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**PSYCHIATRIC EMERGENCY ROOM INTERVENTIONS
AND ASPECTS OF PATIENT CARE
THAT INCREASE PATIENT ADHERENCE TO REFERRALS FOR
OUTPATIENT TREATMENT**

A Dissertation Presented

by

MARK K. BENANDER

**Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of**

DOCTOR OF PHILOSOPHY

May 1996

Education

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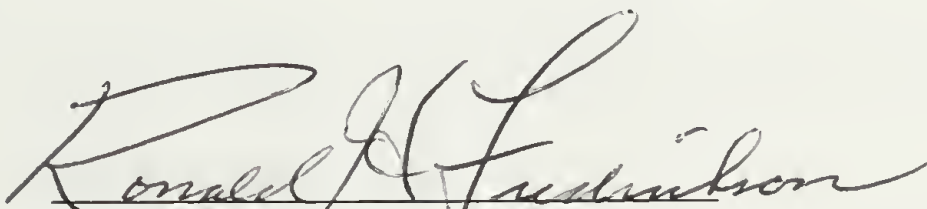
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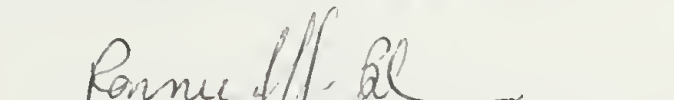
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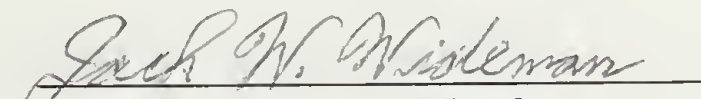
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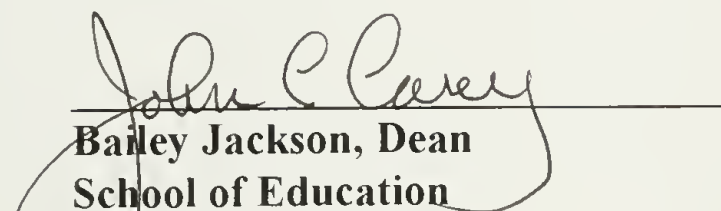
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ACKNOWLEDGMENTS

I am sincerely grateful to a number of people who have supported and encouraged me while I pursued my studies at the University of Massachusetts:

To Dr. Ronald Fredrickson and Pat, his wife, for their unfailing friendship and assistance to me in completing my degree program despite their retirement and my extensions;

To Dr. Jack Wideman for his dedication to the humanistic approach to counseling (and life in general) and his ability to consistently model in his own behavior the very principles he teaches;

To Dr. Ronnie Janoff-Bulman for her participation on my dissertation committee and overall positive and energetic support.

I also thank my children, Emily and Luke, who have endured patiently all of the family consequences that resulted from their father's academic pursuits. I hope to show them it was worthwhile.

Finally, I thank my father; it is he who instilled an interest in learning in me, and it is his example that brings me to choose a profession focusing on service to others.

ABSTRACT

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AND ASPECTS OF PATIENT CARE
THAT INCREASE PATIENT ADHERENCE TO REFERRALS FOR
OUTPATIENT TREATMENT

MAY 1996

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Nonadherence with the recommendations of health care providers results in reduced quality of health, poorer social adjustment, and tremendous strain on our already fragile health care economy. This study includes 283 patients evaluated by the Psychiatric Emergency Service (PES) in the emergency room of an 800-bed medical center in an urban setting in the Northeastern United States. Adherence in this study was operationally defined as attending the first outpatient follow-up appointment after referral from the emergency room. Baseline levels of adherence with treatment recommendations were determined in a first group. Patients seen in a second group received a reminder letter as a treatment prompt. In a third group, a set of five Likert Scale questions evaluated the patient's perception of their experience in the emergency

room and rated the availability of social supports. Objective aspects of patient care such as the length of time waiting for treatment in the emergency room and length of the interval before the first appointment were also recorded. Other variables such as insurance type, referral site and history of prior treatment at the referral site were studied. Data analysis revealed that the interventions of receiving a reminder letter and completing a questionnaire concerning the emergency room experience both were associated with increased adherence. Several aspects of patient care were also significantly associated with increased adherence, including waiting shorter periods for evaluation, and waiting fewer weeks for the first outpatient appointment. Increased adherence was associated with referral to HMO clinics and private practitioners as compared to referrals to community clinics. Having insurance also was associated with increased adherence, ranked in the following order: HMO insurance, commercial insurance, Medicare, and Medicaid, with the uninsured population having the lowest adherence rates. A history of prior treatment at the referral clinic, being satisfied with emergency room treatment, feeling in need of treatment, and having social supports for treatment all were significantly associated with outpatient referral adherence.

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CHAPTER 1

INTRODUCTION

Statement of Problem and Purpose of Study

Nonadherence with the recommendations of health care providers results in reduced quality of health, poorer social adjustment, and tremendous strain on our already fragile health care economy. Adherence rates of only 20% - 50% are common across a broad range of medical and psychiatric treatment recommendations (Chameides & Yamamoto, 1973; Hoffman, 1975; Del Gaudio, et. al., 1977; Wilder et al., 1977; Jellinek 1978; Korsch, et al., 1978; Smith, et al., 1979; Litt & Cuskey, 1980; Litt, et al., 1982; Allen, et al., 1983; Blouin et al. 1985; Solomon & Gordon, 1986-87; Axlerod & Wetzler 1989; Trautman, et al., 1993; Kruse, et al., 1992; Bertschy, et al., 1992; Castenada, et al., 1992; Mooney & Johnson, 1992). However, there is no clear indication that patient demographic or biographic characteristics consistently explain differences in adherence. Instead, there is growing evidence that the patient's satisfaction with the interaction with the health care provider has a significant effect upon adherence. Further, the provider can engage in simple and cost-effective strategies to enhance patient adherence to treatment recommendations.

This study includes patients seen over a period of three months by the Psychiatric Emergency Service (PES) in the emergency room of an 800-bed medical center in an urban setting in the Northeastern United States. Adherence in this study will be operationally defined as attending the first outpatient follow-up appointment after referral

from the emergency room. Baseline levels of adherence with treatment recommendations will be determined in the first month. Patients seen in the second month will receive only a reminder letter as a treatment prompt. In the third month, a set of five questions will evaluate the patient's perception of their experience in the emergency room. Data analysis will determine if calling attention to the patient-provider relationship or sending reminder letters will significantly increase patient adherence with treatment recommendations made from a psychiatric emergency service.

Significance of the Problem

The degree to which patients follow the instructions of their care providers has long been a topic of widespread interest. Jones (1982) notes that an ancient Greek treatise on physician decorum, attributed to Hippocrates in c.200 BC, gives the following advice: "Keep watch also on the faults of the patients, which make them lie about the taking of things prescribed, and, when things go wrong, refuse to confess that they have not been taking their medicine."

Nonadherence was more humorously described by the French playwright Moliere. When questioned by Louis XIV about the details of his medical care, the following exchange ensued (Koltun, 1986):

"The King: You have a physician. What does he do?
Moliere: Sire, we converse. He gives me advice which I do not follow, and I get better."

The benefits of increased adherence are clear. Prevention of relapse, resulting in delay or prevention of hospitalization, and better social adjustment are among the advantages of adherence to care providers' recommendations (Mason, et al., 1963; Orlinsky & D'Elia, 1964; Englehardt, et al., 1967; Hogarty, et al., 1974; Winston, et al., 1977; Serban, 1980; Canton, 1982; Barofsky & Connelly, 1983; Fernando, et al., 1990). In an analysis of the availability of public-sector hospitalization and financial constraints operating in both private- and public-sector outpatient care, Dorsey (1983) concluded that pharmacological adherence is essential for cost-effective treatment of schizophrenic patients.

There are broader economic considerations. Between 1980 and 1987, health-care costs as a percentage of GNP rose 23% (Fuller, 1988; Powis, 1988). Group health costs have been soaring at a 17-20% annualized rate (Ghose, 1987). Our Medicare system is overburdened (Fuller, 1988). Insurance companies, staggering from skyrocketing health claims, have seen their stocks falling out of favor on the US and European markets (Powis, 1988). According to the Department of Health and Human Services, health care expenditures during the 1990's are expected to increase at a rate of over 10% per year. Medical costs accounted for 12.4% of the GNP in 1990 (Koretz, 1990), 14% in 1992 (Metropolitan Life Ins Co, 1992), and is anticipated to reach 16.4% of the GNP by the year 2000 (Reynolds, 1991).

In summary, it is reasonable that if increased adherence leads to delay or prevention of relapse, there will be less use of the more expensive hospital emergency

room and admission, less waste of unused medication, and decreased loss of revenue due to missed appointments resulting in a lessening of financial strain on the health care system.

Beyond issues of improved health and economy, nonadherence may be indicative of a lack of one's will to improve or even survive; it has been noted by Farberow (1986) that nonadherence may represent indirect suicidal behavior. So, in some cases, adherence becomes a life-or-death matter requiring prompt and careful attention. In another attempt to interpret and identify the nature of nonadherence, a proposal has been made that DSM-IV include a subtype of adjustment disorder called "with maladaptive denial of physical disorder" to refer to noncompliance with medical treatment not due to a mental disorder. (Strauss, et al., 1990).

Nonadherence may have an effect on how the patient is treated. Patients in the psychiatric population who are nonadherent with medication prescriptions and/or outpatient visits and who make frequent use of emergency services are receiving poorer care: Adityanjee, et al. (1988) found that chronic repeaters to the hospital emergency room are less often referred to the psychiatric resident on call by the emergency room staff, who seem to assume that the chronic repeater is not really ill, does not deserve proper treatment or referral, or that they abuse the health care delivery system.

A Matter of Perspective

Prior to early published research on adherence in 1943, patient nonadherence was viewed within a moral context, as a fault or sin, similar to Hippocrates' warning noted above (Haynes, 1979). Stone (1979) reported that a substantial proportion of physicians reported little sympathy with their patients' adherence difficulties, viewing the nonadherent behavior most often as an attitude problem on the part of the patient. With the advent of methodological advances such as the double-blind testing of medications plus pharmacological breakthroughs like broad-spectrum antibiotics, antitubercular drugs, and the phenothiazine tranquilizers for treatment of schizophrenia, the issue of nonadherence became more focused and seen as a problem to be solved rather than a strictly moral issue (Haynes, 1979; Koltun & Stone, 1986). Donovan & Blake (1992), in a study of rheumatology patients, noted that an apparently irrational act of nonadherence may be a very rational action when seen from the patient's viewpoint.

Most recently, there has been a movement toward seeing adherence as a process involving the patient and the provider, not simply as a trait of the patient. Such a process includes the attitudes and beliefs of the patient and provider, as well as interactional factors. Surprisingly few studies examined the relationship between aftercare adherence and patients' attitudes toward illness, hospital treatment, and aftercare (Gould, et al., 1970). Many current studies use the term "adherence" rather than "compliance" to reflect the shift in focus away from a moral issue to an issue reflecting the many aspects of the patient, the provider, and the patient-provider relationship

Noting that adherence improves patient health and protects our fragile health-care economy, and understanding that nonadherence is not simply a fault of the patient, a review will appear in Chapter Two on the incidence of nonadherence and will examine factors affecting patient adherence in the arena of health care. There are questions which remain without clear answers. "Why would someone who has gone to the trouble and expense of seeking out a physician, of undertaking arduous or uncomfortable tests and other diagnostic procedures, and of purchasing drugs and devices on the advice of the physician, then fail to follow the recommendation?" (Stone, 1979). More studies need to be done which are cost effective and able to be implemented in a practical manner.

Definitions

A clear definition of adherence and how it is to be applied in a given setting is necessary for its accurate measurement. Merriam-Webster's Collegiate Dictionary offers the following definition of the verb adherence: "the act, action, or quality of sticking to or observing". Haynes, et al. (1979) defines compliance in the medical setting as the extent to which a person's behavior (in terms of keeping appointments, taking medications, and executing life-style changes) coincides with medical advice. For the purposes of this study, adherence will be operationally defined as attending the first outpatient appointment after consultation with the Psychiatric Emergency Service.

Statement of Hypotheses

Regarding patient characteristics and aspects of the patient's treatment, the following results are expected:

- nonsignificant correlation with adherence for wait times for PES evaluation in the emergency room;
- significant correlation with adherence for type of insurance, type of referral clinic, interval to first appointment at the referral clinic, whether or not the patient had prior treatment at the referral clinic, how well the patient felt understood by the PES clinician making the treatment referral, how well the patient felt that they understood the reason for the treatment referral, how well satisfied they were with the treatment in the emergency room, how much they felt they were in need of treatment at the time of the visit to the emergency room, and the existence of social supports.

It is expected that calling attention to the patient-provider relationship will increase adherence. Compliance will be strongly correlated with patient reports of feeling understood by the treatment provider, being knowledgeable about the reasons for the treatment recommendation, and being satisfied with their treatment in the emergency room. Simply asking these questions may imply an interest in the relationship which may itself increase adherence. Further, as dentists' offices seem to have known for some time, behavioral cues such as this study's reminder letter will increase adherence.

One might suggest that a placebo group would clarify any notion that the Hawthorn effect is responsible for any significant result of calling attention to the patient-provider relationship in the emergency room; however, given the nature of the psychiatric crisis patient it was considered unethical and impractical to add a placebo group. Further, the third group receiving the reminder letter functions as a comparison group.

CHAPTER 2

REVIEW OF RELEVANT LITERATURE

Introduction

The purpose of this chapter is to review salient research on patient adherence, largely from the disciplines of general medicine, psychiatry and psychology which have contributed most of the existing studies. The review will include an overview of how researchers' perspectives on adherence have changed over the years, a look at the incidence of nonadherence, characteristics of patients and patient-provider interactions correlated with nonadherence, and a close look at interventions found to improve adherence.

Incidence of Adherence to Referrals to Outpatient Psychiatric Treatment

Many studies have focused on adult nonadherence with referrals for psychiatric outpatient follow-up made during emergency room or crisis evaluations. Chameides & Yamamoto (1973) found that 64% of 153 patients evaluated in a Los Angeles crisis clinic did not make or keep appointments at an attached outpatient clinic shortly after being referred. Jacobson, et al. (1965), looking at patients seen in another psychiatric crisis center, found that 26% of the patients did not return to the center after one visit, after being offered further treatment, with no waiting period, by the same therapist.

Solomon & Gordon (1986-87), tracking the progress of patients by contacting Ohio state human service agencies, found that only 58% of 114 psychiatric patients seen in

a Cleveland emergency room received some form of mental health services within one month. Possibly confounding this study is the fact that there was a 30% refusal rate of agreement to participate in the study; if people who will comply with a study will be more likely to comply with treatment referrals, then it is likely that the overall rate of follow-up is actually lower.

In Del Gaudio et al. (1977), in a study of 350 patients given the telephone number and told to call the same hospital's outpatient services, 66.1% of those not currently in treatment there never called to make the first appointment, and 6.1% called to make the appointment but did not show up. Examining the clinic records of 106 psychiatric patients referred to a nearby mental health clinic (given a card with the telephone number of the clinic and directions to the clinic), Wilder et al. (1977), found that 43% of the patients attended the clinic within an average of 25 days of the emergency room visit.

Jellinek (1978) followed 89 emergency room patients evaluated at Massachusetts General Hospital's Acute Psychiatric Service and found by self-report in a telephone interview that 58% kept their initial appointment. Results of this study include the observation that 11 of the 51 "completers" were already in treatment at the clinic to which they were referred; one might reason that referral completion for this group might be higher than for persons referred to a strange new clinic and for persons who have never been in treatment. Also of note is the finding of Matas et al. (1992) that referrals to an outpatient psychiatric clinic from the emergency room were three times less likely to follow through than from outpatient community sources.

From a Canadian hospital, Blouin et al. (1985) contacted the psychiatric referral clinic within one month and found an overall adherence rate of 59%. It should be noted that this population has a common nationalized health insurance; one might reason that any SES effect as measured by type of insurance in the United States would not operate in the same way in Canada.

There have been few studies found regarding rates of incidence of nonadherence with the first appointment after hospitalization. Of 134 psychiatric patients referred to outpatient care, Axelrod & Wetzler (1989) found that 70% attended their first appointment and 40% completed 6 months of aftercare.

Factors Affecting Adherence in Medicine and Psychiatry

Age

Though nonadherence with medical regimens for adolescents was found to range between 20-80%, comparable to adult rates (Litt & Cuskey, 1980), other investigators have found this teenage population to be worse compliers than other age groups. In a study of cancer patients, Tebbi et al., (1988) found that the rate of nonadherence with medications for adolescents was higher than that of younger children. Studies of adolescents with diabetes, rheumatoid arthritis, cancer, renal transplants, and suicide attempts have all noted high rates of adolescent nonadherence (Trautman, et al., 1993; Allen, et al., 1983; Litt, et al. 1982; Smith, et al., 1979; Korsch, et al., 1978; Hoffman, 1975).

Tebbi (1988) notes the adolescent period as particularly difficult, characterized by complex developmental issues and Hall's (1904) "sturm and streif" (storm and strife). Teen years are often marked by rebellious behavior against parental and other authorities that is intended to sever previous dependencies and emotional ties (Kimball & Campbell, 1979). Thus, some researchers would conclude, the very nature of adolescence may make adherence a difficult objective.

Comparing 1074 persons with respect to adherence with 20 recommended health-seeking behaviors, the elderly group aged 65 or older (N=177) reported greater adherence with these behaviors than the rest of the sample (Bausell & Barker, 1986). Similarly, Jellinek (1978) found that referral completers from his study tended to be older. However, in a survey of the opinions of pharmacists regarding difficulties in serving the geriatric population, 223 pharmacists indicated that, second to a perception of inadequate professional skills or knowledge in geriatrics, patient nonadherence with medications was their most difficult problem (Pratt, et al., 1982). Further, in a study of 61 patients in a Gerontology Center, those 71 and over had lower adherence to medication regimens than those 70 and under. The older group benefited significantly from the intervention of providing a medication chart and an over-the-counter pill-box type of medication organizer (Park, et al., 1992).

Just as the nature of adolescence can be seen to directly affect adherence rates for that age group, there are characteristics of old age which can have a significant impact on patient adherence. For example, cognitive difficulties associated with dementia may

impair one's ability to perform such behaviors as reading a prescription, remembering dosage frequencies and amounts, and recalling appointments. Generally, although adolescence and senility may affect adherence rates, age is not a reliable or consistent predictor of adherence.

Social Supports

Several studies have noted that adherence behaviors improve in the presence of a supportive significant other. In studies of diabetic, hypertensive, and tuberculosis patients, increased adherence with treatment recommendations was found with the presence of a significant other exerting a positive influence on adherence behaviors (Wishner, 1978; Stanton, 1987; Barnhoorn & Adriaanse, 1992). In Tebbi's (1988) study of adolescent cancer, adherence with medications, measured by both self-report and by testing serum corticosteroid levels, was significantly correlated with adolescent-parent pair agreement on who was responsible for administering the medication, medication instructions, and the manner in which the medication effects cure. It is noteworthy that serum corticosteroid levels matched in every case adherence levels claimed by self-report. Examining 48 Mexican Americans with diabetes, Tamez (1989) also found a higher rate of adherence with the presence of a significant other offering positive influence on adherence behaviors.

Matas et al. (1992) studied 874 referrals to the outpatient psychiatric department of a large teaching hospital over a 2.5-year period. Nonadherent subjects were more likely to be unmarried. Anthony (1992) reviewed discharge plans from a short-term crisis unit, and found that the existence of social supports was significantly more likely to be found

for patients who were successfully discharged to the community instead of transferred to long-term inpatient units.

Axelrod & Wetzler (1989), in their study of psychiatric patients, found no effect of what they referred to as "social support;" however, they only counted the number of visitors the patient received while in the hospital. This measurement technique may not resemble the type of social support referred to in the literature, which commonly refers to significant others who live with or near the patient and who behave in a manner which promotes better health for the patient in the patient's daily life.

Socioeconomic Status

Meichenbaum & Turk (1987) found no effect of socioeconomic groups on adherence. However, several other investigators have found a significant SES effect: middle class patients were more likely to comply than lower class (Axelrod, 1988; Rosenthal & Frank, 1958; Del Gaudio, 1977; Blouin, 1985). This does not necessarily mean that lower class patients do not get health care; in Del Gaudio's (1977) study of 353 emergency room patients referred to the outpatient clinic of the same hospital, at the end of one year after the initial emergency room visit there was no correlation of socioeconomic class with whether or not the patient received some form of psychiatric care somewhere in the community. Haynes (1979) offered the criticism that many studies had focused heavily on middle class subjects and thus could not be generalized to broader populations.

Education has been shown to correlate with increased adherence: Jellinek (1978) found that patients successfully completing referral tended to be more educated (13 versus 11.7 years; $p < .05$).

Psychiatric Diagnostic Groups

Among the psychiatric diagnoses, it has been found for chronic schizophrenics that between 25% to 60% of outpatients take less medication than prescribed. One study found that approximately 50% of a group of relapsed schizophrenics had discontinued their medication several weeks prior to their admission (Blackwell, 1982). Miller et al. (1971) noted that 79% of patients with a psychotic diagnosis attended their first outpatient appointment, possibly assisted by the fact that the appointment was set with the same clinician at the time of the crisis evaluation. Also, we are not told if some portion of that group was already in treatment at the referral site. Data from Wilder et al. (1977) revealed that only 38% of those patients with psychotic diagnoses attended a follow-up appointment at a nearby clinic when referred from an emergency room. Considering 23 hospitalized manic patients, Milkowitz (1992) found that the presence of mood-incongruent psychotic features was associated with decreased adherence. In considering the psychotic disorders, it is important to remember that disease symptoms such as paranoia, delusions, hallucinations, and disorganization may specifically interfere with adherence behaviors. Unpleasant side effects of neuroleptic medication can also deter adherence.

In the case of depression, as many as 50% of a group of chronic depressives were likely to stop their medication during long-term therapy. Reasons for discontinuation might include feeling recovered or that the medication wasn't helping (Blackwell, 1982). Reviewing the follow-up of psychiatric patients from an emergency room, Hatcher (1982), Craig (1974), and Jellinek (1978) found that the only psychiatric diagnosis positively correlated with increased adherence was depression. In the Matas et al. (1992) study of outpatient psychiatric referrals to their teaching hospital's clinic, it was found that affective disorder occurred less frequently among nonadherers.

Regarding personality disorders, Gabbard & Coyne (1987) examined adherence with inpatient treatment (staying in the hospital), finding that 70% of patients with a diagnosis of antisocial personality disorder or personality disorder with antisocial features left the hospital prematurely, compared to much lower rates for anxiety and depressive diagnoses. Matas et al. (1992) also found that personality disorder diagnoses were more common in the nonadherent group of outpatient referrals.

Suicide attempters have a remarkably low rate of successful referral (less than 4%) to outpatient facilities (Bogard, 1970). It is sobering to note that of eight patients seen in an emergency room and who committed suicide within six months, three did not follow up with outpatient care (Hillard, et al., 1983).

Axelrod & Wetzler (1989) found that psychiatric diagnosis had no effect on adherence with outpatient attendance of the first follow-up appointment. However, their

initial sample was reduced from 350 patients to 134 patients due to "limits on the interviewer's time." The method of reduction in number of patients was not revealed (was it randomized?). Instead, the author states that the remaining 134 "had characteristics comparable to the entire sample" without elaborating further.

Attitudes and Beliefs

Patient attitudes and beliefs regarding their illness and the recommended treatment have been examined to discover their effect on adherence. Greater acceptance of need for treatment and perceived need for medication were associated with increased adherence among 134 psychiatric patients referred for outpatient aftercare (Axelrod & Wetzler, 1989). Studying 31 patients referred to a 26-week program for the treatment of hypercholesterolemia, Lynch et al., (1992) notes that adherence was positively associated with the patient's perceived seriousness of the illness and expectation of the benefit of treatment.

Patients may differ on how much value or importance they place on health behaviors. Persons over 65 reporting significantly higher adherence rates than persons under 65 attributed more importance to the value of health-seeking behaviors (Bausell & Barker, 1986).

Wilder et al. (1977) note that some groups of patients (black females in their sample) seem to prefer coming to the emergency room rather than negotiating the complex procedures of calling a strange clinic, negotiating an intake appointment, waiting

for assignment to a therapist, scheduling future appointments, etc. It is recommended that the choice of returning to the emergency room might more practically be offered, instead of making a referral the patient has no intention of following. However, considering the expense (often to the already-depleted tax revenue) of repeat emergency room visits, it is hopeful that a more cost-effective solution might be found.

Stanton (1987) studied 50 hypertensive patients through the use of questionnaires and home interviews, evaluating adherence through self-report as well as by repeated blood-pressure monitoring over a ten-week period. A greater expectancy of internal control over health and hypertension as well as greater knowledge of the treatment regimen were correlated with increased adherence with medical regimens, which led to reduction in blood-pressure.

Patient-Provider Relationship

Aspects of the provider-patient relationship have also been demonstrated to be important. One dimension of this relationship includes the patient's perception of the provider's motivations and understandings. For example, when Jellinek (1978) asked patients "What did you think the doctor had in mind when he/she referred you?" and "Do you think he/she understood you?," he found that referral completers tended to report a clearer knowledge of why the referral was made and felt that the physician understood them: the referral was seen as negotiated. Blouin (1985) also notes that patient reports of feeling understood by the physician were significantly correlated with referral adherence. In that study, length of time spent waiting for evaluation was inversely correlated with

referral completion: a longer delay in waiting for the psychiatric resident was linked with decreased likelihood of adherence.

Burgoon et al. (1987) telephoned patients who had seen their primary care physician in the past six months, asking them to respond to questions regarding the severity of their illness, the physician's verbal messages, and their own adherence. It was found that the patients' perception of the physician's relational style, including their receptivity to the patient's statements and questions, and their level of composure, was strongly associated with the patient's satisfaction, which in turn was correlated with improved adherence behavior.

Frank & Gunderson (1990) note that schizophrenic patients who experience positive therapeutic relationships with their clinicians are more likely to adhere to treatment regimens. Lee, et al. (1992) found that in a survey of 50 Chinese outpatients on Lithium maintenance therapy, a "sound therapeutic alliance" was associated with adherence.

Rost et al. (1989) analyzed thirty random samples of audiotaped dialogue from initial outpatient medical visits to determine how much of the patient's speech behavior was offered independently in comparison to being offered in response to physician requests (bidirectional information). Samples were taken randomly from the history, examination and consultation phases of the visits. The data demonstrate that bidirectional introduction of information during the examination phase accounted for more than half of

the variance in patient's subsequent adherence to physician recommendations for new medication. So, physician willingness to allow patients to contribute input may enhance the partnership's arrival at meaningful treatment decisions, leading to increased adherence.

Interestingly, Bartlett (1990) discovered that physicians may be poor judges of patient adherence. In a study of 25 family medicine and internal medicine residents, a 10 minute interview between the resident and a simulated patient with uncontrolled hypertension was videotaped. The tape was analyzed for the resident's ability to identify level of adherence and obstacles to adherence. Most residents were considered to have ineffective techniques because they assumed the cause of nonadherence to be lack of either knowledge or motivation rather than employing systematic open-ended questions to determine the actual cause.

In light of these studies, it is clear that the patient's level of satisfaction in their relationship with the treatment provider will have a significant impact on adherence behavior.

Other Clinical Variables

Increased length of hospitalization, shorter time between discharge and first appointment, increased number of prior hospitalizations: all enhanced patient adherence with first appointment (Axelrod & Wetzler, 1989). A retrospective review of emergency room psychiatric patients referred to outpatient treatment found that patients given appointment slips at the time of referral were three times as likely to comply with the

recommendation as those patients who were only given a telephone number to call to make their own appointment (Craig et al., 1974).

Interventions

This section will examine the wide range of interventions that researchers have employed in an effort to increase patient adherence.

Prompts

Efforts to increase patient adherence have been attempted. Thompson, et al. (1986) tested three adherence-enhancing intervention strategies in an attempt to increase patient participation in occult blood testing for colorectal cancer. They found that a reminder postcard significantly improved patient adherence with the testing program and was cost-effective.

Webster (1992) performed a study of an outpatient mental health clinic's clients, some of whom were sent an information sheet concerning attendance, assessment, and expectations of treatment prior to their initial appointment. Attendance was increased from 57% among those not receiving the information sheet to 82% for those receiving the sheet.

Planos and Glenwick (1986) studied 274 children and their adult caretakers who had previously telephoned a community mental health clinic to schedule an appointment. Subjects were assigned to one of three treatment conditions: 1) a phone prompt one day before the appointment, 2) a letter prompt one to two days before the appointment, and 3)

a no-intervention control group. Both phone and letter prompts produced significantly greater attendance than the no-intervention group, with the phone prompt tending to have more effect than the letter. The phone prompt was identified as most cost-effective.

Following a missed health center appointment, 148 patients with ages ranging from 15-87 who suffered from either borderline or clinical hypertension were assigned to one of four prompting conditions: 1) telephone call, 2) home visit, 3) postcard, or 4) a rotation condition including all three methods. Subjects were contacted a maximum of three times or until they complied with the health center appointment. The rotating condition was most effective, yielding adherence rates of 75% for the borderline hypertensives and 85% for the clinical hypertensive patients. For all message modes, the second contact was the most statistically significant (Meyers, et al. (1983).

Plaut & Alston (1983), concerned with missed appointments at the Dr. Martin Luther King Health Center, instituted a program of calling just before a scheduled appointment, explaining the reason for the appointment, and following-up on missed appointments. This program increased adherence with appointments significantly.

Friman et al. (1985) obtained baseline data on kept appointments at a pediatric clinic for five practitioners, then instituted a program consisting of a reminder postcard, a telephone call, and a parking pass, resulting in an increase in kept appointments from an average of 56% to 75.3%. The inclusion of the parking pass, normally available at the clinic at the time of the appointment, with the reminder postcard saved patients the

inconvenience of an extra trip to their cars when they arrived to the clinic. Similarly, in a randomized trial involving 2044 women with abnormal cervical cytology (pap smear), Marcus et al. (1992) found that among the three interventions of a follow-up letter, an informational slide-tape program on pap smears, or bus passes and parking permits, the latter transportation incentives had the dominant effect in increasing return rates for follow-up appointments after the screening.

Incentives

Morisky, et al. (1990) examined the effect of incentives on 205 patients with tuberculosis, randomly assigning patients in active care and preventive care to intervention and control groups. Incentives including bus tokens, movie tickets, food coupons, or cash valued at \$5.00 were given at the monthly visit. A special 5-10 minute health education counseling session was also given. For patients in the preventive care category, the incentive program was determined to have increased adherence with medication from 47% to 64%.

Iwata & Becksfort (1981) assigned 31 adult dental patients to either an educational program alone or an educational program plus appointment fee reduction as a reward for low plaque scores. While the education program alone did not significantly improve plaque scores, those patients in the reward group demonstrated substantially better plaque scores.

Reducing the Call-Appointment Interval

Benjamin-Bauman, et al. (1984) varied the delay in appointment time for 192 patients calling a clinic to schedule an annual gynecological examination. It was found that 72% kept an appointment scheduled over the telephone for the next day while 52% kept an appointment scheduled for two weeks later. In a similar study of another group of 337 patients, they found 77% attending a scheduled appointment within one week compared to 57% showing up for an appointment in three weeks. One aspect of this study which might explain the relatively high adherence rates of 72% and 77% is that these subjects initiated the telephone call to schedule their appointment, thus already demonstrating motivation for the appointment. Also, although it is not discussed in the published account of the study, many of the patients were probably returning to a familiar facility and treatment staff.

So, it can be seen that behavioral strategies including prompts or cues and incentives or rewards have been shown to be useful in enhancing adherence. In his exhaustive work on adherence in 1979, Haynes notes that most successful interventions for long-term adherence have included cues and rewards for compliant behavior. Additionally, reducing the delay in between the patient's call and the scheduled appointment can also increase adherence.

Patient Education

Kelly & Scott (1990) looked at the effect of two interventions designed to educate patients and their families about their illness and its treatment program. For 418

psychiatric patients, up to three home visits plus two clinic visits were structured with the goals of clarifying the nature of the patient's illness, improving adherence with medication and appointment keeping, and assessing the patient's attitudes toward the provider, medications, and treatment. Compared with no treatment groups, both interventions significantly improved medication adherence. Although they found no significant attitude change, it should be noted that their measures were perhaps somewhat vague. For example, subjects were asked to rate the following statement which was intended to measure attitude toward treatment: "No matter what you do, it is largely a matter of chance as to whether you get sick again." This statement is more likely to measure locus of control than attitude toward treatment. Similarly, attitude toward provider was measured by rating the statement "Your doctor listens to your comments, questions and responses." This statement only evaluates what might be referred to as the provider's receptivity, which may be only a partial factor in the patient's overall attitude toward the provider, which could include the patient's perception of the provider's competence, kindness, genuineness, interest shown in the patient, ability to reflect understanding of the patient, and amount of time spent with the patient. Despite the lack of clear effect of patient attitudes and beliefs in this study, the improved adherence behavior can probably be attributable to a combination of education and social support.

Gagliano (1988) performed a literature review of studies using videotapes to enhance patients' education regarding their illnesses and treatment programs; it was found that while this technique has been demonstrated to improve patients' short-term knowledge, there has been no demonstrable effect of increasing patient adherence.

In Cochran's (1984) work with the education of patients with Bipolar Disorder, 28 subjects were given an educational session, based on cognitive therapy principles, about Lithium therapy. This intervention was found to significantly improve medication adherence at both the post-intervention and 6-month follow-up assessment. The complicated nature of lithium therapy may be unique; successful treatment depends on consistent use of medication and regular blood testing. Bipolar Disorder consists of an array of symptoms whose identification may be elusive to the patient. Given these complexities, adherence with treatment of this disorder with lithium is more likely to benefit from educational interventions.

Interagency Contact

Many authors have speculated that the act of referring someone to a new clinic to see an unknown care provider may evoke anxiety, which would become an obstacle for the patient to overcome if they are to successfully call to schedule and then attend an appointment. Some of this potential anxiety could be alleviated if communications between agencies were enhanced, including setting appointments directly at the time of referral and, with the patient's permission, engaging in case discussion to familiarize the prospective treatment provider with the patient's situation. Mattson, et al. (1969) found that such interagency contact significantly improved the follow-up of childhood suicidal behavior. Chafez et al. (1966) and Rogawski & Edmundson (1971) found a similar effect for psychiatric patients referred from the emergency room.

Bassuk & Gerson (1908) studied a group of psychiatric patients who had repeated suicide attempts and who were considered to be at high risk for suicide. In many cases, there was more than one agency providing treatment; noncompliant behavior with one provider was in danger of not being taken seriously if that provider assumed services were being received elsewhere. So, a program of interagency contact was established which had the end result of increasing appointment-keeping behavior by the patient.

Discussion

It has been shown that there are many benefits to increased patient adherence, ranging from improved health to economic gains. The traditional view of seeing nonadherence as the fault of the patient does not appear to be either accurate or relevant to the problem at hand. Attributing poor adherence to characteristics of the patient has been shown to be of little value; with only few studies finding significant differences, a high prevalence of nonadherence exists independently of race, economic group, gender, and educational level. Haynes et al. (1979) summarized 324 studies from a variety of health care areas and found the majority (64.5%) reporting no significant relationship between demographic variables and adherence. Social supports, the nature of the illness, and aspects of the patient-provider relationship have been found to be related to adherence. Successful programs appear to incorporate components such as information about the illness and its treatment, reminders, rewards, and social support (Haynes et al., 1982).

Experimentally sound efforts to increase adherence have been relatively few in comparison to descriptive studies and reviews of nonadherence incidence. Most such intervention studies have focused on behavioral cues and incentives, with good success in increasing adherence in a cost-effective manner. These promising results have yet to find widespread application outside the fields of dentistry and some medical outpatient clinics, with apparently minimal use in mental health settings. It should also be noted that there is a great lack of research in the area of adherence with psychological prescriptions. Although Phillips (1988) has discussed the "decay curve" noted when outpatient psychotherapy appointment keeping behavior is graphed, there is little mention of what happens between sessions. For those mental health practitioners who either prescribe behaviors or who arrive at mutually agreed - on plans for the patient's behavior, there is little research examining adherence.

It is growing increasingly apparent that patient satisfaction and related aspects of the patient-provider relationship also have dramatic effects on adherence. For example, effective communication, by virtue of promoting understanding and positive affect, is expected to produce greater patient adherence with recommendations made by the physician or other health professional (Korsch et al., 1968).

Many treatment providers overestimate the amount of time they spend giving information. An analysis of the interactions between 300 patients and their physicians in both their offices and hospitals revealed that during an average 20-minute visit, less than two minutes was actually spent giving information. Interestingly, however, physicians

estimated that one-quarter to one-half of the visit was spent in giving information to the patient (Waitzkin, 1976). Physicians will thus need to pay more careful attention to their behavior during interaction with their patients.

In some cases, we may be overlooking the obvious; some patients, if only asked more closely, may be able to directly tell their treatment provider whether or not they intend to comply with advice. It is important to accurately assess each patient's motivation for adherence and then to manage follow-up care wisely (Noble & Hamilton, 1983).

It has been noted that adherence is improved when patients feel that the prescribed treatment is the result of negotiation or arrived at mutually. A similar observation has been made by Lewin (1942), performing a study of food habits during the war. He found that when groups were urged by a lecturer to make use of little-used meats - heart, kidney, brains - few (10%) actually carried out the recommendation in practice. In other groups, the problem of war scarcities was discussed with the group members and simple information about the meat's availability was given to them, following which the group members were asked to make decisions about serving the meats in question. These decisions, it was found through a follow-up study, tended to be kept, and 52% actually served one or more of the meats. Rogers (1951) draws the conclusion that self-initiated action proves more effective than directed action.

There appear to be parallels between the psychotherapeutic process and the physical health- care experience. In the relationship between physician and patient, certain phenomena occur that are comparable to responses in the relationship between the therapist and client, such as transference and counter transference. This indicates that the physician in physical health care in effect is involved in some kind of psychotherapy. Thus, there is potential for improvement in the patient's physical health when the provider's perception extends beyond focusing on the physical symptoms and disorders and includes attention to the patient's psychological and emotional needs (Blum, 1985).

CHAPTER 3

EXPERIMENTAL DESIGN

Purpose of the Study

The purpose of this study was to investigate the nature of patient adherence to treatment recommendations that a patient seek outpatient mental health treatment made by Psychiatric Emergency Service (PES) personnel in a general hospital emergency room. After baseline adherence levels were measured in a comparison group, two other groups received interventions, and several aspects of patient care were examined. The first intervention studied the relationship between a behavioral intervention of sending out a reminder letter and completion of outpatient referrals. The second intervention examined the association between the patient-provider relationship and whether or not patients completed outpatient referrals. This patient-provider relationship included subjective issues as (1.) how understood the patient felt, and (2.) level of satisfaction with care in the emergency room. Objective aspects of patient care such as the length of time waiting for treatment in the emergency room and length of the interval before the first appointment were also recorded. Other variables such as insurance type, referral site and history of prior treatment at the referral site were studied. It was anticipated that results from this study might enhance the delivery of services and increase patient adherence to referrals for outpatient mental health treatment.

Hypotheses

The first hypothesis involves the primary interventions, sending a reminder letter and administering a questionnaire.

H1. Significant association with adherence for group membership. It was expected that increased adherence in groups two and three would be significantly different from the no-treatment baseline group.

A number of hypotheses were developed to compare patient characteristics and aspects of the patient's treatment. Hypotheses H2 through H6 concern all subjects from all three groups.

H2. Significant association with adherence for wait times for PES evaluation in the emergency room.

H3. Significant association with adherence for length of interval until the first appointment.

H4. Significant association with adherence for type of referral clinic.

H5. Significant association with adherence for type of insurance.

H6. Significant association with adherence for whether or not the patient had prior treatment at the referral clinic.

The following hypotheses (H7 through H11) concern only group three in which the Likert Scale questionnaire was completed by the patient.

H7. Significant association with adherence for how well the patient felt understood by the PES clinician making the treatment referral.

H8. Significant association with adherence for how well the patient felt that they understood the reason for the treatment referral.

H9. Significant association with adherence for how well satisfied they were with the treatment in the emergency room.

H10. Significant association with adherence for how much they felt they were in need of treatment at the time of the visit to the emergency room.

H11. Significant association with adherence for the existence of social supports.

Subjects

This study included 283 patients aged 18 - 86 seen over a period of six months in 1995 by the Psychiatric Emergency Service (PES) in the emergency room of an 800-bed medical center in an urban setting in the Northeastern United States. These patients were examined initially by an emergency room physician who requested a psychiatric consultation. The PES clinician performed an evaluation and subsequently made a referral for outpatient psychiatric treatment. Patients referred for admission or for whom outpatient treatment was not recommended or who carried a primary diagnosis of substance abuse were not included in this study. Information about the patient population is provided as follows.

Table 1. Incidence of DSM-IV Diagnostic Groups

DSM-IV Diagnostic Group	Percentage of Subjects
Depressive Disorders	40% (113)
Psychotic Disorders	16% (45)
Adjustment Disorders	12% (34)
Bipolar Disorder	9% (25)
Anxiety Disorders	7% (20)
Other	16% (46)
	100% (283)

Table 2. Incidence of Insurance Groups

Type of Insurance	Percentage of Subjects
State Medicaid	30% (85)
No Insurance	20% (57)
Medicare	19% (54)
HMO	17% (47)
Other Third Party	14% (40)
	100% (283)

Methodology

There were seven PES staff members aged 34 to 56. All were experienced emergency room clinicians with experience ranging from 4 to 19 years performing emergency room evaluations. Academic degrees ranged from masters to doctoral level. Four staff were female and three male.

Table 3. Psychiatric Emergency Service Staff Data

PES Staff	Age	Degree	Years of Experience	Sex
1	34	M.Ed.	6	M
2	50	M.Ed.	19	M
3	39	Ed.D.	4	M
4	56	LICSW	14	F
5	35	LICSW	4	F
6	42	MSN	6	F
7	40	Ph.D.	8	F

All of the staff received a series of scripted instructions (see Appendices) from the investigator. There were separate instructions at the beginning of the study and at the start of the intervention groups. Subjects were divided into three groups; a target of 100 subjects per group was indicated by considerations of statistical power. The groups included a control group from which baseline adherence rates can be determined and two intervention groups. An evaluation interview was performed by the PES staff person upon the request of the Emergency Room physician. Evaluation interviews generally lasted from 10 minutes to one hour or more, depending on factors including the complexity of the case, availability of prior history, and previous contacts with the subject. Medications were used to treat significant anxiety or psychosis as needed. Referrals were made to various clinics and private practitioners depending on the patient's existing treatment and

insurance restrictions. The subject was given the name and telephone number of the referral and instructed to call for their appointment. Adherence in this study is operationally defined as attending the first outpatient follow-up appointment after referral from the emergency room. Whether or not the subject continued in outpatient therapy after the first appointment was beyond the scope of this study. Some of the non-attenders did not give a waiting period because they never made an appointment with their outpatient provider. Since this study involved no direct risk to the subjects, it was appropriate that oral consent was obtained from the participants. This consent was requested at the time of the follow-up call for the first group (APPENDIX C), and at the time of the initial PES evaluation for the second and third groups (APPENDIX B).

Interventions

The first group received no intervention and served as the comparison group. Patients evaluated and referred for outpatient care were called by PES staff between the fourth and fifth week after the referral. A script was used (APPENDIX C). It was noted if the patient stated they kept the initial appointment or not, and the interval between the PES evaluation and the initial appointment was noted.

In the second group, a letter (APPENDIX D) was sent out to each subject reminding them of the referral. This letter was sent immediately after the initial PES evaluation. A telephone call (APPENDIX C) was placed by PES staff to each subject between the fourth and fifth week after the evaluation to discover if they kept the first appointment and to record the interval between the evaluation and the first appointment.

In the third group, at the conclusion of the interview, the PES clinician provided a brief questionnaire to the subject for immediate response. The questionnaire was comprised of five questions, all requiring a Likert scale response (APPENDIX E). The first three questions were directed at the patient-provider relationship, and include such aspects as how well understood the patient felt, how well the patient understood the reason for the referral, and how well satisfied the patient was with their care in the emergency room. Also asked was to what degree the patient felt that their referral was needed, and whether or not there was social support for their treatment. As with the other groups, a telephone call (APPENDIX C) was made to these patients asking if they attended their initial appointment and to discover the length of time spent waiting for their appointment. A Data Summary Form for subjects in each group was completed by PES staff and was maintained by the investigator (APPENDIX F).

One might suggest that a placebo group would clarify any notion that the Hawthorn effect alone is responsible for any significant result from calling attention to the patient-provider relationship in the emergency room; however, given the nature of the psychiatric crisis patient it was considered unethical and impractical to add such a placebo group. Further, the second group receiving the reminder letter functions as a comparison group. It is conceivable that after administering the patient-provider relationship questionnaire in the third month, the PES staff might become increasingly sensitive to these issues; this is why this intervention is done in the final month so as not to confound the other intervention.

Analysis

For questions of this study involving discrete independent variables the χ^2 test was used to see if there was a significant association between the independent and dependent variables. Logistical regression was employed in analysis of data with a continuous independent variable. The target level of confidence was chosen as 0.05, the commonly applied level of confidence for behavioral research.

Limitations

This study was limited in several ways. First, results may not be generalizable due to geographic and insurance group uniqueness. Insurance groups in this region had differing ways of handling outpatient psychiatric services. For example, those on state aid were accepted at most clinics but faced significant waiting periods. Those without insurance could attend only a few clinics and faced even longer waiting periods. There were local HMO's with varying procedures for accessing outpatient care, some with outpatient clinic staff who played an active role in calling the patient until they came in for an appointment.

CHAPTER 4

RESULTS

This chapter reviews the results of this study which examines two interventions and various aspects of patient care as related to whether or not patients complete outpatient referrals from an emergency room psychiatric emergency service. After baseline adherence levels were measured in a comparison group, two other groups received interventions, and several aspects of patient care were examined. The first intervention studied the relationship between a behavioral intervention of sending out a reminder letter and completion of outpatient referrals. The second intervention examined the association between the patient-provider relationship and whether or not patients completed outpatient referrals. This patient-provider relationship included subjective issues as (1.) how understood the patient felt, and (2.) level of satisfaction with care in the emergency room. Objective aspects of patient care such as the length of time waiting for treatment in the emergency room and length of the interval before the first appointment were also recorded. Other variables such as insurance type, referral site and history of prior treatment at the referral site were studied.

For group one, 100 subjects were followed for baseline adherence rates. For group two, the reminder letter was sent to 100 subjects. However, when the staff attempted to reach them for the follow-up call, eight were unable to be reached, leaving a final total for group two of 92. In group three, the questionnaire was offered until it was completed by 100 subjects (there were 17 subjects in group three who refused to complete

the questionnaire); however, nine could not be reached, leaving a total of 91 for group three.

Table 4. Summary of Groups One, Two and Three

Group	Initial N	Intervention	Followup Call
1	100	None	100
2	100	Reminder Letter	92
3	100	Questionnaire Regarding ER Experience	91
			283

Data Analysis

H1: Group Membership is associated with Adherence.

Table 5. Outpatient Referral Adherence by Group

Group	Did Not Attend First Appointment	Did Attend First Appointment
1-Baseline (no intervention)	50% (50)	50% (50)
2-Reminder Letter	42% (39)	58% (53)
3-Questionnaire	30% (27)	70% (64)

The χ^2 contingency coefficient test was applied to the adherence rates of the three groups to see if there was a significant association between group membership and adherence. This test was significant at .015, confirming a relationship to treatment group. Group 2, those to whom the reminder letter was sent, showed increased adherence. This is an effect that has been enjoyed successfully in other disciplines, such as family dentistry, and which may be practically used from the Emergency Room (ER). Offering the questionnaire in Group Three also increased adherence, perhaps simply by demonstrating that the ER was interested in their experience.

H2: Length of wait for PES evaluation is associated with adherence.

Table 6. Actual Outpatient Adherence Compared to Predicted Outpatient Attendance Considering Length of Wait in ER for Pyschiatric Emergency Service Evaluation for All Subjects

Actual Outcomes	Predicted Would Not Attend	Predicted Would Attend	Percent of Correct Predictions
Did Not Attend	52	64	44.80%
Did Attend	16	151	90.50%

Logistic regression was used to compare the dichotomous variable of attendance (yes or no) with the continuous variable of wait time in the ER for PES evaluation. This statistical model asked the following question: With what confidence did the ER wait time for PES evaluation predict adherence? This determined the extent of the association between how long the subject waited in the emergency room to be seen by the PES and adherence. The average wait time was less than 15 minutes. However, during times of high volume a delay of several hours was possible. This logistic regression was significant at .0000, indicating a strong association. This model was able to predict adherence best for attenders (90.5% of the time) and found ER wait times for these subjects to be clustered at 45 minutes or less. This statistic includes all 283 subjects in the study regardless of group membership.

H3: Number of weeks between ER visit and first appointment is associated with adherence.

Table 7. Outpatient Adherence by Number of Weeks Until First Appointment for All Subjects

	1 Week	2 Weeks	3 Weeks	4 Weeks	5 Weeks	Total (N)
Did Not Attend			70.3% (26)	100% (16)	100% (3)	45
Did Attend	100% (73)	100% (77)	29.7% (11)			161

Chi² analysis was used to determine if there was an association between the interval spent waiting for the first appointment and outpatient appointment adherence. For some subjects in current treatment this time was within one week. For others without pre-existing treatment this interval ranged up to 7 weeks. Most of the non-attenders (68%) gave as the reason for not attending that they had to wait too long for their first appointment. These were the 45 subjects in the table above who were dissatisfied with waiting between 3 and 5 weeks for their first appointment and so didn't attend. There were 22 subjects who were offered appointments with a delay of six to seven weeks; none of these subjects scheduled appointments. The remaining 49 subjects never called for an appointment. This chi² analysis is significant at .001, and should be interpreted as showing a strong association between waiting 2 weeks or less for the attenders and not attending if the wait is longer than 3 weeks. For subjects with a three week delay, subjects are less likely to attend.

H4: Type of referral clinic is associated with adherence.

Table 8. Outpatient Adherence by Type of Referral Clinic

	Community Clinic	Hospital Clinic	Private Therapist	Private Psychiatrist	HMO Clinic	Total (N)
Did Not Attend	51.6% (78)	41.0% (25)	23.1% (6)	22.7% (8)	8.7% (2)	116
Did Attend	48.3% (73)	59.0% (26)	76.9% (20)	77.3% (17)	91.3% (21)	167

One overall Chi² analysis was used to determine if there was an association between attendance and type of referral clinic, as both are discrete variables. The analysis was significant at .0001, indicating that there is a strong association.

H5: Type of insurance is associated with adherence.

Table 9. Outpatient Adherence by Type of Insurance

	HMO Insurance	Commercial Payor	Medicare	Medicaid	No Insurance	Total (N)
Did Not Attend	20.0% (9)	38.5% (15)	20.0% (8)	44.2% (38)	63.0% (46)	116
Did Attend	80.0% (36)	61.5% (24)	80.0% (32)	55.8% (48)	37.0% (27)	167

One overall Chi² analysis was used to determine if there is significant association between type of insurance and adherence. The analysis is significant at .0000, demonstrating a strong association.

H6: Prior treatment at the referral clinic is associated with adherence.

Table 10. Outpatient Adherence by Existence of Prior Treatment

	Did Not Have Prior Treatment	Did Have Prior Treatment	Total (N)
Did Not Attend	58.6% (92)	19.0% (24)	116
Did Attend	41.1% (65)	81.0% (102)	167

One overall Chi² analysis was performed to determine if there was a significant association between prior treatment at the referral site and adherence. The analysis was significant at .0001, indicating a strong association.

The remaining hypotheses (H7-H11) concern the 91 subjects in Group Three who completed the questionnaire with five Likert scale questions.

H7: Feeling understood by the PES clinician is associated with adherence.

Table 11. Outpatient Adherence by Likert Scale Response to the Question "How Well Do You Feel Understood by the Clinician Making Your Outpatient Treatment Referral?"

	Completely Misunderstood	Mostly Misunderstood	Uncertain	Mostly Understood	Completely Understood	Total (N)
Did Not Attend	0	0	0	42.9% (9)	25.7% (18)	27
Did Attend	0	0	0	57.1% (12)	74.3% (52)	64

As these responses can not be shown to have an exact mathematical relationship, they must be treated as a discreet rather than continuous variable. Accordingly, the chi² test was used to determine if there is a significant association between responses to this question and subsequent attendance. This analysis is not significant at the .05 level (the actual value is .137). One limitation of this statistical analysis is that there were no

responses in the first three categories. Another consideration is that this one question was not enough to explore all of the various dimensions of "feeling understood" by the clinician. For the purposes of this study, it can only be said that responses to this question do not have a significant association to the subject's adherence.

H8: Understanding the reason for the referral is associated with adherence.

Table 12. Outpatient Adherence by Likert Scale Response to the Question "How Well Do You Feel That You Understand the Reason for Your Outpatient Referral?"

	Completely Don't Understand	Mostly Don't Understand	Uncertain	Mostly Do Understand	Completely Do Understand	Total (N)
Did Not Attend	0	0	0	42.3% (11)	23.9% (16)	27
Did Attend	0	0	0	57.7% (15)	76.1% (49)	64

The χ^2 test was used to determine if there is a significant association between responses to this question and subsequent attendance. This analysis is not significant at the .05 level (the actual value is .100). One limitation of the statistical analysis is that there were no responses in the first three categories. Another consideration is that this one question is not enough to explore all of the various dimensions of "understanding the reason" for the referral. For the purposes of this study, it can only be said that responses to this question do not have a significant association to the subject's adherence.

H9: Level of satisfaction with treatment in the Emergency Room is associated with adherence.

Table 13. Outpatient Adherence by Likert Scale Response to the Question "How Well Satisfied Were You With Your Overall Care in the Emergency Room?"

	Completely Dissatisfied	Mostly Dissatisfied	Uncertain	Mostly Satisfied	Completely Satisfied	Total (N)
Did Not Attend	0	100.0% (11)	0	33.3% (10)	12.0% (6)	17
Did Attend	0	0	0	66.7% (20)	88.0% (44)	66

The χ^2 test was used to determine if there was a significant association between responses to this satisfaction question and subsequent attendance. This analysis is significant with an actual value of .0001. Subject satisfaction was shown to have a strong association with adherence. A subject who was dissatisfied with their care in the Emergency Room was not likely to attend the initial outpatient appointment.

H10: Degree of feeling the need for treatment is associated with adherence.

Table 14. Outpatient Adherence by Likert Scale Response to the Question "How Much Do You Feel You Are in Need of Outpatient Treatment?"

	Definitely Not Needed	Mostly Not Needed	Uncertain	Mostly Needed	Definitely Needed	Total (N)
Did Not Attend	0	100.0% (15)	0	35.7% (5)	11.3% (7)	27
Did Attend	0	0	0	64.3% (9)	88.7% (55)	64

The χ^2 test was used to determine if there is a significant association between responses to this question and subsequent attendance. This analysis is significant with an actual value of .0000. These responses were shown to have a strong association with adherence. A subject who felt that treatment was mostly not needed was unlikely to

attend the initial outpatient appointment. Conversely, subjects responding that treatment was definitely needed were very likely to attend.

H11: The availability of social supports is associated with adherence.

Table 15. Outpatient Adherence by Likert Scale Response to the Question "How Likely Is It That You Will Have a Family Member or Friend Who Will Encourage You or Help You to Follow Through With Your Outpatient Treatment Recommendations?"

	Probably Not	Maybe Not	Uncertain	Maybe	Probably	Total (N)
Did Not Attend	100.0% (7)	100.0% (8)	100.0% (2)	25.0% (2)	12.1% (8)	27
Did Attend	0	0	0	75.0% (6)	87.9% (58)	64

The χ^2 test was used to determine if there is a significant association between responses to this question and subsequent attendance. This analysis is significant with an actual value of .0000. These responses were shown to have a strong association with adherence. A subject who felt that social supports were not available was unlikely to attend the initial outpatient appointment. Conversely, subjects responding that social supports were available were very likely to attend.

Summary of Results

Table 16. Summary of Study Results

Hypothesis	Adherence Is Associated With	Association Found at 0.05 Level or Better
<i>H1</i>	Group Membership	Yes
<i>H2</i>	Length of Wait for Evaluation	Yes
<i>H3</i>	Number of Weeks to First Appt	Yes
<i>H4</i>	Type of Referral Clinic	Yes
<i>H5</i>	Type of Insurance	Yes
<i>H6</i>	Prior Treatment at Referral Clinic	Yes
<i>H7</i>	Feeling Understood by Clinician	No
<i>H8</i>	Understanding Reason for Referral	No
<i>H9</i>	Satisfaction With ER Care	Yes
<i>H10</i>	Feeling the Need for Treatment	Yes
<i>H11</i>	Availability of Social Supports	Yes

These results demonstrate that there are interventions and aspects of patient care which are significantly associated with adherence to outpatient referral from the psychiatric emergency room. Receiving a reminder letter, completing a questionnaire concerning the emergency room experience, waiting shorter periods for evaluation, waiting fewer weeks for the first outpatient appointment, being referred to certain types of clinics, having certain types of insurance, having a history of prior treatment at the referral clinic, being satisfied with emergency room treatment, feeling in need of treatment, and having social supports for treatment all were found to be significantly associated with outpatient referral adherence. The next chapter will discuss these results and implications for clinical practice, research, and policy-making.

CHAPTER 5

DISCUSSION

This author investigates: 1. Can adherence with outpatient follow up be increased by two interventions performed in the Emergency Room?, and 2. Is adherence associated with various aspects of patient care? Both interventions were associated with increased adherence, and several aspects of patient care were discovered to have strong associations with increased adherence.

Reminder Letter Intervention

Regarding the first intervention of sending out the reminder letter, significant association between membership in the three groups and adherence indicates that there is a gain in adherence when the reminder letter is sent, as that group showed an increase of 8% over the control group. Thompson et al. (1986), Planos & Glenwick (1986), Meyers et al. (1983), and Friman et al. (1985) had similar results. There seems to be a group for whom that one reminder letter (APPENDIX D) is enough to encourage them to make or attend that first appointment. This is a cost-effective practice for an emergency room: if outpatient adherence helps to prevent or delay further psychiatric decompensation, then the simple 32-cent stamp can save many times its own cost in mental health care.

Likert Scale Questionnaire

The second intervention group, which completed the Likert scale questionnaires, showed an even greater increase in adherence, 20% over that of the control group and

12% over that of the second group. We might interpret this in three ways. First, as a Hawthorn effect, in that the new procedure of administering the questionnaire caused new behaviors in the clinicians which enhanced their performance. Otherwise, the questionnaire may have given the patient a stronger sense that the Emergency Room was interested in them and their feelings about their treatment, thus fostering a better patient-provider relationship. Webster (1992) found that an information sheet circulated to mental health clients had similar results. It also possible that the staff, although not knowing the specific content of the questionnaire, behaved more solicitously because they were uncertain. There is no clear way to determine which interpretation is most likely; It is suspected that all are at work. Clearly, this intervention would be an efficient and cost-effective way to enhance adherence with outpatient referral.

Emergency Room Waiting Times

When patients are forced to wait several hours to see the PES clinician they are somewhat less receptive to subsequent recommendations. This is similar to Blouin's findings (1985) that a longer delay in waiting for the psychiatric resident was linked with a decreased likelihood of future outpatient attendance. Perhaps they interpret a message that the ER finds them not important enough for more speedy service. Unfortunately, a combination of unpredictable patient volume and low staffing levels make these delays difficult to avoid. Logistic regression results indicate that ER waits of 45 minutes or less are associated with the highest adherence rates. This aspect of the patient-provider relationship is objective and measurable; the Emergency Room can review its policies and staffing patterns so as to make an effort to see these patients as soon as possible.

Number of Weeks Until First Appointment

Waiting for the first appointment is another objectively measurable factor that the treatment provider can manage. Referrals to community clinics are hampered by lack of insurance, longer waits for intake, and the need for increased perseverance on the part of the client. Referral to the hospital's own clinic is aided somewhat by the fact that the referral is to the same facility as the Emergency Room, and that often an actual appointment time can be provided. Referrals to private therapists and psychiatrists are most commonly for those who are already in treatment, so that the client is simply returning to someone they already know. With one local HMO, the patient is referred back to the HMO's clinic, where clinic staff stay in touch with the client until an appointment is made and attended. Two weeks or less appears to be the optimal waiting period for patients after their Emergency Room evaluation. In Benjamin-Bauman et al. (1984) a similar pattern was noted in a group of 192 gynecological patients awaiting an appointment. A longer wait may anger or discourage the patient, or cause them to feel "no one cares." Or, with psychiatric patients, the presenting symptoms might lessen after the initial crisis, thus reducing the patient's motivation to continue treatment. It is not known what became of the patients in this emergency room study for whom an unacceptable wait caused them to not keep their appointment; this could be a project for further study.

Referral Clinic and Insurance Types

The issues of the type of referral clinic and type of insurance are closely interwoven with the current status of the health-care economy. HMO's and commercial

insurers' restricted lists of providers often dictate the choice of outpatient referral. As noted previously, one local HMO has a more active manner of contacting clients to ensure follow up. The commercial payors generally either cover any licensed professional treatment center or else have an approved network of practitioners; in either case the outpatient care is fairly readily available. This availability is one less hurdle for the newly-referred client to overcome. Most of the Medicare recipients were those on disability and who were currently already in treatment, making it easier for them to continue with treatment they knew. The Medicaid group has the availability of treatment like the commercial insurance, but often is referred to local community clinics where intake delays are longer, reportedly ranging up to six weeks or more. Community clinics are often overwhelmed with referrals and suffer lack of funds for adequate staffing. Finally, 2 of 3 uninsured subjects did not attend their first outpatient session; they have the most difficult time arranging for timely treatment due to limited availability of treatment resources and long intake delays. This is a political issue which appears to have no simple solution.

When the outpatient provider is aware of the referral and makes phone contact to confirm the appointment, adherence was increased from a baseline rate of 50% to 80%. This is understandable when one considers that it must be much more comfortable for a patient to return to a known therapist or psychiatrist rather than to be given a number for an unknown clinic, speak with an unknown receptionist, and wait a number of weeks for an appointment to speak with an unknown therapist. In some settings the intake clinician is different from the treating clinician who is different from the case manager who is different from the prescribing psychiatrist. A phone call from the treatment provider

providing explanations and directions is helpful in promoting treatment adherence.

Ideally, with consent of the patients in the emergency room, the PES clinician ideally would call the referral site and request that the staff at the referral site contact the patient.

Social Supports and Patient Experience In the Emergency Room

In Group Three, the first two Likert scale questions regarding understanding the reason for the referral and feeling understood by the clinician making the referral were not found to be significantly associated with adherence. Worthy of note is that there were no responses indicating that the patients felt anything less than "mostly understood" by the clinician. Similarly, there were no responses indicating anything less than "mostly understanding" the reason for the referral. The PES clinicians communicated an understanding of the patient and the patients had good understanding of the reasons for the referral as shown by high scores on these ratings.

One aspect of the patient-provider relationship in the Emergency Room might be measured by the patient's level of satisfaction with their care. In the questionnaire group it was found that satisfaction with care was very strongly associated with adherence. Over 88% of those who were completely satisfied with their care and over 65% of those who were mostly satisfied with their care subsequently kept their outpatient appointments. None of those who were mostly dissatisfied with their care attended a first appointment. All of the possible reasons for dissatisfaction are beyond the scope of this study, but it would be an important issue for further study. We as treatment providers must attend to patient satisfaction if we are to maximize adherence.

This study notes that the patient's feeling the treatment is needed is strongly associated with adherence. Axlerod & Wexler (1989) noted the same dynamic in their study of 139 psychiatric patients referred for aftercare, as did Lynch et al. (1992) following 31 patients referred to a 26-week program for the treatment of hypercholesterolemia. A patient feeling treatment is not needed is clearly not likely to keep the referral appointment. For patients who feel treatment is not needed we must make extra efforts if we as clinicians feel otherwise. This extra effort might include enlisting the aid of family or friends who support the patient's treatment. The population was one in crisis; as the crisis resolved in the emergency room, so may have the perceived need for treatment.

Social supports are strongly associated with adherence in this study. Attending outpatient treatment is facilitated by the presence in a person's life of someone who will support and encourage their treatment. This result is consistent with the finding of earlier studies (Wishner, 1978; Stanton, 1987; Tebbi, 1988; Anthony, 1992; Barnhoorn & Adriaanse, 1992; Matas et al., 1992). Lack of this support was associated with poor adherence. For those with no social supports extra efforts must be made by the person making the referral and by the referral site to increase adherence.

Conclusions

There are interventions and aspects of patient care which increase attendance at outpatient referral sites. Results from this study may not be totally generalizable. Although the two interventions are replicable, there are several unique circumstances,

including location, population demographics, and configuration of area outpatient services and insurance groups. However, the reminder letter as a practical intervention may be found to increase adherence in other settings. Similarly, aspects of the patient-provider relationship such as satisfaction with care, reasonable wait times for Emergency Room evaluation, and reasonable wait times for the initial appointment may deserve study in other settings. The availability of social supports may deserve attention in other settings as well. For the sake of simplicity, and due to statistical power limitations, only a few possible dimensions of the patient-provider relationship have been analyzed. Clearly, more effort in this area is needed. Similarly, other behavioral interventions are possible, including contact from the referral clinic. However, this study has examined interventions which can be easily implemented in the emergency room setting. These results are being reviewed for possible institution in this emergency room.

APPENDIX A

STAFF TRAINING SCRIPT

To prevent contamination of baseline data there will be no instructions while the first group of subjects is evaluated and provided with outpatient referrals. The following instruction shall be given after the baseline group is seen. The investigator shall provide lists of the subjects to be called for all three groups.

"Thank you for your assistance with this project. We will be studying various issues related to patient care and follow-up from the Emergency Room. There will be three parts to the study. Until 100 subjects are contacted it will be your assignment to telephone patients who were seen and provided with outpatient referrals. You will follow the Group One Telephone Survey Script (APPENDIX C) provided for your telephone call. Make arrangements to call again if the subject is unavailable or busy at the time of the call. Answer any questions as needed. If necessary leave a message for the investigator to call them back. Record subject responses on the Group One Subject Data Summary Form provided (APPENDIX F)."

This instruction is to be given at the end of the second group, for Group Two. To avoid the potential argument that simply knowing a reminder letter was being sent might affect the way the referral is made, staff will not be told of the letters beforehand. It is at this time also that the Group Three Instruction is to be given. Staff will be blind to the content of the patient questionnaire so as to minimize confounding this intervention.

"Thank you for your continued assistance with this study. Please resume follow-up calls as before. You will be calling the second group in the study. Your Group Two Telephone Survey Script (APPENDIX C) has one new question, asking if the subject received a letter reminding them of the recommendation for outpatient follow-up. Please record all responses on the Group Two Subject Data Summary Form (APPENDIX F).

"It is also time to begin the third part of the study, which will require an additional procedure to be performed. There is a patient questionnaire (APPENDIX E) which you will find in a closed envelope. It is imperative that you do not open the envelope or read the questionnaire. Please mark the subject's ER# on the envelope. At the end of your evaluation, after you have finished giving your outpatient referral and after the subject has granted verbal consent (APPENDIX B), tell the subject 'Thank you for participating in this study. After I leave the room, please open the envelope and complete the enclosed form. Place the completed form in the envelope provided and seal the envelope. Your responses will be seen only by the investigator, not by me. Return the sealed envelope to Emergency Room staff when you are finished.'"

This final instruction is to be given at the end of the third group.

"Thank you once again for your help with this study. Please continue your follow-up phone calls. Note the change in the Group Three Telephone Survey Script

(APPENDIX C); the question about the reminder letter is gone. Record the responses on the Group Three Subject Data Summary Form (APPENDIX F)."

APPENDIX B

CONSENT SCRIPT FOR GROUPS TWO AND THREE

This script is to be read to the Emergency Room patient after you have given outpatient treatment referrals.

"We are conducting a study about outpatient referrals from the Emergency Room. It is our hope that results from this study will improve patient care. If you are willing to participate, I may ask you to fill out a questionnaire with five questions or you may receive one piece of mail related to your visit today. Also, you will receive a brief telephone call within one month. All of your answers will be kept confidential. Your participation will in no way affect your treatment at (identify hospital). Do you have any questions?" (answer any questions). "May I have your consent to participate?"

Record answer and staff signature on appropriate Subject Data Summary Form.

For Group Three, proceed to give patient questionnaire (APPENDIX E).

APPENDIX C

TELEPHONE SURVEY SCRIPTS

GROUP ONE TELEPHONE SURVEY SCRIPT

Opening the Conversation

Call the patient's number, identify yourself by full name as calling from (identify hospital), but do not mention crisis team or psychiatry. Ask for the patient to come to the phone.

"This is (identify yourself by full name) calling from (identify hospital). Is this a convenient time for you to speak with me?" (make other arrangements if not).

Consent

"We are conducting a study about outpatient referrals from the Emergency Room. It is our hope that results from this study will improve patient care. If you are willing to participate, I will ask you two or three questions about your follow-up. Your answers will be kept confidential. Your participation will in no way affect your outpatient treatment or future treatment at (identify hospital). Do you have any questions?" (answer any questions). "Can I have your consent to participate?"

Record answer and staff signature on Group One Subject Data Summary Form.

If "Yes" then proceed to "The Interview."

If "No" then say "Thank you for your time anyway. Goodbye."

The Interview

"You may recall being in the Emergency Room on (give date of ER visit). At that time it was recommended that you pursue outpatient treatment with/at (name of therapist or clinic)."

"Did you attend your first appointment?"

Record answer on subject data summary form

"How long did you have to wait for the first appointment?"

Record answer on subject data summary form

Closing the Conversation

"Thank you for participating in this survey. Your help will assist us in understanding what kinds of things affect outpatient care. Thank you for your time on the phone today. Goodbye."

GROUP TWO TELEPHONE SURVEY SCRIPT

Opening the Conversation

Call the patient's number, identify yourself by full name as calling from (identify hospital), but do not mention crisis team or psychiatry. Ask for the patient to come to the phone.

"This is (identify yourself by full name) calling from (identify hospital). Is this a convenient time for you to speak with me?" (make other arrangements if not).

The Interview with Reminder Postcard Intervention Question

"You may recall being in the Emergency Room on (give date of ER visit). At that time it was recommended that you pursue outpatient treatment with/at (name of therapist or clinic)."

"Did you receive a letter reminding you of outpatient follow-up referral?"

Record answer on subject data summary form.

"Did you attend your first appointment?"

Record answer on subject data summary form.

"How long did you have to wait for the first appointment?"

Record answer on subject data summary form.

Closing the Conversation

"Thank you for participating in this survey. Your help will assist us in understanding what kinds of things affect outpatient care. Thank you for your time on the phone today. Goodbye."

GROUP THREE TELEPHONE SURVEY SCRIPT

Opening the Conversation

Call the patient's number, identify yourself by full name as calling from (identify hospital), but do not mention crisis team or psychiatry. Ask for the patient to come to the phone.

"This is (identify yourself by full name) calling from (identify hospital). Is this a convenient time for you to speak with me?" (make other arrangements if not).

The Interview

"You may recall being in the Emergency Room on (give date of ER visit). At that time it was recommended that you pursue outpatient treatment with/at (name of therapist or clinic)."

"Did you attend your first appointment?"

Record answer on subject data summary form.

"How long did you have to wait for the first appointment?"

Record answer on subject data summary form.

Closing the Conversation

"Thank you for participating in this survey. Your help will assist us in understanding what kinds of things affect outpatient care. Thank you for your time on the phone today. Goodbye."

APPENDIX D

CONTENT OF REMINDER LETTER

"During the month of (list month) you were in the Emergency Room at (name hospital). The clinician who interviewed you made a recommendation that you make or keep an appointment for outpatient care. This reminder letter is being sent as part of a follow-up study from the Emergency Room. Please call (list number) if you have any questions.

APPENDIX E

LIKERT SCALE QUESTIONNAIRE

For each question, please place an "x" in the space () over the number you select.

A. How well do you feel understood by the clinician making your outpatient treatment referral?

<--- (1)----- (2)----- (3)----- (4)----- (5)---->
completely mostly uncertain mostly completely
misunderstood misunderstood understood understood

B. How well do you feel that you understand the reason for your outpatient treatment referral?

[illegible]

C. How well satisfied are you with your overall care in the Emergency Room?

← (1) — (2) — (3) — (4) — (5) →

completely mostly uncertain mostly completely
dissatisfied dissatisfied satisfied satisfied

D. How much do you feel that you are in need of outpatient treatment?

<--- (1)----- (2)----- (3)----- (4)----- (5)---->
 definitely mostly uncertain mostly definitely
 not needed not needed needed needed

E. How likely is it that you will have a family member or friend who will encourage you or help you to follow through with your outpatient treatment recommendations?

<--- (1)----- (2)----- (3)----- (4)----- (5)-->
 probably not maybe not uncertain maybe probably

Thank you for completing this form. Please fold it and seal it in the envelope provided. Give to the crisis team staff or the Emergency Room nurse.

APPENDIX F

SUBJECT DATA SUMMARY FORMS

GROUP ONE SUBJECT DATA SUMMARY FORM

ER#: _____ Date Seen: _____ Date Called: _____

Data From ER Record

Insurance Code: _____ Wait Time For PES Eval: _____ hours

Data From Clinical Interview or PES Record

Referred to: _____

Prior Treatment there? Y N

Data From Telephone Interview

Did subject give verbal consent? Y N Staff Signature _____

Did subject attend first appointment? Y N

How long did subject wait for first appointment? _____ days

GROUP TWO SUBJECT DATA SUMMARY FORM

ER#: _____ Date Seen: _____ Date Called: _____

Data From ER Record

Insurance Code: _____ Wait Time For PES Eval: _____ hours

Data From Clinical Interview or PES Record

Referred to: _____

Prior Treatment there? Y N

Consent

Did subject give verbal consent? Y N Staff Signature _____

Data From Telephone Interview

Did subject receive reminder postcard? Y N

Did subject attend first appointment? Y N

How long did subject wait for first appointment? _____ days

GROUP THREE SUBJECT DATA SUMMARY FORM

ER#: _____ Date Seen: _____ Date Called: _____

Data From ER Record

Insurance Code: _____ Wait Time For PES Eval: _____ hours

Data From Clinical Interview or PES Record

Referred to: _____

Prior Treatment there? Y N

Consent

Did subject give verbal consent? Y N Staff Signature _____

Patient Questionnaire

A. _____ B. _____ C. _____ D. _____ E. _____

Data From Telephone Interview

Did subject attend first appointment? Y N

How long did subject wait for first appointment? _____ days

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