**BENEFITS AND COSTS OF SUPPORTED EMPLOYMENT:
AN ANALYSIS OF THE ILLINOIS SUPPORTED EMPLOYMENT PROJECT**

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This investigation presents a cost-benefit analysis completed for one of 27 states implementing supported employment as a result of federal funding. Based upon the benefits and costs detailed, society realized a \$0.75 return for every \$1.00 invested in supported employment in Illinois. Supported employees realized a 37% increase in their earnings over a comparable period. The results of this study are discussed and recommendations are made for similar analyses across states.

DESCRIPTORS: cost-benefit analysis, supported employment, integration, work, severe disabilities

Individuals with disabilities have been provided with a new vocational opportunity, referred to as supported employment. This option has enabled many individuals with severe disabilities to become employed with appropriate support in integrated work settings (Rusch, in press). Over the past 10 years, developers of the supported employment model have reported the long-term maintenance of approximately 50% of its workers for at least 1 year alongside nonhandicapped workers (Kregel, Wehman, Revell, & Hill, in press; Ellis, Rusch, Tu & McCaughrin, in press; Vogelsberg, Richard, & Nicoll, in press). By contrast, traditional sheltered workshops have reported that only approximately 10% of their workers were placed in integrated work settings during the same time period (U.S. Department of Labor, 1977, 1979; U.S. Congress, 1987). As a result of these findings, recent federal legislation (P.L. 99-506, 1986) has begun to pro-

vide funding for supported employment nationwide as a new vocational alternative for individuals with handicaps.

Supported employment, in contrast to most human service programs, has a measurable outcome—earnings—that is influenced by market forces, is stated in terms of dollars, and can be reliably measured. Consequently, the financial costs and benefits of supported employment programs can be readily compared to its alternatives to determine if its benefits exceed costs. This type of analysis is referred to as cost-benefit analysis with economic costs and benefits directly related to supported employment being measured and compared over time according to various perspectives, the most common being the perspective of society, the taxpayer, and persons being placed on the job (Thompson, 1980). This analysis provides policy makers with one type of information for deciding whether some employment programs should be expanded or whether various alternatives (e.g., adult day programs) should serve some persons. Findings from preliminary cost-benefit analyses (Hill & Wehman, 1983; Rusch, 1986) as well as more recent longitudinal studies (Hill et al., 1987; McCaughrin, 1988) indicate that although costs of supported employment are greater than benefits during the first years of implementation, costs decrease and benefits increase over time because employees increase both their hours and average hourly wages, while the amount of support needed on the job decreases. This has

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not been the case with traditional vocational programs, such as sheltered employment and adult day care programs, because supervision, hours worked, and hourly wages usually remain stable over time (U.S. Department of Labor, 1977, 1979).

It is important to collect the information needed to describe the benefits and costs of supported employment compared to alternatives to this program as this new vocational option is being implemented. It is also important to formulate criteria to indicate which types of supported employment are most appropriate for different clients. Otherwise, it is likely that most public funds for services to persons with severe disabilities will continue to be allocated to work activities and adult day care centers.

The purpose of this article is to present cost-benefit analysis of supported employment programs in Illinois during its first complete year of operation (July 1, 1986 through June 30, 1987). This state-wide initiative was a result of the combined efforts of the U.S. Department of Education's Office of Special Education and Rehabilitative Services and the Administration on Developmental Disabilities (Rusch & Hughes, in press). Illinois, one of 27 states awarded a 5-year grant by the federal government to implement supported employment, initiated this new adult service option during fiscal year (FY) 1987 (Tines, Rusch, & McCaughrin, 1989).

METHOD

Data Sources

During FY 1987, the state of Illinois allocated funds to the University of Illinois to provide technical assistance to model supported employment programs designated by the state of Illinois as well as to collect data from them in order to evaluate the efficiency and effectiveness of supported employment services in Illinois. Twenty-five model programs submitted data throughout the year concerning each worker's characteristics as well as monthly data regarding job coach efforts, co-worker involvements, and each worker's hours and earnings.

Data on program costs and alternative earnings

were obtained from the Illinois Department of Rehabilitation Services (DORS) and the Illinois Department of Mental Health and Developmental Disabilities (DMHDD). Data on alternative earnings were obtained from the Illinois Department of Labor.

Characteristics of the Supported Employees

During FY 1987, 394 individuals were enrolled in the 25 model supported employment programs in Illinois. Approximately 62% (244) of these persons were males, and 79% (311) were white. There were 323 individuals whose IQs were reported and applicable. Their average IQ scores were reported to be 56 (range, 16 to 97). Approximately 48% of all supported employees were in the borderline and mild range. However, IQ scores alone can be a misleading indicator of the extent of work disability, because many of the employees in supported employment have additional physical and emotional disabilities.

The supported employees were placed into three types of supported employment. Approximately half were placed in individual placements throughout the community. The majority of the remaining half were placed in clustered groups. These individuals worked in the same general area and performed similar work. Only 8% were placed in mobile work crews. Approximately 80% remained in supported employment at the end of FY 1987. Job separation was not always due to the disability; for example, some persons were separated from their jobs because of economic difficulties encountered by the business establishment in which they were working.

Cost-Benefit Analysis Model

Cost-benefit analysis can be defined as the systematic comparison of the benefits of a program, such as supported employment, with its costs. There are various techniques for analyzing benefits and costs. The ratio of benefits to costs is the best known of these techniques, although net benefits are also frequently used. (See Conley, 1973, for a discussion of various techniques of comparing benefits and

Table 1
 Characteristics of 394 Supported Employees in Illinois During Fiscal Year 1987

Characteristics	Total workers	Individual	Clustered	Mobile work crew	Terminated workers
Number of workers	394	193	171	30	69
Average mean age	30	30	29	33	29
Sex					
Male	244	115	109	20	49
Female	150	78	62	10	20
Race					
White	311	143	140	28	60
Black	60	39	19	2	6
Hispanic	17	7	10	0	3
Asian	5	3	2	0	0
Unreported	1	1	0	0	0
Average mean IQ	56	60	53	56	56
No./level if MR					
Borderline	45	26	19	0	9
Mild	146	79	50	17	21
Moderate	96	40	50	6	16
Severe	30	5	23	2	4
Profound	6	1	5	0	2
N/A	41	26	14	1	15
Unreported	30	16	10	4	2

costs and the advantages and disadvantages of each.) In our cost-benefit analysis, we have chosen to compare benefits and costs as cost-benefit ratios from the perspective of society, the supported employee, and the taxpayer as the most relevant decision-makers.

Economic benefits included in this analysis were estimated by the following variables. The first was the increase in earnings that was attributed to supported employment. (Increased earnings were gross wages minus estimated lost alternative earnings.) The second variable was the decrease or savings in the costs incurred by alternative programs. This assumes that, in the absence of supported employment services, the majority of individuals currently participating in supported employment in Illinois would have been placed in alternative programs. The reader may come across cost-benefit analyses that do not consider decreases in the costs of alternative programs. Such studies implicitly assume that there are no alternative programs in which some or all clients would be placed. Although such

an assumption would have been tenable for many social programs 10 or more years ago, our data suggest that this is no longer the case, and cost-benefit analyses are evolving from a comparison of the benefits of a service program with the benefits of no program at all to a comparison of the benefits of one service program with its alternatives. In this comparison, we can take alternative programs into account because almost all of the employees in supported employment in Illinois were in alternative programs before entering the supported employment programs.

The remaining benefit variables included reduced public benefits received by the supported employees and taxes paid as a result of the supported employees earning wages. (Many noneconomic benefits can also be identified and should at a later time be taken into account when determining the level of resources that need to be allocated to supported employment in the future.)

Costs of supported employment refer to the resources that society expends as a result of initiating

Table 2
Estimated Alternative Earnings of 394 Supported
Employees in Illinois During Fiscal Year 1987

Alternative placement	Number of clients	Estimated earnings
Developmental Training I (adult day care)	2	\$ 233
Developmental Training II (work activities)	92	23,933
Regular work or extended employment (sheltered workshop services)	146	210,977
Work adjustment training	92	72,132
Skill training	14	17,716
Vocational development	12	14,018
Evaluation	11	11,681
Transitional employment	6	15,051
School STEP program or community	54	58,091
Total	394	\$423,832

a program. Although measuring costs would appear to be a straightforward operation, collection of data becomes complicated if more than one agency provides services essential to the attainment of the goal, in this instance, supported employment. For example, both the costs incurred by local supported employment programs and the costs incurred by a state office to award grants and to monitor and evaluate the operations of these programs should be included. However, these costs should not include costs for income support (e.g., SSI and SSDI) or normal medical care (e.g., Medicaid and Medicare) because these basic living costs would be incurred with or without the supported employment program.

The economic cost of supported employment was estimated by adding together the funds paid to agencies specifically for the purpose of providing supported employment services and the reimbursement to employers provided under the Targeted Jobs Tax Credit (TJTC) program. At the state level, funding to agencies providing supported employment was provided by the Illinois DMHDD and DORS. In addition, some city and local agencies allocated funds for this purpose. These funds were

identified by examining the audited FY 1987 revenue budgets and expense reports submitted by the model supported employment agencies to Illinois DMHDD and/or DORS. Although it would have been ideal to have the 25 model agencies provide us with information directly regarding all costs such as operational expenditures, as well as fixed costs, salaries, and so on, this is not currently possible in the state of Illinois.

The TJTC program, which is administered by the U.S. Department of Labor, offers tax credits equal to 40% of the first \$6,000 of the earnings of each eligible employee. During FY 1987, 56 individuals in supported employment participated in the TJTC program.

RESULTS

Benefits of Supported Employment

Increased earnings during FY 1987 for 394 persons enrolled in supported employment in Illinois amounted to \$279,412. This was calculated by subtracting their estimated lost alternative earnings (\$423,832) from their gross wages (\$703,264). The majority of supported employees had been enrolled in alternative programs before entering supported employment. It was assumed that their lost alternative earnings would have been equal to the average earnings of current enrollees of these alternative programs. An estimate of what supported employees would have earned if they had remained in alternative placements is shown in Table 2. These placements represent the sheltered workshops, work activity centers, and other work-oriented programs in Illinois. The estimates were derived as follows. The earnings of clients in Developmental Training I and II programs averaged \$16.21 and \$36.13 per month, respectively (Taylor Institute, 1988). These monthly earnings were multiplied by the average number of months the supported employees worked during FY 1987 (7.2 months) and were again multiplied by the number of individuals that originated from each program.

The earnings of individuals in all other alternative employment programs were based on average hourly wage rates reported by these organi-

zations to the U.S. Department of Labor. These average hourly rates were \$1.93 for the regular work or extended employment program (sheltered workshop services), \$1.69 for the work adjustment training and skill training programs, and \$1.56 for the vocational development and evaluation programs. School or community earnings were based on the average of the above programs. Individuals from schools or the community usually became part of some program and earned wages through their local adult service agencies (McCaughrin, 1988). The hourly wages were converted to weekly rates by multiplying them by the average number of hours worked per week (approximately 26). These rates were then multiplied by 4 weeks to estimate monthly rates, by 7.2 months (average number of months worked), and finally by the number of individuals that originated from each alternative employment program to estimate what their total yearly wages would have been.

The estimated earnings that supported employees would have received had they not been enrolled in supported employment was almost \$425,000. In consequence, the estimated increase in supported employees' earnings in the first year of the program was about \$279,412 or about \$710 per employee.

Savings in alternative programs were based on the assumption that supported employees would have remained in the alternative programs from which they were selected for the supported employment program. Table 3 summarizes the calculation of these benefits. These estimates were derived as follows. The average annual cost for persons in each form of placement was assigned on the basis of the rates reported to DORS and DMHDD in Illinois. This average annual cost was then multiplied by the number of persons in supported employment who had previously been placed in this alternative program and multiplied by the ratio of 7.2/12 to reflect the average time of participation in the supported employment program during the first year of implementation of supported employment in Illinois. The estimated savings came to approximately \$1 million.

Taxes paid and reduced public benefits resulted from the supported employees receiving wages. Re-

Table 3
Alternative Program Costs for 394 Supported Employees
in Illinois During Fiscal Year 1987

Alternative placement	Average annual cost	Estimated savings
Developmental Training I	\$4,521	\$ 5,425
Developmental Training II	4,353	240,292
Regular work or extended employment	4,866	166,442
Work adjustment training	3,119	273,206
Skill training	6,655	47,506
Vocational development	7,384	26,582
Evaluation	5,655	37,390
Transitional development	6,192	44,582
School STEP program or community	4,125	133,650
Total		\$975,075

duced public benefits were considered to be reductions in monetary benefits from the government—Supplemental Security Income (SSI), Social Security Disability insurance (SSDI), Public Aid (PA), Medicaid, and Aid to Dependent Children (ADC)—that resulted from the individual participating in supported employment. This totaled \$26,138. Total taxes withheld were reported to be \$98,457, and included federal and state income taxes as well as FICA (Social Security).

Costs of Supported Employment

The cost of the 25 model supported employment programs totaled \$1,632,229 based on revenue grants received from Illinois DMHDD and DORS as well as some local grants. TJTC costs were reported to be \$36,523 for 56 employees.

The Cost-Benefit Analysis

Table 4 summarizes the distribution of the benefits and costs of supported employment in Illinois from three perspectives—society, the supported employee, and the taxpayer. From society's perspective, the estimated cost-benefit ratio for the first year of operation of the supported employment program in Illinois was 0.75, indicating that for every dollar spent on supported employment in Illinois, society received a return of \$0.75.

Table 4
Cost-Benefit Analysis of Supported Employment in Illinois During Fiscal Year 1987

	Society	Employees	Taxpayers
Benefits			
Increased earnings	\$ 279,412	\$279,412	
Reduced public benefits		-26,138	\$ 26,138
Taxes paid		-98,457	98,457
Alternative program costs	975,075		975,075
Total	\$1,254,487	\$154,817	\$1,099,670
Costs			
Supported employment programs	\$1,632,229		\$1,632,229
Targeted job tax credit	36,523		36,523
Total	\$1,668,752		\$1,668,752
Cost-benefit ratio	0.75		0.66

From the perspective of the supported employee, their net earnings for their first year in the program totaled \$154,817. This total was their gross wages of \$703,264 minus their lost alternative earnings (\$423,832), their reduced public benefits (\$26,138), and their taxes withheld \$98,457).

From the taxpayer's perspective, total benefits of \$1,099,670 divided by total costs of \$1,668,752 yielded a cost-benefit ratio of 0.66. For every dollar spent on supported employment, taxpayers received a return of \$0.66.

DISCUSSION

Clearly, the most important observation to be made from these data is that measured monetary benefits were less than measured costs during the first year. This is consistent with preliminary findings that have been made for supported employment (Rusch, 1986). But this analysis, which is based on comprehensive and carefully collected data on supported employment, documents what has been suggested informally.

Although the cost-benefit ratio was less than one from the perspectives of the taxpayer and society, the actual dollar benefits to supported employees increased by 37% over their earnings in alternative service programs, and they averaged approximately \$60 per month more during FY 1987.

What can we conclude? Although there are many reasons why we expect that the cost-benefit ratios

will rise substantially in the future, we need to emphasize that such an increase is probably necessary if the program is to continue to receive widespread support. Despite successes in winning public acceptance in recent years, advocates for supported employment must not become complacent (Rusch & Hughes, in press). The Illinois data are a clear indication that supported employment programs must actively seek means of becoming more efficient and more effective, and that programs that cannot achieve these goals must be terminated.

An essential stimulus to this continued search for improvement is a comprehensive and ongoing information system with which the success of this search can be measured. Our analysis represents only one illustration of the types of analyses that are needed. For example, there were 25 separate supported employment programs that varied in the types of support they provided and the individuals they served. Subsequent analysis should begin to ascertain which programs were most effective for persons with different types and severity of disabilities. Such comparisons should be made not only within a state, but also among programs in different states; this requires that extensive information be made available on the characteristics of supported employees being served and differences in success rates. Such studies will determine which programs are most effective and should serve as models for other programs until even more successful programs are developed.

One final observation about the information presented above is that approximately 80% of the benefits of supported employment were based on savings or reductions in the costs incurred for alternative programs. We have assumed that the supported employees in this study would most likely have continued in the alternative community programs in which the majority had previously participated if supported employment had not been available. This assumption, resulting in savings of alternative program costs, cannot always be justified and needs to be taken into consideration when comparing findings across studies.

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