

**Community Placement for Persons with Significant Cognitive  
Challenges: An Outcome Analysis**

Brief Report Number 13  
Of a Series on the Well Being of People with  
Developmental Disabilities in Oklahoma

Submitted to:

Dennis Bean, Director of Quality Assurance  
DHS, Developmental Disabilities Services Division  
3817 North Santa Fe Avenue, P.O. Box 25352  
Oklahoma City, OK 73125

Submitted by:

Scott Spreat, Ed.D., and James W. Conroy, Ph.D.  
The Center for Outcome Analysis  
1062 Lancaster Avenue, Suite 18C  
Rosemont, PA 19101-1565  
610-520-2007, FAX 610-520-5271

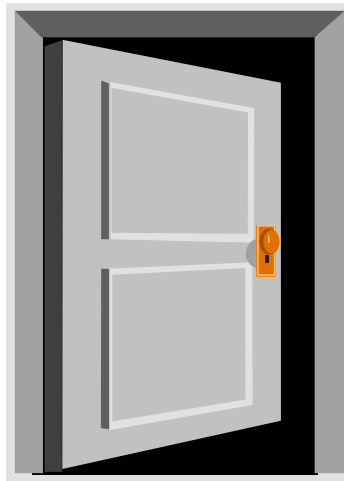
February, 2000

## Table of Contents

Acknowledgement	
Executive Summary	
Introduction .....	1
Methods.....	6
Data Collection Procedures.....	6
Instrumentation .....	6
Participants in the Study .....	10
Results .....	12
Analysis 1.....	12
Analysis 2.....	16
Discussion .....	17
References .....	20

## Acknowledgement

Data have been obtained through a cooperative agreement with the Oklahoma State University Department of Sociology's Developmental Disabilities Quality Assurance Research Project. Since 1989, the Sociology Department at O.S.U. has conducted yearly independent assessments of consumer outcomes for approximately 3700 individuals receiving services from the Oklahoma Department of Human Services Developmental Disabilities Services Division.



“In 1990, these people were surrounded by walls.  
In 1994, they're surrounded by doors.”

The quotation above is from David Loconto, a graduate student at Oklahoma State University. When he wrote this in 1995, Mr. Loconto was studying the well-being of people who moved from Hissom to community. He personally visited more than 200 Hissom class members in 1995.

## **Executive Summary**

Outcome indices were compared across groups of individuals who either remained in institutional settings or transferred from an institutional setting to various Supported Living Arrangements in the community. All individuals included in the first analysis had profound mental retardation, while all individuals included in the second analysis had adaptive behavior scores in the bottom tenth percentile of persons with mental retardation in Oklahoma. Improvements in adaptive behavior, family contact, service contact hours, and IHP goals were noted in each group. Greater degrees of improvement were noted for that group that transferred to community programs. Ratings of medical quality did not cleanly distinguish community from institutional programs, however, it was noted that persons in the community had slightly greater difficulty in obtaining medical services. Non-medical unmet needs were greater in the community programs.

## **Introduction**

Deinstitutionalization has been the dominant theme in the field of mental retardation for approximately 25 years. Data from a variety of sources suggest that over 100,000 persons have moved from large public facilities to smaller settings in the community (Conroy, 1977; Prouty and Lakin 1996). Braddock and Hemp (1997) observed that mental retardation service delivery systems are evolving from a centralized service model towards an expansion of localized community living opportunities.

A large body of empirical literature has documented the impact of deinstitutionalization on persons who have mental retardation. Perhaps the most commonly cited improvement that is associated with community living has to do with adaptive behavior (cf. Conroy & Bradley, 1985; Craig & McCarver, 1984; Dagnan, et al., 1995; Haney, 1988; Rose, et al., 1993). Fiorelli and Thurman (1979) reported that certain adaptive behavior or domestic type skills increased following transfer from an institution to community based programming. They attributed these improvements to the increased opportunity for such behaviors in the community. For example, the absence of a commissary to provide food for group home residents enables those residents to participate in food preparation. Similar findings of increased adaptive behavior were reported in Conroy and Bradley's (1985) study of the closure of Pennhurst

Center. Each of six study groups evidenced growth in adaptive behavior following transfer to community-based programs. This growth continued over time, albeit at a slower rate. Similarly modest growth in adaptive behavior was reported in Felce and Perry's (1996) seven-year longitudinal study of community placement. Fine, Tangeman, & Woodard (1990) also reported growth in adaptive behavior over time in the community. It might be tempting to suggest that these observed increases in adaptive behavior are attributable to any of a number of factors related to a person getting out of an institutional setting, however, some evidence suggests otherwise. Maisto and Hughes (1995) reported adaptive behavior growth for persons who lived in group homes, regardless of previous residential placement. Persons who had previously lived in institutional settings evidenced the same pattern of growth as did persons who did not live in institutional settings.

The pattern of adaptive behavior growth following deinstitutionalization has been consistent in the literature. Larson and Lakin (1989) reviewed 18 separate research studies that met specific criteria for experimental design and recency. The community placements of 1,358 persons were reviewed in these studies. Eight of the reviewed studies involved comparison between experimental and contrast groups, and all eight found significant improvements in adaptive behavior, self-help, and domestic activity skills among the persons

who moved to community placements. Of the ten longitudinal studies, half reported statistically significant improvements in adaptive behavior. Larson and Lakin (1989) concluded that community placement was generally associated with positive life changes. Similar positive conclusions were reached in a meta analysis conducted by Lynch, Kellow, Thomas, & Victor (1997). By studying effect sizes across 11 studies, they concluded that the adaptive behavior gains that followed deinstitutionalization were most pronounced in the area of self-care. Larger gains were reported for persons with greater cognitive deficits, a finding that was in marked contrast with the earlier institutional research of Spreat & Isett (1980).

Over the ensuing 25 years of deinstitutionalization, our delineation of desired service outcomes has broadened and become more complex. The emphasis on growth and change has significantly diminished, being supplanted by a growing interest in supporting individuals in a manner that promotes their life quality. The field has recognized that there must be a greater emphasis on self-determination, integration, and societal acceptance of the individuals with mental retardation.

Deinstitutionalization research began to address some of these more subjective measures of life quality. Stancliffe and Avery (1997) reported that adults who moved to community homes had more opportunities to exercise

choice than did their peers who remained in the institution, and they had more opportunities to exercise choice in the community than they had previously in the institution. Acceptance of these findings should be tempered by the report that the opportunities to exercise choice were relatively low in both the institutional and community settings. Lord and Pedlar (1991) used a more ecological approach to evaluate the quality of life for persons who were placed in community programs following an institutional closure. Eighteen persons were intensively interviewed and studied, and the authors concluded that the quality of life had improved for 13 of the 18 individuals.

In general, the research regarding the deinstitutionalization of persons with mental retardation offers a positive picture. Skills increase and quality of life improves. Yet, acceptance of community placement remains far less than universal. The authors recently received a phone call from the father of an adult who has profound mental retardation and absence of both sight and hearing. The father asked each of us to enumerate the benefits that his son would accrue through community placement. We cited the positive literature that is discussed above, but the father was unswayed. He said that we were talking about the average person with mental retardation, and that his son was far from average. The challenges faced by his son were so enormous that the available literature simply did not pertain to him. In response to this father's sincere concern for

the welfare of his son, we undertook a study of the impact of community placement on persons whose challenges significantly exceed those faced by other persons with mental retardation. In two related analyses, we examined the impact of community placement on persons who have profound mental retardation and persons who have adaptive behavior in the bottom 10% of the Oklahomans who have mental retardation.

## **Methods**

### **Data Collection Procedures**

Data were collected by graduate students and staff from the Sociology Department at Oklahoma State University. The University conducts annual two-day training sessions on data collection methods to prepare the collectors. Data collection required access to: (a) the person, (b) whoever knew the person best on a day to day basis, (c) the person's home, and (d) records concerning the person's services and supports. Data collection visits required approximately 70 minutes at the residence.

The data collection process involved directly interviewing the available staff person who was most familiar with the service recipient. This process entailed reading each of the items in the questionnaire to the respondent and recording his/ her response. Interviewers had been trained to offer standard responses to specific requests for clarification.

### **Instrumentation**

Oklahoma administers the Developmental Disabilities Quality Assurance Questionnaire (DDQAQ) (Oklahoma State University, 1992) for all consumers (i.e., service recipients) within its mental retardation service system on an annual basis. This assessment is administered by interviewers contracted by the

state, and it includes major sections on adaptive behavior, challenging behavior (i.e., socially unacceptable behaviors such as aggression, property destruction, and self injury), living site conditions, health, social interactions, community integration, service planning, and consumer satisfaction. A copy of this questionnaire is available from the authors. Portions of this comprehensive assessment device that were used in this particular study are discussed below.

**Adaptive Behavior** - The scale of adaptive behavior used in Oklahoma was derived from the American Association on Mental Retardation's Adaptive Behavior Scale (Nihira, Foster, Shellhaas, and Leland, 1974). This shortened version consists of 32 items, and it yields scores that range from 0 to 129, with lower scores indicating lower levels of adaptive behavior. It is administered by interviewing a third party who is familiar with the person whose adaptive behavior is being assessed. In-house studies (Fullerton, Douglass, Dodder, 1999) reveal an inter-rater reliability of .99, a figure that is consistent with Isett and Spreat's (1979) report of the longer version of the scale.

**Challenging Behavior** - There are 16 items on the questionnaire that measure the frequency of socially unacceptable behaviors emitted by the participants. Possible scores range from 0 to 100, with 100 indicating a complete absence of such behaviors. These data are collected via interview with knowledgeable informants. This scale has been used in other studies of

relocation from institutional settings to community settings (cf. Conroy and Bradley, 1985; Conroy, Efthimiou, and Lemanowicz, 1982). Test retest and inter-rater reliabilities for this scale were reported as .90 and .65 respectively (Conroy, Efthimiou, and Lemanowicz, 1981).

**Use of Time** - Data collectors queried knowledgeable informants regarding each Focus Class Member's activities during the day. Both vocational and educational activities were categorized.

**Community Integration** - The DDQAQ asks knowledgeable informants to estimate the frequency with which the Focus Class Members leave the residence to engage in social or economic intercourse. Example of such activities includes visiting friends, shopping, dining out, going to the movies, and going to the bank.

**Service Provision** - Informants were asked to estimate the number of hours in the previous month that each Focus Class Member received a variety of different services. These potential services included Habilitation Training, Homemaker Services, OT/PT, Psychotherapy, Nursing Services, Psychiatric Services, Communication Training, and Audiology Services. From these data, one can estimate the number of individuals receiving a given service and the number of service hours that were provided.

**Family Contact** -There are three questions in the DDQAQ that address family involvement, with staff informants providing information on family contact. Summing these three scores yields a brief family contact scale that has an internal consistency reliability of .8655. A score of 18 on this scale would indicate maximal family involvement (indeed, an individual would literally have to live with his/her family to achieve this score). A score of 3 would indicate that either the individual had no family or had not had family contact within the past year.

**Use of Medications** - Records are reviewed to collect information on the psychiatric medications used by the participants. Individual psychiatric medications were grouped according to the guidelines put forth by the American Medical Association (1978), and as reported in Spreat, Conroy, and Jones (1997).

**Health Care Indicators** - The DDQAQ contains a section on medical needs, and this section asks about the medical needs and access to medical services for the members of the Focus Class. These data are collected by interviewing knowledgeable informants and by reviewing available records.

## **Participants in the Study**

Analysis #1 addressed the welfare of Oklahomans who have profound mental retardation. Our study sample consisted of three discrete groups. Group 1 consisted of the 128 individuals who had profound mental retardation and who lived in State Institution A from 1992 through 1997. Group 2 consisted of the 83 individuals who had profound mental retardation and who lived in State Institution B in 1992 through 1997. Group 3 was composed of the 135 individuals with profound mental retardation who lived in a third state institution in 1992 and in small community based homes in 1997. These 346 individuals were all of the individuals who met the selection criteria. Table 1 summarizes their demographic composition. It was noted that while there were no significant racial or gender differences, the individuals who lived in Institution A were slightly older (35 years) than the persons who lived in either Institution B (32 years) or the community (32 years). It should be noted that there was a court order to close Institution C.

Analysis #2 used a smaller, more tightly defined group of individuals. Instead of selecting individuals for their level of mental retardation, we selected only those individuals whose 1992 adaptive behavior scale scores were in the lowest 10% of the Oklahoma mental retardation population. There were 39 individuals who met this criterion and who lived in Institution A in both 1992

and 1997. 12 individuals who had such low levels of adaptive behavior lived in Institution B in both years. Thirty-six (36) individuals lived in the third state institution in 1992 and in the community in 1997. Demographic information is presented in Table 1.

**Table 1**  
**Demographic Characteristics of Samples**

	<b><u>Persons with Profound Retardation</u></b>	<b><u>Persons with Low Adaptive Behavior</u></b>
<b><u>Race</u></b>		
White	114	36
Black	9	1
American Indian	4	1
Other	1	1
<b><u>Gender</u></b>		
Male	80	17
Female	48	22
<b><u>Age</u></b>		
Youngest	19	19
Oldest	69	51
Average in 1997	35	32

## Results

### Analysis #1

Analysis #1 employed both longitudinal and cross-sectional methodology. Where appropriate, 1992 performance was compared with 1997 performance. This was an attempt to determine whether various aspects of peoples' lives improved. We also conducted static comparisons of selected measures in 1997. The results of these analyses follow.

Adaptive behavior, family contact, challenging behavior, # of IHP goals, monthly service hours, and monthly employment hours were submitted to a series of 3 (group) by 2 (time) analyses of variance for repeated measures. With the exception of challenging behavior, where there was minimal challenging behavior and no change over time, a generally positive pattern of improvement emerged from these analyses. Statistically significant main effects for time were noted for Adaptive Behavior ( $F[1,343]=42.72, p=.000$ ), Family Contact ( $F[1,343]=70.80, p=.000$ ), Number of IHP Goals ( $F[1,343]=, p=.000$ ), Monthly Service Hours ( $F[1,343]=18.97, p=.000$ ), and Employment Hours ( $F[1,343]=23.47, p=.000$ ). The typical individual, regardless of placement, improved in these areas. Although the three groups differed overall on several of these measures, no group performed lower in 1997. Analysis of the significant interactions suggests that rate of improvement was higher for the

community group than the two institutional groups for family contact and total service hours. Thus, persons with profound mental retardation improved on these measures across the five years of study. Greater improvement was noted among those persons who transferred to the community. These data are summarized in Table 2.

**Table 2**  
**Outcome Measure Results**  
**Profound Retardation Group**

	<u>1992</u>	<u>1997</u>		<u>F</u>	<u>df</u>	<u>p</u>
<b><u>Family Contact</u></b>						
Institution A	6.23	7.50	Group	10.89	2,343	.000
Institution B	6.73	7.53	Time	70.80	1,343	.000
Community	6.79	10.47	Interaction	16.68	2,343	.000
<b><u>Service Hours/Month</u></b>						
Institution A	186.01	206.34	Group	33.87	2,343	.000
Institution B	58.55	94.11	Time	18.97	1,343	.000
Community	68.63	159.82	Interaction	4.28	2,343	.015
<b><u>Adaptive Behavior</u></b>						
Institution A	25.71	26.88	Group	6.14	2,343	.002
Institution B	33.81	37.70	Time	42.72	1,343	.000
Community	25.72	32.41	Interaction	8.48	2,343	.000
<b><u>Number of Goals</u></b>						
Institution A	3.69	15.77	Group	41.15	2,343	.000
Institution B	4.49	17.27	Time	16.92	1,343	.000
Community	6.19	18.75				
<b><u>Vocational Hours/Month</u></b>						
Institution A	34.45	74.33				
Institution B	44.57	67.11	Time	40.20	1,343	.000
Community	50.78	45.17	Interaction	23.47	2,343	.000

Because of the recent concern over access to health care in the community (Strauss and Kastner, 1996), we compared a number of health indices in 1997. No differences were detected with respect to the rated general health of the study participants, however, individuals who lived in Institution B were thought to have significantly greater Medical needs than the individuals in either Institution A or the community ( $F[2,342]=7.62, p=.0006$ ). No differences were detected with respect to frequency of contact with physicians and nurses, utilization of the emergency room, or hospital admissions. Persons living in the community were reported to have had more trouble in gaining access to medical services ( $F[2,342]=4.58, p=.0109$ ).

Respondents to the interview were asked to rate the quality of medical services being provided. These ratings are summarized in Table 3. No differences in quality were found for primary care physician, emergency care, inpatient hospital care, neurology services, and general health care. Dental care ( $F[2,325]=246.66, p=.0000$ ) and seizure management ( $F[2,209] = 14.46, p=.0000$ ) was rated lower in Institution B than either Institution A or the community, however, psychiatric care ( $F[2,79]=6.35, p=.0028$ ) was rated superior in Institution B and the community.

**Table 3**  
**Quality Ratings Across Groups – Profound Mental Retardation**

	<u>A</u>	<u>B</u>	<u>C</u>	<u>Anova Results</u>
Overall Health Rating	3.80	3.94	4.00	ns
Urgency of Health Need	<u>2.49</u>	2.13	<u>2.53</u>	F[2,342]=7.63, p=.0006
Emergency Room Care	4.26	4.34	3.97	ns
Trouble Getting Services	<u>1.01</u>	<u>1.02</u>	1.09	F[2,342]=4.58, p=.0109
Dental Care	<u>4.25</u>	2.10	<u>4.12</u>	F[2,325]=246.66, p=.0000
Psychiatry Services	<u>3.81</u>	4.32	<u>4.10</u>	F[2,79]=6.35, p=.0028
Hospital Care	4.23	4.27	4.17	ns
Seizure Management	<u>4.41</u>	3.89	<u>4.43</u>	F[2,209]=14.46, p=.000
Frequency MD contact	1.88	1.40	2.16	ns
Have primary MD	4.34	4.34	4.17	ns
Nursing Services	<u>4.23</u>	4.45	<u>4.29</u>	F[2,299]=4.02, p=.0185

Means connected by lines are not significantly different

A = Institution A

B = Institution B

C = Community

Respondents were also queried about unmet consumer needs. Of the 128 individuals who lived in Institution A in 1997, only 2 individuals were reported to have unmet needs (<2%). One person needed a communication device, and one person needed some sort of bathroom aid. Six (6) individuals who lived in Institution B in 1997 reportedly had unmet needs (>7%). Three individuals needed communication devices, and three individuals needed dentures. There were 17 persons in community programs who reportedly had unmet needs (>12%). One person needed glasses, one needed a wheelchair, eight needed communication devices, three needed dentures, and 4 needed braces or splints.

## Analysis #2

The analyses described above were replicated for the sample of individuals with extremely depressed adaptive behavior. Of course, we could not repeat the adaptive behavior analysis because our selection criteria would have subjected us to severe regression effects.

Once again, the 3 (group) by 2 (time) analyses of variance for repeated measures revealed both improvements over time and group differences. Such differences were evident for every dependent measure except challenging behavior. Challenging behavior simply was not an issue for this sample. Statistically significant group by time interactions were noted for Number of IHP goals ( $F[2,84]=8.30, p=.001$ ) and service hours ( $F[2,84]=4.58, p=.013$ ). In both cases, greater rates of improvement were noted for the group that transferred from Institution C to Supported Living Arrangements.

## Discussion

Let us begin with an explicit statement of bias. If equal outcomes are observed in institutional and community based programs, the authors will argue that the results support community placement. This position is adopted because we believe that for an institutional placement to be justified, it must offer benefits in excess of comparable community programs. Segregated programming demands a higher level of justification.

Our data do not show this to be the case. Whether dealing with persons with profound mental retardation or persons whose adaptive behavior is in the bottom 10% of persons with mental retardation in Oklahoma, institutional placement seemed to offer no general benefits in excess of community placement. Persons did improve on a number of dimensions in institutional placements, but these improvements were met and exceeded by persons living in the community. Increases in family contact, adaptive behavior, service hours, and IHP goals were evident in all environments, but the increases were greatest in the community.

It must be recognized that families of such significantly impaired individuals are not greatly interested in small increases in adaptive behavior or service hours. The primary concerns seem to be focused on safety and security. They want to know that health care is adequate. These concerns are

appropriate, and our data suggest some validity to the concerns. It was found that people in the community did have more trouble gaining access to medical services than persons living in institutions. This is hardly surprising, given that most institutional settings have on-grounds physicians. Perhaps the greater issue is whether medical access is any more difficult for these individuals than members of the community who lack mental retardation.

This differentiation would perhaps be of greater concern if supported by the medical quality ratings. While subjective ratings of medical quality are certainly less than ideal indices, we were able to make comparisons on some such ratings. These analyses suggested that there was greater variability between the two institutional settings than between the institutions and the community. It would appear that the quality ratings of medical services were not a function of residential setting per se. For example, psychiatric services were judged superior in both the community and Institution B than in Institution A. Dental services, on the other hand, were judged superior in the community and in Institution A.

While medical quality ratings do not raise concerns regarding community placement, unmet needs do raise such a concern. Our data revealed that both Institution A and Institution B did a better job of ensuring that consumer needs were met. Over 12% of the people in the community programs had unmet

needs, with the most frequently cited unmet need being for communication devices. In viewing these findings, we need to recognize that an unmet need can exist only because someone has defined a need. We do not have data on the ratio of identified needs to unmet needs. In any case, it is a matter of concern when 12% of a sample has identified needs that were not met, even if most of those needs do not really relate to medical or security concerns.

Returning to our initial statement regarding the interpretation of findings, we must offer that the most severely challenged groups of persons with mental retardation do not seem to be poorly served in the community. They receive more services, experience greater family contact, and develop increased levels of independence. There is some increased difficulty in obtaining medical services, but perhaps this is in comparison to the ready availability of facility physicians in the institutions. Medical quality ratings, at worst, are equivalent to the institutional quality ratings. The only particular concern was the issue of unmet related needs. This seems to be more of a problem in the community. In sum, we found little empirical support for the fears regarding the welfare of extremely challenged individuals who are placed in smaller community settings.

## References

- American Medical Association. (1978). **AMA Drug Evaluations**. Chicago: American Medical Association.
- Braddock, D. & Hemp, R. (1997). Toward family and community mental retardation services in Massachusetts, New England, and the United States. **Mental Retardation, 35**, 241-256.
- Conroy, J. (1977). Trends in deinstitutionalization of the mentally retarded. **Mental Retardation**, August, 44-46.
- Conroy, J. & Bradley, V. (1985). **The Pennhurst longitudinal study: Combined report of five years of research and analysis**. Philadelphia: Temple University Developmental Disabilities Center; Boston: Human Services Research Institute.
- Conroy, J., Efthimiou, J., & Lemanowicz, J. (1982). A matched comparison of the developmental growth of institutionalized and deinstitutionalized mentally retarded clients. **American Journal on Mental Deficiency, 86**, 581-587.
- Conroy, J., Efthimiou, J., & Lemanowicz, J. (1981). **Reliability of the Behavior Development Survey: Maladaptive behavior section**. Pennhurst Study Brief Report #11. Philadelphia: Temple University Developmental Disabilities Center.
- Craig, E. & McCarver, R. (1984). Community placement and adjustment of deinstitutionalized clients: Issues and findings. In N. Ellis & N. Bray (Eds.), **International Review of Research in Mental Retardation, Volume 12**. Orlando: Academic Press.
- Dagnan, D., et al. (1995). Changes in the quality of life of people with learning disabilities who moved from hospitals to live in community-based homes. **International Journal of Rehabilitation Research, 18**(2), 115-122.
- Devlin, S. (1989). **Reliability assessment of the instruments used to monitor the Pennhurst class members**. Philadelphia: Temple University Developmental Disabilities Center.

Felce, D. & Perry, J. (1996). Adaptive behavior gains in ordinary housing for people with intellectual disabilities. **Journal of Applied Research in Intellectual Disabilities**, **9**(2), 101-114.

Fine, M., Tangeman, P., & Woodard, J. (1990). Changes in adaptive behavior of older adults with mental retardation following deinstitutionalization. **American Journal on Mental Retardation**, **94**, 661-668.

Fiorelli, J. & Thurman, K. (1979). Client behavior in more and less normalized residential settings. **Education and Training of the Mentally Retarded**, **14**, 85-94.

Fullerton, A., Douglass, M., Dodder, R. (1999). A reliability study of measures assessing the impact of deinstitutionalization. **Research in Developmental Disabilities**, **20**(6), 387-400.

Haney, J. (1988). Empirical support for deinstitutionalization. In L. Heal, J. Haney, & A. Amado (Eds.). **Integration of developmentally disabled individuals into the community**. Baltimore: Paul H. Brookes.

Isett, R. & Spreat, S. (1979). Test-retest and inter-rater reliability of the AAMD Adaptive Behavior Scale. **American Journal of Mental Deficiency**, **84**, 93-95.

Larson, S. & Lakin, C. (1989). Deinstitutionalization of persons with mental retardation: Behavioral outcomes. **Journal of the Association for Persons with Severe Handicaps**, **14**, 324-332.

Lord, J. & Pedlar, A. (1991). Life in the community: Four years after the closure of an institution. **Mental Retardation**, **29**, 213-221.

Lynch, P., Kellow, J., Thomas, W. & Victor, L. (1997). The impact of deinstitutionalization on the adaptive behavior of adults with mental retardation: A meta analysis. **Education and Training in Mental Retardation**, **32**, 255-261.

Maisto, A. & Hughes, E. (1995). Adaptation to group home living for adults with mental retardation as a function of previous residential placement. **Journal of Intellectual Disability Research**, **39**, 15-18.

Nihira, K., Foster, R., Shellhaas, M., and Leland, H. (1974). **AAMR Adaptive Behavior Scale**. Washington, D.C.: American Association on Mental Deficiency.

Oklahoma State University. (1992). **Developmental Disabilities Quality Assurance Questionnaire**. Stillwater, Oklahoma: Oklahoma State University Department of Sociology.

Prouty, R. & Lakin, C. (1996). **Residential Services for Persons with Developmental Disabilities: Status and trends through 1995**. Report No. 48. Minneapolis: University of Minnesota, Institute on Community Integration/ UAP.

Rose, K., et al. (1993). Following the course of change: A study of adaptive and maladaptive behaviors of young adults living in the community. **Education and Training in Mental Retardation, 28**, 149-154.

Spreat, S., Conroy, J., & Jones, J. (1997). Use of psychotropic medication in Oklahoma: A statewide survey. **American Journal on Mental Retardation, 102**, 80-85.

Spreat, S. & Isett, R. (1980). An examination of performance decrement in institutionalized mentally retarded persons. **Evaluation and the Health Professions, 3**, 385-397.

Stancliffe, R. & Avery, B. (1997). Longitudinal study of deinstitutionalization and the exercise of choice. **Mental Retardation, 35**, 159-169.

Strauss, D. & Kastner, T. (1996). Comparative mortality of people with mental retardation in institutions and the community. **American Journal on Mental Retardation, 101**, 26-40.