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AGGREGATED CLAIMS SERIES

Volume 3: CODEBOOKS FOR FEE-FOR-SERVICE TREATMENT EPISODES AND ANNUAL EPISODE COUNTS

C. E. Peterson, C. d'Arc Taylor, E. S. Bloomfield

June 1986

HEALTH INSURANCE EXPERIMENT

Rand
SANTA MONICA, CA.

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PREFACE

This Note provides codebooks for two data files from the Health Insurance Experiment (HIE), a large social experiment conducted by The Rand Corporation from 1974 to 1982 under a grant from the Department of Health and Human Services. The HIE is issuing a number of data files, grouped in topical series, with associated documentation.

The codebooks describe data on episodes of treatment undergone by experimental subjects--numbers, types, duration, and associated expenses. The data are derived from claims submitted by families experimentally insured by HIE.

Episode files were created to facilitate analysis of how the subjects adjusted their demand for health care in the expectation of satisfying/not satisfying the annual deductible or limit on out-of-pocket expenses specified in their health insurance policy.

The *individual-episode file* describes each treatment episode experienced by an HIE enrollee in terms of type, duration, provider, expenses, and effect on meeting the annual deductible or expense limit. The *annual episode file* totals the number of episodes and their expenses by type during each year an individual was enrolled in the experiment. This Note describes each variable in the files, defines the response codes or range of values, and tabulates important statistics or response frequencies. It is thus a basic reference for file users.

Joseph Newhouse provided guidance and support throughout this work. Emmett Keeler, Joan Keesey, and William Fowler defined most of the derived variables. Alicia Bell and Deborah Wesley provided programming support; Betty Amo provided administrative support. Patricia Camp, Emmett Keeler, Janet Hanley, and Suzanne Polich reviewed the draft codebooks and made useful suggestions. Joice Polin and Cecelia Canter prepared numerous typescripts. Final production of this Note was supervised by Patricia Bedrosian.

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I. INTRODUCTION

This section presents an overview of the Health Insurance Experiment (HIE) and its data collection and file development efforts. It provides essential background for understanding the contents of the codebooks. Section II describes the distinctive features of the episode files, so called because they provide data on episodes of treatment undergone by experimental subjects. Section III presents the codebook for the individual-episode file; Sec. IV presents the codebook for the annual episode file.

EXPERIMENTAL DESIGN

The Rand Corporation conducted the Health Insurance Experiment from 1974 to 1982 in six sites across the United States: Dayton, Ohio; Seattle, Washington; Fitchburg and Franklin County, Massachusetts; and Charleston and Georgetown County, South Carolina.[1] The main purpose of the experiment was to assess how varying patients' cost of health services affected their use of services, their satisfaction with health care, the quality of their care, and the state of their health. A related purpose was to study how those outcomes were affected by the mode of delivery--fee for service or health maintenance organization (HMO).[2]

Over the course of the experiment, information of some kind was obtained for 26,148 persons. A total of 24,340 persons were administered a baseline interview (*baseline participants*[3]), of which

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[1]The sites were chosen to represent the four census regions of the country and both urban and rural areas. They also differed in the amount of delay to obtain an appointment, reflecting different degrees of stress on the ambulatory medical care system. Site selection is described in Philip J. Held, *Site Selection Criteria for the Health Insurance Study,* The Rand Corporation, N-2266-HHS, May 1985.

[2]For a discussion of the purposes and design of the HIE, see Joseph P. Newhouse, "A Design for a Health Insurance Experiment," *Inquiry,* Vol. 11, 1974, pp. 5-27. HIE is also called HIS, Health Insurance Study. The terms are synonymous.

[3]This and other distinctive HIE terms are defined in the Glossary at the end of this document.

7,700 were ultimately enrolled.[4] An additional 554 persons were enrolled later, all but a few of them newborns or adopted children under one year of age. Those 8,254 *insured enrollees* were assigned to an *experimental insurance treatment*, and data on their use of health services were collected throughout their period of participation.[5] Another 2,483 *adjunct enrollees* were not assigned to an insurance treatment but resided with insured enrollees or were members of a short-lived control group in Dayton.

Selection of Enrollees

Persons offered enrollment in the experiment represent a random sample from each site, subject to certain eligibility restrictions.[6] They were chosen by a two-stage baseline selection process. In each site an areawide probability sample of dwelling units was drawn. Their occupants were interviewed for eligibility, and those found eligible were questioned in depth about their socioeconomic characteristics and experience with health care.

Eligibility criteria excluded those whose health care delivery systems differed from options available to the general population. The following groups were excluded:

- Those who were eligible for Medicare or would become so during the experiment, i.e., those 62 years of age and older, or younger than 62 but with a Medicare-eligible condition such as end-stage renal disease.

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[4]Of the remaining 16,640 persons, the 15,411 who did not enroll are called *baseline-only participants*; 1,229 are part of the adjunct enrollee group defined below.

[5]Note that "insured" in HIE terminology only means "assigned to an experimental treatment." By the same token, "uninsured" only applies to a participant not so assigned, not necessarily someone lacking health insurance altogether.

[6]Subject also to slight oversampling of low-income families in Dayton, Massachusetts, and South Carolina.

- Those with family incomes over $25,000 (1973 dollars).
- Those institutionalized (jail, long-term hospital).
- Veterans with service-connected disabilities.
- Those in the military and their dependents.[7]

Project staff verified the accuracy of the information given by baseline participants with employers and insurance companies.

In the second selection stage, HIE staff drew a representative sample of eligible persons to be offered enrollment and assigned each family to one of the insurance plans described below. A sophisticated technique assured that, across plans, families closely resembled each other in 24 health and socioeconomic characteristics.[8]

Experimental Treatments

Sixteen experimental treatments distinguished between coinsurance rates, delivery systems, and maximum out-of-pocket expenditures. All but one of the treatments were health insurance plans, listed below as A-O. Enrollees who had gone through the baseline selection process were assigned to one of the plans. The remaining treatment involved a control group in Seattle, chosen separately.

Insurance Plans. Plans A-N entailed different degrees of cost sharing under the fee-for-service system. Within each cost-sharing group, plans also differed by the ceiling placed on maximum expenditure. Plan O involved participation in a prepaid group practice, a traditional type of HMO:

A. Free care (0% coinsurance) (one plan).
B-D. Family pays 25% of its medical bills (25% coinsurance) (three plans).

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[7]Details of HIE eligibility requirements are in Lorraine Clasquin and Marie E. Brown, *Rules of Operation for the Rand Health Insurance Study*, The Rand Corporation, R-1602-HEW, May 1977, Sec. II.

[8]The logic and techniques used to determine optimal sample sizes and assign individual families to experimental plans are described in Carl N. Morris, "A Finite Selection Model for Experimental Design of the Health Insurance Study," *Journal of Econometrics*, Vol. 11, 1979, pp. 43-61.

E-G. 50% coinsurance (three plans).

H-J. 50% coinsurance for dental and outpatient mental health services and 25% coinsurance for all other services (three plans).

K-M. 95% coinsurance (three plans).

N. 95% coinsurance on outpatient services; 0% on hospital care (one plan).[9]

O. 0% coinsurance if care was received at a Seattle HMO, Group Health Cooperative of Puget Sound; 95% otherwise (one plan).

Plans requiring coinsurance (B-N) placed a ceiling on annual out-of-pocket expenditures, above which care was free.[10] In all but one case (N), the ceiling was a specified percentage of the family's income or a dollar limit, whichever was less. The percentage varied with family income and the dollar limit varied with the plan, as indicated below:

Plan	*Percentage of Family Income*	*Dollar Limit*
B-D	5, 10, or 15	1000/750[11]
E-G	5, 10, or 15	1000
H-J	5, 10, or 15	1000/750
K-M	5, 10, or 15	1000
N	--	150 per individual; 450 per family

[9]During the experiment's first year in Dayton, the provisions of plans A-N differed in two ways: only plan A covered dental services for adults; and the coinsurance rate on plans K-N was 100 percent instead of 95 percent.

[10]During the experiment's first year in Dayton, expenditures for outpatient mental health care did not apply toward the ceiling.

[11]In plans B-D and H-J the $1000 limit applied during the first two years of enrollment for Dayton families who enrolled from November 1974 to February 1975; and during the first year of enrollment for Seattle families who enrolled from January to September 1976. The $750 limit applied during subsequent enrollment years for the aforementioned families, and during the entire enrollment period for all other families.

HMO Control Group. A random sample of existing members of the Group Health Cooperative (subject to HIE eligibility requirements) was drawn as a control group for the HMO experimental group assigned to plan 0. The control group was formed to compare HMO use by those who had *chosen* that delivery mode (i.e., members of the control group) with use by those experimentally *transferred* to an HMO from the fee-for-service system (i.e., members of the experimental group). Enrollees in the HMO control group continued with the Group Health Cooperative under their prior arrangements but provided the same data as HMO experimental members. With respect to the insurance provider, enrollees assigned to plans A-0 (including the HMO experimental group) were said to be HIE-insured; the HMO control group was termed HMO-insured.

Services Provided

Plans A-0 provided the same comprehensive benefits, including hospital, physician, dental, mental health, visual, and auditory services, drugs (including over-the-counter drugs for certain chronic conditions), and supplies. Services of nonphysician providers, such as audiologists, chiropractors, clinical psychologists, optometrists, physical therapists, and speech therapists, were also covered. The only noteworthy exclusions were nonpreventive orthodontic services, cosmetic surgery for preexisting conditions, and outpatient mental health visits exceeding 52 per year.

Enrollees were able to choose the physicians and other persons who provided their health care. However, if those in the HMO experimental group sought care outside the HMO that was available within, they were responsible for 95 percent of the cost. (For covered services, such as dental or chiropractic, that were unavailable at the HMO, members of the experimental HMO group were fully reimbursed.)

Enrollees in the HMO control group retained whatever benefit package they or their employer had purchased from the HMO. Members of both control and experimental groups were reimbursed 5 percent of the cost of care obtained outside the HMO to encourage the reporting of non-HMO care.

Terms of Enrollment

Families who accepted the insurance plan offered from plans A-0 were enrolled in the experiment for either three or five years, the term randomly assigned. All members of the HMO control group were enrolled for five years.

Enrollees assigned any benefits from their existing health insurance policies to the HIE during the time they participated. No family was financially penalized by HIE enrollment. Enrollees were reimbursed for the cost of maintaining their policies, and if their HIE plan could, under any conceivable set of circumstances, provide less coverage than their private policies, they were paid the maximum difference.[12]

Table 1 indicates the timing of enrollment in the experiment and number of enrollees insured immediately after the baseline selection process in each site.

DATA COLLECTION

Over the course of the experiment, extensive data were collected on participants' demographic and economic characteristics, health status, and use of health services. Background information was obtained on local health care costs, providers, and types of services rendered. The data collection instruments are described in Table 2.

Table 2 shows the amount and types of data gathered from the various participant groups. The most extensive data, especially longitudinal data on the use of health services, are available from the 8,254 insured enrollees, who participated in the experiment longest. The 15,411 baseline-only participants provided much demographic and socieoeconomic data, as well as information on health status, experience with health care, and health-related attitudes. Limited data were obtained for the 2,483 adjunct enrollees.

Several subcontractors to Rand participated in the data collection effort. Until March 1975, Mathematica, Inc., supervised data collection, administered the insurance plans, and processed claim forms.

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[12]Calculation of the maximum difference is described in Appendix A.

Table 1

HIE ENROLLMENT PERIODS

Site	Number of Enrollees[1]	1974	1975	1976	1977	1978	1979	1980	1981	1982
Dayton	1137	Nov.						Feb.		
3-year	533					Feb.				
5-year	604									
Seattle	3112			Jan.					Sept.	
3-year	1500						Sept.			
5-year	1612									
Fitchburg	723			July					Oct.	
3-year	547						Oct.			
5-year	176									
Franklin Co.	889			July					Oct.	
3-year	649						Oct.			
5-year	240									
Charleston	779			Nov.						Feb.
3-year[2]	571					Nov.				
5-year	208									
Georgetown Co.	1060			Nov.						Feb.
3-year[3]	800					Nov.				
5-year	260									
Total	7700									

NOTE: Timelines mark the month and year in which the first person enrolled in the experiment and the month and year in which the last person left the experiment. Data on use of health services continued to be collected from several groups after the end dates shown here: one year afterward for the Dayton 5-year group and Seattle, Fitchburg, and Franklin County 3-year groups; six months afterward for the Dayton 3-year group.

[1]Numbers refer to enrollees insured immediately after the baseline selection process. An additional 554 persons were enrolled and insured later, nearly all of them newborns or adopted children under 1 year of age. Figures for Seattle include the HMO control group.

[2]Some of these enrollees were also members of a preenrollment group between November 1976 and February 1979. An additional 339 persons participated in the preenrollment phase but did not formally enroll in the experiment.

[3]Some of these enrollees were also members of a preenrollment group between November 1976 and February 1979. An additional 213 persons participated in the preenrollment phase but did not formally enroll in the experiment.

Table 2

PRINCIPAL HIE DATA COLLECTION INSTRUMENTS

Instrument	Topics Covered	Data Collected		
		How	When	From
1. Screening questionnaire [1]	Demographic information to establish basic eligibility	Interview	Beginning of HIE operation in site	Occupants of representative sample of dwelling units on geographic clusters in site
2. Baseline questionnaire, 2 parts	Income, employment Family composition	Interview	4-6 months before enrollment	Baseline participants
	Health status Health care experience and insurance coverage Satisfaction with medical care	Self-administered	4-6 months before enrollment	Baseline participants
3. Enrollment verification form	Changes in family composition, economics, or insurance coverage since baseline questionnaire	Interview	Between administration of baseline questionnaire and enrollment date	Baseline participants determined eligible
4. Medical history questionnaire (MHQ), 3 versions by age group: 0-4 years 5-13 years 14+ years	Form A: health status, attitudes, habits Form B: specific medical disorders	Administered by self or parent [2]	Just before enrollment and exit [3]	Insured enrollees
5. Medical screening examination, 3 versions by age group: 0-2 years 3-13 years 14+ years	Physiologic tests	Paramedical personnel	Just before enrollment and exit	Sample of insured enrollees at enrollment; all exiting enrollees
6. Health report	Use of medical or dental services and time spent obtaining them; any restricted activity or bed disability	Administered by self or parent	Biweekly during period of participation	Insured enrollees [4]
7. Health care questionnaire, 3 versions by age group: 0-4 years 5-13 years 14+ years	Health status, attitudes, habits (subset of MHQ)	Administered by self or parent	Each anniversary of enrollment except at exit	Insured enrollees

For footnotes, see p. 10.

Table 2 (cont.)

Instrument	Topics Covered	Data Collected		
		How	When	From
8. Annual income report	Amount and sources of family income, taxes paid	Self-administered	Annually (April)	Head of insured family
9. Periodic employment report	Wages, hours worked, family payments for care of children or elderly, government program benefits received	Self-administered	Semiannually	Enrollees (head and family members 16 and older)
10. Assets and debts questionnaire	Family assets and liabilities	Self-administered	Exit	Head of insured family
11. Knowledge of coverage questionnaire	Details of HIE insurance plan	Self-administered	Specified intervals [5]	Insured enrollees
12. Insurance abstraction	Details of selected insurance policies	Abstraction	At time of knowledge of coverage questionnaire	Insurance company brochures
13. Chronic condition questionnaire	Status of condition, correctness of diagnosis, adequacy of treatment	Physician interview	At exit medical screening examination	Sample of insured enrollees found to have certain chronic conditions [6]
14. Evaluation questionnaire	Perceptions and attitudes about HIE and health care system	Self-administered	Exit	Head of insured family
15. Health notice	Use of medical or dental services	Administered by self or parent	Biweekly during preenrollment phase (South Carolina); 6 months-1 year after exit (other sites)	Preenrollees (So. Carolina), insured enrollees who have exited (other sites)
16. Medical expense report (MER)--fee-for-service claim form, 4 types: Doctors' services and supplies Dental care Hospital and extended care Pharmacy	Each use of medical or dental service, drugs, and equipment; reason or diagnosis; treatment	Administered by self or parent	Time of occurrence	Insured enrollees and providers/suppliers

For footnotes, see p. 10.

Table 2 (cont.)

Instrument	Topics Covered	Data Collected		
		How	When	From
17. Services rendered report (SERR)--HMO equivalent of MER [7], 2 types: Doctors' services and supplies; Hospital and extended care	Each use of medical service provided by HMO; reason or diagnosis; treatment	Abstraction	Annually to cover entire previous year	HMO records for insured enrollees in HMO experimental and control groups
18. Factor price survey	Wages and benefits of selected hospital personnel [8], average daily inpatient population	Phone and mail	Semiannually	Sample of local hospitals
19. Consumer price index	Prices of selected nonmedical products in the six HIE sites	Phone and inspection	Semiannually	Sample of local retailers
20. Physician capacity utilization survey (PCUTS)	Availability of services[9]	Phone	Annually	Sample of local physicians [10]
21. Dentist capacity utilization survey (DCUTS)	Similar to PCUTS	Phone	Annually	Sample of local dentists [11]

1. Administered as a separate questionnaire only in Dayton; part of baseline questionnaire in the other sites.
2. When "parent" appears in this column, a parent was asked to provide data for children 13 and younger.
3. "Exit" refers to normal departure from the experiment after completing the assigned enrollment period, three or five years. Those who "attrited," or voluntarily left the experiment early, received an "attrition" MHQ that was identical to the exit MHQ.
4. In the first year of the experiment in Dayton, the health report was administered weekly to a random half of Dayton enrollees. In the first year of the experiment in Massachusetts and South Carolina, 25 percent of enrollees were exempted to measure the reporting requirement's effect on the use of health services. Also at one point virtually all participants stopped filling out health reports, for budgetary reasons.
5. Intended intervals were enrollment, 18 months, 3 years, and 5 years after enrollment (the last only for the 5-year participants). Actual mailings approximated those intervals in Massachusetts and South Carolina; the first mailing was 2-1/2 years and 1 year after enrollment in Dayton and Seattle, respectively.
6. Hypertension, diabetes, thyroid diseases, chronic heart diseases, chronic lung diseases, joint diseases, ulcers, cerebrovascular disease.
7. Pharmacy data were obtained directly from an HMO-supplied computer tape. Dental care was not available through the HMO; HMO participants reported claims for dental care and other non-HMO services on the MER.
8. Categories of personnel: registered nurses (general-duty), medical technicians, licensed professional nurses, nursing aides, kitchen helpers, general stenographers, and maids or porters.
9. Waiting time for appointments; appointments per hour; patients seen in office, home, and hospital; weekend office hours; office staffing; cost of office visit; whether new patients accepted.
10. Physicians (M.D. or D.O.) specializing in general practice, internal medicine, and pediatrics.
11. Except in Fitchburg, Franklin County, and Georgetown County, where all dentists were surveyed.

Thereafter, National Opinion Research Center managed data collection and Glen Slaughter and Associates handled insurance administration and claim processing. American Health Profiles, Inc., conducted the medical screening examinations at enrollment (October 1974 through January 1977); CompuHealth administered those examinations at exit (October 1977 through December 1981).

FILE DEVELOPMENT

Subcontractors sent the collected data to Rand, either in hardcopy form or as cleaned data tapes. At Rand the hardcopy data were encoded for machine readability and subjected to computerized checks for logical consistency and adherence to specified response ranges; outliers were checked only for fidelity to the original response and otherwise left unchanged. Limited cross-checking was done to assess logical consistency among a respondent's answers. All identifiers permitting information to be linked to a specific respondent were replaced twice to protect respondents' privacy.[13] The cleaned records were then arranged in the HIE version of standard computer file format, and the resulting files of *primary variables* made available for HIE analyses.

When an analyst needed information that required manipulation of primary data, *derived variables* were constructed. The analyst and a programmer determined a suitable way of obtaining the information by extracting, aggregating, or transforming primary data, and the programmer wrote the appropriate logic. With the analyst's approval, the new variable was entered on the master file.

Both primary and derived variable files are being issued to the public in a number of topical series. Appendix B provides a complete list of the files to be issued.

The machine-readable tape for each file includes data in both SAS[14] (Statistical Analysis System) and character formats, and an index of character-format variables.[15]

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[13]The first conversion was known only to the subcontractor, the second only to Rand. Neither institution could make the full link from the respondent's name to his or her identifier on the analytic files.

[14]A registered trademark of the SAS Institute Inc.

[15]This is the content of all files issued by Rand. Other institutions (e.g., National Archives) will distribute these files and may alter their contents.

A codebook is also provided for each file. This volume contains codebooks for the two episode files in the aggregated claims series. Section II describes the features common to both files. Section III presents the codebook for the individual-episode file; Sec. IV presents the codebook for the annual episode file.

II. EPISODE FILES

Episode files were created to help analyze how people adjust their demand for health care in the expectation of satisfying/not satisfying the annual deductible or limit on out-of-pocket expenses specified in their health insurance policy. Most health care services are purchased during *treatment episodes*, health care visits linked by a common complaint or purpose, diagnosis, or treatment. Episodes are thus the natural "sales" unit for analyzing the effects of price.

The episode files contain information about the treatment episodes experienced by HIE enrollees--numbers, types, durations, and associated expenses. Each episode is characterized by type and provider category. Types include acute, chronic, chronic flareup (temporary problem in a usually controlled condition such as arthritis), well-care (such as immunizations, physical exams, and dental exams), and prenatal or maternity. Provider categories include hospital inpatient, hospital outpatient, physician, dentist, pharmacy, and nonpharmacy supplier.

THE SAMPLE

The *individual-episode file* describes each episode experienced by an enrollee. The *annual episode file* totals the number of episodes and their expenses by type for enrollees during each contract year (defined below). In both files, the sample population is 6,208 *FFS enrollees*. They are the persons initially assigned to a fee-for-service insurance plan (plans A-N listed on pp. 3-4 above), excluding members of the HMO experimental and HMO control groups in Seattle.[1] The distribution of the sample population by site is as follows:

[1]Because of temporary ineligibility, a very few enrollees had periods of not being covered by HIE insurance. Those persons, and their treatment episodes while covered, are included in the episode files.

Dayton	1,208
Seattle	1,306
Massachusetts	1,710
South Carolina	1,984
	6,208

The unit of observation is a treatment episode or a person-year, depending on the file. The individual-episode file contains a record for every episode experienced by an FFS enrollee while insured in the experiment. For each year an enrollee was insured at any time but had no treatment episodes, a dummy record was created. It shows missing values for the variables that describe episodes occurring that year. Dummy records simplify analysis by enabling researchers to control for nonusers of health care services in the sample population. The total number of observations is the total number of episodes for all enrollees, plus the number of dummy records.

The annual episode file contains one record per enrollee per contract year. The record shows zero episodes and expenses for years in which the enrollee was insured but did not use health care services. The total number of observations is the total number of enrollee years.

EFFECT OF ENROLLMENT CONDITIONS

The episode files are affected by two HIE enrollment practices: (1) Enrollment and assignment to an insurance plan were by *family*, whereas episode data are provided for *individuals*, and (2) the "contract year" was the administrative unit of time for enrollees.[2] All family members were assigned the same enrollment date, even newborns and others added later. The first contract year for individuals and their families began on the family's enrollment date and ended one year later. The second contract year began on the first anniversary of enrollment and extended to the next anniversary date, and so on. "Contract years" do not necessarily coincide with calendar years. Depending on the assigned

[2]For a more detailed explanation of eligibility and enrollment dynamics, see S. M. Polich and C. d'Arc Taylor, *Master Sample Series, Vol. 1: Codebook for Eligibility-Family Changes File*, The Rand Corporation, N-2264/1-HHS, May 1986, pp. 14-19.

enrollment term, families participated in the experiment a maximum of three or five contract years.

In all sites but South Carolina, chronological years and contract years were identical for persons assigned to both three-year and five-year enrollment terms. That is because persons in both terms enrolled at the same time and finished two years apart. In South Carolina, however, all enrollees finished their terms at the same time. Accordingly, though enrollees were all chosen simultaneously, the three-year group was not formally enrolled until the beginning of the third year of the experiment. During years 1 and 2 its members served as a preenrollment group; they were not assigned to an insurance plan (so could not submit claims), but general data on their use of health care services were collected. Only episode data for the three contract years of their formal enrollment appear in these files.

Individuals are linked to families by a system of identifiers. Each enrollee was assigned a unique person identifier and a family identifier shared by the other members of his/her family. Person identifiers were never changed; family identifiers were changed if a family acquired a member (through birth, adoption, or moving in, for example) or lost a member (through separation or divorce, moving out, or death, for example). Identifier changes as a result of family composition changes were made at the beginning of the contract year *after* they occurred, not during the year, to simplify analysis and administration. For each enrollee the episode files show the person identifier and the family identifier at the beginning of any contract year of interest.[3]

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[3]The family identifier on the episode files corresponds to the family identifier on the eligibility-family changes file in the master sample series, but their forms differ. The episode family identifier, a four-digit number, is not unique across sites, so care is needed to distinguish, say, Dayton's family 63 from Seattle's family 63. The eligibility-family changes identifier is an eight-digit number that includes a site code and is thus unique across sites. The different systems arose from the need, during the experiment, to have separate identifiers for (1) tracking family composition changes (which could occur at any time) and (2) linking family members who shared the same insurance plan over a contract year. Since the identifiers on both the episode and eligibility-family changes files pertain to the beginning of a contract year, they correspond exactly.

Assignment to an experimental insurance plan entailed specification of a *maximum dollar expenditure* (MDE). The MDE was the annual maximum the family had to spend out of pocket before medical care was free. The amount, a function of the plan, was usually a specified percentage of family income up to a limit of $750 or $1000 (see p. 4). Exceptions were plan A, which provided for free care, and plan N, which fixed the MDE at $150 per individual or $450 per family. For families whose plans specified an income-related MDE, HIE staff recalculated MDE at the beginning of the second and each subsequent contract year if the family income had changed. Only expenditures for services covered by the HIE (see p. 5) applied toward the MDE.

The individual-episode file shows the effect of each episode on satisfaction of the family's MDE per contract year. The annual episode file indicates the date on which the family exceeded its MDE for the year.

DATA SOURCES

Episode data are derived from the series of files pertaining to enrollees' fee-for-service claims--the claims line-item series.[4] Those 14 files, and the topics they cover, are the following:

File Number	*Topic*
01	Hospital inpatient services
03	Inpatient physician procedures billed by institutions
04	Drugs prescribed by physicians
05	Supplies prescribed by physicians
06	Services rendered by physicians
08	Drugs sold by physicians
09	Supplies sold by physicians
10	Injections administered by physicians
11	Outpatient services billed by institutions
12	Services rendered by dentists

[4]For a detailed description of the fee-for-service line-item files, see C. E. Peterson et al., *Claims Line-Item Series, Vol. 1: Codebooks for Fee-for-Service Claims*, The Rand Corporation, N-2347/1-HHS, June 1986.

13	Drugs prescribed by dentists
15	Drugs purchased
16	Supplies purchased from pharmacies
18	Supplies purchased from nonpharmacy suppliers

The claims line-item files in turn draw on enrollee claim forms (*medical expense reports* (*MERs*), item 16 on Table 2); standard diagnosis and service codes; and HIE administrative records on participants' enrollment history.

DERIVATION PROCESS

The process of creating episode records from line-item records was complex because the line-item data are highly disaggregated and appear in many different documents. It is beyond the scope of this document to describe in detail how the line-item data were reorganized into logically complete treatment episodes.[5] Briefly the process involved the following steps:

1. Arranging all claims line items (services) for an individual by date.
2. Isolating individual health care services and associated costs.
3. Defining episodes by using claim numbers, dates, treatment history codes, and diagnoses to link related services.
4. Summarizing episode counts and costs per enrollee per contract year.

Each step involved assumptions and procedures that affect the use of the data. For example, in linking services to define episodes (step 3), we observed a hierarchy: hospital, physician, drug, nonpharmacy supplier. This means that if a service could be related (by date, treatment history, or diagnosis) to two provider categories, it was

[5]The derivation of episode data from claims line-item data is explained in Joan Keesey, Emmett Keeler, and William Fowler, *The Episodes-of-Illness Processing System*, The Rand Corporation, N-1745-1-HHS, January 1985. That document describes how the type of episode was determined, which is not covered in this codebook.

linked with the "higher." For example, if a visit to a physician's office could be related to a hospital visit, both were made part of a hospital episode rather than a physician episode. Similarly, if a physician visit occurred on the same day a drug was purchased, the latter was linked with the former rather than the reverse. Two categories of episodes were split: hospitalizations into inpatient and outpatient parts, and dental into the initial exam and subsequent work. Since many insurance policies treat those parts separately (though the HIE did not), the distinction facilitates modeling.

People are assumed to adjust their demand for health care as soon as they know they will incur an expense, not later when they receive the bill. Accordingly, to serve the analytic purpose of the episode files, the date for an episode was set at the earliest time it was likely to have been foreseen. Moreover, since economic behavior was studied within the context of an annual MDE, episodes had to restart at the beginning of a new contract year. For example, it was assumed that routine expenses for a chronic condition such as diabetes or hypertension are completely foreseen, so such a chronic episode was dated from the first office visit for the condition that year. Dental episodes were dated to the first in a series of related procedures or the preceding examination. A hospitalization episode involving abortion that was unlinked to a previous episode was dated 60 days before the date of service or the beginning of the current contract year, whichever was later. Similarly, an unlinked maternity hospitalization episode was dated 200 days before the date of service or the beginning of the contract year if later.

Inconsistencies in the claims line items may also be reflected in the episode data. For example, the claims line items show that in most maternity cases (90 percent), the woman's prenatal doctor visits were included in the physician's bill for hospital delivery services. As a result, in the episode data 90 percent of those costs and services appear as hospitalization episodes and 10 percent as physician episodes.

In addition, the claims line items show that some hospitals billed maternity services to newborns instead of their mothers. The individual-episode file reflects that fact, so that what appear to be two episodes (more if multiple births) may really be one. The supplemental data file

in the master sample series[6] links the identifiers of mothers and their newborns. Reference to that file is necessary to combine such separated episodes. In the annual episode file, however, all maternity episodes are assigned to the mother.

RELATED FILES

Because they contain complete variable descriptions, the codebooks in Secs. III and IV are basic references for users of the two episode files. For a full understanding of the basis and limitations of these derived variables, however, it is necessary to consult the documentation for the claims line-item files[7] and the explanation of how episode data were derived from claims data.[8]

Data in the episode files can be understood in greater detail by reference to the outpatient, inpatient, and dental visit files in the aggregated claims series.[9] For example, the specific visits that took place during the time of an episode are described in those files. Because of the complex rules for defining episodes, however, it is not possible to determine whether a certain visit was *part of* a particular episode, just that it occurred at the same time. Similarly, the claims line-item files can show what procedures occurred during the time of an episode. By checking treatment history and diagnosis codes, users may be able to isolate some of the procedures in a specific episode.

To analyze episode data along demographic or eligibility lines, it is necessary to use files in the master sample series. For example, the eligibility-family changes file has variables showing the proportion of time an enrollee was insured during contract years 1-5 (TIME1 - TIME5).[10] Use of those variables is needed to determine which enrollees are represented by partial years of utilization in the episode files.

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[6]See Appendix B, item MS3.

[7]Peterson et al., *Claims Line-Item Series, Vol. 1: Codebooks for Fee-for-Service Claims.*

[8]Keesey, Keeler, and Fowler, *The Episodes-of-Illness Processing System.*

[9]C. E. Peterson et al., *Aggregated Claims Series, Vol. 2: Codebooks for Fee-for-Service Visits--Outpatient, Inpatient, and Dental*, The Rand Corporation, N-2360/2-HHS, June 1986.

[10]Polich and Taylor, *Master Sample Series, Vol. 1: Codebook for Eligibility-Family Changes File.*

Similarly, use of sex and age variables in the full sample demographic file is necessary to isolate women and children for episode analysis.[11]

Rand analyses of episode data have focused on expenditures as the product of the total number of an individual's episodes times the cost per episode.[12] The assigned insurance plan affects the number of episodes more than per-episode cost, so the annual episode file gives a useful summary of overall plan effects. To study enrollees' economic behavior within contract years, however, the individual-episode file is more appropriate.

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[11]S. M. Polich et al., *Master Sample Series, Vol. 2: Codebook for Full Sample Demographic File*, The Rand Corporation, N-2264/2-HHS, May 1986.

[12]See Emmett Keeler et al., *The Demand for Episodes of Medical Treatment: Interim Results from the Health Insurance Experiment*, The Rand Corporation, R-2829-HHS, December 1982.

III. CODEBOOK FOR INDIVIDUAL-EPISODE FILE

This codebook describes each of the 18 variables in the individual-episode file.[1]

VARIABLE TYPES

Header Variables

Five *identifiers* precede the other variables on the individual-episode file. FILENAME denotes the present file. PERSON identifies each enrollee, permitting data to be merged for an individual across years and files. The other identifiers are SITE, INSTAT (HIE insurance status), and CONTYR (contract year).

Episode Facts

The next class of variables provides the *facts of the episode*. They include the beginning date of the contract year, the dates the episode began and ended, a description of the episode including the type and provider category (EPIS_NO), the diagnosis or drug involved, and whether the service fit a category not usually covered by health insurance plans (CATEG). Diagnosis, service, and drug categories are taken from three systems of standard codes: HICDA (hospital-related international classification of diseases adapted for use in the United States), CRVS (California relative value scale), and NDC (national drug code).[2]

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[1]A technical description of the file, including the location and length of each variable, is provided in Appendix C.

[2]M. Nelsen and C. A. Edwards, *HIE References, Vol. 1: Codes Used in HIE Claims--Diagnoses, Symptoms, Procedures, Drugs, and Supplies*, The Rand Corporation, N-2349/1-HHS, May 1986.

Effect on MDE

The final class of variables describes the episode's effect on MDE. IFAM identifies family members sharing the same MDE; PLAN defines the family's assigned insurance plan[3]; and MDE indicates the dollar amount of MDE (a function of the insurance plan) assigned to the family at the beginning of the contract year. Those data are taken from HIE administrative files.

Variables indicating specific effects on MDE are those for episode expenses covered by the HIE (LINE_CHR); MDE remaining to be satisfied at the beginning and end of the episode, that is, before and after covered charges and coinsurance payments for the episode (MDE_STRT and MDE_END, respectively); and the date MDE is exceeded and the family is entitled to free care for the rest of the contract year (MDE_OVER). After the family has exceeded its MDE, the MDE_STRT and MDE_END values for any subsequent episode that year are negative numbers. Those numbers cumulate the charges covered by the HIE, not payable by the enrollee.[4]

We cite several examples to illustrate how those variables portray the effect of family members' episodes on MDE in a given contract year.

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[3]From this point on, we refer to insurance plans by their numeric codes in the variable PLAN rather than the letters used in Sec. I. The following tabulation shows the correspondences:

Variable PLAN	*Sec. I*
11	A
5-7	B-D
8-10	E-G
17-19	H-J
14-16 (2-4: Dayton year 1 only)	K-M
13 (1: Dayton year 1 only)	N

[4]The single exception to these statements focusing on the family applies to the plan that specifies both individual and family deductibles (PLAN = 13). For families assigned to that plan, MDE_OVER is the date an individual member exceeds the individual deductible if that occurs before the family exceeds its deductible. From that date, MDE_STRT and MDE_END values for that individual are negative. The matter is explained below.

The simplest case (see Table 3) is presented by a family assigned to the insurance plan in which health care is free (PLAN = 11). Accordingly, the family's MDE at the beginning of the contract year is zero, its MDE_STRT and MDE_END values are zero and negative, respectively, as of the first episode, and its MDE_OVER value is the date the contract year begins (same as ACCT_YR).

Table 3

EFFECT OF FAMILY EPISODES ON MDE: SIMPLEST CASE

Observation	Family Member	EPIS_NO	BEG_DATE	END_DATE
1	A	461001	19780201	19780426
2	B	411001	19780527	19780605
3	C	412001	19780608	19780613
4	D	412001	19780623	19780623

Observation	LINE_CHR	MDE_STRT	MDE_END	MDE_OVER
1	1482.36	0.00	-1482.36	19780201
2	1715.87	-1482.36	-3198.23	19780201
3	35.00	-3198.23	-3233.23	19780201
4	27.70	-3233.23	-3260.93	19780201

NOTE: This episode history is for a family assigned to the insurance plan that specifies 0 percent coinsurance (PLAN = 11). The contract year of interest began 2/1/78.

A slightly more complex but still simple case is presented by a family assigned to virtually any other plan (all but PLAN = 11 or 13). Table 4 shows the same episode history as Table 3 except that the family's assigned plan has a coinsurance rate of 25 percent and an MDE of $750 at the beginning of the contract year (PLAN = 6). As shown, the first episode incurs a charge of $1482.36, of which the family must pay 25 percent, or $370.59, which reduces the $750 MDE to $379.41 at the end of the episode. By the end of the second episode, the coinsurance

portion of the expenses the family has had to pay ($1715.87 x 25% = $428.96) is more than enough to satisfy the remaining MDE ($379.41 - $428.96 = -$49.55). The BEG_DATE of the second episode, 5/27/78, then becomes the MDE_OVER value for episodes among the entire family. Subsequent episodes show the negative MDE_END value increasing by the negative amount of LINE_CHR x 25 percent.

Table 4

EFFECT OF FAMILY EPISODES ON MDE: SIMPLE CASE

Observation	Family Member	EPIS_NO	BEG_DATE	END_DATE
1	A	461001	19780201	19780426
2	B	411001	19780527	19780605
3	C	412001	19780608	19780613
4	D	412001	19780623	19780623

Observation	LINE_CHR	MDE_STRT	MDE_END	MDE_OVER
1	1482.36	750.00	379.41	19780527
2	1715.87	379.41	-49.55	19780527
3	35.00	-49.55	-58.30	19780527
4	27.70	-58.30	-65.22	19780527

NOTE: This episode history is for a family assigned to the insurance plan that specifies 25 percent coinsurance up to an MDE of 10 percent of family income or $750 ($1000 in early site-years), whichever is less (PLAN = 6). At the beginning of the contract year of interest, 2/1/78, the MDE was $750.

Table 4 demonstrates a fact common to all insurance plans but 11 and 13: After the expenses for any family member cause the family to exceed its MDE, the health care of the entire family is free. Plan 13, which stipulates an individual as well as family deductible, requires that we consider the effect of episodes on MDE for individuals as well as for the family as a whole. Each individual has to meet a $150 MDE before his/her health care is free *unless* the family meets a $450 MDE first; then health care is free for all members. As a result, in a

family of three or fewer members, each must meet the individual deductible before further care is free for all. In a family of four or more members, all could conceivably receive free care without any one spending $150. However, the most an individual can contribute toward satisfying the family's MDE is $150.

Consider the episode history of the four-person family assigned to plan 13 (Table 5). Plan 13 specifies 95 percent coinsurance for outpatient care; hospital inpatient care is free. The episodes in Table 5 are all outpatient, so the coinsurance rate applies. For clarity, dotted lines separate the data for each family member. The contract year began August 1, 1979.

We see that each member had one or more episodes and started with an individual MDE of $150 (MDE_STRT value for member's first episode). Members B and D, with episodes in August and October, each met their deductible, and their MDE_OVER values reflect the BEG_DATE of the episode in which each did so. As of October 23, members B and D had also contributed a total of $300 toward satisfying the family MDE. Only $150 more was needed *between* the other two family members to reach the $450 limit. Member A had the next episodes, in January and February 1980. Those expenses did not meet member A's individual deductible but raised the contribution toward meeting the family's MDE to $339.66 ($150 - $110.34 = $39.66; $300 + $39.66 = $339.66). It took the expenses for the third episode of member C, on June 20, 1980, to exceed the family's MDE of $450 ($150 - $17.01 = $132.99; $339.66 + $132.99 = $472.65). Since neither members A nor C met the individual deductible, their MDE_OVER values show the June 20, 1980, BEG_DATE of the episode in which the *family's* MDE was exceeded.

Table 5

EFFECT OF FAMILY EPISODES ON MDE: COMPLEX CASE

Observation	Family Member	EPIS_NO	BEG_DATE	END_DATE
1	A	412001	19800119	19800125
2	A	443002	19800220	19800220
3	B	412001	19790803	19790809
4	B	442002	19800206	19800206
5	C	424002	19790816	19800621
6	C	412001	19791219	19791219
7	C	445003	19800620	19800620
8	D	443008	19790802	19790802
9	D	412001	19791023	19791029
10	D	412002	19791220	19800102

Observation	LINE_CHR	MDE_STRT	MDE_END	MDE_OVER
1	16.75	150.00	134.09	19800620
2	25.00	134.09	110.34	19800620
3	275.00	150.00	-111.25	19790803
4	25.00	-111.25	-135.00	19790803
5	65.50	150.00	87.78	19800620
6	20.50	87.78	68.31	19800620
7	54.00	68.31	17.01	19800620
8	25.00	150.00	126.25	19791023
9	187.30	126.25	-51.68	19791023
10	37.00	-51.68	-86.83	19791023

NOTE: This episode history is for a family assigned to the insurance plan that specifies 95 percent coinsurance (outpatient care) until a deductible of $150 (individual) or $450 (family) is met (PLAN = 13). Inpatient hospital care is free. At the beginning of the contract year of interest, 8/1/79, the family's MDE was $450.

VARIABLE DESCRIPTIONS

Each variable description is in a standard format, described below and illustrated in Fig. 1 for the variable CATEG.

VARIABLE CATEG INDIVIDUAL EPISODES

Special category of service

CODES

. - FFS enrollee had no episodes (dummy record), or service does not fit special category

1 - Mental health services

2 - Hearing services

3 - Vision services other than diagnosis/ treatment of eye injuries or cataracts*

4 - Pregnancy-related services

*Vision services designated chronic physician or chronic nonpharmacy supply in line-item records are designated well-care physician or well-care nonpharmacy supply in the episode files. Their type and provider codes in EPIS_NO are thus 42 and 45, respectively.

CATEG indicates whether episode involved a special category of service--one covered by the HIE but not usually covered by other health insurance plans.

Fig. 1--Example of format in individual-episode codebook

The box describes the variable in the following terms, as appropriate:

- Variable name, the substantive abbreviation used by analysts.

- File name, in this case "individual episodes."
- Variable label, a capsule description.
- Response codes and their definitions, or range of values.
- Prose definition.

At the right of the box (not shown in Fig. 1) is a table of statistics or response frequencies. For continuous variables such as MDE (maximum dollar expenditure), statistics including the mean, standard deviation, and minimum-maximum values are given. Where frequencies are appropriate--for example, the variable PLAN (assigned insurance plan)--the table has five columns. They show, respectively, all response codes appearing for the variable, the absolute and cumulative response frequencies for each code, and the corresponding absolute and cumulative percentages.

The total number of observations is 99,001, of which 3,288 are dummy records indicating no episodes in a given contract year. Dummy records carry identifying data but no substantive episode data.

CODEBOOK FOR INDIVIDUAL-EPISODE FILE

VARIABLE FILENAME — INDIVIDUAL EPISODES

Name of file

FILENAME is a 6-digit code that identifies this file as DEE1AA.

FILENAME

VALUE	FREQ	CUM FREQ	%	CUM %
DEE1AA	99001	99001	100.00	100.00

VARIABLE PERSON — INDIVIDUAL EPISODES

Person identifier

PERSON is an 8-character alphanumeric code that uniquely identifies the participant in the HIE to whom the following data refer. The 2nd character of PERSON designates in which site a participant resided during enrollment in the HIE: A = Dayton; B = Seattle; E = Fitchburg; F = Franklin County; G = Charleston; H = Georgetown County.

VARIABLE SITE — INDIVIDUAL EPISODES

Site

CODES

1 - Dayton, Ohio
2 - Seattle, Washington
3 - Fitchburg, Massachusetts
4 - Franklin County, Massachusetts
5 - Charleston, South Carolina
6 - Georgetown County, South Carolina

SITE identifies the participant's place of residence when enrolled.

SITE

VALUE	FREQ	CUM FREQ	%	CUM %
1	23535	23535	23.77	23.77
2	21301	44836	21.52	45.29
3	13002	57838	13.13	58.42
4	16831	74669	17.00	75.42
5	9698	84367	9.80	85.22
6	14634	99001	14.78	100.00

VARIABLE INSTAT INDIVIDUAL EPISODES

Insurance status

CODES

1 - Ever HIE-insured
2 - Ever HMO-insured (assigned to HMO control group)
3 - Never insured

INSTAT describes the participant's insurance status in the Health Insurance Experiment.

INSTAT

VALUE	FREQ	CUM FREQ	%	CUM %
1	99001	99001	100.00	100.00

VARIABLE CONTYR INDIVIDUAL EPISODES

Contract year

CODES

P1 - First year (South Carolina 3-year enrollees)
P2 - Second year (South Carolina 3-year enrollees)
P3 - Third year (South Carolina 3-year enrollees)
01 - First year
02 - Second year
03 - Third year
04 - Fourth year
05 - Fifth year

CONTYR identifies the contract year in which the episode took place. In South Carolina, contract years P1-P3 for 3-year enrollees occurred at the same time as contract years 03-05 for 5-year enrollees. In all other sites chronological years and contract years are identical for those in both enrollment terms.

CONTYR

VALUE	FREQ	CUM FREQ	%	CUM %
P1	4954	4954	5.00	5.00
P2	5198	10152	5.25	10.25
P3	5240	15392	5.29	15.55
01	23042	38434	23.28	38.82
02	21572	60006	21.79	60.61
03	21964	81970	22.19	82.80
04	8263	90233	8.35	91.14
05	8768	99001	8.86	100.00

VARIABLE ACCT_YR INDIVIDUAL EPISODES

Beginning date of contract year

RANGE

19741101 to 19810201

ACCT_YR indicates the beginning date of the contract year (YYYYMMDD). The contract year began on the anniversary date of the family's enrollment in the experiment. Each family member had the same enrollment date, hence the same ACCT_YR.

VARIABLE EPIS_NO INDIVIDUAL EPISODES

Episode description

CODES

blank - FFS enrollee had no episodes (dummy record)

YABNNN:

Y = year of experiment in site (1-5)*

A = type of episode
- 1 - acute
- 2 - chronic
- 3 - chronic flareup
- 4 - well-care (including dental exam and elective hospitalization)
- 6 - prenatal/maternity
- 9 - unknown

B = provider of service:
- 1 - hospital (inpatient)
- 2 - physician
- 3 - dentist
- 4 - pharmacy
- 5 - nonpharmacy supplier
- 6 - hospital (outpatient)
- 9 - unknown

NNN = identifier for this episode among all episodes in the contract year for enrollee (no chronological order implied): 001-nnn; 999 = unknown

*Same as contract year except for members of South Carolina 3-year sample. For them, this number is 3-5, to correspond with chronological years for South Carolina 5-year enrollees.

EPIS_NO is a six-character alphanumeric code that uniquely describes each episode for the enrolle.

TYPE	FREQ	%
1	49,475	51.7
2	12,018	12.6
3	3,472	3.6
4	29,488	30.8
6	1,256	1.3
9	3	0

PROVIDER	FREQ	%
1	2,710	2.8
2	51,523	53.8
3	29,009	30.3
4	9,952	10.4
5	1,214	1.3
6	1,301	1.4
9	3	0

NOTE: Related but distinct episodes differ in only 1 of the 6 digits. They include hospitalization episodes with associated

(cont.)

VARIABLE EPIS_NO (cont.)

NOTE (cont.)

physician visits and dental episodes stemming from a visit where both an exam and treatment for an acute condition were given. The relevant hospitalization episodes differ in provider code--1 if the physician visit(s) occurred between the enrollee's hospital admission and discharge dates, and code 6 if the physician visit(s) occurred up to 7 days before admission (up to 14 days before elective hospitalization) or up to 10 days after discharge. The relevant dental episodes differ in type code--1 for the acute portion of the visit, 4 for the exam portion.

VARIABLE BEG_DATE — INDIVIDUAL EPISODES

Episode start date

RANGE

. - FFS enrollee had no episodes (dummy record)
19741101 to 19820130

BEG_DATE indicates the date the episode began (YYYYMMDD). The following rules were observed.

IF EPISODE INVOLVES:	BEG_DATE IS:
Outpatient hospitalization	Hospital admission date
Hospitalization for abortion	60 days before admission date
Hospitalization for maternity/ pregnancy	200 days before admission date, or ACCT_YR, whichever is later
Continuing chronic condition	First office visit for that condition in contract year
Treatment continuing from previous year	ACCT_YR (current contract year)
Dental care	Date of immediately preceding examination or first service date (for series of related procedures)
All other conditions	First date of service for episode

VARIABLE END_DATE — INDIVIDUAL EPISODES

Episode end date

RANGE

. - FFS enrollee had no episodes (dummy record)
19741101 to 19820201

END_DATE indicates the last date of service for the episode (YYYYMMDD). Exceptions: (1) outpatient hospital episodes end on the hospital discharge date, (2) episodes continuing into next contract year end the last day of current contract year.

VARIABLE DIAG — INDIVIDUAL EPISODES

Diagnosis or drug code

CODES

. - FFS enrollee had no episodes (dummy record) or data missing
HICDA or NDC code*

*HICDA = hospital adaptation of the international classification of diseases adapted for use in the United States; NDC = national drug code. These codes are defined in an HIE data file (see Appendix B, item RF1).

DIAG indicates the diagnosis associated with the episode, or drug code for a drug episode with no diagnosis indicated. Caution: DIAG is the diagnosis attached to the first service of the episode. Since services were not always linked to an episode by diagnosis, this diagnosis may not be accurate for the episode as a whole.

VARIABLE CATEG — INDIVIDUAL EPISODES

Special category of service

CODES

. - FFS enrollee had no episodes (dummy record), or service does not fit special category
1 - Mental health services
2 - Hearing services
3 - Vision services other than diagnosis/treatment of eye injuries or cataracts*
4 - Pregnancy-related services

*Vision services designated chronic physician or chronic nonpharmacy supply in line-item records are designated well-care physician or well-care nonpharmacy supply in the episode files. Their type and provider codes in EPIS_NO are thus 42 and 45, respectively.

CATEG indicates whether episode involved a special category of service--one covered by the HIE but not usually covered by other health insurance plans.

VARIABLE IFAM — INDIVIDUAL EPISODES

Insurance family identifier

IFAM is a 4-digit code that identifies the insured family (within a given site) to which the enrollee belonged at the beginning of the contract year. IFAM must be used with SITE to uniquely identify the family.

CATEG

VALUE	FREQ	CUM FREQ	%	CUM %
.	90101	.	.	.
1	1618	1618	18.18	18.18
2	546	2164	6.14	24.32
3	5487	7651	61.65	85.97
4	1249	8900	14.03	100.00

VARIABLE PLAN — INDIVIDUAL EPISODES

Assigned insurance plan

CODES

1 - Participant pays 100% of covered services until deductible is met, then plan pays 100%. Deductible is $150 per person or $450 per family. In effect only 1st year in Dayton; thereafter participants were switched to plan 13.

2 - Participant pays 100% of covered services until deductible is met, then plan pays 100%. Deductible is 5% of family income or $1000, whichever is less. In effect only 1st year in Dayton; thereafter participants were switched to plan 14.

3 - Participant pays 100% of covered services until deductible is met, then plan pays 100%. Deductible is 10% of family income or $1000, whichever is less. In effect only 1st year in Dayton; thereafter participants were switched to plan 15.

4 - Participant pays 100% of covered services until deductible is met, then plan pays 100%. Deductible is 15% of family income or $1000, whichever is less. In effect only 1st year in Dayton; thereafter participants were switched to plan 16.

5 - Participant pays 25% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 5% of family income or $1000 ($750*), whichever is less.

6 - Participant pays 25% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 10% of family income or $1000 ($750*), whichever is less.

7 - Participant pays 25% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 15% of family income or $1000 ($750*), whichever is less.

8 - Participant pays 50% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket

(cont.)

PLAN

VALUE	FREQ	CUM FREQ	%	CUM %
1	1856	1856	1.88	1.88
2	1809	3665	1.83	3.70
3	1274	4939	1.29	4.99
4	1689	6628	1.71	6.70
5	3315	9943	3.35	10.04
6	3732	13675	3.77	13.81
7	3833	17508	3.87	17.69
8	1374	18882	1.39	19.07
9	909	19791	0.92	19.99
10	3960	23751	4.00	23.99
11	40848	64599	41.26	65.25
13	16125	80724	16.29	81.54
14	3585	84309	3.62	85.16
15	2726	87035	2.75	87.91
16	4120	91155	4.16	92.08
17	2582	93737	2.61	94.68
18	2955	96692	2.99	97.67
19	2309	99001	2.33	100.00

VARIABLE PLAN (cont.)

expenditure is 5% of family income or $1000, whichever is less.

9 - Participant pays 50% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 10% of family income or $1000, whichever is less.

10 - Participant pays 50% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 15% of family income or $1000, whichever is less.

11 - Participant pays nothing out-of-pocket for covered services.

13 - Participant pays nothing out-of-pocket for covered inpatient services but pays 95% of covered outpatient services until deductible is met. Then plan pays 100%. Deductible is $150 per person or $450 per family.

14 - Participant pays 95% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 5% of family income or $1000, whichever is less.

15 - Participant pays 95% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 10% of family income or $1000, whichever is less.

16 - Participant pays 95% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 15% of family income or $1000, whichever is less.

17 - Participant pays 25% of covered medical services and 50% of dental and outpatient psychiatric services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 5% of family income or $1000 ($750*), whichever is less.

18 - Participant pays 25% of covered medical services and 50% of dental and outpatient psychiatric services until maximum is spent, then plan pays 100%. Maximum out-of-

(cont.)

VARIABLE PLAN (cont.)

pocket expenditure is 10% of family income or $1000 ($750*), whichever is less.

19 - Participant pays 25% of covered medical services and 50% of dental and outpatient psychiatric services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 15% of family income or $1000 ($750*), whichever is less.

*$1000 in the early site-years (see footnote 11, p. 4).

PLAN identifies the insurance plan to which the participant was assigned. This is the plan assigned when the participant's family enrolled. Even if the family's plan changed and the participant was enrolled afterward (e.g., as a newborn), PLAN is the original plan.

VARIABLE MDE INDIVIDUAL EPISODES

Maximum dollar expenditure at beginning of contract year

CODES

. - MDE missing

MDE indicates the maximum dollar amount the family had to pay out-of-pocket during the contract year before health care was free. The amount was a function of the family's assigned HIE insurance plan (see variable PLAN).

MDE

NUMBER OF OBSERVATIONS	98999
NUMBER OF MISSING	2
MEAN	367.46
MEDIAN	300.00
MINIMUM VALUE	0.00
MAXIMUM VALUE	1000.00
STANDARD DEVIATION	383.06
COEFFICIENT OF VARIATION	104.24
SKEWNESS	0.48
KURTOSIS	-1.30

VARIABLE LINE_CHR — INDIVIDUAL EPISODES

Covered charges for episode ($)

CODES

. - FFS enrollee had no episodes (dummy record)

LINE_CHR is the total of covered charges for a given episode (EPIS_NO).* Any noncovered charges (see Appendix D) have been subtracted, but deductions for enrollee coinsurance payments have not been made.

*The negative charge ($-225) represents either an adjustment for a previous HIE overpayment to an enrollee, or a total charge of $225 for noncovered services, which should have left a charge of $0 for covered services.

VARIABLE MDE_STRT — INDIVIDUAL EPISODES

MDE at beginning of episode

CODES

. - FFS enrollee had no episodes (dummy record)

MDE_STRT is the dollar amount of MDE remaining to be satisfied at the beginning of this episode. If the MDE has been exceeded, MDE_STRT is a negative value.

LINE_CHR

NUMBER OF OBSERVATIONS	95713
NUMBER OF MISSING	3288
MEAN	115.20
MEDIAN	26.00
MINIMUM VALUE	-225.00
MAXIMUM VALUE	65523.10
STANDARD DEVIATION	558.25
COEFFICIENT OF VARIATION	484.58
SKEWNESS	34.95
KURTOSIS	2666.84

VARIABLE MDE_END INDIVIDUAL EPISODES

MDE at end of episode

CODES

. - FFS enrollee had no episodes (dummy record)

MDE_END is the dollar amount of MDE remaining to be satisfied after payments have been made for this episode. Exception: If two or more episodes began on the same day, MDE_END is the amount remaining on the END_DATE of the longest of those episodes. If the MDE has been exceeded, MDE_END is a negative value.

VARIABLE MDE_OVER INDIVIDUAL EPISODES

Date MDE exceeded

RANGE

. - FFS enrollee had no episodes (dummy record) or MDE not yet exceeded
19741101 to 19820108

MDE_OVER is the episode start date (BEG_DATE) on which the family's remaining MDE changes from positive to negative. For families assigned to plan 13 (see variable PLAN), MDE_OVER is the BEG_DATE on which either the individual's or family's remaining MDE changes from positive to negative, whichever comes first. For families assigned to plan 11 with 0% coinsurance, MDE_OVER is the beginning of the contract year (ACCT_YR). From the MDE_OVER date until the beginning of the next contract year, the family's or individual's (plan 13) health care is free (that is, its covered expenses are reimbursed 100 percent).

IV. CODEBOOK FOR ANNUAL EPISODE FILE

This codebook describes each of the 41 variables in the annual episode file.[1]

VARIABLE TYPES

Header Variables

Five *identifiers* precede the other variables on the annual episode file. FILENAME denotes the present file. PERSON identifies each enrollee, permitting data to be merged for an individual across years and files. The other identifiers are SITE, INSTAT (HIE insurance status), and CONTYR (contract year).

Input Variable

EXPENTYP describes the method we used to classify individual episodes by expense category in preparation for the count and expense summaries in the annual episode file. EXPENTYP is on neither episode file since it is not strictly a variable, but we include it as an "input variable" in this codebook because it provides a convenient bridge from the individual-episode file to the annual episode file.

Counts

These ten variables count the number of episodes an enrollee experienced during a contract year. Six of the variables count the episodes by various expense categories: acute (variable NACUT), chronic (NCHRN), chronic flareup (NFLARE), well-care (NWELL), hospitalization (NHOSP), and dental (NDENT). Variable NTOT totals episodes of the foregoing categories for the enrollee per year. The remaining three variables count annual episodes involving services for mental health, vision, and pregnancy (NMENT, NVIS, and NPREG, respectively).

---

[1]A technical description of the file, including the location and length of each variable, is provided in Appendix C.

The first six expense category variables are mutually exclusive with each other but not with the last three service variables. Thus, an episode counted in NACUT cannot also be counted in NCHRN but can be in NVIS.

Expenses

The next 20 variables indicate the enrollee's annual expenses covered by the HIE for the individual expense categories, total expense category, and service categories addressed in the "count" variables. The first set of ten variables provides dollar amounts (e.g., EXPACUT); the second set of ten provides the sum of the natural logarithms of expenses (e.g., LEXPACUT).[2] Each set follows the same pattern of mutual exclusivity as the count variables.

The dollar amounts are more useful in simple analyses that divide expenses into various types. Because the mean costs may depend heavily on a few large episodes, comparisons of dollar amounts across types are unreliable. The log amounts are more reliable in modeling the effects of various characteristics on costs.

Effect on MDE

The last six variables describe the episode's effect on MDE. IFAM identifies family members sharing the same MDE; PLAN defines the family's assigned insurance plan[3]; and MDE indicates the dollar amount

---

[2]Not comparable to the natural logarithm of summed episode expenses.

[3]From this point on, we refer to insurance plans by their numeric codes in the variable PLAN rather than the letters used in Sec. I. The following tabulation shows the correspondences:

Variable PLAN		*Sec. I*
11		A
5-7		B-D
8-10		E-G
17-19		H-J
14-16	(2-4: Dayton year 1 only)	K-M
13	(1: Dayton year 1 only)	N

of MDE (a function of the insurance plan) assigned to the family at the beginning of the contract year. Those data are taken from HIE administrative files. Finally, ACCT_YR shows the beginning date of the contract year, FRSTDATE shows when the first episode of the contract year began, and MDE_OVER shows the date the family exceeded its MDE and became entitled to free care for the rest of the contract year. Those dates are provided to indicate how long it took a family to exceed its annual MDE.

VARIABLE DESCRIPTIONS

Each variable description is in a standard format, described below and illustrated in Fig. 2 for the variable NDENT.

VARIABLE NDENT ANNUAL EPISODES

Number of dental episodes

NDENT indicates the total number of dental episodes for the enrollee during the contract year.

INPUT VARIABLES

Source	Variable	
Individual-episode file	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
NDENT = 0;

DO OVER PERSON AND CONTYR;

   IF EXPENTYP = 'DENTAL' THEN NDENT = NDENT + 1;

END;
```

Fig. 2--Example of format in annual episode codebook

The box describes the variable in the following terms, as appropriate:

- Variable name, the substantive abbreviation used by analysts.
- File name, in this case "annual episodes."
- Variable label, a capsule description.
- Response codes and their definitions, or range of values.
- Prose definition.

The source or input variables are identified next. Input variables can be other derived variables or temporary variables. We recommend that users check the variable descriptions of input variables from the individual-episode file for any qualifications or limitations on the data.

The section called "Construction" describes how HIE programmers built the derived variable. Constructions are written in pseudo-code, a compressed version of the actual SAS programming code used to create the variable. The code conforms to SAS rules, including the convention that all values are initialized to "missing" and converted to valid responses only when specifically instructed.

At the right of the box (not shown in Fig. 2) is a table of statistics or response frequencies. For continuous variables such as MDE (maximum dollar expenditure), statistics including the mean, standard deviation, and minimum-maximum values are given. Where frequencies are appropriate--for example, the variable PLAN (assigned insurance plan)--the table has five columns. They show, respectively, all response codes appearing for the variable, the absolute and cumulative response frequencies for each code, and the corresponding absolute and cumulative percentages.

The total number of observations is 21,094, of which 3,288 represent enrollee years with no medical usage. Records for those enrollee years have zero values for all count and expense variables.

CODEBOOK FOR ANNUAL EPISODE FILE

VARIABLE FILENAME — ANNUAL EPISODES

Name of file

FILENAME is a 6-digit code that identifies this file as DEE2AA.

FILENAME

VALUE	FREQ	CUM FREQ	%	CUM %
DEE2AA	21094	21094	100.00	100.00

VARIABLE PERSON — ANNUAL EPISODES

Person identifier

PERSON is an 8-character alphanumeric code that uniquely identifies the participant in the HIE to whom the following data refer. The 2nd character of PERSON designates in which site a participant resided during enrollment in the HIE: A=Dayton; B=Seattle; E=Fitchburg; F=Franklin County; G=Charleston; H=Georgetown County.

VARIABLE SITE — ANNUAL EPISODES

Site

CODES

1 - Dayton, Ohio
2 - Seattle, Washington
3 - Fitchburg, Massachusetts
4 - Franklin County, Massachusetts
5 - Charleston, South Carolina
6 - Georgetown County, South Carolina

SITE identifies the participant's place of residence when enrolled.

SITE

VALUE	FREQ	CUM FREQ	%	CUM %
1	4615	4615	21.88	21.88
2	4250	8865	20.15	42.03
3	2532	11397	12.00	54.03
4	3191	14588	15.13	69.16
5	2758	17346	13.08	82.23
6	3748	21094	17.77	100.00

VARIABLE INSTAT ANNUAL EPISODES

Insurance status

CODES

1 - Ever HIE-insured
2 - Ever HMO-insured (assigned to HMO control group)
3 - Never insured

INSTAT describes the participant's insurance status in the Health Insurance Experiment.

INSTAT

VALUE	FREQ	CUM FREQ	%	CUM %
1	21094	21094	100.00	100.00

VARIABLE CONTYR ANNUAL EPISODES

Contract year

CODES

P1 - First year (South Carolina 3-year enrollees)
P2 - Second year (South Carolina 3-year enrollees)
P3 - Third year (South Carolina 3-year enrollees)
01 - First year
02 - Second year
03 - Third year
04 - Fourth year
05 - Fifth year

CONTYR identifies the contract year in which the episode took place. In South Carolina, contract years P1-P3 for 3-year enrollees occurred at the same time as contract years 03-05 for 5-year enrollees. In all other sites chronological years and contract years are identical for those in both enrollment terms.

CONTYR

VALUE	FREQ	CUM FREQ	%	CUM %
P1	1395	1395	6.61	6.61
P2	1384	2779	6.56	13.17
P3	1369	4148	6.49	19.66
01	4518	8666	21.42	41.08
02	4469	13135	21.19	62.27
03	4427	17562	20.99	83.26
04	1768	19330	8.38	91.64
05	1764	21094	8.36	100.00

```
*******************************************************

Input variable:  EXPENTYPE (expense type)

EXPENTYPE describes how information from the
individual-episode file (variable EPIS_NO) was used
to assign each episode to an expense category in
preparation for the count and expense summaries
in the annual episode file.  The method provides a
convenient bridge between the two files.

Use of the code below yields the EXPENTYP values
DENTAL, HOSPITAL, ACUTE WELL (well-care, including
dental exams and elective hospitalizations), FLAREUP
(chronic flareup), and CHRONIC:

TYPE = SUBSTR(EPIS_NO,2,1);
FACILITY = SUBSTR(EPIS_NO,3,1);
IF FACILITY = . THEN EXPENTYP = '          ';
   ELSE IF FACILITY = 3
           THEN EXPENTYP = 'DENTAL';
   ELSE IF FACILITY = 1 OR FACILITY = 6
           THEN EXPENTYP = 'HOSPITAL';
   ELSE IF TYPE = 1 OR TYPE = 9
           THEN EXPENTYP = 'ACUTE';
   ELSE IF TYPE = 4 OR TYPE = 6
           THEN EXPENTYP = 'WELL';
   ELSE IF TYPE = 3 THEN EXPENTYP = 'FLAREUP';
   ELSE EXPENTYP = 'CHRONIC';

*******************************************************
```

VARIABLE NACUT — ANNUAL EPISODES

Number of acute episodes

NACUT indicates the total number of acute episodes for the enrollee during the contract year.

NOTE: NACUT includes episodes whose type (A digit in EPIS_NO) is unobtainable and provider (B digit in EPIS_NO) is other than hospital or dental.

INPUT VARIABLES

Source	Variable	
Individual-episode file	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
NACUT = 0;
DO OVER PERSON AND CONTYR;
   IF EXPENTYP = 'ACUTE' THEN NACUT = NACUT + 1;
END;
```

NACUT

VALUE	FREQ	CUM FREQ	%	CUM %
0	7669	7669	36.36	36.36
1	4903	12572	23.24	59.60
2	3307	15879	15.68	75.28
3	2119	17998	10.05	85.32
4	1296	19294	6.14	91.47
5	770	20064	3.65	95.12
6	444	20508	2.11	97.22
7	263	20771	1.25	98.47
8	156	20927	0.74	99.21
9	80	21007	0.38	99.59
10	45	21052	0.21	99.80
11	23	21075	0.11	99.91
12	9	21084	0.04	99.95
13	2	21086	0.01	99.96
14	4	21090	0.02	99.98
16	1	21091	0.01	99.99
17	1	21092	0.01	99.99
18	1	21093	0.01	100.00
22	1	21094	0.01	100.00

VARIABLE NCHRN — ANNUAL EPISODES

Number of chronic episodes

NCHRN indicates the total number of chronic episodes for the enrollee during the contract year.

INPUT VARIABLES

Source	Variable	
Individual-episode file	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
NCHRN = 0;
DO OVER PERSON AND CONTYR;
   IF EXPENTYP = 'CHRONIC' THEN NCHRN = NCHRN + 1;
END;
```

NCHRN

VALUE	FREQ	CUM FREQ	%	CUM %
0	14537	14537	68.92	68.92
1	3608	18145	17.10	86.02
2	1657	19802	7.86	93.88
3	718	20520	3.40	97.28
4	302	20822	1.43	98.71
5	133	20955	0.63	99.34
6	57	21012	0.27	99.61
7	28	21040	0.13	99.74
8	20	21060	0.10	99.84
9	7	21067	0.03	99.87
10	8	21075	0.04	99.91
11	8	21083	0.04	99.95
12	4	21087	0.02	99.97
13	4	21091	0.02	99.99
14	2	21093	0.01	100.00
15	1	21094	0.01	100.00

VARIABLE NFLARE — ANNUAL EPISODES

Number of chronic flareup episodes

NFLARE indicates the total number of chronic flareup episodes for the enrollee during the contract year.

INPUT VARIABLES

Source	Variable	
Individual-episode file	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
NFLARE = 0;
DO OVER PERSON AND CONTYR;
   IF EXPENTYP = 'FLAREUP' THEN NFLARE = NFLARE + 1;
END;
```

NFLARE

VALUE	FREQ	CUM FREQ	%	CUM %
0	18705	18705	88.68	88.68
1	1728	20433	8.19	96.87
2	435	20868	2.06	98.93
3	130	20998	0.62	99.55
4	51	21049	0.24	99.79
5	18	21067	0.09	99.87
6	16	21083	0.08	99.95
7	6	21089	0.03	99.98
8	1	21090	0.01	99.98
9	1	21091	0.01	99.99
11	1	21092	0.01	99.99
12	2	21094	0.01	100.00

VARIABLE NWELL — ANNUAL EPISODES

Number of well-care episodes

NWELL indicates the total number of well-care episodes for the enrollee during the contract year, including nonhospital pregnancy-related episodes.

INPUT VARIABLES

Source	Variable	
Individual-episodes file	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
NWELL = 0;
DO OVER PERSON AND CONTYR;
   IF EXPENTYP = 'WELL' THEN NWELL = NWELL + 1;
END;
```

NWELL

VALUE	FREQ	CUM FREQ	%	CUM %
0	12215	12215	57.91	57.91
1	6094	18309	28.89	86.80
2	1998	20307	9.47	96.27
3	522	20829	2.48	98.74
4	171	21000	0.81	99.55
5	60	21060	0.28	99.84
6	28	21088	0.13	99.97
7	4	21092	0.02	99.99
8	2	21094	0.01	100.00

VARIABLE NHOSP — ANNUAL EPISODES

Number of hospital episodes

NHOSP indicates the total number of hospital episodes (both inpatient and outpatient) for the enrollee during the contract year.

NHOSP

VALUE	FREQ	CUM FREQ	%	CUM %
0	19192	19192	90.98	90.98
1	1579	20771	7.49	98.47
2	239	21010	1.13	99.60
3	53	21063	0.25	99.85
4	17	21080	0.08	99.93
5	6	21086	0.03	99.96
6	5	21091	0.02	99.99
7	1	21092	0.01	99.99
8	2	21094	0.01	100.00

(cont.)

VARIABLE NHOSP (cont.)

INPUT VARIABLES

Source	Variable	
Individual-episode file	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
NHOSP = 0;
DO OVER PERSON AND CONTYR;
  IF EXPENTYP = 'HOSPITAL' THEN NHOSP = NHOSP + 1;
END;
```

VARIABLE NDENT — ANNUAL EPISODES

Number of dental episodes

NDENT indicates the total number of dental episodes for the enrollee during the contract year.

INPUT VARIABLES

Source	Variable	
Individual-episode file	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
NDENT = 0;
DO OVER PERSON AND CONTYR;
   IF EXPENTYP = 'DENTAL' THEN NDENT = NDENT + 1;
END;
```

NDENT

VALUE	FREQ	CUM FREQ	%	CUM %
0	9835	9835	46.63	46.63
1	4619	14454	21.90	68.52
2	3991	18445	18.92	87.44
3	1671	20116	7.92	95.36
4	652	20768	3.09	98.46
5	224	20992	1.06	99.52
6	69	21061	0.33	99.84
7	22	21083	0.10	99.95
8	4	21087	0.02	99.97
9	6	21093	0.03	100.00
10	1	21094	0.01	100.00

VARIABLE NTOT — ANNUAL EPISODES

Total number of episodes

NTOT indicates the total number of episodes for the enrollee during the contract year.

INPUT VARIABLES

Source	Variable	
Annual episode file	NACUT	Number of acute episodes
	NCHRN	Number of chronic episodes
	NFLARE	Number of chronic flareup episodes
	NWELL	Number of well-care episodes
	NHOSP	Number of hospital episodes
	NDENT	Number of dental episodes

CONSTRUCTION

```
NTOT = NACUT + NCHRN + NFLARE + NWELL + NHOSP + NDENT;
```

NTOT

VALUE	FREQ	CUM FREQ	%	CUM %
0	3338	3338	15.82	15.82
1	2605	5943	12.35	28.17
2	2529	8472	11.99	40.16
3	2436	10908	11.55	51.71
4	2119	13027	10.05	61.76
5	1829	14856	8.67	70.43
6	1552	16408	7.36	77.79
7	1215	17623	5.76	83.55
8	932	18555	4.42	87.96
9	666	19221	3.16	91.12
10	518	19739	2.46	93.58
11	412	20151	1.95	95.53
12	297	20448	1.41	96.94
13	201	20649	0.95	97.89
14	133	20782	0.63	98.52
15	101	20883	0.48	99.00
16	62	20945	0.29	99.29
17	42	20987	0.20	99.49
18	28	21015	0.13	99.63
19	27	21042	0.13	99.75
20	15	21057	0.07	99.83
21	7	21064	0.03	99.86
22	6	21070	0.03	99.89
23	7	21077	0.03	99.92
24	5	21082	0.02	99.94
25	1	21083	0.01	99.95
26	2	21085	0.01	99.96
28	3	21088	0.01	99.97
29	1	21089	0.01	99.98
30	1	21090	0.01	99.98
31	1	21091	0.01	99.99
32	1	21092	0.01	99.99
34	1	21093	0.01	100.00
40	1	21094	0.01	100.00

VARIABLE NMENT — ANNUAL EPISODES

Number of mental health episodes

NMENT indicates the number of episodes in which mental health services were provided for the enrollee during the contract year.

INPUT VARIABLES

Source	Variable
Individual-episode file	CATEG Special category of service

CONSTRUCTION

```
NMENT = 0;
DO OVER PERSON AND CONTYR;
   IF CATEG = 1 THEN NMENT = NMENT + 1;
END;
```

NMENT

VALUE	FREQ	CUM FREQ	%	CUM %
0	20364	20364	96.54	96.54
1	366	20730	1.74	98.27
2	175	20905	0.83	99.10
3	85	20990	0.40	99.51
4	38	21028	0.18	99.69
5	33	21061	0.16	99.84
6	14	21075	0.07	99.91
7	14	21089	0.07	99.98
8	2	21091	0.01	99.99
9	2	21093	0.01	100.00
10	1	21094	0.01	100.00

VARIABLE NVIS — ANNUAL EPISODES

Number of vision-related episodes

NVIS indicates the number of episodes in which vision services were provided for the enrollee during the contract year.

NVIS

VALUE	FREQ	CUM FREQ	%	CUM %
0	16540	16540	78.41	78.41
1	3976	20516	18.85	97.26
2	538	21054	2.55	99.81
3	34	21088	0.16	99.97
4	6	21094	0.03	100.00

(cont.)

VARIABLE NVIS (cont.)

INPUT VARIABLES

Source	Variable	
Individual-episode file	CATEG	Special category of service

CONSTRUCTION

```
NVIS = 0;
DO OVER PERSON AND CONTYR;
   IF CATEG = 3 THEN NVIS = NVIS + 1;
END;
```

VARIABLE NPREG — ANNUAL EPISODES

Number of pregnancy-related episodes

NPREG indicates the number of episodes in which pregnancy-related services were provided for the enrollee during the contract year.

INPUT VARIABLES

Source	Variable	
Individual-episode file	CATEG	Special category of service

(cont.)

NPREG

VALUE	FREQ	CUM FREQ	%	CUM %
0	20595	20595	97.63	97.63
1	478	21073	2.27	99.90
2	18	21091	0.09	99.99
3	2	21093	0.01	100.00
4	1	21094	0.01	100.00

VARIABLE NPREG (cont.)

CONSTRUCTION

```
NPREG = 0;

DO OVER PERSON AND CONTYR;

   IF CATEG = 4 THEN NPREG = NPREG + 1;

END;
```

VARIABLE EXPACUT — ANNUAL EPISODES

Acute episode expenses ($)

EXPACUT indicates the enrollee's annual covered expenses for acute episodes. The amount excludes noncovered charges (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Individual-episode file	LINE_CHR	Covered charges for episode
	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
EXPACUT = 0;

DO OVER PERSON AND CONTYR;

   IF LINE_CHR = . THEN LINE_CHR = 0;

   IF EXPENTYP = 'ACUTE' THEN EXPACUT = EXPACUT + LINE_CHR;

END;
```

EXPACUT

NUMBER OF OBSERVATIONS	21094
NUMBER OF MISSING	0
MEAN	76.62
MEDIAN	22.66
MINIMUM VALUE	0.00
MAXIMUM VALUE	6119.32
STANDARD DEVIATION	158.99
COEFFICIENT OF VARIATION	207.52
SKEWNESS	7.47
KURTOSIS	143.33

VARIABLE EXPCHRN ANNUAL EPISODES

Chronic episode expenses ($)

EXPCHRN indicates the enrollee's annual covered expenses for chronic episodes. The amount excludes noncovered charges (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Individual-episode file	LINE_CHR	Covered charges for episode
	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
EXPCHRN = 0;

DO OVER PERSON AND CONTYR;

   IF LINE_CHR = . THEN LINE_CHR = 0;

   IF EXPENTYP = 'CHRONIC' THEN EXPCHRN = EXPCHRN + LINE_CHR;

END;
```

EXPCHRN

NUMBER OF OBSERVATIONS	21094
NUMBER OF MISSING	0
MEAN	53.74
MEDIAN	0.00
MINIMUM VALUE	0.00
MAXIMUM VALUE	8595.91
STANDARD DEVIATION	224.50
COEFFICIENT OF VARIATION	417.71
SKEWNESS	13.50
KURTOSIS	315.30

VARIABLE EXFLARE ANNUAL EPISODES

Chronic flareup episode expenses ($)

EXFLARE indicates the enrollee's annual covered expenses for chronic flareup episodes. The amount excludes non-covered charges (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Individual-episode file	LINE_CHR	Covered charges for episode
	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
EXFLARE = 0;
DO OVER PERSON AND CONTYR;
   IF LINE_CHR = . THEN LINE_CHR = 0;
   IF EXPENTYP = 'FLAREUP' THEN EXFLARE = EXFLARE + LINE_CHR;
END;
```

EXFLARE

NUMBER OF OBSERVATIONS	21094
NUMBER OF MISSING	0
MEAN	10.81
MEDIAN	0.00
MINIMUM VALUE	0.00
MAXIMUM VALUE	2300.00
STANDARD DEVIATION	64.48
COEFFICIENT OF VARIATION	596.48
SKEWNESS	14.07
KURTOSIS	299.81

VARIABLE EXPWELL — ANNUAL EPISODES

Well-care episode expenses ($)

EXPWELL indicates the enrollee's annual covered expenses for well-care episodes, including nonhospital pregnancy-related episodes. The amount excludes noncovered charges (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Individual-episode file	LINE_CHR	Covered charges for episode
	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
EXPWELL = 0;
DO OVER PERSON AND CONTYR;
   IF LINE_CHR = . THEN LINE_CHR = 0;
   IF EXPENTYP = 'WELL' THEN EXPWELL = EXPWELL + LINE_CHR;
END;
```

EXPWELL

NUMBER OF OBSERVATIONS	21094
NUMBER OF MISSING	0
MEAN	28.58
MEDIAN	0.00
MINIMUM VALUE	0.00
MAXIMUM VALUE	1626.57
STANDARD DEVIATION	59.44
COEFFICIENT OF VARIATION	207.96
SKEWNESS	6.63
KURTOSIS	91.53

VARIABLE EXPHOSP — ANNUAL EPISODES

Hospital episode expenses ($)

EXPHOSP indicates the enrollee's annual covered expenses for hospital episodes, both inpatient and outpatient. The amount excludes noncovered charges (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Individual-episode file	LINE_CHR	Covered charges for episode
	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
EXPHOSP = 0;
DO OVER PERSON AND CONTYR;
   IF LINE_CHR = . THEN LINE_CHR = 0;
   IF EXPENTYP = 'HOSPITAL' THEN EXPHOSP = EXPHOSP + LINE_CHR;
END;
```

EXPHOSP

NUMBER OF OBSERVATIONS	21094
NUMBER OF MISSING	0
MEAN	208.23
MEDIAN	0.00
MINIMUM VALUE	0.00
MAXIMUM VALUE	71405.40
STANDARD DEVIATION	1358.31
COEFFICIENT OF VARIATION	652.31
SKEWNESS	18.58
KURTOSIS	578.28

VARIABLE EXPDENT — ANNUAL EPISODES

Dental episode expenses ($)

EXPDENT indicates the enrollee's annual covered expenses for dental episodes. The amount excludes noncovered charges (see Appendix D) but includes the enrollee's coinsurance payments.*

*A charge of $-225 (see variable LINE_CHR) was treated as an adjustment for a previous overpayment, thus reducing the individual's total dental expenses for that year by $225.

INPUT VARIABLES

Source	Variable	
Individual-episode file	LINE_CHR	Covered charges for episode
	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
EXPDENT = 0;
DO OVER PERSON AND CONTYR;
   IF LINE_CHR = . THEN LINE_CHR = 0;
   IF EXPENTYP = 'DENTAL' THEN EXPDENT = EXPDENT + LINE_CHR;
END;
```

EXPDENT

NUMBER OF OBSERVATIONS	21094
NUMBER OF MISSING	0
MEAN	129.48
MEDIAN	15.00
MINIMUM VALUE	0.00
MAXIMUM VALUE	10077.00
STANDARD DEVIATION	422.18
COEFFICIENT OF VARIATION	326.06
SKEWNESS	7.64
KURTOSIS	84.58

VARIABLE EXPTOT ANNUAL EPISODES

Total episode expenses ($)

EXPTOT indicates the enrollee's annual covered expenses for episodes of all expense categories. The amount excludes noncovered expenses (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Annual episode file	EXPACUT	Acute episode expenses
	EXPCHRN	Chronic episode expenses
	EXPFLARE	Chronic flareup episode expenses
	EXPWELL	Well-care episode expenses
	EXPHOSP	Hospital episode expenses
	EXPDENT	Dental episode expenses

CONSTRUCTION

```
EXPTOT = EXPACUT + EXPCHRN + EXFLARE + EXPWELL + EXPDENT + EXPHOSP;
```

EXPTOT

NUMBER OF OBSERVATIONS	21094
NUMBER OF MISSING	0
MEAN	507.46
MEDIAN	132.00
MINIMUM VALUE	0.00
MAXIMUM VALUE	72682.64
STANDARD DEVIATION	1576.45
COEFFICIENT OF VARIATION	310.65
SKEWNESS	14.24
KURTOSIS	365.48

VARIABLE EXMENT ANNUAL EPISODES

Mental health episode expenses ($)

EXMENT indicates the enrollee's annual covered expenses for mental health episodes. The amount excludes non-covered expenses (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Individual-episode file	CATEG	Special category of service
	LINE_CHR	Covered charges for episode

CONSTRUCTION

```
EXMENT = 0;
DO OVER PERSON AND CONTYR;
   IF LINE_CHR = . THEN LINE_CHR = 0;
   IF CATEG = 1 THEN EXMENT = EXMENT + LINE_CHR;
END;
```

EXMENT

NUMBER OF OBSERVATIONS	21094
NUMBER OF MISSING	0
MEAN	33.19
MEDIAN	0.00
MINIMUM VALUE	0.00
MAXIMUM VALUE	31605.51
STANDARD DEVIATION	444.74
COEFFICIENT OF VARIATION	1340.03
SKEWNESS	39.36
KURTOSIS	2189.82

VARIABLE EXVIS ANNUAL EPISODES

Vision-related episode expenses ($)

EXVIS indicates the sum of the enrollee's annual covered expenses for episodes with vision services. The amount excludes noncovered expenses (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Individual-episode file	CATEG	Special category of service
	LINE_CHR	Covered charges for episode

CONSTRUCTION

```
EXVIS = 0;
DO OVER PERSON AND CONTYR;
   IF LINE_CHR = . THEN LINE_CHR = 0;
   IF CATEG = 3 THEN EXVIS = EXVIS + LINE_CHR;
END;
```

EXVIS

NUMBER OF OBSERVATIONS	21094
NUMBER OF MISSING	0
MEAN	18.62
MEDIAN	0.00
MINIMUM VALUE	0.00
MAXIMUM VALUE	3507.17
STANDARD DEVIATION	62.03
COEFFICIENT OF VARIATION	333.18
SKEWNESS	19.85
KURTOSIS	795.23

VARIABLE EXPREG — ANNUAL EPISODES

Pregnancy-related episode expenses ($)

EXPREG indicates the enrollee's annual covered expenses for pregnancy-related episodes. The amount excludes noncovered expenses (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Individual-episode file	CATEG	Special category of service
	LINE_CHR	Covered charges for episode

CONSTRUCTION

```
EXPREG = 0;
DO OVER PERSON AND CONTYR;
   IF LINE_CHR = . THEN LINE_CHR = 0;
   IF CATEG = 4 THEN EXPREG = EXPREG + LINE_CHR;
END;
```

EXPREG

NUMBER OF OBSERVATIONS	21094
NUMBER OF MISSING	0
MEAN	16.82
MEDIAN	0.00
MINIMUM VALUE	0.00
MAXIMUM VALUE	21444.60
STANDARD DEVIATION	239.99
COEFFICIENT OF VARIATION	1427.11
SKEWNESS	52.57
KURTOSIS	3901.37

VARIABLE LEXPACUT ANNUAL EPISODES

Sum of logged expenses for acute episodes

CODES

. - FFS enrollee had no acute episode expenses

LEXPACUT indicates the sum of the natural logarithms of the enrollee's annual expenses for acute episodes. The amount excludes noncovered expenses (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Individual-episode file	LINE_CHR	Covered charges for episode
	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
DO OVER PERSON AND CONTYR;

   IF EXPENTYP = 'ACUTE'
      THEN DO;

           IF LINE_CHR > 0
              THEN LEXPACUT = LEXPACUT + LOG(LINE_CHR);

           END;

END;
```

LEXPACUT

NUMBER OF OBSERVATIONS	13425
NUMBER OF MISSING	7669
MEAN	8.12
MEDIAN	6.33
MINIMUM VALUE	-0.29
MAXIMUM VALUE	80.59
STANDARD DEVIATION	6.26
COEFFICIENT OF VARIATION	77.09
SKEWNESS	1.91
KURTOSIS	6.02

VARIABLE LEXPCHRN ANNUAL EPISODES

Sum of logged expenses for chronic episodes

CODES

. - FFS enrollee had no chronic episode expenses

LEXPCHRN indicates the sum of the natural logarithms of the enrollee's annual expenses for chronic episodes. The amount excludes noncovered expenses (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Individual-episode file	LINE_CHR	Covered charges for episode
	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
DO OVER PERSON AND CONTYR;

   IF EXPENTYP = 'CHRONIC'
      THEN DO;

           IF LINE_CHR > 0
              THEN LEXPCHRN = LEXPCHRN + LOG(LINE_CHR);

           END;

END;
```

LEXPCHRN

NUMBER OF OBSERVATIONS	6557
NUMBER OF MISSING	14537
MEAN	6.47
MEDIAN	4.83
MINIMUM VALUE	-0.69
MAXIMUM VALUE	41.15
STANDARD DEVIATION	4.84
COEFFICIENT OF VARIATION	74.80
SKEWNESS	2.04
KURTOSIS	5.62

VARIABLE LEXFLARE ANNUAL EPISODES

Sum of logged expenses for chronic flareup episodes

CODES

. - FFS enrollee had no chronic flareup episode expenses

LEXFLARE indicates the sum of the natural logarithms of the enrollee's annual expenses for chronic flareup episodes. The amount excludes noncovered expenses (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Individual-episode file	LINE_CHR	Covered charges for episode
	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
DO OVER PERSON AND CONTYR;

   IF EXPENTYP = 'FLAREUP'
      THEN DO;

           IF LINE_CHR > 0
              THEN LEXFLARE = LEXFLARE + LOG(LINE_CHR);

           END;

END;
```

LEXFLARE

NUMBER OF OBSERVATIONS	2389
NUMBER OF MISSING	18705
MEAN	5.08
MEDIAN	3.87
MINIMUM VALUE	0.52
MAXIMUM VALUE	45.94
STANDARD DEVIATION	3.66
COEFFICIENT OF VARIATION	72.21
SKEWNESS	3.38
KURTOSIS	20.91

VARIABLE LEXPWELL ANNUAL EPISODES

Sum of logged expenses for well-care episodes

CODES

. - FFS enrollee had no well-care episode expenses

LEXPWELL indicates the sum of the natural logarithms of the enrollee's annual expenses for well-care episodes, including nonhospital pregnancy-related episodes. The amount excludes noncovered charges (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
individual-episode file	LINE_CHR	Covered charges for episode
	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
DO OVER PERSON AND CONTYR;

  IF EXPENTYP = 'WELL'
     THEN DO;

          IF LINE_CHR > 0
             THEN LEXPWELL = LEXPWELL + LOG(LINE_CHR);

          END;

END;
```

LEXPWELL

NUMBER OF OBSERVATIONS	8879
NUMBER OF MISSING	12215
MEAN	4.94
MEDIAN	4.31
MINIMUM VALUE	-0.29
MAXIMUM VALUE	25.44
STANDARD DEVIATION	2.60
COEFFICIENT OF VARIATION	52.56
SKEWNESS	1.74
KURTOSIS	4.27

VARIABLE LEXPHOSP ANNUAL EPISODES

Sum of logged expenses for hospital episodes

CODES

. - FFS enrollee had no hospital episode expenses

LEXPHOSP indicates the sum of the natural logarithms of the enrollee's annual expenses for hospital episodes, both inpatient and outpatient. The amount excludes noncovered charges (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Individual-episode file	LINE_CHR	Covered charges for episode
	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
DO OVER PERSON AND CONTYR;

   IF EXPENTYP = 'HOSPITAL'
      THEN DO;

           IF LINE_CHR > 0
              THEN LEXPHOSP = LEXPHOSP + LOG(LINE_CHR);

           END;

END;
```

LEXPHOSP

NUMBER OF OBSERVATIONS	1902
NUMBER OF MISSING	19192
MEAN	8.75
MEDIAN	7.12
MINIMUM VALUE	1.39
MAXIMUM VALUE	60.03
STANDARD DEVIATION	5.08
COEFFICIENT OF VARIATION	58.08
SKEWNESS	3.91
KURTOSIS	22.00

VARIABLE LEXPDENT ANNUAL EPISODES

Sum of logged expenses for dental episodes

CODES

. - FFS enrollee had no dental episode expenses

LEXPDENT indicates the sum of the natural logarithms of the enrollee's expenses for dental episodes for the year.* The amount excludes noncovered charges (see Appendix D) but includes the enrollee's coinsurance payments.

*An episode with a charge of $-225 (see variable LINE_CHR) was treated as $0 because no logarithms exist for negative numbers.

INPUT VARIABLES

Source	Variable	
Individual-episode file	LINE_CHR	Covered charges for episode
	EXPENTYP	Expense type (see page 50)

CONSTRUCTION

```
DO OVER PERSON AND CONTYR;

   IF EXPENTYP = 'DENTAL'
      THEN DO;

           IF LINE_CHR > 0
              THEN LEXPDENT = LEXPDENT + LOG(LINE_CHR);

           END;

END;
```

LEXPDENT

NUMBER OF OBSERVATIONS	11259
NUMBER OF MISSING	9835
MEAN	7.40
MEDIAN	6.15
MINIMUM VALUE	0.46
MAXIMUM VALUE	51.49
STANDARD DEVIATION	4.89
COEFFICIENT OF VARIATION	66.10
SKEWNESS	2.02
KURTOSIS	6.36

VARIABLE LEXPTOT ANNUAL EPISODES

Sum of logged expenses for all episodes

CODES

. - FFS enrollee had no episode expenses

LEXPTOT indicates the sum of the natural logarithms of the enrollee's annual expenses for episodes of all expense categories. The amount excludes noncovered charges (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Annual episode file	LEXPACUT	Sum of logged expenses for acute episodes
	LEXPCHRN	Sum of logged expenses for chronic episodes
	LEXFLARE	Sum of logged expenses for chronic flareup episodes
	LEXPWELL	Sum of logged expenses for well-care episodes
	LEXPHOSP	Sum of logged expenses for hospital episodes
	LEXPDENT	Sum of logged expenses for dental episodes
	EXPTOT	Total episode expenses

CONSTRUCTION

```
ARRAY LEXP  (I) LEXPACUT LEXPCHRN LEXFLARE LEXPWELL LEXPDENT
                LEXPHOSP;

ARRAY LEXPX (I) LEXP1 - LEXP6;
```

(cont.)

LEXPTOT

NUMBER OF OBSERVATIONS	17756
NUMBER OF MISSING	3338
MEAN	17.31
MEDIAN	14.01
MINIMUM VALUE	0.36
MAXIMUM VALUE	154.88
STANDARD DEVIATION	13.25
COEFFICIENT OF VARIATION	76.54
SKEWNESS	1.74
KURTOSIS	5.33

```
VARIABLE LEXPTOT (cont.)
  CONSTRUCTION (cont.)
     DO I = 1 TO 6;
          IF LEXP = . THEN LEXPX = 0;
     END;
     LEXPTOT = LEXP1 + LEXP2 + LEXP3 + LEXP4 + LEXP5 + LEXP6;
          IF EXPTOT = 0 THEN LEXPTOT = .;
```

VARIABLE LEXMENT ANNUAL EPISODES

Sum of logged expenses for mental health episodes

CODES

. - FFS enrollee had no mental health episode expenses

LEXMENT indicates the sum of the natural logarithms of the enrollee's annual expenses for mental health episodes. The amount excludes noncovered charges (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Individual-episode file	CATEG	Special category of service
	LINE_CHR	Covered charges for episode

CONSTRUCTION

```
DO OVER PERSON AND CONTYR;

   IF CATEG = 1
      THEN DO;

           IF LINE_CHR > 0
              THEN LEXMENT = LEXMENT + LOG(LINE_CHR);

           END;

END;
```

LEXMENT

NUMBER OF OBSERVATIONS	730
NUMBER OF MISSING	20364
MEAN	10.59
MEDIAN	7.51
MINIMUM VALUE	1.61
MAXIMUM VALUE	49.97
STANDARD DEVIATION	8.02
COEFFICIENT OF VARIATION	75.79
SKEWNESS	1.81
KURTOSIS	3.39

VARIABLE LEXVIS ANNUAL EPISODES

Sum of logged expenses for vision-related episodes

CODES

. - FFS enrollee had no vision-related episode expenses

LEXVIS indicates the sum of the natural logarithms of the enrollee's annual expenses for vision-related episodes. The amount excludes noncovered expenses (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Individual-episode file	CATEG	Special category of service
	LINE_CHR	Covered charges for episode

CONSTRUCTION

```
DO OVER PERSON AND CONTYR;

   IF CATEG = 3
      THEN DO;

           IF LINE_CHR > 0
              THEN LEXVIS = LEXVIS + LOG(LINE_CHR);

           END;

END;
```

LEXVIS

NUMBER OF OBSERVATIONS	4554
NUMBER OF MISSING	16540
MEAN	4.59
MEDIAN	4.40
MINIMUM VALUE	1.39
MAXIMUM VALUE	15.79
STANDARD DEVIATION	1.47
COEFFICIENT OF VARIATION	32.00
SKEWNESS	2.05
KURTOSIS	6.43

VARIABLE LEXPREG ANNUAL EPISODES

Sum of logged expenses for pregnancy-related episodes

CODES

. - FFS enrollee had no pregnancy-related episode expenses

LEXPREG indicates the sum of the natural logarithms of the enrollee's annual expenses for pregnancy-related episodes. The amount excludes noncovered charges (see Appendix D) but includes the enrollee's coinsurance payments.

INPUT VARIABLES

Source	Variable	
Individual-episode file	CATEG	Special category of service
	LINE_CHR	Covered charges for episode

CONSTRUCTION

```
DO OVER PERSON AND CONTYR;

   IF CATEG = 4
      THEN DO;

           IF LINE_CHR > 0
              THEN LEXPREG = LEXPREG + LOG(LINE_CHR);

           END;

END;
```

LEXPREG

NUMBER OF OBSERVATIONS	499
NUMBER OF MISSING	20595
MEAN	6.07
MEDIAN	6.18
MINIMUM VALUE	1.16
MAXIMUM VALUE	23.76
STANDARD DEVIATION	2.14
COEFFICIENT OF VARIATION	35.23
SKEWNESS	2.65
KURTOSIS	16.75

VARIABLE IFAM ANNUAL EPISODES

Insurance family identifier

IFAM is a 4-digit code that identifies the insured family (within a given site) to which the enrollee belonged at the beginning of the contract year. IFAM must be used with the variable SITE to uniquely identify the family.

VARIABLE PLAN ANNUAL EPISODES

Assigned insurance plan

CODES

1 - Participant pays 100% of covered services until deductible is met, then plan pays 100%. Deductible is $150 per person or $450 per family. In effect only 1st year in Dayton; thereafter participants were switched to plan 13.

2 - Participant pays 100% of covered services until deductible is met, then plan pays 100%. Deductible is 5% of family income or $1000, whichever is less. In effect only 1st year in Dayton; thereafter participants were switched to plan 14.

3 - Participant pays 100% of covered services until deductible is met, then plan pays 100%. Deductible is 10% of family income or $1000, whichever is less. In effect only 1st year in Dayton; thereafter participants were switched to plan 15.

4 - Participant pays 100% of covered services until deductible is met, then plan pays 100%. Deductible is 15% of family income or $1000, whichever is less. In effect only 1st year in Dayton; thereafter participants were switched to plan 16.

5 - Participant pays 25% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 5% of family income or $1000 ($750*), whichever is less.

6 - Participant pays 25% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 10% of family income or $1000 ($750*), whichever is less.

7 - Participant pays 25% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 15% of family income or $1000 ($750*), whichever is less.

8 - Participant pays 50% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket

(cont.)

PLAN

VALUE	FREQ	CUM FREQ	%	CUM %
1	410	410	1.94	1.94
2	439	849	2.08	4.03
3	295	1144	1.40	5.42
4	377	1521	1.79	7.21
5	832	2353	3.94	11.16
6	864	3217	4.10	15.25
7	746	3963	3.54	18.79
8	268	4231	1.27	20.06
9	236	4467	1.12	21.18
10	947	5414	4.49	25.67
11	7059	12473	33.46	59.13
13	3996	16469	18.94	78.07
14	930	17399	4.41	82.48
15	810	18209	3.84	86.32
16	1115	19324	5.29	91.61
17	608	19932	2.88	94.49
18	656	20588	3.11	97.60
19	506	21094	2.40	100.00

VARIABLE PLAN (cont.)

expenditure is 5% of family income or $1000, whichever is less.

9 - Participant pays 50% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 10% of family income or $1000, whichever is less.

10 - Participant pays 50% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 15% of family income or $1000, whichever is less.

11 - Participant pays nothing out-of-pocket for covered services.

13 - Participant pays nothing out-of-pocket for covered inpatient services but pays 95% of covered outpatient services until deductible is met. Then plan pays 100%. Deductible is $150 per person or $450 per family.

14 - Participant pays 95% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 5% of family income or $1000, whichever is less.

15 - Participant pays 95% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 10% of family income or $1000, whichever is less.

16 - Participant pays 95% of covered services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 15% of family income or $1000, whichever is less.

17 - Participant pays 25% of covered medical services and 50% of dental and outpatient psychiatric services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 5% of family income or $1000 ($750*), whichever is less.

18 - Participant pays 25% of covered medical services and 50% of dental and outpatient psychiatric services until maximum is spent, then plan pays 100%. Maximum out-of-

(cont.)

VARIABLE PLAN (cont.)

pocket expenditure is 10% of family income or $1000 ($750*), whichever is less.

19 - Participant pays 25% of covered medical services and 50% of dental and outpatient psychiatric services until maximum is spent, then plan pays 100%. Maximum out-of-pocket expenditure is 15% of family income or $1000 ($750*), whichever is less.

*$1000 in the early site-years (see footnote 11, p. 4).

PLAN identifies the insurance plan to which the participant was assigned. This is the plan assigned when the participant's family enrolled. Even if the family's plan changed and the participant was enrolled afterward (e.g., as a newborn), PLAN is the original plan.

VARIABLE MDE ANNUAL EPISODES

Maximum dollar expenditure at beginning of contract year

CODES

. - MDE missing

MDE indicates the maximum dollar amount the family had to pay out-of-pocket during the contract year before health care was free. The amount was a function of the family's assigned HIE insurance plan (see variable PLAN).

MDE

NUMBER OF OBSERVATIONS	21092
NUMBER OF MISSING	2
MEAN	410.37
MEDIAN	450.00
MINIMUM VALUE	0.00
MAXIMUM VALUE	1000.00
STANDARD DEVIATION	379.27
COEFFICIENT OF VARIATION	92.42
SKEWNESS	0.30
KURTOSIS	-1.38

VARIABLE ACCT_YR ANNUAL EPISODES

Beginning date of contract year

RANGE

19741101 to 19810201

ACCT_YR indicates the beginning date of the contract year (YYYYMMDD). The contract year began on the anniversary date of the family's enrollment in the experiment. Each family member had the same enrollment date, hence the same ACCT_YR.

VARIABLE FRSTDATE ANNUAL EPISODES

First episode start date

RANGE

. - FFS enrollee had no episodes (dummy record)
19741101 to 19810201

FRSTDATE indicates the date the enrollee's first episode of the contract year began (YYYYMMDD). The following rules were observed.

IF FIRST EPISODE INVOLVES:	BEG_DATE IS:
Outpatient hospitalization	Hospital admission date
Hospitalization for abortion	60 days before admission date
Hospitalization for maternity/ pregnancy	200 days before admission date, or ACCT_YR, whichever is later
Continuing chronic condition	First office visit for that condition in contract year
Treatment continuing from previous year	ACCT_YR (current contract year)
Dental care	Date of immediately preceding examination or first service date (for series of related procedures)
All other conditions	First date of service for episode

VARIABLE MDE_OVER ANNUAL EPISODES

Date MDE exceeded

RANGE

. - FFS enrollee had no episodes or MDE not yet exceeded
19741101 to 19820108

MDE_OVER is the episode start date on which the family's remaining MDE changes from positive to negative. For families assigned to plan 13 (see variable PLAN), MDE_OVER is the beginning date on which either the individual's or family's remaining MDE changes from positive to negative, whichever comes first. For families assigned to plan 11 with 0% coinsurance, MDE_OVER is the beginning of the contract year (ACCT_YR). From the MDE_OVER date until the beginning of the next contract year, the individual's health care is free (that is, its covered expenses are reimbursed 100 percent).

Appendix A
PARTICIPATION INCENTIVE PAYMENTS

HIE-insured families were paid a participation incentive (PI) if their HIE plans could conceivably impose a greater financial burden than their existing health insurance policies.[1] Calculated yearly, the PI consisted of (1) an amount calculated to be the *maximum* difference between what the family would have to pay for health care under its HIE insurance plan and what it would have paid under its existing insurance plan, unless (2) the premium a family paid to maintain its existing insurance exceeded the maximum difference. In that case, the family was paid an amount equal to the premium payment.

The calculation of item 1 ignored the family's actual medical expenses. To illustrate, consider family X whose HIE plan specified 95 percent coinsurance up to a maximum out-of-pocket expenditure of $450, above which care was free.[2] Family X's existing insurance specified a $100 deductible, above which the family had to pay 20 percent coinsurance. Under its HIE policy, the family had to spend $473.68 for medical services (with the 5 percent reimbursement) to reach the $450 out-of-pocket maximum. For the same charge under its existing insurance, the family would have paid $100 (the deductible) plus 20 percent of the amount between $100 and $473.68. The maximum difference was thus 473.68 - 100 - 0.2 (473.68 - 100) = $298.94. Family X was entitled to $298.94 per year for that portion of its participation incentive.

The total PI could not exceed the MDE specified in the family's HIE plan unless the family's share of its insurance premium exceeded the MDE. For example, if family X paid an insurance premium of $300, its

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[1]Participation incentive payments were not offered to families receiving free care (plan A, described on p. 3) who had no premium to pay, families who had no health insurance before the experiment, and families whose other policies had equal or less generous terms, under all circumstances, than their HIE plan.

[2]In HIE terminology, maximum out-of-pocket expenditure is called "maximum dollar expenditure," or MDE.

total PI entitlement was $450, not $598.94 (300 + 298.94). If the family paid a premium of $600, its PI was $600 because the premium exceeded the MDE of $450. On the other hand, a family who had a high MDE in its HIE plan and an existing insurance policy with 0 percent coinsurance, no deductible, and an employer-paid premium was entitled to the full MDE amount. The purpose of PI payments was to ensure that a family was no worse off financially by participating in the experiment--whether because of the cost of its insurance premium or the "worse" terms of its HIE insurance plan compared with its existing policy.[3]

As encouragement for families to complete their assigned enrollment terms, a portion of the family's annual PI was withheld until the last year of the term.[4] The family received its full annual PI that last year, and the amount previously withheld was paid as part of a completion bonus when the family completed the physical screening examination and medical health questionnaire at exit.[5]

To measure enrollees' responsiveness to PI payments, a subset of families received their full annual PI in the next-to-last, as well as the last, year of their term. That "super PI bonus" was offered to 44.4 percent of the families assigned to insurance plans requiring 95 percent coinsurance, the highest rate (plans K-N, described on pp. 3-4). Super PI

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[3]Calculation of PI is further described in Clasquin and Brown, op. cit. The formula on p. 20 of that report should read PI = max[K x PG, PR].

[4]The percentage of PI withheld depended on the site and assigned enrollment term, as follows:

	3-yr Term	*5-yr Term*
Dayton	25	15
Seattle	25	15
Fitchburg	33.3	25
Franklin Co.	33.3	25
Charleston	33.3	20
Georgetown Co.	33.3	20

If the discounted PI was not enough to reimburse the cost of the family's insurance premium, however, the family received the full amount of its premium. The difference between the premium and the discounted PI was then subtracted from the withheld amount.

[5]The rest of the completion bonus was the largest annual PI to which the family had been entitled during its enrollment (minus the withheld amount) or $120, whichever was greater.

recipients represented all sites and both terms of enrollment except Dayton enrollees assigned to three-year terms, who had already begun their next-to-last year when super PI was instituted. Within the 95 percent coinsurance plans, super PI recipients were chosen using the "finite selection model." That model was developed by Rand to assign enrollees to experimental insurance plans so that, across plans, families resembled each other in 24 health and socioeconomic characteristics.[6]

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[6]The finite selection model is described in Carl N. Morris, "A Finite Selection Model for Experimental Design of the Health Insurance Study," *Journal of Econometrics*, Vol. 11, 1979, pp. 43-61.

Appendix B
HIE DATA FILES

This appendix identifies the data files that the HIE has either issued or expects to issue, grouped in topical series. As a tape of each file is issued, a companion codebook is published as a Rand Note. One Note may contain the codebooks for several files. In addition to issuing files and codebooks, HIE staff will prepare a user's guide to provide assistance in understanding and using the HIE database for analysis.

The list below cites codebooks for the files that have been issued, and file names for those not yet issued. At this time it is impossible to predict exact issue dates for future files and codebooks. This preliminary list is to alert prospective users to the variety of subject matter covered by the HIE database and to the existence of related files that should be used together.

Before ordering a file or codebook, be sure to verify its availability with the Rand Publications Department, using the reference numbers cited below (e.g., MS3).

ISSUED TO DATE

Master Sample Series

MS1. *Vol. 1: Codebook for Eligibility-Family Changes File*, by S. M. Polich and C. d'Arc Taylor, The Rand Corporation, N-2264/1-HHS, May 1986.

MS2. *Vol. 2: Codebook for Full Sample Demographic File*, by S. M. Polich, N. F. Campbell, C. d'Arc Taylor, D. L. Wesley, J. W. Keesey, and E. S. Bloomfield, The Rand Corporation, N-2264/2-HHS, May 1986.

Aggregated Claims Series

AC1. *Vol. 1: Codebook for Fee-for-Service Annual Expenditures and Visit Counts*, by C. E. Peterson, M. Nelsen, and E. S. Bloomfield, The Rand Corporation, N-2360/1-HHS, May 1986.

ISSUED TO DATE (cont.)

AC2, AC3, AC4. *Vol. 2: Codebooks for Fee-for-Service Visits--Outpatient, Inpatient, and Dental*, by C. E. Peterson, M. Nelsen, D. L. Wesley, and E. S. Bloomfield, The Rand Corporation, N-2360/2-HHS, June 1986.

AC2. FFS outpatient visits
AC3. FFS inpatient visits
AC4. FFS dental visits

AC5, AC6. *Vol. 3: Codebooks for Fee-for-Service Treatment Episodes and Annual Episode Counts*, by C. E. Peterson, C. d'Arc Taylor, and E. S. Bloomfield, The Rand Corporation, N-2360/3-HHS, June 1986.

AC5. FFS treatment episodes
AC6. FFS annual episode counts

Claims Line-Item Series

LI1 to LI14. *Vol. 1: Codebooks for Fee-for-Service Claims*, by C. E. Peterson, M. Nelsen, D. L. Wesley, E. S. Bloomfield, and S. M. Polich, The Rand Corporation, N-2347/1-HHS, June 1986.

LI1. FFS data: hospital inpatient services
LI2. FFS data: inpatient physician procedures billed by institutions
LI3. FFS data: drugs prescribed by physicians
LI4. FFS data: supplies prescribed by physicians
LI5. FFS data: services rendered by physicians
LI6. FFS data: drugs sold by physicians
LI7. FFS data: supplies sold by physicians
LI8. FFS data: injections administered by physicians
L19. FFS data: outpatient services billed by institutions
LI10. FFS data: services rendered by dentists
LI11. FFS data: drugs prescribed by dentists
LI12. FFS data: drugs purchased
LI13. FFS data: supplies purchased from pharmacies
LI14. FFS data: supplies purchased from nonpharmacy suppliers

HIE Reference Series

RF1. *Codes Used in HIE Claims--Diagnoses, Symptoms, Procedures, Drugs, and Supplies*, by M. Nelsen and C. A. Edwards, The Rand Corporation, N-2349/1-HHS, May 1986.

TO BE ISSUED

Master Sample Series

MS3. Supplemental data file

Aggregated Claims Series

AC7. HMO and Seattle FFS annual expenditures and visit counts

AC8. HMO and Seattle FFS outpatient visits

AC9. HMO and Seattle FFS inpatient visits

Claims Line-Item Series

LI15. Seattle HMO data: hospital inpatient services

LI16. Seattle HMO data: inpatient physician services

LI17. Seattle HMO data: drugs prescribed by physicians

LI18. Seattle HMO data: supplies prescribed by physicians

LI19. Seattle HMO data: services rendered by physicians

LI20. Seattle HMO data: drugs dispensed by physicians

LI21. Seattle HMO data: supplies dispensed by physicians

LI22. Seattle HMO data: injections administered by physicians

LI23. Seattle HMO data: outpatient services provided by institutions

LI24. Seattle HMO data: drugs dispensed

LI25. Seattle HMO data: supplies dispensed

LI26. Seattle FFS data for HMO comparison: hospital inpatient services

LI27. Seattle FFS data for HMO comparison: inpatient physician procedures billed by institutions

LI28. Seattle FFS data for HMO comparison: outpatient services rendered by physicians

LI29. Seattle FFS data for HMO comparison: injections administered by physicians

HIE Reference Series

RF2. Providers cited in HIE data

TO BE ISSUED (cont.)

Medical Disorder Series

MD1. Adult medical disorders at enrollment and exit

MD2. Infant and child medical disorders at enrollment and exit

Health Status and Attitude Series

HS1. Adults at enrollment and exit

HS2. Children at enrollment and exit

Medical History Questionnaire Series

MH1A. Dayton adults at enrollment, Form A

MH1B. Dayton adults at enrollment, Form B

MH2A. NonDayton adults at enrollment, Form A

MH2B. NonDayton adults at enrollment, Form B

MH3A. Adults at exit, Form A

MH3B. Adults at exit, Form B

MH4A. Dayton children at enrollment, Form A

MH4B. Dayton children at enrollment, Form B

MH5A. NonDayton children at enrollment, Form A

MH5B. NonDayton children at enrollment, Form B

MH6A. Children at exit, Form A

MH6B. Children at exit, Form B

MH7A. Dayton infants at enrollment, Form A

MH7B. Dayton infants at enrollment, Form B

MH8A. NonDayton infants at enrollment, Form A

MH8B. NonDayton infants at enrollment, Form B

MH9A. Infants at exit, Form A

MH9B. Infants at exit, Form B

Appendix C
FILE DICTIONARIES

This appendix describes the character versions of the episode files in technical terms. Tables C.1 through C.3 provide, respectively, identifying data, a list of variables by alphabetic order, and a list of variables by location for the individual-episode file. Tables C.4 through C.6 provide the same information for the annual episode file.

Table C.1

INDIVIDUAL-EPISODE FILE: BASIC IDENTIFYING DATA

Data file name	DEE1AA01.PUF.DATA
Creation date	June 25, 1986
Variable format	Character
Total number of data elements	19
Header length (bytes)	20
Derived data length (bytes)	104
Record length (bytes)	124

Table C.2

INDIVIDUAL-EPISODE FILE:
LISTING BY ALPHABETIC ORDER

Name	Location	Length	Type
ACCT_YR	21	8	I
BEG_DATE	37	8	I
CATEG	61	8	I
CONTYR	17	2	A
DIAG	53	8	A
END_DATE	45	8	I
EPIS_NO	29	8	A
FILENAME	1	6	A
FILLER	19	2	A
IFAM	69	8	I
INSTAT	16	1	A
LINE_CHR	93	8	F
MDE	85	8	F
MDE_END	109	8	I
MDE_OVER	117	8	I
MDE_STRT	101	8	I
PERSON	7	8	A
PLAN	77	8	I
SITE	15	1	A

Table C.3

INDIVIDUAL-EPISODE FILE:
LISTING BY LOCATION

Name	Location	Length	Type
FILENAME	1	6	A
PERSON	7	8	A
SITE	15	1	A
INSTAT	16	1	A
CONTYR	17	2	A
FILLER	19	2	A
ACCT_YR	21	8	I
EPIS_NO	29	8	A
BEG_DATE	37	8	I
END_DATE	45	8	I
DIAG	53	8	A
CATEG	61	8	I
IFAM	69	8	I
PLAN	77	8	I
MDE	85	8	F
LINE_CHR	93	8	F
MDE_STRT	101	8	I
MDE_END	109	8	I
MDE_OVER	117	8	I

NOTE: "Type" refers to whether the variable values are alphanumeric (A), integer (I), or fixed-decimal in 8.2 format (F). Missing values are represented differently for each type: A = bbbbbbbb, I = bbbbbbb., and F = bbbbb.bb ("b" meaning blank). To obtain the appropriate positive and missing values, read all values as alphanumeric, then convert "I" data to integers and "F" data to 8.2 format.

Table C.4

ANNUAL EPISODE FILE: BASIC IDENTIFYING DATA

Data file name	DEE2AA01.PUF.DATA
Creation date	June 26, 1986
Variable format	Character
Total number of data elements	42
Header length (bytes)	20
Derived data length (bytes)	288
Record length (bytes)	308

Table C.5

ANNUAL EPISODE FILE: LISTING BY ALPHABETIC ORDER

Name	Location	Length	Type	Name	Location	Length	Type
ACCT_YR	285	8	I	LEXPDENT	221	8.4	F
CONTYR	17	2	A	LEXPHOSP	213	8.4	F
EXFLARE	117	8.2	F	LEXPREG	253	8.4	F
EXMENT	157	8.2	F	LEXPTOT	229	8.4	F
EXPACUT	101	8.2	F	LEXPWELL	205	8.4	F
EXPCHRN	109	8.2	F	LEXVIS	245	8.4	F
EXPDENT	141	8.2	F	MDE	277	8.2	F
EXPHOSP	133	8.2	F	MDE_OVER	301	8	I
EXPREG	173	8.2	F	NACUT	21	8	I
EXPTOT	149	8.2	F	NCHRN	29	8	I
EXPWELL	125	8.2	F	NDENT	61	8	I
EXVIS	165	8.2	F	NFLARE	37	8	I
FILENAME	1	6	A	NHOSP	53	8	I
FILLER	19	2	A	NMENT	77	8	I
FRSTDATE	293	8	I	NPREG	93	8	I
IFAM	261	8	I	NTOT	69	8	I
INSTAT	16	1	A	NVIS	85	8	I
LEXFLARE	197	8.4	F	NWELL	45	8	I
LEXMENT	237	8.4	F	PERSON	7	8	A
LEXPACUT	181	8.4	F	PLAN	269	8	I
LEXPCHRN	189	8.4	F	SITE	15	1	A

NOTE: "Type" refers to whether the variable values are alphanumeric (A), integer (I), or fixed-decimal (F). For fixed-decimal variables, the placement of the decimal point is shown in the "LENGTH" column; the number to the right of the dot "." tells the number of digits to the right of the decimal point (e.g., 8.2 means the numbers are written "nnnnn.nn"). Missing values are written differently for each variable type: A = bbbbbbbb, I = bbbbbbb., F8.2 = bbbbb.bb, and F8.4 = bbb.bbbb ("b" meaning blank). To obtain the appropriate positive and missing values, read all values as alphanumeric, then convert "I" data to integers and "F" data to the specified floating-point format.

Table C.6

ANNUAL EPISODE FILE: LISTING BY LOCATION

Name	Location	Length	Type	Name	Location	Length	Type
FILENAME	1	6	A	EXPDENT	141	8.2	F
PERSON	7	8	A	EXPTOT	149	8.2	F
SITE	15	1	A	EXMENT	157	8.2	F
INSTAT	16	1	A	EXVIS	165	8.2	F
CONTYR	17	2	A	EXPREG	173	8.2	F
FILLER	19	2	A	LEXPACUT	181	8.4	F
NACUT	21	8	I	LEXPCHRN	189	8.4	F
NCHRN	29	8	I	LEXFLARE	197	8.4	F
NFLARE	37	8	I	LEXPWELL	205	8.4	F
NWELL	45	8	I	LEXPHOSP	213	8.4	F
NHOSP	53	8	I	LEXPDENT	221	8.4	F
NDENT	61	8	I	LEXPTOT	229	8.4	F
NTOT	69	8	I	LEXMENT	237	8.4	F
NMENT	77	8	I	LEXVIS	245	8.4	F
NVIS	85	8	I	LEXPREG	253	8.4	F
NPREG	93	8	I	IFAM	261	8	I
EXPACUT	101	8.2	F	PLAN	269	8	I
EXPCHRN	109	8.2	F	MDE	277	8.2	F
EXFLARE	117	8.2	F	ACCT_YR	285	8	I
EXPWELL	125	8.2	F	FRSTDATE	293	8	I
EXPHOSP	133	8.2	F	MDE_OVER	301	8	I

NOTE: "Type" refers to whether the variable values are alphanumeric (A), integer (I), or fixed-decimal (F). For fixed-decimal variables, the placement of the decimal point is shown in the "LENGTH" column; the number to the right of the dot "." tells the number of digits to the right of the decimal point (e.g., 8.2 means the numbers are written "nnnnn.nn"). Missing values are written differently for each variable type: A = bbbbbbbb, I = bbbbbbb., F8.2 = bbbbb.bb, and F8.4 = bbb.bbbb ("b" meaning blank). To obtain the appropriate positive and missing values, read all values as alphanumeric, then convert "I" data to integers and "F" data to the specified floating-point format.

Appendix D

CODES AND EXPLANATIONS FOR MEDICAL EXPENSES NOT COVERED BY THE HIE

1 - Inpatient hospital accommodations in a private room
2 - Inpatient hospital comfort items
3 - Inpatient hospital custodial care
4 - Cosmetic surgery not resulting from an accidental injury
5 - Psychiatric outpatient services in excess of 52 consultations per year
6 - Outpatient psychiatric services
7 - Outpatient personal care services
8 - Orthodontia not resulting from accidental injury
9 - Christian Science practitioner or sanitorium not listed in the *Christian Science Journal*
10 - Nonemergency transportation
11 - More than one eye or hearing examination during the contract year
12 - More than one pair of eyeglass frames every two contract years
13 - More than one set of eyeglass lenses during the contract year
14 - More than one hearing aid during contract year
15 - Exceeds limit on eyeglass frames or hearing aids
16 - Repairs to eyeglass frames and hearing aids
17 - Diagnostic, screening, preventive, or rehabilitation services not otherwise specified in the scope of coverage
18 - More than one piece of medical equipment, appliance, or supply
19 - Equipment, appliances, or supplies costing more than $25
20 - Not medically necessary
21 - Duplicate line item
22 - Amount paid on another Explanation of Benefits
23 - Service before enrollment (same as 64)
24 - Procedure done twice
25 - Certificate of benefits stipulations on service not met
26 - Prior authorization not approved
27 - Participant not eligible for dental care
28 - Blood credit
29 - Over-the-counter drugs
32 - Services covered by Workers' Compensation or employer's liability laws
33 - Pass through (covered by other insurance; payment from other company was "passed through")
35 - Services covered by accident insurance policies

36 - Medicare paid
42 - Paid by other insurance carrier
43 - Paid by agency other than insurance company
46 - Services obtained at Group Health Cooperative
47 - Allowance on over-the-counter-drugs per illness per contract year has been met
48 - Services paid for by Group Health Cooperative
53 - Part paid by Group Health Cooperative; plan benefit = 5% of balance
54 - Charge information unavailable--charge coded as one cent
55 - Discount plus plan benefit is 5%
56 - Medicaid paid
57 - Company physical provided as fringe benefit--charge coded as one cent, but true charge unknown
58 Workers' Compensation--charge coded as one cent, but true charge unknown
59 - Services rendered after termination date
60 - Claim is duplicate
61 - Participant not eligible for HIE insurance
62 - Suspended
63 - No service
64 - Before enrollment date (same as 23)
65 - Claim filed after time limit
67 - Underpayment
68 - Overpayment, deducted on another claim
69 - Overpayment, returned
70 - Overpayment, deducted on this claim, overpaid on another claim
71 - Billed in error--patient not seen
73 - Duplicate payment recovered
74 - Duplicate payment not recovered
80 - Prepayment for future services--no maximum dollar expenditure involved
81 - Prepayment--part applied to the maximum dollar expenditure

GLOSSARY

Adjunct enrollee	Uninsured member of insured family/household or member of Dayton control group. Not part of sample in episode files.
Baseline participant	Person considered for enrollment at the beginning of the experiment in the site. May or may not have enrolled, either remaining a baseline-only participant or becoming an enrollee. Not part of sample in episode files.
Baseline-only participant	Person considered for enrollment at the beginning of the experiment in the site who did not enroll. Not part of sample in episode files.
Contract year	Administrative unit of time for enrollees; year period(s) reckoned from date family signed enrollment contract. First contract year began on enrollment date, second contract year began on first anniversary of enrollment, and so on.
Covered charge	Charge for health care that applies toward MDE, or, when when MDE is satisfied, is reimbursed by the HIE. Until the enrollee's MDE is satisfied, includes the part of a charge paid by the enrollee as coinsurance (which applies toward the MDE) and the part reimbursed by the HIE. After the MDE is satisfied, the covered charge is the amount reimbursed by the HIE.
Dayton control group	Group of 669 uninsured enrollees who participated from November 1974 to February 1976. Formed to compare the community's use of health services with use by insured Dayton enrollees. Members retained their own insurance but were asked to complete the same questionnaires as insured enrollees. Group was discontinued because complete data appeared unobtainable from them. Not part of sample in episode files.
Enrollee	Person whose family or household signed an enrollment contract with the HIE. Includes insured and uninsured persons. Any of the following: HIE-insured, HMO-insured, adjunct enrollee, member of Dayton control group.
Episode	A group of health care visits linked by a common complaint or purpose, diagnosis, or treatment.
Exit	Departure from the experiment after completion of assigned enrollment term, three or five years.

Experimental insurance treatment	One of 16 groups in which experimental subjects participated. Fifteen were insurance plans with varying coinsurance rates, out-of-pocket expenditure limits, and both FFS and HMO delivery systems. The sixteenth was the HMO control group.
FFS	Fee for service.
FFS enrollee	Person initially assigned to an FFS insurance plan (plans A-N listed on pp. 3-4). Member of the sample population in the episode files.
GHC	Group Health Cooperative of Puget Sound, the Seattle HMO that participated in the experiment.
HIE	Health Insurance Experiment.
HIE-insured	Enrollee assigned to an experimental health insurance plan paid by the HIE (plans A-O, described on pp. 3-4). Includes members of HMO experimental group. Compare "HMO-insured." Episode files include all HIE-insured except HMO experimental group.
HMO	Health maintenance organization; Group Health Cooperative of Puget Sound, the HMO that participated in the HIE.
HMO control group	Seattle enrollees drawn at random from existing HMO members who met HIE eligibility criteria. The HIE did not pay their insurance premiums. Not part of sample in episode files.
HMO experimental group	Seattle enrollees experimentally transferred to HMO from fee-for-service system. The HIE paid their insurance premiums. Not part of sample in episode files.
HMO-insured	Member of HMO control group.
Insured	Either HIE-insured or HMO-insured.
Insured enrollee	Person assigned to an experimental treatment; HIE-insured or HMO-insured.
Line item	Specific service for which a charge is entered on an enrollee's claim.
MDE	Maximum dollar expenditure--maximum out-of-pocket expense to be paid by HIE-insured family before health care was free. The amount was a function of the family's assigned insurance plan.

MER	Medical expense report, the claim form for enrollees assigned to fee-for-service insurance plans.
Preenrollment group	Persons who participated in preenrollment phase in South Carolina; may or may not have formally enrolled in the experiment.
SAS	Statistical Analysis System. HIE files contain data in both SAS and character formats.
Uninsured	Neither HIE-insured nor HMO-insured participant. Adjunct enrollee or member of Dayton control group. Uninsured persons did not necessarily lack health insurance; they were uninsured only with respect to HIE experimental treatments.