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The Effect of Medicaid Billing on Service to Developmentally Disabled Adults

Kambiz Alavi
Western Michigan University

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THE EFFECT OF MEDICAID BILLING ON SERVICE TO DEVELOPMENTALLY DISABLED ADULTS

by

Kambiz Alavi

A dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
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THE EFFECT OF MEDICAID BILLING ON SERVICE TO DEVELOPMENTALLY DISABLED ADULTS

Kambiz Alavi, Ph.D.
Western Michigan University, 1985

This study provides a detailed analysis of the daily service delivery records before and after the introduction of a Medicaid Billing Form at a day-activity center for developmentally disabled adults. The form required therapists to record daily service delivery (in 15-minute units) to Medicaid eligible clients. There were 38 clients, 23 Medicaid and 15 non-Medicaid, and four therapists. The data showed, for three of the four therapists, a clear and large increase in reported service delivery to Medicaid clients and a smaller increase to non-Medicaid clients. Six months after the introduction of the Medicaid Billing Form the therapists were required to record service delivery to non-Medicaid clients on the same type of form. This resulted in an increase in reported service delivery to non-Medicaid clients, but only for one of the four therapists. Five months later the facility director announced a change in facility financing which made Medicaid reimbursement even more important for the financial well-being of the center than it had been previously. Simultaneously the use of the Medicaid Billing Form with the non-Medicaid clients was discontinued. Data were available for only three of the four therapists, and two showed a drop in recorded service delivery to non-Medicaid clients. There were no clear
effects on service to Medicaid clients.

A questionnaire was devised for measuring client attractiveness, and this variable was studied in relation to reported service delivery and also in interaction with the other independent variables. No general effect was seen, although several relations unique to the individual therapists were suggested by the data.
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TABLE OF CONTENTS

ACKNOWLEDGMENTS .................................................. ii
LIST OF TABLES .................................................. v
LIST OF FIGURES .................................................. vi
CHAPTER

I. INTRODUCTION ........................................... 1
   The Problem ............................................. 1
   Gradual Change in the Behavior of the Mentally Retarded ..... 1
   Lack of Adequate Reinforcement for Effective Staff Performance ............................................. 2
   Counterproductive Senior Staff Influence ............................................. 3
   The Role of Applied Research in Improving Staff Performance ............................................. 3
   Training ............................................. 4
   Training Plus Contingent Reinforcement ............................................. 4
   Feedback As a Means of Improving Staff Performance ............................................. 6
   Institutional Policy As a Means of Improving Staff Performance ............................................. 9

II. METHOD ................................................. 14
   Setting ............................................. 14
   Participants ............................................. 15
   Dependent Variable ............................................. 16
   Procedure ............................................. 17
   Baseline ............................................. 17
   Intervention: Phase 1 ............................................. 18
# Table of Contents—Continued

## CHAPTER

- Intervention: Phase 2 .......................... 20
- Intervention: Phase 3 .......................... 21
- The Client Characteristics Questionnaire .... 21

## III. RESULTS ................................................ 23

- Average Daily Service Units Delivered .......... 23
- Averaged for All Four Therapists ............... 23
- Results for Individual Therapists .............. 26
- Client Characteristics and Service Delivery ... 29

## IV. DISCUSSION .............................................. 46

## APPENDICES ...................................................... 51

- A. Medicaid Billing Form .......................... 52
- B. Client Activity Form ............................ 54
- C. Client Characteristics Questionnaire ........ 56

## BIBLIOGRAPHY ............................................... 58
LIST OF TABLES

1. Average Daily Service ....................................... 24
2. High and Low Attractiveness Groups ........................ 33
3. Service Units by Attractiveness Scores for Therapist 1 . 34
4. Service Units by Attractiveness Scores for Therapist 2 . 35
5. Service Units by Attractiveness Scores for Therapist 3 . 36
6. Service Units by Attractiveness Scores for Therapist 4 . 37
LIST OF FIGURES

1. Average Service Delivery for All Four Therapists .......... 25
2. Service Units Delivered: Therapists 1, 2, 3, and 4 ....... 27
3. Therapist 1: The Effects of Attractiveness ................. 38
4. Therapist 2: The Effects of Attractiveness ................. 39
5. Therapist 3: The Effects of Attractiveness ................. 40
6. Therapist 4: The Effects of Attractiveness ................. 41
7. The Relation Between Attractiveness and Service Delivery for Therapist 1 .................................. 42
8. The Relation Between Attractiveness and Service Delivery for Therapist 2 .................................. 43
9. The Relation Between Attractiveness and Service Delivery for Therapist 3 .................................. 44
10. The Relation Between Attractiveness and Service Delivery for Therapist 4 ................................... 45

vi

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CHAPTER I

INTRODUCTION

The Problem

A major problem in organizational settings where services are provided to mentally retarded people is ensuring that the staff complete their assigned objectives. The staff's job-related behaviors are an essential contributing factor to the welfare of the clients. Because administrators are responsible for successful delivery of services to the retarded population, they must have effective management systems to ensure that programs are actually implemented as intended.

Administrators at such facilities face many problems in rendering services to clients when staff are not productive. Lack of staff productivity is due to many factors, for example, the gradual nature of change in the behavior of mentally retarded individuals, lack of adequate reinforcement for effective behavior by staff members, and possible counterproductive influence by senior staff.

Gradual Change in the Behavior of the Mentally Retarded

Improvement in the behavior of mentally retarded clients as a result of a successful program can function as reinforcement for the relevant behavior of the staff. But it is not uncommon for staff members to lose interest because of the characteristically gradual
change in the behavior of the mentally retarded (Welsh, Ludwig, Radiker, & Krapfl, 1973). Some behavior occurs at a very low rate and requires many hours of consistent and persistent teaching. Even experienced staff may become discouraged and frustrated by very gradual change or no change in the clients' behavior. Behavior of mentally retarded people may take a long time to change (Birnbrauer, 1978). Therefore, many administrators and their immediate staff are reluctant even to begin programs to promote productive client behaviors, limiting their goals to taking care of the residents' basic needs (Ferguson & Cullari, 1983); and staff members who take care of the basic needs of these clients often find the job monotonous and tiring.

**Lack of Adequate Reinforcement for Effective Staff Performance**

There have been problems of motivating people at work in institutional settings for the mentally retarded. This lack of motivation is possibly due to the difficulty of finding appropriate reinforcement for job-related behavior of staff members. Three common supervisory problems with attendants are chronic absenteeism, disinterest in work, and lack of initiative (Bricker, Morgan, & Grabowski, 1972, p. 128). Based on observational data, the report stated that the attendants spent 10% of their time delivering services to the clients and the rest on activities unrelated to the job, for example, sleeping and writing personal notes (Bricker et al., 1972, p. 128). The importance of a consistent program of reinforcement to maintain the behavior of skillful staff has been emphasized by Panyan, Boozer, and
Morris (1970) and by Welsh et al. (1973). Ayllon and Azrin (1968) modified staff behavior with reinforcement, but most of the sources of reinforcement that could be used to consequence staff behavior (e.g., salary, paid vacation, time off from work without pay, and improved working conditions) are not under the control of the director or supervisor (Repucci & Saunders, 1974).

**Counterproductive Senior Staff Influence**

Administrators, professionals, and paraprofessionals, especially those who have been on the job a long time, may have difficulty giving up an old style of treatment and adopting new, more effective procedures. They may even deliberately sabotage the efforts of new staff or existing staff, for example, by using their interpersonal skills to turn one staff member against another. Such conflicts among staff hinder the service delivery to clients. Administrators have to be aware of these kinds of conflicts and control them.

**The Role of Applied Research in Improving Staff Performance**

Most early research with the developmentally disabled was primarily concerned with discovering ways to change the behavior of the client. A more recent focus of research attention has been the management of staff behavior, using such procedures as training, training plus contingent reinforcement, feedback, and institutional policy.
Training

In 1975, Kirigin et al. showed that training programs could alter the staffs' behavior regarding their clients, especially verbal behavior. However, the behavior changes did not generalize beyond the training situation, or if they did, the appropriate behavior was not maintained. Schinke and Wong (1977) found similar results using a criteria involving client appropriate and inappropriate behavior. In 1974, Panyan and Patterson used instructions, videotape playback, lectures, discussion, and programmed learning materials in trying to change staff behavior, and generally found that these methods were ineffective. Quilitch (1975) demonstrated that training workshops were ineffective as a means of teaching the staff to increase client involvement in recreation. These studies strongly suggest that, in spite of possible short-term effectiveness, training alone will not maintain staff behavior on a long-term basis.

Training Plus Contingent Reinforcement

Bricker et al. (1972) used commercial trading stamps and training to alter and maintain appropriate behavior of staff working with low-functioning clients. Staff members were responsible for teaching self-help skills, social interaction, and verbal behavior to their retarded clients. Stamps were given to staff members at the rate of one stamp per minute of interaction between staff and clients. The authors of this study concluded that the stamps functioned as effective reinforcement because the frequency of the interactions between...
staff and clients increased. In another study, Patterson, Griffin, and Panyan (1976) used Bingo money as an incentive to maintain and increase staff behavior. Each staff member was required to read a training booklet and to run 15-minute self-help skills training sessions. The staff members received Bingo Cards according to the number of residents with whom they had conducted training sessions. The more training sessions they conducted, the more Bingo Cards they received, thus increasing their chances of drawing a Bingo from the pot. Bingo money dispensed was $5 per game. The results of this study indicated a large increase in the performance of non-professional staff. Iwata, Bailey, Brown, Foshee, and Alpern (1976) used a lottery system to increase and maintain staff behavior. Staff members were required to engage in different specified activities involving daily care and training services. The criteria for completing the duties were: (a) to avoid a 0% rating in any area of stimulation training, (b) to obtain a minimum rating of 80% in supervision, and (c) to complete other activities (e.g., out of bed and dental care) at least once daily. In the staff meeting at the end of the week, staff members who had met the criteria were publicly acknowledged. Then their names were placed in a container for the lottery drawing. The winner's reward was being able to select his or her preferred day off for the coming week. This lottery system helped bring about significant improvements, including a large decrease in staff behavior unrelated to work, and a large increase in staff behavior related to stimulation training and supervision. Hollander and Plutchik (1972) employed a systematic reinforcement
procedure for maintaining the following staff behaviors: observing and recording patients' grooming, distributing work supplies, bed-making, distributing lunch tickets to patients, collecting lunch tickets from the patients, and graphing the performance of each patient. The staff received training on the above behaviors but showed poor performance during baseline, indicating that the training had not been effective. The introduction of trading stamps at the rate of 150 per completed task (on a weekly basis) significantly increased staff work behavior, and some staff members even volunteered to have more contact with clients. Finally, in a study by Katz, Johnson, and Gelfand (1972), staff members received training in applying the reinforcement principle to hospitalized patients. The training consisted of shaping, lecturing, and demonstration. Staff members were then told that if they increased their reinforcing contacts with patients for at least 2 days to 50% of the total time that the patient was observed, they would receive a $15 cash bonus. The introduction of this monetary contingency resulted in a substantial improvement in the relevant staff behavior.

Procedures involving monetary reinforcement and selecting one's day off, although generally effective as reinforcers, are often not possible in state-supported institutions.

Feedback As a Means of Improving Staff Performance

While the studies cited above demonstrated behavior change as a result of training and contingent reinforcement, some studies have investigated ways of changing staff behavior without heavily
emphasizing training or any kind of monetary contingency, relying instead on various forms of feedback. For example, Panyan et al., (1970) assigned tasks to the staff regarding basic self-help skills for their retarded clients. Staff members were required to train clients in self-feeding, dressing, hand washing, bathing, and toileting. The assigned tasks were completed when 99% mastery was obtained. The staff duties also consisted of recording daily sessions and taking data on clients' performance. The supervisor of the program developed a feedback sheet containing the name of the staff member, the total possible sessions for each skill, and the number of sessions conducted and recorded. Then, the feedback sheet was posted in a place which was easily accessible to everyone in the institution. The posted feedback sheet ranked each unit's performance (a unit being a group of clients). The results demonstrated a large increase in the percentage of sessions conducted, from 20% to 99% in one unit, from 8% to 72% in another unit, and even to 100% in some units. In another study that utilized a feedback system, Quilitch (1975) compared three staff management procedures used to maintain a daily recreational activity program in an institution for the mentally retarded. One of the procedures involved scheduling and feedback. Activities were assigned to the staff and posted. These activities consisted of counting the number of residents, engaging in interaction with clients while the staff and clients were occupied with grooming, reading, writing, or using recreational materials. A feedback sheet listing the name of the staff member and daily performance of active clients was posted daily in a place where it was
visible to other personnel. This system helped the staff to be aware of active clients, and was effective in increasing staff performance with respect to pursuing daily recreational activities.

A number of studies have shown, however, that feedback alone is not effective unless paired with extrinsic consequences. Pommer and Streedbeck (1974) employed "instructional antecedents and monetary rewards to determine whether or not they had differential effects on job performance" (p. 217). The instructional antecedents consisted of a list of daily activities (instruction sheet) posted on the bulletin board where it was visible to everyone. Staff members were assigned to these daily activities. When the assigned activities were completed, the staff member filled out a job slip signed by the supervisor. Each slip functioned as a token and earned the staff member $1 at the end of the month. The results demonstrated that staff work performance during baseline was 42% and increased to 77% after the publicly posted instruction sheet was used. But performance then decreased over time. When job slips were introduced, work performance increased to 88% and was maintained at this higher level. Pomerleau, Bobrove, and Smith (1973) also found that feedback plus a monetary contingency had a better effect on staff performance than feedback alone.

In the studies discussed above, the monitoring of staff performance involved some form of feedback along with contingent consequences. But because of budget and time constraints, administrators and researchers have also tried other procedures requiring less time and/or money to increase and maintain staff behavior. For example,
group contingencies (Reid, Schuh-Wear, & Brannon, 1978), punishment regimes (Repp & Deitz, 1979), participation management approaches (Burgio, Whitman, & Reid, 1983), self-recording and supervision programs to change institutional staff behavior (Burg, Reid, & Lattimore, 1979), and staff participation in setting goals (Seys & Duker, 1978).

Institutional Policy As a Means of Improving Staff Performance

Finally, some administrators have relied on institutional policy for improving staff behavior. In these cases, policy is imposed upon the staff by the administrator, and staff compliance is mandatory. Sneed and Bible (1979) used an administrative procedure to improve staff behavior. The administrator required staff to carry a "duty card." The duty card listed the different tasks for which the staff member was responsible during an 8-hour shift, the locations where tasks were to be performed, and the time schedule for breaks. Each staff member selected a duty card in the morning; and upon completing the job, signed the card and left it in the staff room. The results of this intervention demonstrated that the duty cards increased the frequency of staff interaction with clients and staff attendance at assigned sites. Repp and Deitz (1979) also employed institutional administrative policy to improve staff behavior. The setting was a retardation center and the subjects of the study were 59 staff members who provided services for 60 moderately or severely retarded individuals. One major regulation (imposed by governmental or other agencies that supported the institution economically) required staff

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to provide adequate documentation regarding the clients' progress on a monthly basis, and also a status review progress report. The problems addressed in this study were that these forms of documentation typically lacked adequate information (because staff did not include all of the pertinent information when filling out the forms) and that staff were late in placing the documentation in the client's file. The experimenters developed four classifications: report on time, report late, report approved, or disapproved. There were four different phases in the study. One phase involved writing memoranda to staff members informing them of the percentage of reports that were on time, late, approved, or disapproved. In all phases the written memoranda were signed by one of the administrators and placed in the staff member's mailbox. The results showed an increase in reports being on time and approved because of administrative feedback given to staff in the form of these memoranda.

The present study also involved the manipulation of institutional policy. It was conducted at a day training facility in Michigan for developmentally disabled adults, and investigated the effect of a Medicaid billing system on staff services provided to the clients. Medicaid is reimbursement provided by Social Security for health services to low-income or disabled people. The Michigan Department of Mental Health administers Medicaid funds to programs for the developmentally disabled and ensures that the programs are qualified for this support.

The literature in this area points to various problems relevant to staff performance with the use of the Medicaid system. One study
concluded that since Medicaid recipients are frequently unable or unwilling to undertake responsibility for services to be delivered, regulatory control by government is justified; excessive regulation, however, may cause low quality care and inefficiency (Grimaldi, 1982). A survey of more than 2,000 physicians was conducted to investigate the effect of public policy on their behavior (Sloan, Cromwell, & Mitchell, 1978, pp. 113-134). The physicians reported that the Medicaid system had resulted in a decrease in the quality of services. Moreover, a survey of 336 member physicians of the California Medical Association identified the following four major impediments to physician participation in Medicaid (Sloan et al., 1978, p. 114): low fee schedules, Medicaid's disallowances, bureaucratic interference with patient care, and payment delays. And the results of a nationwide survey financed by the Department of Health, Education, and Welfare in 1972 to 1973 (Grimaldi, 1982) concluded that low quality care resulted from inadequate Medicaid payment rates. In one setting, however, Medicaid contributed to stimulating the efficient and effective production of services in nursing home care (Grimaldi, 1982).

The purpose of the present study was to investigate the effects of a number of interventions related to implementation of the Medicaid billing system on reported service delivery to the clients by the staff of the institution. The State Department of Mental Health reimburses the institution from Medicaid (Social Security) funds for services rendered to developmentally disabled adults from low-income families. The introduction of Medicaid reimbursement in April of
of Medicaid-billable services would alter the reported service delivery of the staff with respect to Medicaid and/or non-Medicaid clients?
CHAPTER II

METHOD

Setting

The study took place in a day activity program for developmentally disabled adults. The facility opened in 1980 and has continued to operate through funding from state, local, and private organizations. The annual budget is somewhat over $200,000, with Medicaid contributing somewhat over $40,000 to the program based on services provided to medicaid clients.

The physical facility consists of a one-story building with four large classrooms, three small rooms used as offices, a lunch room area, a stage, a kitchen, and a room for athletic and exercise activities. Each large classroom has a bathroom and is equipped according to the nature of the training program carried out in that room. Four general areas in which training is conducted are speech and language, adult daily living skills, recreation and physical therapy, and prevocational training.

The staff consists of a Ph.D. psychologist, who functions as director of the facility and as supervisor for program implementation; four therapists, each hired to provide training in one of the four areas mentioned above; paid part-time staff; students; volunteers; and a full-time secretary. Some of the students are paid and some work for course credit from a nearby university. The part-time
staff, students, and volunteers are supervised by the four therapists, who design and implement the training programs and assist in taking care of the basic hygienic needs of the clients.

The center provides day training services to approximately 40 developmentally disabled adult male and female clients, aged from 26 to 65 years. Daily activities start on arrival of the clients around 8:30 a.m. Classes last 45 minutes, and the first class begins at 9:00 a.m. There are typically about 8-12 clients in each of the four classrooms. At the end of the first class period the clients move to a different classroom, and their second class period begins. After the second class period the clients spend about 30 minutes on a coffee break. The third class period begins at 11:00 a.m. A lunch period begins at 11:45 and lasts for an hour and 15 minutes. The therapists continue to work with the clients during the lunch period, helping them with the food and continuing to develop appropriate social and personal skills. After lunch there is a period of recreational activities (singing, sports, etc.), and the final class period begins at 1:45 p.m. and ends at 2:30. The part-time staff aid the clients in the preparation for leaving the center, and the therapists spend the remainder of their work day recording various aspects of the day's activities and preparing material for the next class day.

Participants

The participants in the study were the four full-time therapists, one male and three female, ranging in age from 24 to 30 years. Their educational training varied from undergraduate to graduate
level. None of the therapists was aware of the present study, nor did they know that the daily records were being analyzed in any way different from the way that they had been previously examined by the director of the institution. The experimenter was an employee at the center whose presence was not interpreted in relation to any type of research or data analysis. Two of the therapists (a male and a female) left the facility during the course of the study and were replaced by two new ones (a male and a female). Therapist 3, however, left just before the last intervention and was replaced by a person who was fully informed about the present study. This data is only shown through December of 1983.

Dependent Variable

The dependent variable was the reported number of units of service delivered per client per day by each of the four therapists. In general, each client had one 45-minute session per day with each therapist, although some clients had more than one session with one therapist and none with another. If a therapist had Medicaid-billable objectives which were worked on by the client during the 45-minute session, the therapist recorded three units (15 minutes training equals one unit) of service delivery. Since objectives were also worked on at other times, such as during lunch, recreational periods, etc., there were sometimes more than three units of service delivery reported for a day by a therapist.
Procedure

Data on therapist performance were collected by the experimenter, based on two forms, the Medicaid Billing Record and the Client Activity Form. The Medicaid Billing Record (Appendix A) was filled out by therapists and indicated the amount of time (in 15 minute units) that each therapist spent on billable objectives with a given client each day. Therapists received a Medicaid Billing Record for each client at the beginning of each month and submitted the record to the supervisor at the end of each month. These records were used to bill Medicaid for the services rendered. The experimenter collected these records from April 1983 to April 1984.

The therapists also used several types of client activity forms to record all the specific training program objectives that were worked on with a client each day. A sample form is shown as Appendix B.

Baseline

In order to establish a baseline for the study against which to measure changes in therapist behavior as a function of the introduction of the Medicaid billing system, the experimenter reviewed Client Activity Forms filled out by each therapist for 3 months prior to the beginning of intervention (January, February, and March of 1983). Therapists used several different types of client activity forms, but all of the forms used indicated the days per month that therapists worked with clients on various objectives. Prior to the introduction
of the Medicaid billing system in April 1983, all four therapists filled out client activity forms for some clients, yielding sufficient data to establish a baseline.

The experimenter transferred the data from the Client Activity Forms to Medicaid Billing Records. This entailed counting the number of days per month that a therapist worked with a client on various objectives and for each day recording three units on a Medicaid Billing Form. For example, the Client Activity Form (Appendix B) for Therapist 1 (T1), dated January 1983, indicates the days on which client training occurred and the types of activity engaged in (in this case, forms of recreation). Each of the eight marks or initials on this form was converted to the Medicaid Billing Form (Appendix A) as three units of time, or 45 minutes, for the same day.

**Intervention: Phase 1**

At a staff meeting held April 5, 1983, the facility director informed the therapists that from then on they would be required to record the time spent providing services to Medicaid clients, which records would be the basis for Medicaid reimbursement to the facility. At the same time he instructed the therapists not to change the services they were currently providing to the 23 Medicaid clients nor to the 15 non-Medicaid clients. It was felt by the facility director and explained to the staff that the performance objectives were not to be dictated by the funding guidelines for Medicaid. Daily service delivery records were now mandatory for Medicaid clients, but not for the non-Medicaid clients. Therapists
were informed that the supervisor would review their record keeping on a monthly basis, that a physician assigned by the Community Mental Health Services board would conduct 90-day reviews of all Medicaid cases, and that an interdisciplinary team would conduct an annual review of all Medicaid cases.

To comply with these instructions therapists at first used the facility's ordinary Client Activity Forms to keep records on time spent with Medicaid clients. At the end of April 1983, standard Medicaid Billing Records were provided and the therapists used these forms for the Medicaid clients throughout the remainder of the study.

This phase of the study lasted approximately 5 months, during which time therapists were required to comply with additional aspects of the Medicaid billing system. These additional requirements were announced at weekly staff meetings, and involved using Medicaid terminology in the program objectives developed and implemented for each Medicaid client. Within a week after the April 5, 1983, meeting, therapists received written information about Medicaid Billable Objectives and were asked to rewrite existing goals to meet the Medicaid requirements. For example, if working with puzzles was part of an existing client program, this activity remained in the program and was recorded under the heading "sensory-motor and adaptive physical functioning," according to the Medicaid terminology.

At the May 3, 1983, staff meeting, therapists were informed that case managers, hired by the Community Mental Health Services Board, would meet with them on a monthly basis to review each client's program (which was based on the Medicaid Billable Objectives) and the
records on program implementation. This meeting was prescribed by the regulations for billing Medicaid.

During this phase, and for all subsequent phases, the experimenter compared data recorded by therapists on the Medicaid Billing Forms with data recorded by therapists on the Client Activity Forms as a means of checking the accuracy of record keeping, and to validate baseline data.

**Intervention: Phase 2**

Throughout Phase 1 the supervisor encouraged therapists to provide services equally to Medicaid and non-Medicaid clients, emphasizing development and implementation of new objectives or modification of existing ones for all clients to meet Medicaid standards, but only if they were in the best interest of the program and the client. At a staff meeting held September 20, 1983, approximately 5 months after the introduction of the Medicaid billing system, the supervisor informed the therapists that from then on they would be required to record service delivery time using the Medicaid Billing Forms on the 15 non-Medicaid clients as well as the 23 Medicaid clients. This was explained on the basis that many of them would soon become eligible for Medicaid through new applications or through another Medicaid program. Record keeping was now mandatory for all clients using the Medicaid Billing Form even though no one would currently be billed for services delivered to non-Medicaid clients. Therapists continued to record service delivery details using the facility's Client Activity Form.
Intervention: Phase 3

This intervention involved institutional policy regarding the budget. At a staff meeting held February 1, 1984, the supervisor informed the therapists of the importance of generating sufficient Medicaid funds to meet the facility's annual budgetary needs. He emphasized the fact that Medicaid funding was based on the amount of time staff spent providing client services payable by Medicaid. He explained that the failure to generate the necessary funding could result in a decrease in the number of clients and staff. The supervisor also announced at this meeting that staff members were no longer required to record service delivery time to non-Medicaid clients on the Medicaid Billing Form.

Two questions were posed by this intervention. Would this announcement result in a further increase in services to Medicaid clients? Would it result in a decrease in services to non-Medicaid clients?

The Client Characteristics Questionnaire

As the study progressed it was clear that there was considerable variation in service delivery to the various clients. It seemed possible that this might be at least partly accounted for by factors related to the positive or negative aspects of the clients from the teachers' perspective. Some clients at any institution of this sort are known to be less pleasant to work with than others, for a variety of personal reasons. With this in mind a questionnaire was designed...
to provide a rough measure of this factor. Using common-sense terms, this questionnaire (Appendix C) obtained ratings of each client with respect to three personal characteristics. These were: (a) likability, (b) attractiveness, and (c) level of intelligence. It was presumed that clients who are rated more attractive, more likable, and more intelligent might receive more services than clients rated low on those characteristics. There were five staff, four part-time, and one full-time (none of the therapists of the present study were raters), who rated the clients in terms of the three dimensions on a scale from 1 (very low) to 10 (very high). Each rater was given the list of the clients, Medicaid and non-Medicaid, and asked to circle the scores based on the three dimensions (see the form in Appendix C). Each rater thus circled three numbers for each client. For example, if the rater judged a client to be quite high in the first two characteristics (likability and attractiveness) but moderately low in intelligence the numbers might have been 9, 9, and 3. For each rater for each client an average was taken of these three numbers—for the example above the average would be 7. The attempt to relate these average ratings to service delivery is described in the results section.
CHAPTER III

RESULTS

Average Daily Service Units Delivered

Averaged for All Four Therapists

Table 1 shows the daily service units reported by the individual therapists, averaged across clients, and across days that the center was open, for each month. This table also shows the average of all four therapists for each month. (For Therapist 3 only the data for the first 12 months of the study contributed to the average). The data are shown separately for the 23 Medicaid clients and the 15 non-Medicaid clients. Thus, for January 1983 for Therapist 1 the average service units reported per day for a Medicaid client was 1.33, and also 1.33 for a non-Medicaid client.

Figure 1 shows the data averaged for the four therapists. As can be seen there was a sharp increase in reported service delivery after the Medicaid billing system was introduced in April of 1983, with considerably more service being reported for Medicaid than non-Medicaid clients. The use of Medicaid Billing Forms for the non-Medicaid clients, the second intervention, began in September of 1983, and did not produce any clear changes in reports of service delivery. The third intervention was the announcement regarding the importance of Medicaid funding for the financial well-being of the institution plus the instruction to discontinue the use of Medicaid.
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Figure 1. Average Service Delivery for All Four Therapists.
Billing Forms with the non-Medicaid clients. This took place on February 1, 1984, and had little effect with respect to Medicaid clients, but seemed to produce a decrease in reported service delivery for non-Medicaid clients.

Results for Individual Therapists

The data for individual therapists are shown in Figure 2. As can be seen, Therapist 1 was relatively unaffected by the second and third interventions. A clear rise in reported service delivery is seen after the first intervention, but it is not easy to interpret this effect because of the rather sharp drop that had been occurring during the preceding 3 months. It is also clear that for this therapist the reported service delivery was about equal for the two types of clients.

Therapist 2 reported a considerable increase in service delivery after the first intervention, with the two types of clients about equally affected. Reported service delivery was lower for both types of clients after the second intervention, and after the third intervention the averages rose considerably for Medicaid and fell considerably for non-Medicaid clients.

As explained above, the data for Therapist 3 are only available for the first two interventions. Her reported service delivery for Medicaid clients increased sharply after the Medicaid billing system was introduced but non-Medicaid clients showed only a slight increase. After the non-Medicaid clients' service began to be reported on the Medicaid forms, however, a clear and considerable increase
Figure 2. Service Units Delivered: Therapists 1, 2, 3, and 4.
Figure 2—Continued
occurred for these clients.

Therapist 4 showed the sharpest rise after the first intervention of any of the participants. This therapist also showed a large difference between reported service delivery for Medicaid and non-Medicaid clients, favoring the former. The averages after the second intervention are not easy to interpret because of the defective November data for non-Medicaid clients. It is unlikely that no service was actually delivered to any non-Medicaid client during this month, but none was reported. December shows almost the same service for the two types of clients, as does October. In any case, after the third intervention this therapist's averages resembled those of Therapist 2 in showing some rise for Medicaid and a considerable drop for non-Medicaid clients.

Client Characteristics and Service Delivery

The client characteristics questionnaire makes possible an analysis of the relation between ratings of general attractiveness (intelligence, likability, and attractiveness) and reported service delivery. There are three aspects to this analysis. First, since for three of the therapists (T2, T3, and T4) the reported service delivery for Medicaid clients was considerably greater than for non-Medicaid clients it is important to know whether the general attractiveness ratings for these two groups differed. If they do it will be useful to know how this attractiveness factor is related to the effects of the three interventions on the two types of clients. Finally, it will be useful to know if there is any relation between
client attractiveness and average reported service delivery for that client over all 16 months. Before considering these relations, however, it is necessary to provide a more detailed description of the derivation of the attractiveness scores.

As mentioned at the end of the previous chapter, five staff members who were quite familiar with the 38 clients rated each of them on a 10-point scale with respect to three dimensions: attractiveness, likability, and intelligence. For each client, each staff member's three ratings were averaged to obtain a composite rating. However, it seemed possible that some of the ratings would be based on idiosyncratic perceptions of clients by staff, so as a partial correction for such factors the two extreme ratings were discarded for each client, then the remaining three were averaged across the three raters. The final composite attractiveness score for each client, then, is an average of three averages. To illustrate the derivation of these scores, consider a client who receives from Rater 1 the ratings of 5, 6, and 7 for attractiveness, likability, and intelligence, respectively. For this rater the composite rating is (5 + 6 + 7)/3 or 18/3 or 6. Let it be assumed that Raters 2, 3, 4, and 5 provide composite ratings for this client of 2.3, 8.0, 4.7, and 6.7, respectively. Discarding the ratings of Raters 2 and 3 (the lowest and the highest), the average of the remaining three is (6 + 4.7 + 6.7)/3 or 17.4/3 or 5.8. The value of 5.8, then, is this client's attractiveness score.

The average attractiveness score for the 23 Medicaid clients was 6.20, whereas for the 15 non-Medicaid clients it was 5.31. This
client attractiveness and average reported service delivery for that client over all 16 months. Before considering these relations, however, it is necessary to provide a more detailed description of the derivation of the attractiveness scores.

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The average attractiveness score for the 23 Medicaid clients was 6.20, whereas for the 15 non-Medicaid clients it was 5.31. This
of the Medicaid status of the client. Figures 3 through 6 show the data in the four tables.

An analysis of the possible role of attractiveness in determining reported service delivery is made possible by plotting scatter diagrams with attractiveness scores as independent variable (on the abscissa) and average service delivery across all 16 months (or 12 in the case of Therapist 3) as dependent variable (ordinate). These scatter diagrams were plotted separately for each therapist, and appear as Figures 7-10.
## Table 2

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Table 3

Service Units by Attractiveness Scores for Therapist 1

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Table 5

Service Units by Attractiveness Scores for Therapist 3

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</table>

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Figure 3. Therapist 1: The Effects of Attractiveness.
Figure 4. Therapist 2: The Effects of Attractiveness.
Figure 5. Therapist 3: The Effects of Attractiveness.
Figure 6. Therapist 4: The Effects of Attractiveness.
Figure 7. The Relation Between Attractiveness and Service Delivery for Therapist 1.
Figure 8. The Relation Between Attractiveness and Service Delivery for Therapist 2.
Figure 9. The Relation Between Attractiveness and Service Delivery for Therapist 3.
Figure 10. The Relation Between Attractiveness and Service Delivery for Therapist 4.

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CHAPTER IV

DISCUSSION

This study was in part instigated by the informal observations of the facility director that the Medicaid record keeping seemed to have resulted in increased service delivery to the clients. To the extent that the baseline data taken from the Client Activity Records are comparable to the data obtained using the Medicaid Billing Record the informal observation seems to be quite valid. This is seen in the large increase in reported service delivery that occurred for all therapists between March and April of 1983. Although the data for Therapist 1 are not clear, the other three therapists show this effect quite clearly. The increase was largest for Medicaid clients, but is also apparent for non-Medicaid clients, which is especially important since their data were still being recorded on the Client Activity Forms, where comparability of recording form is not an issue.

The size of this effect is somewhat surprising. A possible interpretation is that prior to the Medicaid billing the relevance of actual number of reported service units to the facility director's evaluation of the therapists was unclear. As in most such settings there was a general awareness on everyone's part that employees were being evaluated by the facility director as well as by each other, but there might not have been much emphasis on the quantitative aspects of service delivery. The Medicaid billing system by its
quantification of client service in terms of "units" essentially discounts more qualitative or subjective forms of evaluation and, in addition, links its more quantitative value system to financial reimbursement, an approach that is easy for most members of the American culture to understand. The generalization of the effects to the non-Medicaid clients may be simply the result of an increased interest on the part of the administration in service, and lack of specificity with respect to the actual nature of employee evaluation.

A second possible explanation is the attention to Medicaid billable services which was generated throughout the entire mental health system. Services which were taken for granted prior to Medicaid billing, were now attended to by the administrator of the facility and by staff members of other agencies. This increased attention for certain services may have influenced the behavior of the staff in the direction of increasing these services. It should be noted that the change was contrary to the verbal instructions of the facility administrator who stated to the staff, when Medicaid services first became billable, that the program should not change just in order to bill Medicaid. It is of interest that the effect of a policy made at the federal level influenced the behavior of the facility staff even when they received instructions not to change their behavior from the facility administration.

With respect to differential effects on the two types of clients, Therapist 1 treated them the same throughout the 16-month period of the study; Therapist 2 likewise until the last intervention, the announcement regarding the financial importance of Medicaid
funding and the discontinuation of the requirement that service
delivery to non-Medicaid clients be recorded on the Medicaid Billing
Forms. At that point reported service delivery to non-Medicaid
clients dropped off considerably. This drop was also seen in the
data of Therapist 4. Possibly extensive experience with the use of
the new recording system in the institution and the fact that it had
not resulted in any administrative actions of an aversive nature led
to a more specific form of compliance with the existing work require­
ments. It is also possible that the increase in service to the
Medicaid clients was made at the expense of non-Medicaid clients for
whom services meant no more income to the agency.

Only Therapist 3 seemed to have been affected by the second
intervention, the requirement that non-Medicaid clients' service be
recorded on the Medicaid Billing Records. The reason for initiating
this second change was the supposition that the change in service to
Medicaid clients was closely linked to the new billing forms, but if
the main effect was due largely to the increased general emphasis on
the quantitative nature of service delivery rather than the forms
themselves (as is implied by the data for the non-Medicaid clients
after the first intervention) then using the new forms with non-
Medicaid clients would be expected to have little effect. But this
leaves unexplained the drop in service delivery to non-Medicaid
clients when the Medicaid forms were no longer used with non-Medicaid
clients.

Client attractiveness as measured by the questionnaire seems not
to be strongly related to the basic dependent variable nor to the
effects of any of the other independent variables. The relation to the basic dependent variable, reported service units delivered, is best seen in the scatter diagrams, Figures 7 through 10. Only for Therapist 4 for the Medicaid clients is there any sign of the positive relation that might have been expected. In one sense this is "good news" in its implication that the therapists were not affected by this variable which is not relevant to the goals of programs such as the present one. From the perspective of the public and private supporters of care and training for the handicapped, clients should receive appropriate treatment irrespective of their "attractiveness," however defined. This finding will be reconsidered below in the discussion of the possible inadequacy of the study's basic dependent variable.

Attractiveness is clearly unrelated to the effects of the other two independent variables, the interventions and the type of client, as can be seen from Figures 3 through 6. It is, of course, possible that the groups formed on the basis of high and low attractiveness were too small to mask the effects of individual differences, or that the questionnaire didn't get at some essential feature of attractiveness, but a more likely reason is the insensitivity of reported service units delivered as a dependent variable.

A major weakness of this research is that it is completely dependent upon the adequacy of reported service units delivered. It is general cultural wisdom in this as well as in other cultures that when people have to provide reports which reflect on their effectiveness, morality, etc., the reports may be influenced by other factors...
Appendix A

Medicaid Billing Form
Appendix B

Client Activity Form
<table>
<thead>
<tr>
<th>CLIENT</th>
<th>THERAPIST</th>
<th>RE-CREATION</th>
<th>January 1983</th>
</tr>
</thead>
</table>

| Activity       | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | TOTAL |
|----------------|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Client Absent  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Party          |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Puzzle         |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Lotto          |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Bingo          |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Pick Pairs     |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Baking         |   |   |   |   |   |   |   |    |    |    |    |    |    | V  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Newspaper      |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Manicure       |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Swimming       |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Field Trip     |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Coloring       |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Go Fish        |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Valentine Art  |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Cannister      |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

- A = Refused to perform task
- V = Verbal prompt needed to perform task
- P = Physical prompt needed to perform task
- I = Independently performed task
Appendix C

Client Characteristics Questionnaire
We are interested in learning about how you feel toward different residents with which you are working. There are probably some residents who you feel are more likeable or physically attractive or more intelligent than other residents. Please rate the clients on the scale of 1 to 10 in terms of the dimensions of (a) likability, (b) physical attractiveness, and (c) perceived level of intelligence.

| Client #1 | 1 2 3 4 5 6 7 8 9 10 | Likability |
| Client #1 | 1 2 3 4 5 6 7 8 9 10 | Attractiveness |
| Client #1 | 1 2 3 4 5 6 7 8 9 10 | Intelligence |

| Client #2 | 1 2 3 4 5 6 7 8 9 10 | Likability |
| Client #2 | 1 2 3 4 5 6 7 8 9 10 | Attractiveness |
| Client #2 | 1 2 3 4 5 6 7 8 9 10 | Intelligence |

| Client #3 | 1 2 3 4 5 6 7 8 9 10 | Likability |
| Client #3 | 1 2 3 4 5 6 7 8 9 10 | Attractiveness |
| Client #3 | 1 2 3 4 5 6 7 8 9 10 | Intelligence |

| Client #4 | 1 2 3 4 5 6 7 8 9 10 | Likability |
| Client #4 | 1 2 3 4 5 6 7 8 9 10 | Attractiveness |
| Client #4 | 1 2 3 4 5 6 7 8 9 10 | Intelligence |
BIBLIOGRAPHY


