, can be self funded, given a certain level of financial

security by an employer. The term "self insurance" refers to an entity, whether a corporation, government unit, a not-for-profit foundation, or multi-employer trust, that chooses to underwrite, pay, and handle claims presented through the use of their own internal financial resources, rather than use an insurance company funded program.

Most large corporations, especially those with over 5,000 employees, will use some method of self insurance, either in a true or modified format. It should be recognized that the employer's benefit departments have a great deal of control over those benefit provisions that affect persons with a head injury. Frequently, third party administrators are employed to handle the claims processing and payment functions and may frequently misinterpret benefit provisions in relation to catastrophic claims. Many employers which have difficulty in predicting the severity of individual claims, especially in financial terms have used reinsurance or "stop loss" coverage as some insurers have, as previously described.

III. DETERMINATION OF GAPS AND PROBLEMS IN COVERAGES

A. Workers Compensation

This type of coverage probably provides the greatest opportunity for persons with a head injury to reach their maximum rehabilitation potential. Use of the nebulous criteria "reasonable and necessary" as applied to rehab services, often are given a broad interpretation, however, problems do occur, based on individual company interpretations. Experience with worker's compensation

claims has shown a predilection for utilizing medical opinions only from physicians, which can be detrimental to the head injured claimant, especially where higher level cognitive and executive skill functions are involved. Neuropsychologists and other therapeutic disciplines may at times be more expert at identifying and prescribing appropriate rehabilitation programs.

Even within the same insurance carrier, different claim representatives often apply inconsistent criteria for provider reimbursement. Problems often occur in receiving prior authorization for rehabilitation treatment or home care. Such uncertainty in reimbursement creates confusion for the claimant because of the intensity and high expense of treating traumatic brain injury.

Insurance carriers are traditionally oriented toward seeing dramatic progress in rehabilitation goals and meeting pre-determined time frames. If progress is not seen, a skeptical attitude about the validity of future rehabilitation outcomes may arise. A carrier may feel that physical gains are sufficient in completing the rehabilitation process and ignore any cognitive deficits that may still remain. Lack of general understanding of head injury is indicative of the insurance industry in general, yet there are some companies that have an enlightened attitude as to the benefits of rehabilitation. Education regarding the long term nature of head injury rehabilitation is needed, as these clients may require life long support from both a medical and financial perspective.

When the victim of a brain injury is discharged from within a medical model facility based program, and becomes dependent on out-patient services, a significant gap in insurance coverage may become apparent. The family of persons with a head injury may experience a very limited amount of support at this stage of recovery. This is especially true when terminology such as "custodial" or "maintenance care" is applied. Additionally, decisions made by claim examiners and insurance adjusters can seem arbitrary, and in some situations contradictory. Globally, most decisions are based on physical restorative issues rather than cognitive issues. Quality of life and family caregiver burnout may not be given strong consideration.

The Rehabilitation Nurse profession, frequently used in Workers Compensation claims, have aided the insurance community in understanding the greater issues involved with head injury, and have a significant impact in general on the claims professional. However, some case managers in the field have not recognized that real cost savings in head injury are achieved, not so much in the facility per diems in the rehabilitation phase, but in preventing the long term disablers in head injury--those being family system disintegration, and development of behavior problems and hospital recidivism.

Discussion to this point has focused on rehabilitation cost as it pertains to the type of funding system involved. Such discussion would be incomplete without mentioning the acute nature of home health care programs, which in many situations will be involved long

after the patient has been discharged from a rehab facility. The home health team that is properly staffed and managed will continue the rehab process in a structured and coordinated way. These services include:

- 1) Attendant care and home nursing
- 2) Physical restorative services, including physical therapy and occupational therapy
- 3) Speech pathology and cognitive skill retraining
- 4) Instruction regarding appropriate psychosocial skill development
- 5) Leisure and recreational activities

While acknowledging these weaknesses, it is accurate to say that Workers Compensation and other casualty lines, such as Auto No-Fault, offer the greatest opportunity to implement a complete head injury rehabilitation program. Such programs must be considered in terms of cost effectiveness, in relation to other types of traditional insurance programs, especially as to the appropriateness of the client's needs.

B. Auto No-Fault/Liability

No-Fault generally follows the payment parameters already established in the Workers Compensation system. Unfortunately, only two states provide unlimited No-Fault benefits over the lifetime of persons with a head injury. Wage benefits are usually limited in No-Fault systems.

Under the auto liability insurance system, the carriers have been slow to adopt proactive measures incorporating rehabilitation. Rather, the tendency is to negotiate and wait for a settlement prior

to paying any monies for medical care. This results in a delay in initiating rehabilitation efforts due to lack of funding for programming. In addition, because of the limited funding available on auto liability coverage, even if a settlement is consummated, the funds may fall short of providing for the long term needs of persons with a head injury. Attorney fees may be one-third of the settlement, which will reduce further the net funds available to meet the future needs of the head injured victim.

C. Health Insurance Policies

We must point out that many of the ills we have discussed in the previous sections are present in health insurance as well, and will not be repeated here.

A recent survey by the Health Insurance Association of America's Rehabilitation Subcommittee polled their membership to determine what, if any rehabilitation programs had been set up internally within their individual companies. In bringing this survey, dated March 20, 1987, to the reader's attention, we hope to establish an overall framework for understanding the environment within the health insurance industry, and their mindset and perspective on rehab services.

In this survey, 139 companies responded to the questionnaire, with 70 companies indicating some type of formal rehabilitation programs were established. Of those companies with a program of rehabilitation services, the services are provided most often through an informal approach (48) rather than under a policy rehabilitation provision. Vocational services are the most

frequently offered service (58) with most companies using both in-house staff and outside vendors to provide these services. Other services frequently provided are: medical management (49); job placement (44); catastrophic case management (44) and financial resources such as retraining/education (44), a structured settlement (31) or self employment (30). The in-house staff used to provide these services are most often either claims personnel or registered nurses. Other staff not as frequently used are vocational rehabilitation specialists, counselors and physicians. Less than half the companies frequently use the services of state agencies, but over half use community resources such as social services and treatment centers.

Head injury is not recognized as a specific diagnosis, different from the other medical groupings, by most health insurers, which consequently results in creating obstacles in the reimbursement of medical services. There are also very significant problems that exist due to contract terminology relating to licensure of providers. For example, most policies will pay for acute care rehabilitation costs in a hospital accredited by the Joint Commission on Accreditation of Hospitals, (JCAH), rather than using the standards for rehabilitation facilities set up by the Commission on Accreditation of Rehabilitation Facilities (CARF). This is so even though CARF may be in a better position to evaluate rehabilitation facilities and programs. CARF now has specific categories for "acute head injury rehab" and is developing standards for transitional and vocational head injury programs.

Aggregate policy limits of health insurance may be so low that long term rehabilitation efforts are thwarted. Policies contain aggregate limits, but also include inside limits, such as specified number of hospital days, or limits on skilled nursing facility days. Often there are no benefits for custodial care, home health care or outpatient group therapies. These policies are designed for acute care rehabilitation, but give little consideration to the chronic care needs of persons with a head injury.

Rehabilitation gains for persons with a head injury may occur more slowly, and therefore the traditional insurance cost containment mechanisms, such as length of stay reviews may result in early discharge to less costly environments which may be inappropriate, and actually delay the recovery process. Utilization reviews and criteria such as "medical plateau" in recovery also may be prematurely applied, because they do not recognize the step/rate nature of rehabilitation gains.

It is indicative of the progress orientation in most policies that clients in the home setting may have been deemed to have "plateaued", or reached their maximum recovery level only a short time after their accidents, often less than one year. Particularly true of head injury is the idea that recovery follows a step-rate sequence in which gradients and achievements occur after periods of plateaus. Once care is judged to be at a maintenance level, most therapies and other in-home services such as nursing and attendant care are no longer reimbursed.

Some health policies limit treatment to certain types of rehabilitation such as physical therapy, or speech therapy. These policies preclude access to other valuable types of care that persons with a head injury require, such as occupational therapy, recreational therapy and neuropsychology. As the clients progress and require community re-entry programs for skill development in cognitive and socialization areas, some policies do not recognize these programs as eligible coverages. These programs are considered educational or psychiatric in nature, and therefore are completely excluded, or severely limited. The development of non-medical environments which provide these kinds of programs usually don't meet the insurer's licensure criteria and therefore, are not reimbursed under current policy provisions.

Additionally, maintenance care is often needed in the home for those, who because of judgment problems, cannot be left alone. This occurs as a progress orientation is applied to the home environment, and because this form of care may only require attendants, and not medical professionals, most often coverage is not available.

To expand upon the earlier comment regarding neuropsychiatric care, frequently, the cognitive rehabilitation and behavior problems that develop as a sequelae to a closed head injury are frequently classified by insurers as mental and nervous conditions. As such, the contract provisions under most group health policies can be extremely restrictive and detrimental to the needs of those with an acquired brain injury. Those policies contain provisions for lifetime maximums and inside limits on an out-patient basis. For

example, 50% of a reasonable fee of \$25 per hour, limits of \$1,000 per year, and a lifetime maximum of \$10,000. By contrast, those policies will provide 100% of in-patient psychiatric treatment for 30 to 120 days, at between \$600-\$900 per day on a yearly basis.

Other frequent problems identified upon discharge of a head injured person from an in-patient program to the home are judgement and poor problem solving skills. Consequently, it becomes very difficult to leave the person unattended for long periods of time. In addition, as a result of cognitive disorders that persist, the person may require some prompts or cues to complete more complex activities. Reasoning skill deficits and decision making difficulties mandate some form of attendant care, at least for certain periods during the day or evening hours. Again, many health policies do not have provisions for this type of care, and it is often too expensive for the family to provide independently.

Before the discussion on this topic is concluded, some final comments should be added regarding basic and major medical coverage. Under traditional indemnity policies purchased by employers, the health insurance benefit is written in two parts: Basic and Major Medical. The Basic portion may or may not be written by a company such as Blue Cross, and the Major Medical covered by another insurer. Basic provisions provide for a certain number of hospital and skilled nursing days. Whereas major medical covers all other ancillary items not provided for under the Basic Program at an 80% reimbursement. (Again, keep in mind that these are broad generalizations, and programs vary from corporation to corporation.)

Problems can and do occur in a number of ways. Blue Cross, for example, may assign approved providers for certain types of treatment and reimburse them based on audited cost statements submitted by providers. Additionally, those providers "not approved" for purposes of Blue Cross can submit their invoice under the major medical components of the policy.

Major Medical components frequently stipulate the types of services that can be provided, yet probably would exclude items like room and board, recreation therapy, or psychology services, and only reimburse physical, occupational, and speech therapies. Also present could be inside limits on the number of sessions provided. As a result, rehabilitation centers dealing with chronic care needs of traumatic brain injury receive so little of their costs related to a comprehensive treatment team approach, that clients who could benefit would not be admitted. These restrictions, as you might expect, play a great role in out-patient services and structured home care programming as they do for in-patient rehabilitation.

In a somewhat different vein, yet still dealing with gaps in health insurance policies, problems occur when individuals with a head injury try to secure health coverage on an individual basis. In addition to the high cost, the pre-existing conditions clause restricts the policy from providing any coverage for a condition that came into existence prior to the effective date of the policy. Waiting periods can be as long as one year, and thus excludes payment for any condition that relates to the head injury. As of this writing, it is believed that over 37 million Americans are

without any health insurance at all. Many of these people also are employed. The burden of their care when they become ill falls not only on the individual himself in terms of their available resources, but also on State Medicaid systems.

D. Short and Long Term Disability Policies

Mandatory under most long term disability policies are provisions for making application for all social insurance applicable to the individual. Once social insurance systems, (workers compensation, social security disability) grant an award, there is an immediate dollar for dollar offset in reduced long term disability payments. This provides a disincentive to the LTD carrier in vigorously pursuing rehab interventions in terms of returning an individual to some form of employment. What has occurred is a reduction in the overall exposure of the carrier, with the concomitant loss of interest in gainful employment for persons with a head injury.

Criteria for return to work under short term disability insurance involves a person's previous employment or so called "his occupation". Long term disability return to work parameters include the standard "any occupation" for which an individual is qualified, based on education or experience within the physical limitations of the disability. It should be noted that some health insurers are beginning to include limited benefits for vocational rehabilitation in long term disability policies. Previously, insurers made no provision for payment for any costs to rehabilitate the injured person. These policies may pay the cost for evaluation or other

vocational assistance to determine whether the individual can be re-employed, which doesn't sound like the insurer is underwriting the costs of vocational rehabilitation.

E. HMO's and PPO's

These two managed care systems are recent entrants into the health insurance field, which have focused on primary care and have paid little attention to rehabilitation. The Federal HMO Act of 1973 mandated only two months of in-patient treatment, which is woefully short of even beginning to meet the needs of persons with a head injury. Not only are benefits of a very short term nature for acute rehab, but funding for post acute programs are virtually non-existent. Attendant care issues for head injured persons at home requiring supervision currently are not being addressed to any degree. Some HMO's/PPO's are looking into re-insurance as an alternative. Re-insurance provides carriers with extended coverage or an "umbrella" policy in the event of a catastrophe. For example, if the 100 days is used up in the basic HMO/PPO plan, then the re-insurer will start providing the funding for the patient. The re-insurers also may provide case managers to assist the HMO/PPO provider in planning the care. While there are good reasons for an HMO/PPO to want to provide re-insurance to their clients, we understand that the process of re-insuring is not as easy as it looks. Nonetheless, we would encourage HMO's/PPO's to start investigating the possibilities of re-insurance and consider it for some of their clients.

IV. RECOMMENDATIONS FOR CHANGE

It is of course realized, that throughout this report generalizations have been made in all areas. We do recognize that there are a number of very forward thinking companies that are extremely progressive in their approach to these payment issues. Many of the following points are based on existing programs that have been very successful in providing for the long term needs of persons with a head injury. In addition, some thoughts are of recent origin or are currently under discussion.

A. Individual Case Management

The common thread running through these various insurance programs involves provision of the most appropriate services available, while containing health care costs. Case Managers, whether they are nurses or rehab counselors, develop service or treatment plans that reflect levels of service provisions commensurate with maximizing full rehabilitation potential.

Case management, as a term, can be used to describe a number of approaches to planning, coordinating and providing care. But often this term is misused and instead describes other mechanisms directed at limiting, rather than rationalizing care. Given this situation, it is useful to define what case management is not.

Case management is not preadmission screening. Preadmission screening is used to determine whether an individual should be admitted to a hospital or nursing home and is intended as a means of reducing the use of costly institutional care, but it does not represent a case management program.

Case management is not utilization review. The notion that an insurer might be involved in case management through the monitoring of volume or duration of care is erroneous. Utilization review is a mechanism to limit the amount, for example, of hospital days, physician visits, or ancillary services to an individual patient. It also may be a method of monitoring providers to identify those who demonstrate a pattern of overutilization. While case management may contain an element of utilization review in determining the best approach to care for a given patient, it encompasses significantly more than this.

So what is case management?

Case management is a process that is concerned with more than simply monitoring or limiting the volume of services. While cost containment is clearly one objective of a case management program, its prime focus is the organization and sequence of services and resources to respond to an individual's health care problem.

There are four basic steps that constitute the case management process. The first is assessment and planning. The intent is to assess an individual's condition in order to determine what services and resources are necessary and plan where, and by whom, they might be most appropriately delivered.

The second step, coordination and referral, is the pivotal element of any case management program. In fact, the ability to coordinate the multiple and often diverse elements of a treatment plan can determine the success of the program. This not only

includes the referral of an individual to another provider, but also frequently encompasses the coordination of a broad array of social, financial and other health services as well, including housing, meals, adult day care, and occupational therapy.

Patient treatment of a medical problem is a third part of the case management process. In one form or another, treatment is centrally coordinated by a case manager. This centralized control may be highly informal and be used simply to assure that the necessary services are provided. Or it might be quite rigorous and involve a strict control of referrals or limits on the frequency or quantity of care.

The last basic element of case management is the continued monitoring of the patient to assess progress, assure that services were delivered, and determine what else is required.

These four steps are not totally independent. Each element is interrelated and not discrete. For example, the coordination and treatment functions might be carried out by the same individual, or the monitoring activity may also involve assessment. Additionally, the process may not always follow this precise order. Assessment, for example, may lead directly to treatment. In fact, the process may be cyclical and ongoing. Monitoring is not always the last step; rather it can lead to the need for new services, new coordination, and additional treatment.

While the case management process usually involves these four steps, it may emphasize one or another of them depending on a

variety of factors. That is, the nature of case management is dependent upon the population served and its health status, the relationship between the case management activity and reimbursement, and who is the case manager.

Within the group health insurance area of liability, constraints in plan design and policy language may prohibit funding for the services and supplies necessary to foster independence and societal mainstreaming. Ideally, a well-orchestrated case management approach offsets this disparity, allowing funding beyond the scope of plan design where indicated. The outcome of such an approach is generally favorable in that health care dollars are prudently spent and patient dependence on the health care delivery system over the long-run is minimized.

Case management is useful in the various stages of rehabilitation as it aims to rationalize rather than simply deny care. Additionally, it assists with the sequencing of care by facilitating communication among providers, patients, insurers, and other involved parties. The approach fosters an overall planning concept aimed at maximizing the individual's recovery and independence.

Early involvement with case management of the traumatically brain injured individual affords the optimal outcome. The case manager serves as ombudsman to the patient and family, assuring identification of and access to appropriate care at each stage of the recovery process. This proactive involvement provides the framework for prudent decision making and mobilization of effective

coping mechanisms that prevent a disjointed response to the catastrophic event. Many health insurers currently have a case management-like approach. Although their motivation and hence philosophy may differ, their aim for the most part is to assure appropriate care.

When it comes to accessing reimbursement for the treatment plan, it is often said that the best defense is a good offense. This concept can be applied to the situation involving the traumatically brain injured by encouraging individuals to obtain assistance from the employer providing the health coverage in interpreting and understanding their health or benefit plan. In addition, there is generally a "cost containment" division within the company, housed in the claim operation, medical review area, or under national marketing that may be better prepared to discuss the individual's reimbursement needs as they relate to the treatment plan.

The authors advocate the increased use of individual case management systems, which have proven to be cost effective. The system has been utilized in casualty insurance for years, and is now being applied by the larger group health insurance carriers. We view these actions as a very favorable development for the needs of persons with a head injury, and hopefully more insurers will adopt case management systems as standard practice.

At this juncture, we should bring to the readers attention the encouraging reports of the recently negotiated labor contract between UAW and Ford Motor Company and General Motors. The new

contract contains a benefit to cover the costs of non-medical custodial care which would assist people handicapped by Alzheimer's disease, as well as spinal cord injury and head injury. The benefit is described as the first such employer financed program of its kind. While existing employee benefits cover nursing home and at-home care for those needing skilled nursing, the additional coverage would include respite care for care-givers and community-based programs. This leadership needs to be acknowledged, as well as the existing case management program which GM has established for 18 acute onset diagnoses, including head injuries. It is hoped that the automobile industry plan will become a model for the rest of the business community.

B. Automobile Insurance

The continuation and expansion of No-Fault Auto insurance in its purest forms would provide the greatest benefits to persons with a head injury and the driving public at large. A No-Fault law that is "in balance" would not lead to an increase in insurance premiums beyond the level of inflation, given the concomitant limitations of liability to sue for pain and suffering. The term "in-balance" refers to the fact that the cost of No-Fault benefits being provided to victims is about equal to the amounts of money saved as a result of reductions in the total amount of tort liability payments.

Efforts to improve the rehabilitation benefits of those involved in auto accidents would also have a spin off effect in the promotion of safety. This would occur as more efforts are placed in protecting the driver and passengers in an insured vehicle.

Therefore, promoting safer automobiles and driver restraint systems would limit the risk of injury and the extent of damage to the person(s) involved in accidents. Safer automobiles and hopefully the more widespread installation of air bags would allow for lower insurance premiums.

C. Catastrophic Riders

This additional coverage would take into consideration that catastrophic injuries are a small percentage of the incidence of medically related claims, yet are responsible for as much as 40% of the overall claims payout. Such a rider which would be added to the existing group policy might require an additional premium payment per employee and dependents, however, the benefits to be derived would be well worth the cost. Employers could make this benefit optional. Medical and rehab services that are currently excluded in the original policy, but that are very necessary for treatment of head injury could be added. Such items as home modification, provision for rehabilitation in alternative settings, and maintenance or attendant care as well as home care could be included.

D. State Health Insurance Pools

A most pressing problem for many who have sustained a traumatic brain injury is what happens when their group health insurance through their employer expires. Normally, when an individual is formally terminated at his/her place of employment, health insurance will continue in effect for up to one year after formal termination, after which there is a privilege of converting this group insurance

policy to an individual policy. Another serious problem is presented for those people who have no health insurance coverage whatsoever, or who are substantially underinsured. In these circumstances, the person on an individual basis, may either not be able to continue insurance coverage, afford the cost of a conversion policy or have the opportunity to purchase coverage at competitive rates. Policy limitations such as pre-existing condition clauses may either make coverage prohibitively expensive or of only minimal benefit.

Another point favoring the creation of state risk pools, involves the employment mobility of the parent or spouse of someone who has sustained a traumatic brain injury. A parent may be reluctant to leave a position with a current employer for fear that coverage with a new employer will disallow coverage for pre-existing conditions, either entirely, or for periods of one year or more. These circumstances further enhance the economic burden a family must bear, especially considering that caring for a loved one either in a medical facility, or at home, projects many different and indirect costs not considered reimbursable by a health insurance carrier.

As a result of these conditions, fifteen (15) states have enacted legislation to create a residual insurance market for those hard to place individual health insurance risks. This risk pool legislation has taken various forms, but include one or more of these salient features:

- Limits of premium charges to twice the average individual health insurance cost

- Modification of prohibitive clauses, such as "pre-existing condition limitation" and extremely high coinsurance deductibles.
- Lifetime limits of \$500,000
- Deductible limits of \$1,000
- Funding to some extent would be produced by a surcharge on all health insurance carriers, HMO's and PPO's

There are major deficiencies with these high risk pools for the disabled population. The costs may be unaffordable to many persons with disabilities. Benefits often do not meet on-going maintenance needs like durable medical equipment or maintenance physical or occupational therapies. These pools may invite the dumping of insured people with high risk health care needs. It is the view of some disability group advocates that a Medicaid buy-in plan offers a better short-term, incremental strategy than a high risk pool.

E. Mandatory Employer Sponsored Group Benefit Programs

Catastrophic insurance coverage and the lack of coverage for both the employed and unemployed population are currently under discussion at the Federal level. As a part of this discussion, federally mandated health insurance benefits have been proposed. One proposal would mandate health insurance with certain minimum provisions that must be provided by all employers with more than 20 employees. Minimum benefits, similar to group health insurance prevalent in the workplace, would be prescribed. As pointed out earlier in this paper, there are many gaps in coverage in the present system. The pending legislation fails to address reimbursement for rehabilitation costs. Neither does it incorporate a system of case management for catastrophic claims. While

enactment of such legislation would address the lack of health insurance for the uninsured employed constituency, it probably will be of minimal benefit in closing the gaps in health insurance coverage for traumatic brain injury.

F. Medicare/Medicaid

This paper has addressed third party payors exclusively, but we could not resist the temptation to mention a word on Medicare reform. Since young adults under the age of 35 make up 66% of persons with head injuries, with almost 70% being male, some will qualify for Medicare benefits 30 months after the date of their accident, which will be far too late for most meaningful acute rehabilitation efforts. Legislative proposals are made annually to reduce the length of this waiting period for Medicare eligibility. Pressures for change may increase as a result of the recent political issues surrounding the AIDS epidemic. In addition, serious legislative proposals are under consideration in Congress to expand Medicare to cover home health care benefits. Both of these changes would significantly broaden the benefits available to persons with a head injury, who lack any other insurance coverage.

Numerous political efforts are also being addressed to reform Medicaid to bring about uniform eligibility standards among the states, and to broaden benefits for home care, independent living and community services, among others. Another significant development is the promotion of the concept of a Medicaid "buy-in", as a vehicle for obtaining health insurance coverage for the uninsured and the underinsured. The predominant issue to be

resolved in all of these public sector proposals, is determining the appropriate financing mechanism.

G. Medical I.R.A.'s

Legislation is pending in Congress to establish medical IRA's. This approach is comparable to IRA programs for those who are not a part of an employer sponsored pension program. Medical IRA's on an individual basis would allow a person to accumulate tax deductible and tax deferred assets that at some later date could be used to purchase catastrophic insurance on either a group, or individual basis. This option would be available to an employee as part of a cafeteria benefit program, the ultimate use being purchase of long term care insurance or a catastrophic rider on the group insurance policy. Such a program would have mass appeal, and might foster more individual responsibilities in dealing with catastrophic and long term care health issues. Such programs quite possibly could relieve some of the burden from the already financially strained Medicaid programs.

H. Attendant Care

Funding for attendant care becomes a significant issue because post acute head injury rehabilitation does not fit into the medical model. Some health care insurance policies deem that services will, however, be provided on a limited basis if skilled professional care is needed, i.e., RN, LPN.

To sustain and realize new gains for those with traumatic brain injury who cannot function independently, a personal care attendant is ideal - not only for technical procedures or health care needs,

but also for reasons of safety. Safety issues are escalated due to deficits in judgment, memory, visual/auditory and perception.

The attendant's role is to help promote function, independence and maintain safety. An attendant requires skill and training in behavior psychology and interpersonal relationships, basic teaching skills and expertise in remediating the problems specific to cognitive functioning.

Utilizing an attendant for this supervised care would extend the limited available funding. Resulting wellness and independent functioning leads to decreased long term medical costs, less recidivism, and fewer psychological problems.

For a lower level brain injured person, who is totally dependent for all activities of daily living, attendant care can provide the family with respite, reducing their stress and stress related illness. Costs in terms of real dollars as well as physical and emotional cost to the family can be significant. Recognizing health needs outside the framework of the current medical model is essential to provide efficient, quality care at acceptable cost.

V. ADVOCACY

Providers, payors, regulators and consumers all have a significant impact in decisions affecting traumatic brain injury. We should direct our attention toward cooperation between each of these groups and seek out a common ground. Areas of mutual interest and delineation of ways we can work together for the benefit of the head injured client are the real priority. Inter-industry

committees, trade groups, task forces, and other coalitions that represent the various factions should be initiated. Other ways to increase awareness include targeted conferences and in-services; articles in trade publications, such as Business and Health, Business Insurance, Employee Benefit Review, as well as various industry, agency and consumer newsletters.

The goal is to achieve a greater understanding of the problems faced by persons with a head injury and the sharing of concerns common to all parties. Grass roots consensus building on a broad range of disability issues can effectuate change and serve as a catalyst for meaningful reform. NHIF has made significant progress in bringing about reforms since its beginning in 1980. The state chapter network has made meaningful inroads in educating regulators and payors to initiate program changes. Such cooperative programs are essential to impact the quality of care for persons with a head injury.

VI. SUMMARY AND CONCLUSION

A family facing day to day issues in caring for a loved one seems far removed from the many different facets of funding issues discussed in this paper. The immediate present is enough to consume most of their energies and waking hours. It is difficult to believe, but as many as 2 million Americans to one degree or another have sustained a head injury, and countless millions more have been touched in either the care giving role, or as an immediate family member.

Somehow, members of the National Head Injury Foundation and others have found the time to advocate for the needs of this group of Americans in order to precipitate change. The future knows no limits. Medicare and Medicaid reform is close at hand. Some form of catastrophic health insurance for senior citizens will become law at the federal level in the near term. The insurance needs of the under age 65 population are coming to the forefront. This nationwide attention on the lack of adequate health insurance for catastrophic medical costs should be an incentive for the insurance industry to redesign insurance coverages and address the gaps and problems which have been identified in this paper. Cooperative efforts between the private and public sector will be required. Continued vigilance and advocacy are an essential part of any solution to achieve functional independence for persons with head injuries.

BIBLIOGRAPHY

- Eggert, Gerald M.; Delaney, Meg; Friedman, Bruce, "Employee Options to Finance Long Term Care", Business and Health: November, 1986, Page 15
- Doyle, John A. "Long Term Care (LTC) - Private Insurance vs. Medicare for the Elderly, Will be a Prime Issue in 1987 for Rehabilitation", NARF Rehab Insurance Report: January, 1987, Pgs. 1-2
- Bowen, Otis, R.M.D. "Private/Public Sector Advisory Committee on Catastrophic Illness" HHS News: 8/19/86, Pgs. 3, 6, 8
- Boland, Peter. "The Role of Preferred Provider Contracting in the Health Care Market", The New Health Care Market: 1985, Pgs. 3-7
- Matkin, Ralph E.; Wallace, William C. "Disability Case Management", Insurance Rehabilitation: 1985, Pgs. 95-99
- U.S. Department of Labor. "State Workers Compensation" Administrative Profiles": September, 1983, Pgs. 324-330
- Kreider, Jeffrey R.; Wissel, Eric, Ph.D. "The Privates: Principles of Insurance Rehab", NARF Publication: January, 1985, Pgs. 11-13
- Mayer, Thomas, R.M.D.; Mayer, Gloria-Gilbert, Rl., Ed.D. "The Health Insurance Alternative--A Complete Guide to Health Maintenance Organizations", Putnam Publishing Group: 1984, Pgs. 13-163
- Musio, Thomas, Director of Statistics. "Survey of Rehabilitation Programs Offered by HIAA Member Companies" Health Insurance Association of America, Research and Statistical Bulletin: March 20, 1987, Pgs. 2-87
- Deutsch, Paul M., Ph.D. and Associates. Center for Rehab Studies, College of Health Related Professions, University of Florida, Gainesville, Florida, and the Greenery Group
- Greenberg, Jay N.; Westwater, Don S.; Lentz, Walter N. "Long Term Care Insurance: How Will It Sell?" Business and Health: November, 1986, Pgs. 20-21

National Association of Rehab Facilities; American Academy of Physical medicine and Rehab, National Head Injury Foundation; National Easter Seals Society; Submitted for the record to the Subcommittee on Health of the House Committee on Ways and Means, Hearings on Catastrophic Health Coverage: March 4-10, 1987, Pgs. 3, 6, 7

Barbera, Carlos A. "Controversial Issues In The Reimbursement Of Brain Injury Rehabilitation Services", CNR Review, Spring, 1987, Page 4