

Evaluating Vocational Rehabilitation Programs for the Disabled: National Long-Term Followup Study

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For the first time on a national scale, long-term followup is possible for all persons referred to State vocational rehabilitation agencies. The Social Security Administration and Rehabilitation Services Administration have linked their record data to evaluate vocational rehabilitation programs for the disabled. Analyses of cases closed in fiscal year 1971 for successfully rehabilitated and unrehabilitated individuals will compare their subsequent employment, earnings, and benefit status and study outcome of referral. This report describes the purposes of and study design for the data link and demonstrates its feasibility for program evaluation. An analysis of summary data shows that rehabilitants generally have greater earnings and others and more often are employed and have recovered following services, but that employment, earnings, and recovery levels remain very low.

TWO CONSTITUENT AGENCIES of the Department of Health, Education, and Welfare—the Social Security Administration and the Rehabilitation Services Administration—have linked their records on all disabled persons whose cases were closed by State vocational rehabilitation agencies in the fiscal year 1971.¹ The link was initiated to serve the mutual program and research needs of both agencies and to demonstrate the potential of linked records as a tool in evaluating programs concerned with vocational rehabilitation of the disabled. The exchange of statistical information will be a major resource to satisfy the “need for an effective followup system which would provide management with continuing information on (rehabilitation) program effectiveness and the identification of unmet

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¹ A data coordination committee with representatives from the two Federal agencies and the State vocational rehabilitation agencies facilitated the data exchange.

needs.”² Data links for subsequent cohorts of closed cases are being considered.

The purposes of the link and methods for utilizing the linked data are described here. In addition, the results of the matching of the two agencies’ records are presented with the summary findings for the total population of matched cases—the first products of analysis of the linked data. These results and findings demonstrate the feasibility of the data link for program evaluation.

PURPOSES AND SOURCES OF DATA LINK

The Rehabilitation Services Administration and the Social Security Administration both have programs whose broad goals are to restore disabled persons to productive, remunerative work and to reduce economic dependence. These goals are pursued by the Rehabilitation Services Administration through financing of State programs of vocational rehabilitation services and counseling to the disabled. Support of these goals is given through the social security programs of monthly income-maintenance benefits and referral to State rehabilitation agencies, and through the limited allocation of trust fund resources for rehabilitation services to disabled beneficiaries.

Applicants for disability insurance benefits under the Social Security Act are generally referred to vocational rehabilitation agencies to encourage them to participate in rehabilitation

² This need for the data link was cited by the Department of Health, Education, and Welfare in response to a General Accounting Office recommendation to institute a continuous followup system of all persons whose cases were closed by vocational rehabilitation agencies. See U.S. General Accounting Office, *Effectiveness of Vocational Rehabilitation in Helping the Handicapped: Social and Rehabilitation Service, Department of Health, Education, and Welfare*, Report to the Congress by the Comptroller General of the United States, Appendix I, James B. Cardwell letter, Washington, 1973.

programs. Disability benefits under the social security program are not payable to anyone who refuses available vocational rehabilitation services. To further encourage rehabilitation efforts, disabled beneficiaries who return to work may continue to receive benefits for up to 12 months while they test their capacity to work. The State vocational rehabilitation agencies accept for services persons referred from all sources, including the Social Security Administration, who have a substantial handicap to employment and who are considered, as a result of their counselors' evaluation, to have "rehabilitation potential"—that is, that rehabilitation services may render them fit for gainful employment.³ Individuals whose cases are "closed" as "rehabilitated" have successfully completed a plan formulated with a counselor, for guidance, restoration, and training services, and have been observed to be employed for at least 30 days. Accepted cases are closed as "not rehabilitated" if the individual is unable to meet one or more of these criteria. Of the remaining referrals, individuals who drop out or are found ineligible for or refuse services may have their cases closed as "not accepted."

Different definitions are used by the two programs. Eligibility criteria for disability benefits under the social security program generally assume a more severe handicap to employment than those for referral to vocational rehabilitation agencies. "Disability" is defined by the Social Security Administration⁴ as inability to engage in substantial gainful activity and is based on medical evidence of physical or mental impairment that can be expected to result in death or to last for at least 12 months. The termination

³ For an assessment of this concept, see S. Z. Nagi, *Disability and Rehabilitation: Legal, Clinical, and Self-Concepts and Measurement*, Ohio State University Press, 1969, especially pages 137-160. See also Ralph Trettel, *Identifying Disabled Workers Who May Return to Work: Rehabilitation and Medical-Improvement Screening Decisions*, Research and Statistics Note No. 5, Social Security Administration, Office of Research and Statistics, April 1973.

⁴ These definitions and those of the Rehabilitation Services Administration serve administrative purposes. For other definitions see M. B. Sussman, ed., *Sociology and Rehabilitation*, American Sociological Association, 1965; L. D. Haber, "Identifying the Disabled: Concepts and Methods in the Measurement of Disability," *Social Security Bulletin*, December 1967; and Constantina Safilios-Rothschild, *The Sociology and Social Psychology of Disability and Rehabilitation*, New York, Random House, 1970.

of disability benefits because of restored capacity to earn adequate income through employment defines "recovery," which may be based on evidence of medical improvement. Recovery generally follows a period of sustained employment and earnings, compared with the 1-month period of employment for rehabilitation that may also include work as an unpaid family worker or in sheltered workshops.

Objectives of Data Link

In evaluating these service and benefit programs, the linked data can be useful to:

- (1) analyze social security beneficiary experience following vocational rehabilitation services, particularly the termination of benefits because of the regained ability to work
- (2) relate services to the subsequent employment and earnings of the entire population of cases closed by vocational rehabilitation agencies
- (3) determine the outcome of referral for rehabilitation services—the incidence of acceptance by the agency and of successful rehabilitation—both among social security beneficiaries and other disabled persons.

For program planners and managers, perhaps the most important aspect of the first two objectives is the identification of factors that maximize the beneficial effects of rehabilitation—employment, increased earnings, and benefit termination—as well as those that diminish such effects. What disability characteristics, social and economic conditions, and aspects of agency programs are associated with either impact? A potentially significant aspect of the third objective is identifying the conditions and factors related to referral outcome.

Significance of Data Link

In providing a more complete picture of the rehabilitation experience of all referred persons and of their employment, earnings, and beneficiary history, the merging of the two agencies' records makes it possible to study a wide variety of social, economic, health, and program characteristics. Types of information routinely obtained by one agency but not the other now will be available to describe in a more comprehensive fashion the characteristics and experiences of the cases known to *both* agencies.

The data link permits, for the first time, continuous long-term followup studies on a national scale of all categories of disabled persons referred to State vocational rehabilitation agencies. Until now, systematic longitudinal studies have been very limited in number, scope, and usefulness.⁵ Few studies have investigated the disabled person's situation following receipt of services. It is often assumed that the client's completion of the prescribed rehabilitation program followed by placement in a job is an intrinsic indicator of rehabilitation success.⁶ Social security reports on rehabilitated disability applicants and beneficiaries have provided some information.⁷ Comparable data on the larger population of nonbeneficiaries and persons who were not rehabilitated, however, were not available before establishment of the data link. Although reports on social security beneficiaries have been national in scope, studies including other categories of vocational rehabilitation agency referrals have generally been limited to local or State settings.⁸ Other geographically restricted studies have focused on special categories, such as referrals from public assistance agencies.⁹

⁵ S. Z. Nagi, *R&D in Disability Policies and Programs: An Analysis of Organization, Clients and Decision-Making*, Ohio State University, Merston Center, 1973, chapter V, pages 29-30. See also L. E. Riley, E. A. Spreitzer, and S. Z. Nagi, *Disability and Rehabilitation: A Selected Bibliography*, Forum Associates, 1971.

⁶ For a discussion of the inadequacy of this criterion and of the need for postplacement measures of success, see Alex Hawryluk, "Rehabilitation Gain: A Better Indicator Needed," *Journal of Rehabilitation*, September-October 1972, pages 22-25. See also E. A. Hefferin and A. H. Katz, "Issues and Orientations in the Evaluation of Rehabilitation Programs: A Review Article," *Rehabilitation Literature*, March-April 1971.

⁷ See Ralph Treitel, "Recovery of Disabled After Trust Fund Financing of Rehabilitation," *Social Security Bulletin*, February 1973; Robert Cormier, *Rehabilitated Disability Applicants, 1967*, Research and Statistics Note No 26, Social Security Administration, 1974; and Jack Schmulowitz, "Recovery and Benefit Termination: Program Experience of Disabled-Worker Beneficiaries," *Social Security Bulletin*, June 1973, pages 11-12.

⁸ See H. E. A. Tinsley, R. G. Warnken, D. J. Weiss, et al., *A Followup Study of Former Clients of the Minnesota Division of Vocational Rehabilitation*, Minnesota Studies in Vocational Rehabilitation, Bulletin 50, University of Minnesota, Industrial Relations Center, 1969.

⁹ Several such studies are reviewed in L. S. Hamilton and J. E. Muthard, *Reducing Economic Dependency Among Welfare Recipients: A Review of Vocational Rehabilitation and Manpower Training Research*, Regional Rehabilitation Research Institute, University of Florida, Gainesville, August 1973, pages 33-43.

The data link provides a relatively effective means of securing regularly recorded information across any desired time period following disposition of a case by the rehabilitation agency. In an attempt to include as many cases as possible, longitudinal studies, often confronted with severe problems in locating and obtaining information from former clients, tend to restrict data collection to a single period relatively soon after rehabilitation services. Because the data link relies on ongoing statistical records based on legally mandated reports, continuous as well as long-term followup becomes more feasible.

Types of Data

Three sets of records are used for the data link, two from the Social Security Administration and one from the Rehabilitation Services Administration:

1. *Case Service Report (RSA-300)*.—This statistical record of clients identified under the reporting system of the Rehabilitation Services Administration is completed in State vocational rehabilitation agencies for each referred person whose case is closed during the year. It includes information on the referral and its outcome, the services provided, and the personal background and disabling condition of the client.

2. *Earnings Summary Record (ESR)*.—This record provides a continuous history of wages and self-employment income reported to the Social Security Administration. Earnings of more than 9 out of 10 employed persons in the United States are covered. Excluded are workers covered by the Federal civil service and persons in household or farm work or in self-employment whose earnings are too low or who do not work long enough to meet minimum requirements.

3. *Master Beneficiary Record (MBR)*.—This benefit payment record of the Social Security Administration for each beneficiary contains information about monthly cash benefits under the old-age, survivors, and disability insurance program (OASDI). Three categories of disability benefits are distinguished: (1) disabled insured workers under age 65, (2) adults disabled since childhood who are dependent children of insured workers, and (3) disabled widows or widowers, aged 50 or over, of insured workers.

STUDY DESIGN AND ANALYTIC PLAN

Benefit Status and Earnings Experience

A longitudinal design was developed to utilize the linked data, and it is particularly useful for meeting the study objectives regarding benefit status and earnings experience. The design is applicable to any annual cohort of cases closed by vocational rehabilitation agencies. The choice of fiscal year 1971 allowed analysis of the data in social security records on at least one entire calendar year of earnings after closure and permitted followup of current beneficiary data in the records at least 2 years after closure.¹⁰ In the future, data on earnings and benefit status in subsequent years can be included.

In the followup plan for beneficiary information prime interest centers on all persons referred for vocational rehabilitation who had ever been disabled-worker beneficiaries and on the proportions whose benefits are terminated for recovery and who are still entitled to disability benefits. The study design for earnings data focuses on all persons referred to the vocational rehabilitation agencies. Their earnings history is traced for 3 calendar years before and after rehabilitation services: the year preceding the year of referral to the rehabilitation agency (which varies by client), 1971 (which overlaps the fiscal year of closure), and 1972 (the year following closure). Earnings changes from the year before referral until 1971 and 1972 are computed. This design also calls for more detailed data on earnings during the post-closure year. Information is tabulated on employment, average earnings among the employed, and the percentage distribution of earnings in 1972.

These beneficiary and earnings data from social security records are cross-tabulated by referral outcome—the key variable from the RSA-300 case service report—and comparisons are made between rehabilitated clients and each of the other two types of closed cases. These comparisons constitute the basic element of the analytic plan.¹¹

¹⁰ These data were obtained from the records during September–November 1973. In some cases, initial entitlement to disability benefits occurred after closure.

¹¹ Studies that have relied on data on earnings at closure in the RSA-300 form have avoided such comparisons because of incomplete information for the non-rehabilitated cases. See, for example, D. M. Bellante, "A Multivariate Analysis of a Vocational Rehabilitation Program," *Journal of Human Resources*, Spring 1972.

Special caution is required in interpreting earnings changes. The absolute or percentage change in earnings cannot be entirely attributed to rehabilitation services. Such attribution assumes that the amount of prereferral earnings is a valid estimate of the disabled person's future earnings in the absence of services. The time period on which such earnings are based, however, does not immediately precede referral; nor is it necessarily identical to the period of disability before referral. (The prereferral year of earnings can terminate as much as 18 months before the month of referral and can therefore occur long before the onset or the worsening of the disability. This long interval results from the method for determining referral month—midpoint of closure year less months in agency—as well as from the fact that the previous calendar year is selected. Dates of referral and disability onset are not available.)¹²

Earnings changes may be considered as relative. The focus is on whether increased earnings among the rehabilitated are greater than those among the unrehabilitated and unaccepted closures. In analysis, assumption is made that the time gaps between prereferral year of earnings and referral date for the rehabilitated and unrehabilitated groups are similar as well as the time intervals between the dates of disability onset and referral. Rehabilitation may result in greater improvement in earnings, but the extent to which the increased earnings are traceable to rehabilitation services may not be discernible.

Is rehabilitation independently related to recovery, earnings, and employment? Information is available in the data link to answer this question. Factors responsible for the association of rehabilitation and subsequent earnings and recovery can be controlled. One area would be selection factors¹³ in cases screened by the rehabilitation agency, which is generally predisposed to seek clients with high potential for vocational

¹² These considerations are crucial for those concerned with benefit-cost analysis. See R. W. Conley, "Benefit-Cost Analysis and Vocational Rehabilitation," in R. N. Pacinelli, ed., *Research Utilization in Rehabilitation Facilities: Proceedings of an International Conference*, Washington, D.C., 1971.

¹³ These factors have been found to be related to acceptance for services and to rehabilitation among public assistance cases. See C. M. Grigg et al., *Vocational Rehabilitation for the Disadvantaged*, Heath and Co., Lexington, Mass., 1970.

training and success. Among the selection factors are severity of disability,¹⁴ age, work history,¹⁵ and education.

The data link not only facilitates analyses of the independent impact of rehabilitation, but also provides a sufficiently broad variety of information and large population of cases for analyses of the limits of rehabilitation impact.¹⁶ It will thus help to identify situations that maximize rehabilitation effects—that is, those that produce greater differences between rehabilitated and other cases in subsequent recovery and earnings—as well as conditions that lessen or perhaps nullify them and result in smaller or no differences. In this type of analysis, rehabilitation is conceived as an intervening variable; certain pre-existing conditions that antedate the rehabilitation process are the independent variables; and the beneficiary, employment, and earnings changes are dependent variables.¹⁷

Preexisting conditions → *Rehabilitation* → *Benefit status, earnings*

Successful completion of the rehabilitation program affects subsequent benefit status, employment, and earnings, and is influenced, in turn, by prereferral conditions. Preexisting conditions include personal characteristics and situations preceding or during the referral process. Available data on these conditions can be categorized as social (insofar as they describe various social roles and group attachments), economic, and disability factors. Control of these factors reveals whether preexisting conditions stimulate or diminish rehabilitation effects. Do differences between rehabilitated and other cases become wider, for example, among younger persons not severely disabled and narrower among older severely disabled persons? A positive response would suggest the relative ineffectiveness of rehabilitation programs among the latter group. Narrower differences among younger, less dis-

abled persons, on the other hand, would raise doubts about the need for the program among this group. The answers will have implications for policy planning.

Another set of variables from the data link will be analyzed to identify program factors related to recovery and earnings following rehabilitation. These variables describe major elements of program activities of vocational rehabilitation agencies and the Social Security Administration. Available data on social security program factors include referral by social security offices, status of the disability benefit application, characteristics of benefit entitlement, and trust fund financing. The status and duration of receipt of public assistance payments are also identifiable. The data also include rehabilitation agency program variables such as type and cost of services, time on agency rolls and in training, and financing by agency. Analysis can determine which elements are factors in the accomplishment of the program goals of restored employment, improved earnings, and reduced dependency. It can also reveal which elements are related to these achievements despite disadvantageous social, economic, and disability preconditions. Moreover, the program impact for unrehabilitated as well as rehabilitated persons, if any, will be delineated by the analysis.

Referral Outcome

The analysis of the outcome of referral can be divided into two phases: (1) determining the factors related to acceptance of disabled persons referred for rehabilitation services, and (2) investigating the factors related to completion of the rehabilitation program among those accepted for services. In either phase, outcome is a dependent variable, and the independent variables refer to events and circumstances that precede referral or occur between referral and closure. All the previously described data on preexisting social, economic, and disabling conditions and on characteristics of both agency programs can be used in analyzing referral outcome. Some variables, in particular program activities that occur after acceptance of referrals—that is, aspects of the training programs—are relevant only in the

¹⁴ Approximated by data on social security disability applicant status.

¹⁵ Approximated by data on work status at referral and on employment and earnings in the prereferral year.

¹⁶ Information for some variables is poorly reported—that is, a high percentage is “unknown.” As this gap generally affects “not accepted” cases, some comparisons are restricted to the other two categories of closures.

¹⁷ Based on E. A. Suchman, “A Model for Research and Evaluation on Rehabilitation,” in M. B. Sussman, ed., *Sociology and Rehabilitation*, American Sociological Association, 1965, pages 52-70.

analysis of factors related to completion of rehabilitation.

STUDY POPULATION

The population of the study is all cases closed by the State vocational rehabilitation agencies in a given fiscal year. The effective population, however, is the total number of closures with available case records matchable to social security records. The individual's social security number was used to match the three sets of records. The degree to which the total universe of closures was attained depends largely upon the number of case records received by the Rehabilitation Services Administration from State agencies and the completeness of reporting the social security number in these records.

Results of Matching Operations

State agencies reported 824,699 closures in fiscal year 1971. Some 756,716 case records, or 91.8 percent of the total reported, were received by the Rehabilitation Services Administration. Among these records received, 14.6 percent of the total cases reported lacked a valid social security number and therefore were not matchable. Some 77.2 percent of the total closures thus were linked, resulting in 636,900 cases being available for analysis.¹⁸

The success of the linking effort can also be estimated by relating the number matched to the total number of case records received: 84.2 percent were matched; 14.2 percent of the records lacked a social security number; and 1.6 percent had invalid numbers. This percentage linked is relatively high, and it is expected to increase further in subsequent years.¹⁹

Do the matched cases reflect the total population of closures? Or, is the composition of the

¹⁸ This number was linked to the Earnings Summary Record. Closures identified and linked to the Master Beneficiary Record—a much smaller number—had first been matched to the Earnings Summary Record.

¹⁹ The absence of a valid social security number may be due largely to failure of the agency to record the number or failure of the clients to obtain a number, particularly those lacking work experience. Both factors are believed to be diminishing with time.

study group altered because of significant differences in the characteristics of the unmatched cases? The tabulation below, comparing the data on total reported and matched closures in fiscal year 1971, indicates that distribution by type of closure remains essentially unchanged.²⁰ A more

Referral outcome	Closures, fiscal year 1971	
	Total reported ¹	Matched ²
Total number.....	824,699	636,900
Total percent.....	100.0	100.0
Rehabilitated.....	35.3	34.0
Not rehabilitated.....	11.7	11.5
Not accepted.....	53.0	50.6
Unknown.....		3.9

¹ Represents cases reported by State vocational rehabilitation agencies to the Rehabilitation Services Administration. Data derived from *Caseload Statistics, State Vocational Rehabilitation Agencies, 1972*, table 7 (Rehabilitation Services Administration)

² RSA-300 case records matched to the Earnings Summary Record.

detailed analysis is planned in which comparisons between matched cases and unmatched cases lacking social security numbers will be made for closure type, age, sex, State, and source of referral.

INITIAL FINDINGS

The feasibility of using the data link for evaluating agency programs dealing with vocational rehabilitation is also demonstrated in the analyses of summary data relevant to the three objectives outlined above. These data describe the frequencies of types of outcome of referral among beneficiaries as well as among all matched cases, and earnings and beneficiary experience subsequent to closure as related to category of outcome. Social, economic, disability, and program variables that may affect the findings will be analyzed in later reports.

Outcome of Referral

Table 1 shows the distribution of referral outcomes reported by State rehabilitation agencies

²⁰ The percentages rehabilitated and not accepted are slightly lower among the matched, but they become almost identical with those for total reported when the unknown cases are distributed according to the proportions prevailing in the other categories.

TABLE 1.—Percentage distribution of disabled persons with cases closed by State vocational rehabilitation agencies in fiscal year 1971, by referral outcome and by disability beneficiary history

Referral outcome	All cases ²	Disability beneficiary history ¹	
		Ever received disabled-worker benefit	Never received a retired worker benefit
Total number.....	636,900	120,215	515,990
Total percent.....	100 0	100 0	100 0
Accepted.....	45 5	31 4	48 9
Rehabilitated.....	34 0	19 7	37 4
Not rehabilitated.....	11 5	11 7	11 5
Not accepted.....	50 6	65 5	47 1
Unknown.....	3 9	3 1	4 0

¹ Benefit data extracted from records as of Sept.-Nov. 1973

² Total matched to social security earnings records. Included in total but excluded elsewhere are 328 persons ever awarded disabled-widow(er) or childhood benefits and 367 persons with type of benefit unknown

among all matched closures for the fiscal year 1971. Less than half the referrals (45.5 percent) were found to have rehabilitation potential and were accepted for services. Among those accepted as clients, some three-fourths subsequently completed their rehabilitation plan. These successful rehabilitants amounted to 34 percent of all referrals whose cases were closed; 11.5 percent were accepted for services but not rehabilitated. Although a large majority of those accepted achieved the successful outcome to which the agency's resources are directed, they constitute a minority of all referrals whose cases were closed during the year. These proportions appear to be typical of earlier and later years. A similar pattern is found among total reported cases in fiscal years 1970 and 1972.

In evaluating these results, the perspective of the referring agency is of interest. Each referral may represent the agency's positive expectation about the individual's rehabilitation potential based on a careful professional assessment. This perspective apparently diverges sharply from professional expectations in the vocational rehabilitation agency and perhaps differs also in predicting successful rehabilitation. Screening decisions for referral or acceptance, however, may reflect other considerations, including routinized procedures and different organizational requirements and pressures among the agencies.²¹

The data indicate that rehabilitated persons

²¹ For analyses of referral decisions, see S. Z. Nagl, *Disability and Rehabilitation: Legal, Clinical, and Self-Concepts and Measurement*, and Ralph Treitel, *Identifying Disabled Workers Who May Return to Work . . .*

received more services than the others. The extent of services delivered to each of the three types of closures can be gauged roughly by the average case service costs incurred by the State vocational rehabilitation agencies: \$661 for the rehabilitated clients, \$393 for those accepted but not rehabilitated, and \$28 for those not accepted. The latter amount primarily covers diagnostic and evaluation costs for selected cases. These figures are amounts for services purchased from other agencies, such as restoration and training from medical and educational institutions. They exclude costs of guidance, counseling, placement, and administration and do not include occasional services obtained free or paid for by individuals or other organizations. The sizable cost differences indicate that outcome of referral is a general index of level of service. The amount of services received by rehabilitants can be characterized as high, those by unrehabilitated clients as intermediate, and those of the unaccepted cases as low. These designations are based, of course, on national averages and do not necessarily describe individual situations. Furthermore the averages may reflect type of service and other factors associated with referral outcome.

A different profile of referral outcome is found among persons whose cases were closed and who had received disabled-worker benefits at some time. The major beneficiary group in the disability insurance program of the Social Security Administration, they constituted almost one-fifth of all closures and virtually all of the disabled beneficiaries referred to State agencies. About half of all referrals were not judged eligible for rehabilitation services, but almost two-thirds of those with cases closed who had ever been disabled-worker beneficiaries were not accepted for services. Among those who had never received disability benefits, less than half were not accepted. Of the approximately one-third of the beneficiaries who were accepted, about five-eighths were successfully rehabilitated, a smaller proportion than the six-eighths observed among the accepted nonbeneficiaries. Thus, only a fifth of all referred beneficiaries were rehabilitated, compared with almost twice this proportion among nonbeneficiaries. The ratio of rehabilitated persons to those not rehabilitated among those accepted for services was less than 2 to 1 for beneficiaries and more than 3 to 1 for nonbene-

ficiaries. Thus, not only are disability beneficiaries—a more severely disabled group than most referrals—selected less frequently for rehabilitation services, but, among those who are deemed to possess “rehabilitation potential” and thus presumably may benefit equally from services, they also are rehabilitated less often.

Earnings Experience

Average annual earnings for the calendar year before referral, for the year closest to closure (calendar year 1971), and for calendar year 1972 are reported in table 2 for all linked cases and for each type of referral outcome. Detailed data on employment and earnings in the postclosure year 1972 appear in table 3.

Among the total number of matched cases earnings were higher in 1972 than in the calendar year before referral to the rehabilitation agency. Earnings remained relatively constant in 1971 but rose in 1972, increasing 14 percent over pre-referral earnings. This overall earnings gain reflects essentially the favorable experience of those who were rehabilitated. Earnings in 1972 were 56.9 percent higher than in the year before referral for the rehabilitated, but in the same period among those accepted but not rehabilitated they barely changed and among the cases not accepted for services they declined 11.4 percent. The differences in percentage change between the rehabilitants and each of the other two groups are considerable. The bulk of the earnings rise among the rehabilitated, however, occurred by 1971, while for the other two categories earnings dipped in 1971 and reversed in 1972. These 1-year

TABLE 3.—Employment status and 1972 earnings: Percentage distribution of persons with cases closed by State vocational rehabilitation agencies in fiscal year 1971, by referral outcome

Employment status and earnings level	All cases	Referral outcome			
		Rehabilitated	Not rehabilitated	Not accepted	Unknown
Number:					
Total ¹	636,900	216,795	73,313	322,120	24,672
Employed ²	346,017	141,635	33,036	156,696	14,650
Percent employed....	54.3	65.3	45.1	48.6	59.4
Percentage distribution of employed persons					
Total percent.....	100.0	100.0	100.0	100.0	100.0
\$1-999.....	28.9	21.0	37.1	30.1	28.7
1,000-1,999.....	15.2	14.1	16.4	16.0	15.1
2,000-2,999.....	11.6	11.6	11.0	11.6	12.6
3,000-3,999.....	10.9	11.9	9.3	10.3	11.2
4,000-4,999.....	9.8	11.3	7.4	8.8	9.9
5,000-5,999.....	7.3	8.5	5.6	6.5	6.8
6,000-6,999.....	6.4	6.5	3.9	4.8	5.1
7,000-7,999.....	4.2	5.0	2.9	3.6	4.0
8,000-8,999.....	2.9	3.6	2.2	2.7	2.9
9,000 or more ³	6.8	6.5	4.2	5.6	5.7
Mean earnings.....	\$2,677	\$3,274	\$1,784	\$2,332	\$2,652
Mean earnings ⁴	3,276	3,661	2,647	3,063	3,250

- ¹ Total matched to social security earnings records
² Persons with reported earnings in covered employment.
³ Maximum taxable earnings base was \$9,000 in 1972.
⁴ Earnings over \$9,000 were computed as \$9,000

increases between 1971 and 1972 among unrehabilitated clients and unaccepted referrals were sizable, amounting to more than 22 percent in both types of cases. The increase in earnings among rehabilitants in the same period was only 7.5 percent, thus narrowing the gap in earnings somewhat. This narrowing is reflected in the fact that the differences in percentage change between them in 1972 is smaller than it was in 1971. The impact of rehabilitation on earnings appears, therefore, to be greatest in the period immediately following conclusion of services and diminishes thereafter. The delay in the resumption of earnings capacity among persons with cases closed

TABLE 2.—Amount of mean earnings and percentage change from prereferral year to 1971 and 1972 in earnings of persons with cases closed by State vocational rehabilitation agencies in fiscal year 1971, by referral outcome

Referral outcome	All cases ¹	Mean earnings					
		Amount ²			Percentage change from—		
		Prereferral year ³	1971	1972	Prereferral year to 1971	Prereferral year to 1972	1971 to 1972
Total.....	636,900	\$1,562	\$1,551	\$1,780	-0.7	+14.0	+14.8
Rehabilitated.....	216,795	1,525	2,225	2,392	+45.9	+56.9	+7.5
Not rehabilitated.....	73,313	1,202	975	1,193	-18.9	-8	+22.4
Not accepted.....	322,120	1,681	1,216	1,490	-27.7	-11.4	+22.5
Unknown.....	24,672	1,395	1,716	1,930	+23.0	+38.4	+12.5

- ¹ Total matched to social security earnings records.
² Calendar year earnings reported from covered employment divided by total number of cases. Not adjusted for changes in the number of earners,

- number alive, maximum taxable earnings category, and inflationary factors.
³ Calendar year preceding year of referral

who received a moderate or low amount of services is puzzling. This deferred spurt in earnings occurred among those who had failed to fulfill the rehabilitation potential identified earlier by the vocational rehabilitation agency as well as among those who did not present evidence of such potential.

The more favorable earnings change of the rehabilitants since closure is reflected in their 1972 employment and earnings experience (table 3). Almost two-thirds of them reported earnings from employment, compared with less than half of each of the other groups. Among those gainfully employed, higher earnings were reported by the rehabilitated. The earnings distribution for each type of closure shows a greater proportion of rehabilitants than of other cases at all levels above \$3,000. Their mean income is also considerably higher: \$3,661, compared with \$2,647 among those accepted and not rehabilitated and \$3,063 among the cases who did not receive services. Median earnings, moreover, are also higher among the rehabilitants. Those not accepted for services, it should be noted, achieved higher levels of employment and earnings than the nonrehabilitated. They maintained higher average earnings as a group from the prereferral year to 1972, despite a greater percentage decline, as table 2 indicates.

Employment and earnings levels, however, are generally low for all three groups. More than a third of the rehabilitants remained unemployed throughout 1972. Earnings of the employed are very low, even among the rehabilitated. This can be seen in the median earnings figures: half of each of the three closure types—rehabilitated, not rehabilitated, and not accepted—earned less than \$3,274, \$1,784, and \$2,332, respectively. Between 21 percent and 37 percent of each group earned under \$1,000. The picture that emerges is one of continually high unemployment and depressed earnings among those previously judged by the vocational rehabilitation agency to be capable of self-support through work as well as among the other referrals.

Benefit Status

Benefit status during the fall of 1973 (2-3 years following closure) is shown in table 4. Only

data for persons who have ever received benefits as disabled workers are included since the other types of disabled beneficiaries are too few in number to permit analysis of their experience.

Several years after closure only about 15 percent of all cases had recovered and no longer required disability benefits. The large majority—70.7 percent—were still receiving such payments, and the remainder had died or had their benefits converted to retirement benefits.

Vocational rehabilitation services appear to have had some impact on the status of disabled-worker beneficiaries. About twice as many rehabilitants as other outcome groups had regained the ability to support themselves through employment: 23 percent among rehabilitants, 10.1 percent among the unrehabilitated, and 12.7 percent among those not accepted. Recovery among the latter occurred slightly more often than among the unsuccessfully rehabilitated persons who received far more rehabilitation services. Recovery in all three groups, however, occurred infrequently. Even most rehabilitants (63.1 percent) continued to receive disability benefits—a proportion not much lower than that for the unrehabilitated clients. The proportion among those accepted but not rehabilitated reflected, in part, their relatively high death rate, 16.7 percent. The lower mortality among beneficiaries not accepted for services and their somewhat higher recovery rate were not expected to be found in a group that was presumably no less severely impaired than those who failed to realize their rehabilitation potential. These findings appear to parallel those on the greater earnings found earlier among all persons with cases closed not accepted for services.

Earlier it was noted that only one-fifth of the disabled-worker beneficiaries who had been referred to vocational rehabilitation agencies were eventually rehabilitated. Of these rehabilitants, some 23 percent no longer needed disability benefits several years after services. Only 5 percent of referred beneficiaries thus could be said to have regained and retained the ability for self-support through employment as a result of a successfully completed rehabilitation program. An additional 8 percent of these severely disabled referrals—a small but nevertheless larger portion—recovered despite the lack of evidence of rehabilitation potential and the receipt of minimal

TABLE 4.—Percentage distribution of persons with cases closed by State vocational rehabilitation agencies in fiscal year 1971, by current beneficiary status and referral outcome ¹

Referral outcome	Ever received disabled-worker benefit							Never received any disability benefit				
	All cases	Percentage distribution						All cases	Percentage distribution			
		Total	With disabled-worker benefit	Re-covered ²	With retired-worker benefit	De-ceased	Other ³		Total	With retired-worker benefit	Never any retired-worker benefits ⁴	De-ceased
Total.....	120,215	100.0	70.7	14.7	3.0	11.1	0.5	515,090	100.0	2.9	94.9	2
Rehabilitated.....	23,674	100.0	63.1	23.0	5.1	8.1	.7	192,016	100.0	3.4	95.1	1.5
Not rehabilitated.....	14,097	100.0	70.2	10.1	2.6	16.7	.4	59,109	100.0	2.0	94.8	3.2
Not accepted.....	78,682	100.0	73.1	12.7	2.5	11.2	.5	243,120	100.0	2.9	94.6	2.5
Unknown.....	3,782	100.0	69.3	19.0	2.8	8.7	.2	20,845	100.0	1.6	96.8	1.6

¹ Benefit data extracted from records as of Sept.-Nov. 1973. Excludes 328 persons ever awarded disabled-widow(er) or childhood benefits and 367 persons with type of benefit unknown.

² Benefit terminated on evidence of medical improvement or sustained employment.

³ Benefit terminated for reasons other than recovery or death.

⁴ Not entitled to benefit on own or related wage earner's record. Includes cases not identified in benefit records because the wage earner's social security number was unknown.

or no services. Finally, 1 percent recovered although they received agency services that failed to rehabilitate them. Among beneficiaries who had been referred to State rehabilitation agencies and had subsequently recovered, most regained their capacity for gainful employment without benefit of services.

CONCLUSION

This report demonstrates the feasibility of the data link as a followup system for evaluating employment, earnings, and benefit status of disabled persons subsequent to vocational rehabilitation services, and for examining the outcome of referral for such services. Records of the State vocational rehabilitation agencies on the total population of clients whose cases were closed in the fiscal year 1971 have been successfully matched with social security records. An analysis of summary data reveals significant information on referral outcome and on rehabilitation impact, both for disabled beneficiaries and for the larger undifferentiated group of cases.

In particular, data on the entire population demonstrate that the successfully rehabilitated experienced markedly increased earnings over prereferral levels in the first full calendar year after case closure, compared with other referred

disabled persons who reported no gains. The data also suggest, however, that the latter group experiences more accelerated earnings increases with time. Furthermore, very high unemployment levels and extremely low earnings levels were found to persist after closure even among rehabilitants. Followup of the status of disabled-worker beneficiaries several years after their cases had been closed by the vocational rehabilitation agencies shows that an exceedingly small proportion were able to engage in remunerative work and were no longer receiving disability benefits—even among rehabilitants where the proportion, although double that of the other groups, remained below one in four. Even more striking is the finding that only a minority of these recovered former beneficiaries—persons who had been severely disabled—beneficiaries had actually been rehabilitated or received substantial services from the State agencies. These findings identify problems relevant to programs of the Social Security Administration and Rehabilitation Services Administration and raise questions for further investigation.

Data on subsequent annual earnings, employment, and benefit status would establish whether the above trends are continuing. Analyses of personal and program characteristics will make it possible to specify the situations in which rehabilitation impact is diminished.