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Retrospective Comparison of One-time Inpatient Mental Health Admissions to Readmissions : a Look at Managed Care

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A RETROSPECTIVE COMPARISON OF ONE-TIME INPATIENT MENTAL HEALTH ADMISSIONS TO READMISSIONS

A LOOK AT MANAGED CARE DATA

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Dissertation Approval

This is to certify that the thesis presented to us by Stuart Goldenberg

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Dedication

This dissertation is dedicated to my father and mother, Dr. Steven Goldenberg and Cynthia Kline, who throughout my life have provided me with outstanding direction and support. This dissertation represents just one of many accomplishments of mine that were made possible because of the love that I received from them. They have inspired me to be successful and have been there for me every step of the way. Words can not express how lucky I am to have such remarkable parents. Thank you both so much, I love you!

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"Our destiny exercises its influence over us even when, as yet, we have not learned its nature: it is our future that lays down the law of our today"

(Friedrich Wilhelm Nietzsche, 1844 – 1900)

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Abstract

This study retrospectively reviewed 2,753 members from a managed behavioral health care organization who experienced at least one psychiatric inpatient hospitalization between July 1, 2003 and December 31, 2004. Demographic and clinical variables were examined in an effort to distinguish the factors that were present between members treated with one hospitalization versus members who required re-hospitalization. Readmission for the present study was defined as a psychiatric re-hospitalization within a 180 day timeframe. Particular focus included analyzing the variables of length of treatment, age groups, presence of a psychotic disorder, history of inpatient treatment, and managed care account funding types. The sample set of the present study was randomly split into two groups for the purpose of replication. Similar results were found between the two sample sets. When comparing psychiatric readmissions to one-time admissions, there were significant differences between longer and shorter lengths of treatment, between members with psychotic disorders versus non-psychotic disorders, and between members with and without a previous inpatient hospitalization. Findings indicated that a member, who experienced either a long length of treatment, the presence of a psychotic disorder, or a history of previous hospitalizations, was more likely to experience an inpatient psychiatric readmission. No significant differences were found between the comparable age groups of children and adults to adolescents and older adults, nor account types of non-risk accounts to full-risk accounts.

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Chapter 1

Introduction

During the past two decades, managed care has become the dominant form of health care in the United States. Its purpose has been to reduce the costs associated with health care without sacrificing its quality. Previously, providers billed patients and insurance companies on a retrospective, fee for service basis. Prior to managed care, insurers had no influence over the care rendered to the patients; they did not negotiate fees; and they did not question the appropriateness of mental health services that were being provided. One concept frequently used by economists during the emergence of managed care was "moral hazard" (Gorin, 2003). Moral hazard occurred "when individuals have no need to assume responsibility for their actions and fail to behave in a rational manner... [prior to managed care] consumers could afford to be disinterested in or lackadaisical about the cost of health care" (Gorin, 2003, p.241). In other words, because providers were reimbursed for whatever they charged patients, they actually had an interest in prescribing more, rather than less health care. The excess of services, combined with the cost to deliver these services, is what led pioneers to look toward a managed care model (Gorin, 2003).

Managed care organizations have become the "middle-man" between service providers and employers who pay for their employees' behavioral health care insurance. However, concerns abound regarding the effectiveness of managed care organizations when it comes to monitoring and improving mental health care. Clinicians and patients do not appreciate the restrictions placed on treatment, on shorter lengths of treatment, on requirements to utilize specific in-network providers, and on yearly benefit limitations (Gorin, 2003).

Statement of Problem

The art of care management and utilization review through managed care companies emerged as a way to try to counter the extreme increase in services rendered at all levels of care. The philosophy of the care management model is to have staff available 24-hours a day to connect patients to the right providers, at the least restrictive level of care that can manage their symptoms. In addition to matching patients to the right level of care, managed care companies require a pre-approval process to access the recommended level of care. After an initial clinical assessment occurs, there is a clinical discussion between the provider and the managed care company to ensure that the correct level of care has been recommended. After a member is certified for a particular level of care, regular clinical reviews are required to receive continued certification. These services performed by managed care companies decreases the cost of treatment by ensuring the delivery of quality services, combined with a timely discharge. Furthermore, managed care companies attempt to prevent unnecessary admissions by providing crisis management counseling, thus saving employers from unnecessary expenses each year (Patricelli and Lee, 1996).

Despite the additional services managed care companies are providing and the improvements they have made, patients continue to utilize a large amount of mental health services. Even today there are frequent admissions and readmissions to all levels of care. Is there a way to decrease the number of admissions and readmissions that patients experience? Are there certain patients who will require intensive levels of care, regardless of the quality of the treatment they receive? Are there additional steps that managed care companies and providers can take to further improve a patient's health upon their being admitted to a hospital? What are

the factors that may be affecting repeat admissions to intensive levels of care? Are the restrictions that managed care companies are imposing on continued treatment leading to patients being readmitted, or is it because of a diagnosis that a patient is given? Are there differences within managed care companies that impact the level of scrutiny that is placed on treatment access and service delivery? Does age play a factor in service utilization? Are certain people simply prone to a lifetime of multiple hospitalizations?

There have been numerous research studies aimed at answering the above questions, but the results vary. This dissertation focuses on the inpatient hospital level of care, examining the differences that exist between one-time psychiatric hospital admissions and readmissions. The present researcher used retrospective data from a managed care company to determine if the factors of length of stay, age, previous hospitalization, and diagnosis impact a person's chances for a readmission. In addition, the present researcher examined the different ways that managed care health plans are financially structured to determine if this variable plays a role in increasing or decreasing readmissions. All of these factors are examined so that future attempts can be made to improve the quality of mental health treatment, while decreasing service utilization.

The History of Managed Care. Prior to exploring the current state of managed care and inpatient hospitalization, it is important to understand the chronology of key events that have occurred in the health care industry. In 1973, Congress and the Nixon administration passed legislation supporting the development of prepaid health care plans, or health maintenance organizations (HMOs). Under these plans, physicians worked exclusively for the HMO as salaried employees and were reimbursed at a discounted fee for service rate. By the end of the 1970s, states began to repeal laws that had prevented "selective agreements" between providers

and insurers. Soon, insurers had organized networks of providers who reduced their fees in exchange for patient referrals (Gorin, 2003).

In the 1970s, employee assistance programs (EAPs) were established. It became clear to employers that some of their employees abused alcohol and consequently worked poorly. Recognizing this, employers initiated programs to manage alcoholism in the work site through employee assistance programs. The first EAPs, focusing mainly on alcohol abusers, were headed by recovering employees in the workplace. By the mid 1970s, however, EAPs became broader based and focused on such challenges as marital, legal, financial, and family problems (Patricelli and Lee, 1996). The success of the EAP programs soon led to the development of care management programs in the 1980s, providing a full range of mental health and substance abuse services (Patricelli and Lee, 1996).

There have been numerous innovations which prompted employers to support the role of managed care, especially in the behavioral health field. Employers have become more compelled to manage behavioral health costs due to an increase in the costs sustained by distracted or dysfunctional employees. Patricelli and Lee (1996) reported that "a problem drinker uses 8 times more medical care, is absent 2.5 times more than the norm, and is 3.6 times more likely to be involved in an accident" (p. 325). It is clear from this example that employers had reasons to support managed care and utilization management.

Utilization Management and Quality of Care

Cost Containment. In the late 1980s and well throughout the 1990s, managed care drastically changed utilization patterns of mental health inpatient services. Prior to managed care, a short stay in an inpatient level of care was considered to be fewer than three weeks. With the emergence of managed care, the average length of stay was decreased to ten days (Yohanna, Christopher, Lyons, Miller, Slomowitz, & Bultema 1998). It became clear that discharge rates were on the rise as inpatient episodes became increasingly shorter. Between 1988 and 1994, there was a 35% increase in the number of psychiatric discharges from general hospitals. This was an increase from 1.4 million psychiatric patients discharged to 1.9 million. The discharge rate of patients with a primary psychiatric diagnosis increased from 785 discharges per 100,000 adult patients to 996 discharges per 100,000 adult patients, nearly a 27% increase (Mechanic, McAlpine, & Olfson, 1998).

Why did the length of stay decrease so drastically over the past decade? As cost effectiveness began to weigh heavily on the approval of inpatient psychiatric admissions, focus shifted toward the more diverse types of treatments and treatment settings. Employers and managed care companies aimed at reducing treatment costs by substituting less expensive, lower levels of care for the more expensive, acute hospitalization services (Sledge et al, 1996). In other words, the goal of managed care companies was to treat patients effectively, but in the least restrictive and least expensive level of care available. Treatment at the inpatient mental health level of care became more and more focused on the management of crisis and acute stabilization, while the symptoms were treated in lower levels of care or step down programs (Sledge et al, 1996).

Sledge, Tebes, Wolff, & Helminiak (1996) conducted a study examining the costs for patients treated in a day hospital/crisis respite program versus a psychiatric hospital setting. They found that it was significantly less expensive to treat patients in the day hospital/crisis respite program compared with the inpatient hospital. Sledge et al. (1996) found that on average, the direct service costs for the day hospital/crisis respite program was $26,820 compared with $33,917 for the inpatient hospitalization. The savings amounted to approximately $7,100 per patient.

Managed behavioral health companies reduce costs by matching patient treatment needs with the least restrictive, but clinically appropriate, levels of treatment. These services are known as individualized case management or utilization management (UM) and can generate significant savings for employers (Patricelli and Lee, 1996). The aim of UM is to "ensure that treatment provided to patients is clinically appropriate and medically necessary" (Wickizer, Lessler, and Boyd-Wickizer, 1999, p. 1354). As Fried, Topping, Morrisey, Ellis et al. (2000) noted, "UM is a technique used to control costs by seeking to limit unnecessary care or to promote use of more cost-effective services" (p.32). "Good utilization management can control plan expenditures while giving patients the care they need" (Peele, Lave, & Xu, 1999, p. 431). Clinical employees of managed care companies also monitor insured patients even after they have been discharged from a facility to ensure the progress of their health. Although utilization management occurs at all levels of care, this dissertation focused solely on readmissions to an inpatient psychiatric facility, because this is the most expensive level of care provided to patients and has the largest financial impact on patients, employers, and managed care organizations.

Account Types. Insurance plans reimburse providers at fixed rates. These rates are negotiated between insurers and providers, and coincide with annual or lifetime service/dollar limits. Lifetime limits are often placed on the employee to protect the employer and insurer against costly claims. Employers have the option to purchase different types of behavioral health insurance plans, which have different levels of financial risk. Until the 1990s, fee-for-service, or non-risk, indemnity plans were the most common form of health insurance coverage. With this type of coverage, insurance companies were reimbursed for their administrative services only. However, now insurers can assume full, partial, or no financial risk based on the contract which is established with an employer group (Peele, Lave, & Xu, 1999). Peele, Lave, & Xu (1999) conducted a study examining the savings that managed care companies achieve by providing utilization management services. The researchers looked at data from a large managed behavioral health company, resulting in a sample of claims data for approximately 496,911 lives covered between 46 different benefit plans, across all 50 states. The results of this study indicate that the implementation of managed care and behavioral health carve-out plans, combined with utilization management, led to a decrease in cost as evidenced by a decrease in provider payments, inpatient lengths of stay, and frequency of outpatient visits per member. It is suspected that this is due to the services provided by the care managers at managed care companies. Some of their services include making more appropriate referrals to providers earlier in the course of treatment (Peele, Lave, & Xu, 1999). Managed care companies primarily save money through reductions in the amount of inpatient hospitalizations and lengths of stay, as well as by shifting services to less intensive levels of care, such as residential treatment, partial hospitalization, and outpatient therapy (Fried et al., 2000).

The fees associated with behavioral health accounts can be structured in different ways. One type of contract is an administrative services only (ASO), often called a non-risk account in which the behavioral health company is paid a fixed administrative fee to manage the carve-out. Carve-outs can also apply to full-risk plans in which "the managed care organization provides managed care services and acts as the insurer by assuming the risk for claims costs" (Sturm, 2000, p. 761). The goal of a full-risk, or capitated account, is to minimize all expenditures by substituting less expensive (or lower levels of care) for more expensive services (higher levels of care). The full-risk contract "usually involves a range of services at a fixed and agreed-on price with all cost risk borne" by the managed care organization, with an incentive toward under utilization of services (Fried et al., 2000, p. 31).

In non-risk accounts, the managed care company passes on all claims to the employer, rather than having any financial risk associated with utilization. By limiting the financial risk to the managed care company, studies have found limited incentives for these account types. It appears that tightly managing utilization is not strongly encouraged for these account types by the managed care company and the focus is shifted to containing internal costs to supply the care management services (Fried et al., 2000). In a study comparing full-risk and non-risk accounts, Sturm (2000) reported that the incentive for full-risk accounts is to reduce health care expenses by managing care more aggressively. The incentive for non-risk accounts is to save management costs using minimal utilization review and care management (Sturm, 2000).

Care managers in managed behavioral health organizations (MBHO'S) can work on several accounts at a time, both full-risk and non-risk contracts. Ideally, the emphasis for these care managers is on providing the same care management services to all members despite the contract type or level of care. Sturm (2000) believed that the care managers were not aware of

the financial risks for the contracts that they worked with and the influence of contractual arrangements on clinical care managers was minimal. In contrast to this, Sturm found that "larger contracts often have dedicated teams, and MBHO's could develop a separate management style for each team" (Sturm, 2000, p. 763). Sturm (2000) also found that although full-risk plans are not significantly different from non-risk plans in terms of services provided or hospitalization rates; costs per user were significantly lower for members of the full-risk accounts.

The Cost of Managed Care. The overall cost of health care in the United States continues to be a concern. A Report from the Surgeon General released in 1999 claimed that National Health Accounts totaled $943 billion in the year 1996. As the baby boomer generation becomes older, the cost of health care is likely to become even more of a concern (Mark et al., 1998). A large contribution to the overall cost of health care comes from the field of mental health. According to the Surgeon General's Report released in 1999, seven percent ($99 billion) of the National Health Account was for the treatment of mental disorders in 1996. Substance abuse treatment alone accounted for almost one percent ($13 billion), and Alzheimer's and other dementias combined, accounted for almost two percent ($18 billion) (Mark et al., 1998). Approximately 53 percent of the funding for these mental health services came from public payers; 43 percent came from private payers, including insurance companies. In 1996, 61 percent of the United States population had employer-based insurance, which resulted in a seven percent increase in mental health expenditures from 1986 to 1996 (Mark et al., 1998). Indirect costs of mental illness, including mortality, time away from work, and reduced productivity at work or at school resulted in a $79 billion loss to the United States economy in 1990 (Rupp et al., 1998). Interestingly, Unipolar Major Depression, Bipolar Disorder, Schizophrenia, and Obsessive-

Compulsive Disorder were identified among the top causes of disability worldwide (Murray & Lopez, 1996).

Utilization Management and Quality of Care. In addition to financial gains achieved from utilization management, there is a focus on quality of care for services through the use of a concurrent review process (Patricelli and Lee, 1996). When a patient arrives at a facility seeking treatment, the facility is responsible for calling the managed care company to inform them of the admission and to discuss the treatment plan. When both the psychiatric hospital and the managed care company agree on the admission, the clinical information is reviewed throughout the patient's hospitalization in the form of concurrent reviews. When reviewing a case, care managers take into consideration the severity of the illness, reasonable expectation of improvement within the requested level of care and proposed treatment plan, as well as the availability of resources covered by the benefit package (Masters, 1998). Clinical protocols and level of care guidelines such as those developed by the American Academy of Child and Adolescent Psychiatry and American Psychiatric Association exist for all levels of care; diagnoses and cases are reviewed based on medical necessity (See Appendix 1A). Care managers are further supported by a team of board certified psychiatrists to ensure a high quality of care for members. In addition, care managers assist facilities with discharge planning and with connecting members to services available through their benefit package. The care managers in behavioral health companies also provide aftercare follow-up services. Such services help to prevent readmissions by intervening when a patient is relapsing, as well as by providing proactive services to members who may be at high risk for relapse and hospitalization (Patricelli and Lee, 1996).

Quality Becomes A Concern. Although health care inflation slowed by the mid-1990s as a result of the development of managed care, concerns were being raised about the quality of care being provided. There also was increased focus on monetary profits for employers and behavioral health organizations. As a result, in 1997, the Clinton administration appointed an Advisory Commission on Consumer Protection and Quality in the Health Care Industry, which provided a series of consumer rights and responsibilities. Some states even enacted patient protection laws through which the individual had the right to sue managed care companies for damages; however, most of these laws were limited (Gorin, 2003). Concerns continued to remain regarding short lengths of treatment and people began to wonder if the utilization management and the treatment that patients were receiving influenced readmission rates.

Purpose of the Study

The purpose of this dissertation was three-fold: it examined past research on psychiatric readmissions; analyzed the results from the retrospective study which assessed the variables of length of stay, diagnosis, age, treatment history, and account type; and it provided future suggestions for expanding research on the topic of psychiatric readmissions. Although there appears to be a vast array of research on psychiatric readmissions, many of the results are conflicting ones. Does length of stay increase the likelihood of readmissions? Is there a difference in readmission rates based on diagnosis, age, treatment history, or the funding risk of managed care accounts? The purpose of this study was to understand if there is an association between the above variables and readmission rates.

Psychiatric Admissions. A joint publication of the American Academy of Child & Adolescent Psychiatry and the American Psychiatric Association (1997) defines an acute inpatient hospitalization admission as one in which a person has one of the following criteria: imminent risk for self-injury, with an inability to guarantee safety; imminent risk for injury to others; an active psychiatric disorder that can either be more efficiently treated or treated to more rapidly in order decrease the patient's suffering; acute and serious deterioration from the patient's baseline ability to fulfill age-appropriate responsibilities; imminent risk for acute medical status deterioration due to the presence and/or treatment of an active psychiatric symptom(s); weight loss to a point that the patient is 15% below ideal weight or failure to make expected weight gain during a period of growth, leading to body weight 15% below ideal weight (see Appendix A).

Bernardo and Forchuk (2001) examined a random sample of 200 patients admitted to a psychiatric hospital in 1991. The reason for admission that the patients cited most frequently was difficulty coping; this was followed by persistence of symptoms, difficulties with relationships, medication noncompliance, drug or alcohol abuse, medical problems and aggression. A study by Harris, Hilton, & Rice (1993) examined the presenting problems of 280 patients admitted to a public psychiatric hospital over a six-month period. The results of this study indicated that the patients identified an average of 2.8 presenting problems upon admission. The most frequent presenting problems were depressive symptoms, violent behavior towards others, schizophrenic symptoms, inability to care for oneself, suicidality, and confusion. Perceived dangerousness, inability to care for oneself, having a history of hospitalizations, and pressure from family members or the police all seemed to increase the likelihood of a patient admitting to a psychiatric hospital. Additional presenting issues were reported; these were ones affecting community

adjustment, such as marital and family problems, alcohol abuse, anxiety, and unemployment (Harris, Hilton, & Rice, 1993).

Psychiatric Readmissions. Franklin, Noetscher, Murphy, and Lagoe (1999) defined a readmission as "the return of a patient after acute care discharge for a subsequent acute care stay" (p.69). A readmission is often seen as a failure of the previous hospitalization. Within the first six months of discharge from an inpatient psychiatric hospital, 20 to 40% of patients readmit. The peak period for risk of readmission is within the first month following discharge (Walker and Eagles, 2002). Moran et al. (2000) studied 370 adults admitted to a psychiatric hospital between October 1994 and January 1996. During the 15-month course of the study, 28% of the patients were readmitted. The median time between hospitalizations was 52 days but 38% were readmitted within 30 days of discharge. As a result, studies continued to be conducted in the late 1990s in an effort to understand readmissions. At present, the evidence appears inconclusive regarding the root causes of readmissions, but many possibilities exist. Bernardo and Forchuk (2001) found that the most frequent reasons cited for readmissions were worsening symptoms, aggression, alcohol or drug abuse, and medication noncompliance; however, most of the past research examines factors such as age, length of stay, treatment history, and diagnosis.

Craig, Fennig, Tanenberg-Karant, & Bromet (2000) examined the differences between rapid readmissions (readmission to an inpatient level of care within three months of discharge) and delayed readmissions (readmission between 3-12 months of discharge). Craig et al. (2000) studied 674 participants, ages 15-60 years old, with a psychiatric inpatient admission to any of 12 psychiatric facilities in Suffolk County, New York, over a six-year period starting in September 1989. The participants included in the study were diagnosed with Schizophrenia or

Schizoaffective Disorder, Bipolar Disorder with Psychotic Features, or Major Depression Disorder with Psychotic Features. During the first year, 35.6% of the patients were rehospitalized one or more times. This included 36.5% of patients diagnosed with Schizophrenia or Schizoaffective Disorder, 39.7% diagnosed with Bipolar Disorder, and 43.3% diagnosed with Major Depressive Disorder. Within this readmitted sample, 43.9% of the Schizophrenia patients, 63.4% of the Bipolar patients, and 66.7% of the Depressed patients readmitted within the first three months of discharge and were labeled rapid readmissions. Craig et al., (2000) identified several characteristics of the patients who rapidly readmitted versus those who had a delayed readmission. The rapidly readmitted patients diagnosed with Schizophrenia had a higher presence of psychotic symptoms. The patients diagnosed with Bipolar Disorder with Psychosis who had a rapid readmission were less likely to have received a mood stabilizer prior to discharge. The rapidly readmitted patients diagnosed with Depression with Psychosis are less likely to have received an antipsychotic medication prior to discharge. Even more interesting is that the median length of stay in the first hospitalization for the patients who readmitted within three months of discharge was two to four days fewer than patients who had a delayed readmission. These findings suggest that the rapidly readmitted patients may have had more symptomology at discharge, possibly due to the shorter length of stay (Craig et al., 2000).

Rationale/Theoretical Background

If there is increased knowledge surrounding the factors that lead to mental health admissions and readmissions, it is possible to have a reduction in the overall cost of health care, as well as in improvement in patients' lives. If the variables leading to readmissions could be

identified, hospitals and managed care organizations could assess for these variables upon admission and hopefully prevent a readmission from occurring. These findings could potentially aid in identifying high-risk conditions prior to discharge, change the expected improvement within specific lengths of stay, and put in place external supports for identified patients with risk factors.

The Revolving Door Phenomenon. The revolving door phenomenon refers to a subgroup of psychiatric patients who experience a high frequency of hospital admissions and discharges. Varied operational definitions exist describing the revolving door phenomenon. Some researchers describe this phenomenon as patients having three or more, four or more, five or more, or 15 or more psychiatric hospitalizations. Despite the differences in the definition, the revolving door phenomenon infers that repeat hospitalizations result from various societal problems that date back to the deinstitutionalization policies of the 1960s (Haywood, Kravitz, Grossman, Cavanaugh, Davis, & Lewis, 1995). Some theories about the revolving door phenomenon claim that admission frequency may be the product of inadequate rehabilitation facilities, poor follow-up care, or inadequate continuity of outpatient treatment. Other theorists think that patients may be using psychiatric hospitals for nonpsychiatric reasons, such as housing, financial, or familial difficulties. Still other researchers explain the revolving door phenomenon as a function of the patients' symptomology, including their failure to comply with treatment plans (Haywood et al., 1995). Despite the various reasons for frequent readmissions, it is clear that rehospitalizations occur, creating a subgroup of patients known as the revolving door patients. Gaining clarity into the factors that generate revolving door patients would be a crucial step that could lead to the reduction of psychiatric readmissions (Haywood et al., 1995).

Related Research/Literature Review

Readmissions and Length of Stay. Numerous researchers have been conducting studies to determine if the length of stay for a hospital admission is correlated with readmission rates. Unfortunately, there is no clear answer because studies have proved varying results. Yohanna, Christopher, Lyons, Miller, Slomowitz, & Bultema (1998) completed a study examining short-stay patients (less than 48 hours) and long-stay patients (greater than 48 hours) who admitted to an inpatient psychiatric hospital between January 1, 1994 and June 30, 1994. Participants who had a primary substance-related disorder or who were admitted to a specialty adolescent/older unit were excluded from the study, resulting in a short-stay sample of 77 and a random sample of 145 long-stay patients. The average length of stay for the long-stay patients was 12.7 days. Yohanna et al. (1998) assessed variables such as demographics, payer status, and appropriateness for admission to see if there were factors leading to short or long stay admissions to inpatient psychiatric settings. The researchers found that on average, short-stay admissions had less severe psychiatric symptoms than persons with longer periods of stay. Short-stay individuals appeared more motivated, participated in more inpatient programming, had better self care skills, and were able to complete their activities of daily living better than the patients who had longer lengths of stay in the hospital. Interestingly, short stay admissions also consisted of significantly more suicidal individuals and tended to have less family involvement in their treatments (Yohanna et al., 1998).

Mojtabai, Nicholson, & Neesmith (1997) conducted a study of 2,002 participants admitted to an inpatient mental health system between July 1, 1987 and June 30, 1988. This

study examined factors affecting relapse and readmission and found a positive correlation between length of stay and readmission rates, stating, "Longer hospitalization was associated with increased relapse rate." (p. 127). Mojtabai et al. (1997) also found that patients who had longer periods of stay had a 1.5 times greater rate of relapse.

Despite the results from the above studies, the mental health community was still concerned with shorter lengths of stay at the hospital level of care, and there were still concerns regarding the quality of care within this treatment setting. Mechanic, McAlpine, & Olfson (1998) stated, "...short hospital stays may be disadvantageous to the degree they provide inadequate preparation for discharge and increase readmission rates" (p. 790). Other studies comparing inpatient services to community-based treatment led to similar concerns. Wickizer, Lesser, and Boyd-Wickizer (1999) studied 561 psychiatric hospital admissions and found that the reduction in lengths of stay for hospital admissions was negatively correlated with readmissions. They indicated specifically, "for each day by which concurrent review restricted length of stay, the odds of readmissions ... among mental health cases increased by 6.9%" (p. 1355). Wickizer et al. (1999) also found that 45% of these readmission occurred within 21 days after discharge and most of these patients were readmitted for the same diagnosis that led to their initial admission. Craig et al. (2000) stated "If managed care protocols result in earlier discharges with patients still actively symptomatic, [the] rapid readmission rate might rise even further...supported by the fact that median lengths of stay for rapidly readmitted patients were consistently shorter than for those with delayed readmission..." (p. 237).

Still others encouraged researchers not to use length of stay as a predictor for hospital readmission. Lyons et al. (1997) studied 225 patients who admitted to seven different mental health hospitals and did not find significant differences in the length of stay between patients

who later readmitted and those who did not. Their study advocated not using readmission rates as a quality indicator (Lyons et al., 1997). Neither did Moran, Doerfler, Scherz, & Lish (2000) find significant differences in the length of stay between one-time admitters and readmitters to a psychiatric hospital. The average length of stay for readmitters was 9.5 days compared to an 8-day length of stay for patients who did not readmit to the hospital within a 90-day period (Moran et al., 2000).

Results of a study by Sledge et al. (1996) suggest that patients can be treated in lower levels of care, for less time and money, and still receive the same quality of treatment than those who have a longer periods of stay on an inpatient unit. This was supported by results from their study indicating that patients had similar readmission rates regardless of the levels of care in which they were treated and regardless of varying lengths of stay. The Sledge et al. (1996) study found that 39% of the day hospital/respite patients were readmitted compared with 37% of the inpatient patients. Their study alluded to the fact that certain patients are prone to readmission, regardless of how long they are treated and regardless of the intensity of treatment (Sledge et al., 1996).

Despite the presence of varying results surrounding the length of stay and the level of care, Schneider & Ross (1996) found support for shorter lengths of inpatient stay when patients can be adequately connected to outpatient treatment services. The outpatient services referred to consisted of a day hospital/respite program, an intensive outpatient program, individual counseling, and/or psychopharmacological therapy. All of these levels of care have proved to have a positive effect on deinstitutionalizing patients and improving their quality of life (King, 1999).

Should Demographics Be A Concern? By incorporating factors such as age, gender, race, diagnosis, the availability of community resources, and socioeconomic status, it may be possible for managed care organizations to understand who is at high risk for a mental health admission. Additionally, understanding patient characteristics would make it possible to predict more accurately which patients will stay longer in mental health treatment, and which will have a greater chance to readmit (Harman, Cuffel, & Kelleher, 2004). After examining the records of 291 patients admitted to a psychiatric hospital between January 1988 and June 1989, Tucker and Brems (1993) found that more Caucasians were hospitalized than non-Caucasians, and that non-Caucasians appear to have a shorter length of stay once hospitalized, 11.5 days compared with 16.4 days. According to Tucker and Brems (1993), suspected root causes for this difference in length of stay among non-Caucasians are biases against minorities, hopelessness about prognosis for minorities, lack of education among therapists concerning minorities, different expectations among some minorities regarding benefits of hospitalization, and the role of the family in caring for a mentally ill relative (Tucker & Brems, 1993).

Tucker & Brems (1993) also found that in proportion to the general population, significantly more women than men receive mental health inpatient services and men appear to have shorter periods of stay. Haywood, Kravitz, Grossman, Cavanaugh, Davis, & Lewis (1995) examined the demographic features of patients with diagnoses of Schizophrenia, Schizoaffective Disorder, and Unipolar Major Depressive Disorder who frequently readmit to inpatient psychiatric units. They discovered that more women were first admission patients, but that men were rehospitalized more frequently than women were. Haywood et al. (1995) found that 64% of the men and 43% of the women in their sample were hospitalized five or more times. After

examining 200 patients admitted to an inpatient psychiatric hospital, Bernardo and Forchuk (2001) found that 59% of the males in their sample readmitted to the hospital, compared with 41% of female readmitted patients. The mean age was 34.2 years old and a significantly large portion of the patients were divorced, were more likely to have secondary school education, and were unemployed or employed only part-time (Bernardo & Forchuk, 2001). Additionally, if individuals were poor, had low educational achievement, or were from a lower social class, they also had a higher chance of being admitted to a mental health inpatient setting (Harris, Zoe, & Rice, 1993).

Children tend to experience the longest lengths of stay. Pavkov, George, & Lee (1997) examined data on children and adolescents who admitted to an inpatient psychiatric facility in Illinois between July 1, 1987 and June 30, 1992. Pavkov et al. (1997) discovered that for every 10 days of hospitalization, the likelihood of rehospitalization for children was increased by 2%. African-American youths were 11% more likely to readmit than Caucasian youths, and the older adolescents were less likely to readmit than their younger counterparts. Specifically, for every year of increase in age, the likelihood of readmission decreased by 4%. Children and adolescents diagnosed with a psychotic disorder were 45% more likely to reenter the hospital and to experience the longest hospitalizations (Pavkov et al., 1997). Pavkov et al. (1997) noted, however, that their results do not indicate that children are at such high risk for hospitalization only because of their age. Their results could also signify the fact that the amount of community-based resources is not adequate to address the mental health needs of the young children in our society (Pavkov et al., 1997).

Joseph Blader (2004) examined predictors of psychiatric inpatient readmission for children aged 5 to 12 years old and found that four additional variables contributed to predicting

readmissions for children. These variables included: severe conduct problems, harsh parental discipline, disengaged parent-child relations, and parent reports of low stress in their parenting roles. Participants for this study were children admitted to a psychiatric hospital during a 14-month period; this resulted in a sample of 109 children. Data were collected from the children and their guardians during a telephonic assessment and interview at three, six, and twelve months after the child's discharge from the hospital. Blader (2004) found that 37 of the 109 participants were rehospitalized within one year of discharge, and that 81% of these readmissions occurred within three months of discharge. The results of the study indicated that children with conduct problems were more liable to readmit. Also, children who had parents who tended to use corporal punishment as a discipline method were also more liable to be readmitted. This was consistent with past research which suggested that aggressive children tend to have poorer impulse control and affective instability. Interestingly, children who had more parental involvement and whose parents reported more stress in their parenting roles were less likely to be readmitted than those who had parents in the low-involvement, low stress subgroup (Blader, 2004). This is consistent with findings that emotional involvement by family members, even if uncomfortable, yields better clinical outcomes for children (Hooley and Hoffman, 1999). Because of this, when studies examine factors for admission and readmission, multiple patient characteristics should be addressed.

Older adults are another sub sample of the population that tends to have a high number of psychiatric admissions per year. A retrospective study by Ettner and Hermann (1998) examined data on 192,194 Medicare beneficiaries who were hospitalized at least once during 1990 because of a psychiatric diagnosis. The average age of these members was 75 years; 64% were women, and 88% were Caucasian. The total number of separate psychiatric admissions for the year was

245,135. The most common reasons for hospitalization among the group were Major Depressive Disorder (28.1 percent), dementia (15.2%), substance related disorders (12.6 percent), organic disorders other than dementia (11.6%), and Schizophrenia (6%). Organic disorders accounted for half of the psychiatric admissions for patients 85 and older (Ettner and Hermann, 1998). The average length of stay for all diagnoses, combined was 13 days. Patients who were admitted with a primary psychotic disorder had the longest length of stay (18 days), followed by Bipolar and Major Depressive Disorder (17 days). Patients diagnosed with dementia tended to have an average length of stay of 11 days (Ettner and Hermann, 1998).

Diagnosis as a Predictor for Readmissions. Many studies have found that readmissions are more prevalent among certain diagnostic categories found in the Diagnostic and Statistical Manual of Mental Disorders (DSM). The categories that seem to be correlated with readmissions are major mental health disorders (Axis I) and personality disorders (Axis II). For example, many researchers report that psychotic disorders, followed by mood disorders are good predictors for readmission. Bernardo and Forchuk (2001) found in their study that 41% of the patients who readmitted had a primary diagnosis of Schizophrenia, followed by 27% who were diagnosed with a mood disorder and 16% diagnosed with a Schizoaffective Disorder. Mojtabai, Nicholson, & Neesmith (1997) also found that individuals diagnosed with Schizophrenia have a greater likelihood to be readmitted within 30 days of discharge. Patients diagnosed with Schizophrenia tend to have longer lengths of stay as well as an average of five or more hospitalizations in their lifetimes (Haywood, Kravitz, Howard, Grossman, Cavanaugh, Davis, & Lewis.1995). Mojtabai et al. (1997) also give precedence to psychotic disorders, finding that individuals diagnosed with Major Depression are less likely to readmit than those diagnosed with

Schizophrenia, Bipolar, and Schizoaffective disorders. Conversely, there is research that suggests that patients diagnosed with Adjustment Disorders appear to spend less time in inpatient treatment than any other group (Tucker & Brems, 1993). Tucker and Brems (1993) state that, "This is consistent with diagnostic criteria that Adjustment Disorders arise in response to an identifiable psychosocial stressor, are not caused by another mental disorder, and are by definition time-limited" (p. 63).

There does not appear to be any specific Axis II diagnoses which affect readmission rates; rather, it is the presence of an Axis II disorder which is positively correlated to longer lengths of stay as well as to readmission rates (Mojtabai et al., 1997). Bernardo and Forchuk (2001) found that 33% of the patients in their study who readmitted were diagnosed with a personality disorder. Geller, Fisher, McDermeit, & Brown (1998) found that patients in their study of frequent readmitters tended to be Caucasian females who also had personality disorders. Reasons for this may be that patients with an Axis II diagnosis are often more problematic and have treatment-resistant symptomology (Tucker & Brems, 1993).

Should Previous Treatment Be A Concern? Studies indicate that if an individual has received mental health treatment in the past, that individual is more likely to readmit to an inpatient level of care (Bernardo and Forchuk, 2001; Harris, Hilton, & Rice, 1993 Pavkov, George, & Lee, 1997). Bernardo and Forchuk (2001) found in a study of 200 patients, that the only variable that consistently identified individuals who were at risk for future psychiatric admissions was a history of inpatient treatment. Patients who had readmitted had an average of 3.3 past admissions to the same hospital before the index admission studied. The average number of admissions to any psychiatric facility was 7.3 among patients who were readmitted. The mean

length of stay appeared to decrease per each admission, but so did the amount of time between each hospitalization. Harris, Hilton, & Rice (1993) examined data from 280 patients admitted to an inpatient psychiatric facility; on average, each patient had four previous hospitalizations in their lifetimes. Unfortunately, it is extremely difficult to target past treatment history as a predictor of hospital readmission, because individuals tend to have several other confounding variables and characteristics simultaneously.

Other Predictors of Readmissions. There are several other factors that can serve as predictors for readmission, such as noncompliance with treatment regimens and medications, often indicating a lack of insight into the mental illness. Sullivan, Wells, Morgenstern, & Leake (1995) examined data from participants who had readmitted to a state hospital and found that more than one half of the participants they studied were noncompliant with medications, despite the fact that 66% "thought the medication had been overall very helpful" (p.1752). A history of substance abuse was also positively correlated with the rate of readmission for patients (Haywood et al., 1995; Bernardo & Forchuk, 2001). Sullivan et al. (1995) found in their study that 29% of the patients who readmitted had problems with alcohol abuse and between 5-10% had problems with other substances. Haywood et al. (1995) found no evidence that a criminal record or a history of violent behavior was a factor common among readmissions, but Bernardo and Forchuk (2001) did find a significant correlation, reporting their study that 23% of patients who readmitted to a psychiatric hospital had a history of aggressive behavior. They also reported that 31% of readmissions had a history of behavioral problems (Bernardo and Forchuk, 2001).

Another factor of readmission is high patient turnover in the treating hospital i.e., the number of annual discharges per bed. "The practice of high patient turnover can be a very

efficient way of delivering and distributing hospital care to the population, balancing the needs of admitted patients against those demanding access" (Heggestad, 2001, p. 197). Heggestad (2001) examined hospital admissions to 20 institutions during the 1996 fiscal year and found that high patient turnover was significantly associated with an increased risk of readmission. Heggestad (2001) also found that being discharged from a ward with relatively low access to therapists increased the possibility of readmission.

Lyons et al. (1997) concluded that a readmission had little to do with the quality of care received at a treating facility; however, it did correlate with patients who had more severe difficulties and with higher levels of impairment in self-care. While assessing for factors affecting psychiatric readmissions, Arfken, Lackman-Zeman, Yeager, Mischel, and Amirsadri (2002) did not find the above factors correlated with rate of readmission; instead, they found that it was the first week of every month and during inclement weather that proved to be the most vulnerable times for admissions.

Is Managed Care Affecting Readmission Rates? With the onset of managed care programs, many people had concerns that too much emphasis was placed on cost containment and reduction, and as a result the focus on patients' health was lost. Questions continued to be raised about whether or not short lengths of stay lead to readmissions, wiping out initial cost savings (Lyons, O'Mahoney, Miller, Neme, Kabat, & Miller, 1997). Critics began to say that utilization management pressured facilities to have shorter lengths of stay and in return caused more frequent readmissions. Moran, Doerfler, Scherz, & Lish (2000) report that "Although shorter inpatient stays have been achieved, up to 50% of patients are rehospitalized within 1 year of discharge" and some patients are rehospitalized many times, earning the nickname "revolving

door patient" (p.191). Geller, Fisher, McDermeit, and Brown (1998) examined the characteristics of 7,293 inpatient psychiatric patients who received treatment in Massachusetts through a managed care company between 1992 and 1995, examining specifically whether or not utilization management affected the patient's length of stay and hospital treatment. This study found that they created a network of providers; patients were more likely to readmit to a different facility, which often resulted in a longer length of stay. Geller et al. (1998) found that 8.9% of the patients admitted to an inpatient psychiatric facility had five or more readmissions within a one-year time frame. Readmissions to the same hospital resulted in shorter lengths of stay but admissions to new facilities resulted in increasingly longer lengths of stay. For patients with multiple admissions, gaining access to other network facilities often led to extreme discontinuity of treatment, resulting in a paradoxical outcome, longer lengths of stay (Geller et al., 1998).

Account Types and Readmissions. A study by Fried, Topping, Morrisey, & Ellis (2000) examined provider perceptions as well as utilization management procedures for two types of accounts, full-risk and non-risk. Fried et al. (2000) retrieved data from 198 mental health clinicians and administrators about their perceptions of utilization management procedures. Although some providers appeared to feel that the authorization process is different, based on account type, Fried et al. (2000) did not find this was the case. Rather, Fried et al. (2000) found no significant difference in the types of services rendered when comparing a full-risk capitated account and a no-risk, fee-for-service account. Instead, they found that "utilization review managers in both programs approach this function in much the same manner...clinical competence and cost considerations were the most prominent criteria used for authorization decisions" (p. 39).

At present, however, the present researcher has not been able to locate sufficient data examining the differences in utilization patterns and the effect on readmissions that the full and non-risk account types may have.

Hypotheses

Research Question One

What is the relationship between length of stay and readmission to an inpatient psychiatric hospitalization?

Hypotheses One. Length of stay is positively correlated with readmission.

Rationale One

Longer lengths of stay appear to be associated with psychotic diagnoses, which in turn are more prone to relapse. Mojtabai, Nicholson, & Neesmith (1997) found that patients who had longer lengths of stay had a 1.5 times greater rate of relapse.

Research Question Two

What is the association between age and readmission to inpatient psychiatric hospitalization?

Hypotheses Two. Compared with children and adults, adolescents and older adults will have a significantly higher frequency of readmissions to inpatient treatment within 6 months of discharge from that level of care.

Rationale Two:

Because of the numerous struggles of latency age children, it seems that adolescents are less likely to be compliant with treatment, often resulting in hospital readmission. Tucker and Brems (1993) reported that children {implying children and adolescents} and the elderly experience the longest lengths of stay. (Tucker and Brems, 1993)

Research Question Three

What is the relationship between the presence of a psychotic disorder and readmission to an inpatient psychiatric hospital?

Hypotheses Three. The presence of a psychotic disorder will positively correlate with a patient's likeliness of readmission to an inpatient psychiatric facility within a 6-month timeframe.

Rationale Three

Medication noncompliance appears to be a common occurrence throughout the spectrum of mental illness. Because medication is the primary mode of treatment for patients diagnosed with a psychotic disorder, medication noncompliance is more liable to result in decompensation and a hospital readmission. Bernardo and Forchuk (2001) found that 41% of the patients who readmitted in their study had a primary diagnosis of schizophrenia. Mojtabai, Nicholson, & Neesmith (1997) also found that individuals diagnosed with schizophrenia have a greater likelihood to be readmitted within 30 days of discharge. Patients diagnosed with Schizophrenia tend to have longer lengths of stay as well as an average of five or more hospitalizations (Haywood, Kravitz, Howard, Grossman, Cavanaugh, Davis, & Lewis.1995).

Research Question Four

What is the relationship between past inpatient treatment at a psychiatric hospital and readmission?

Hypotheses Four. By having an inpatient psychiatric hospitalization in the past, a patient will be more likely to readmit within a 6-month timeframe.

Rationale Four

Factors leading to a psychiatric admission can often remain constant throughout a person's life. Studies indicate that if an individual has received mental health treatment in the past, that individual is more likely to admit to an inpatient unit. Additionally, if an individual has been hospitalized in the past, that individual is more likely to have future readmissions (Pavkov, George, & Lee, 1997).

Research Question Five

What is the relationship between account type (full-risk and non-risk types) and readmission?

Hypotheses Five. Account funding types will correlate with readmission rates. Members of full-risk accounts are less likely to readmit to an inpatient psychiatric facility within 6 months than members of non-risk accounts.

Rationale Five

Because of the financial risks and rewards associated with the business of care management, there is incentive to decrease service utilization. By decreasing service utilization and reducing corporate out-of-pocket mental health expenses, a care management company is more likely to maintain and add customers. Although there are incentives to managing service

utilization for non-risk and full-risk accounts, there seems to be increased financial incentives for members of a full-risk account.

Chapter 2

Methods

Participants

For confidentiality purposes, the name of the managed care behavioral health insurance company used for data analysis, as well as the name of the accounts studied within the managed care organization, remains confidential. Because of company resources, the present researcher was limited to the amount of data collected. Because there was an extremely large volume of members in the full-risk accounts, the present researcher randomly selected one full-risk account to use for this study. This researcher then randomly selected several non-risk accounts to match the sample size of qualifying participants. The total sample size resulted in approximately two thousand participants. Age range, gender, diagnostic classifications, and socioeconomic status were confirmed to be equally diverse in all of the accounts utilized. Regardless of account funding type, participants in this study are composed of account employees, and their nuclear family members. Children of an employee maintained their dependent status until the age of 18, unless they were enrolled as a student. Students, however, lose their insurance coverage at age 24 years old, regardless of their active student status.

All participants in the study demonstrated at least one admission to an inpatient mental health level of care over the course of 18 months. An inpatient mental health level of care was defined as a 24-hour locked unit, monitored at minimum by physicians, psychiatrists, social workers, and nurses. Ancillary staff was also present on these types of units, including psychologists, occupational therapists, physical therapists, clergy, recreational therapists, and art

therapists. A readmission was defined as a return to an inpatient psychiatric type of care within an allotted time frame. The present study specifically examined readmission data at 180-day intervals. The purpose was to assess if correlations existed between the rate of readmission and the following variables: age, presence of a psychotic disorder, length of stay, past inpatient treatment, and/or account funding type.

Data for the present study was retrospectively analyzed and spanned the period of 18 months, from July 1, 2003 through December 31, 2004. No single subject was represented more than once in the sample. Participants were excluded from the study if it was not possible to identify their age, diagnosis, length of stay while in treatment, inpatient treatment history, or account funding type. The experimenter attempted to utilize full account memberships of each of the accounts involved in this study to identify an equal number of appropriate participants from both the full-risk and the non-risk accounts. Because there was an unequal representation of participants by account funding type, participants were removed at random from one of the account funding types to ensure an equally stratified sample set.

Overview of Research Design

Independent Variables. Independent variables for this study were captured using the managed care company's claim submission data for the account types being studied. Variables of interest gleaned from this claims database included the following: the account identifier, mental health treatment indicator, admission date for all acute admissions, age in years, account funding type, Axis I DSM diagnostic code, discharge date of all acute admissions, gender, interval from previous admission, length of stay for all admissions, and previous admission indicator.

Table 1
Operational Definitions Of Independent Variables

Variable	Operational Definition
The Account Identifier	This indicates **the name of the account**. By knowing the account name the experimenter will know if an account is a non-risk or full-risk account. The actual name of the account will be kept confidential.
Mental Health Treatment Indicator	This is represented by the symbol "**MH**", which signifies that a case has a primary mental health diagnosis. This is used to distinguish cases which have primary substance abuse diagnoses, which are indicated by the symbol "**CD**".
Admission Date For All Acute Admissions	This is a **calendar date which represents every acute admission date** for a case within a specified date range. This date, along with the discharge date of all acute admissions can be used to verify that a readmission has occurred, as well as confirm lengths of stay.
Age In Years	**0-11 = Child** **12-17 = Adolescent** **18-64 = Adult** **65 & Older = Older Adult**
Axis I DSM Diagnostic Code	This is **the five digit diagnostic code** obtained from the Diagnostic and Statistical Manual which will represent the diverse diagnoses found in the cases utilized for this study. Each diagnostic code will determine if the disorder listed is a psychotic disorder. Appendix C indicates the comprehensive list of disorders and indicates which disorders are psychotic disorders. Some diagnoses may have psychosis as a symptom, but will not qualify for this study as a psychotic disorder.
Discharge Date Of All Acute Admissions	This is a **calendar date which represents every acute discharge date** for a case within a specified date range. This date, along with the admission date of all acute admissions can be used to verify that a readmission has occurred, as well as confirm lengths of stay.
Gender	**Male** **Female**
Interval From Previous Admission	This is the number of days that have elapsed from the most recent previous admission. A readmission for this study is defined as a repeat hospitalization within 6 months of discharge. **1 Month = 30 days** **1-180 Days = Readmission** **181-Higher = New Admission (Not A Readmission)**
Length Of Stay Of All Admissions	Each admission is listed separately and there is an **indication in days of the length of stay** for that admission. The day of dicharge is not counted as a day. A day in the hospital counts if the patient stays past midnight.
Previous Admission Indicator	This study is only assessing for previous mental health inpatient treatment, and as such, any indication of "CD" for this section will be excluded. **MH = The patient's last admission was an inpatient mental health admission** **CD = The patient's last admission was an inpatient chemical dependency admission**

Each of the independent variables was analyzed to check its correlation with readmissions. Interrater reliability trials were performed prior to confirming the validity of the data used in this dissertation. This investigator and an independent rater from the managed care company analyzed sets of claims data, confirming or denying that the claims variables matched the clinical database. Upon completion of each set of data, the independent rater and this investigator compared their agreement. This continued until this investigator and the independent rater reached an agreement percentage above 80% for each variable being studied. This process ensured that the independent rater was properly trained and was using the same operational definitions as this investigator. Forty cases at random, 20 from each account funding type, were

analyzed by the independent rater and by this investigator to ensure accuracy of the variables present within the claims data. This was performed by examining the claims data and cross-validating them with the source authorization database to ensure that the information was consistent. The accuracy of this data integrity check is reported in the results section. This investigator strived for an accuracy rating of 100% for each of the variables in question, and corrected any inaccurate variables found. Because this was a retrospective study of preexisting data, this investigator's awareness of the hypotheses could not impact the results of the study. Data were transferred from the managed care company's Excel spreadsheet database to a SPSS database for thorough statistical analysis.

Plan For Analysis

This study is a retrospective study of managed care data. It compares archival data collected from several managed care accounts. The purpose of this study was to see what, if any, factors correlated with psychiatric readmissions. This study utilized two essential statistical measures, the Chi Square and Point Biserial Analyses. Because the goal of this study was to understand the variation between readmitters and one-time admitters, this was a between-subject design. However, within-subject variation was also analyzed and documented in the results section.

Measures

Procedures. Consent in writing from the managed care company's research department was obtained in order to complete this study and to allow access to the data. This investigator agreed to strict confidentiality guidelines for the study. Because of the confidentiality restrictions, the name of the managed care company, as well as all protected health information (PHI) remained anonymous. After the experimenter received the claims data from the managed care company's data analyst, full membership data was extracted from the respective accounts being studied, ensuring full confidentiality.

Chapter 3

Results

All variables were coded and processed by SPSS. The predominant statistical tests employed were the chi-square test of significance and the bivariate correlational test. The sample of participants comprised 2,753 insurance records. This dataset was split randomly, to cross validate the findings. The two sets of data and the results are presented below in a comparative fashion, as well as demographic and clinical variables for the inpatient admissions in this study, inter-rater reliability, and the results of each hypothesis. See Tables 2 and 2 for the demographic and clinical factors present in this study.

Demographic and Clinical Variables

The demographic and clinical variables from this study are listed within Tables 2 and 3. Among the 2,753 subjects in this study, approximately 60% were female. In both sample sets there were an overwhelming number of adults, approximately 72% when compared with other age groups. There was an extremely small sample of children and of older adults in both sample sets. The leading diagnostic category for both sample sets was Mood Disorders, which accounted for over 75% of the subjects. The second most prevalent diagnostic category was Schizophrenia and Other Psychotic disorders, which totaled between 7-10% of the subjects. The average number of days that subjects were hospitalized in both samples was approximately six days, with the standard deviation varying between the two samples from approximately 5 days to 11 days. In each sample there was an approximate readmission rate of 25%, implying that approximately 75% of the subjects were one-time admissions. Because this was a stratified sample set and the

account funding type was controlled for, there was an almost 50% split between the two different account funding types in this study. See Tables 2 and 3 for a comprehensive list of the variables studied.

Table 2

*Demographic and Clinical Variables

Sample 1

Variable	N	Percentage
Participants	1377	
Gender		
Male	609	44.2%
Female	768	55.8%
Age Category		
Child	53	3.8%
Adolescent	310	22.5%
Adult	995	72.3%
Older Adult	19	1.4%
Age Categories Combined		
Children & Adults	1048	76.1%
Adolescents & Older Adults	329	23.9%
Readmission Status		
One-time Admitters	1080	78.4%
Readmissions	297	21.6%
Previous Hospitalization Status		
Participants With A Previous Hospitalization	515	37.4%
Diagnoses		
Adjustment Disorders	44	3.2%
Anxiety Disorders	21	1.5%
Delirium, Dementia, Amnesiac, and Other Cognitive Disorders	10	.7%
Disorders Usually First Diagnosed In Infancy, Childhood, or Adolescence	42	3.1%
Eating Disorders	15	1.1%
Impulse Control Disorders Not		

Elsewhere Classified	19	1.4%
Mood Disorders	1034	75.1%
Personality Disorders	2	.1%
Schizophrenia and Other Psychotic Disorders	139	10.1%
Somatoform Disorders	3	.2%
Substance Related Disorders	40	2.9%
Unspecified Mental Disorder	3	.2%
Length of Stay		
Range	0-52 days	
Mean	6.01	
Standard Deviation	5.088	
Type of Insurance Plan		
Non-Risk	698	50.7%
Full-Risk	679	49.3%

Table 3

*Demographic and Clinical Variables

Sample 2

Variable	N	Percentage
Participants	1376	
Gender		
Male	557	40.5%
Female	819	59.5%
Age Category		
Child	36	2.6%
Adolescent	321	23.3%
Adult	996	72.4%
Older Adult	23	1.7%
Age Categories Combined		
Children & Adults	1032	75%
Adolescents & Older Adults	344	25%
Readmission Status		
One-time Admitters	1030	74.9%
Readmissions	346	25.1%
Previous Hospitalization Status		
Participants With A Previous Hospitalization	589	42.8%
Diagnoses		
Adjustment Disorders	48	3.5%
Anxiety Disorders	25	1.8%
Delirium, Dementia, Amnesiac, and Other Cognitive Disorders	6	.4%
Disorders Usually First Diagnosed In Infancy, Childhood, or Adolescence	29	2.1%
Dissociative Disorders	2	.1%

Eating Disorders	14	1%
Impulse Control Disorders Not Elsewhere Classified	17	1.2%
Mood Disorders	1073	78.0%
Schizophrenia and Other Psychotic Disorders	107	7.8%
Somatoform Disorders	3	.2%
Substance Related Disorders	50	3.6%
Unspecified Mental Disorder	2	.1%

Length of Stay

Range	1-244 days
Mean	6.64
Standard Deviation	10.855

Type of Insurance Plan

Non-Risk	721	52.4%
Full-Risk	655	47.6%

Inter-Rater Reliability

Inter-rater reliability analysis was performed on 38 records by two independent raters. One rater was this investigator; the other, an employee of the managed care company. To test inter-rater reliability, Kappa values were computed for the categorical variables of diagnosis, age group, previous treatment, and account type, and a correlation was used to test the continuous variable of length of stay. The categorical variable of diagnosis obtained a Kappa value of .806. A Kappa of 1.00 was computed for the remaining categorical variables: age group, previous treatment, and account type. In summary, 100% agreement between raters was obtained on all of the hypothesized variables, with the exception of diagnosis which had 92% agreement. Kappa values indicated that the agreement was beyond mere chance for all variables being studied. For the continuous variable of length of stay, a correlation of 1.00 was computed, suggesting perfect agreement.

Hypotheses

Hypothesis One stated that length of stay is positively correlated with readmission. In Sample 1, the length of stay (N=1377, M=6.01, SD=5.09) of all of the participants was positively correlated with readmission, r=.084, p= .001 (one-tailed) (see Table 4). In Sample 2, the length of stay (N=1376, M=6.64, SD=10.86) of all of the participants was also positively correlated with readmission, r=.162, p<.001 (one-tailed) (see Table 4). Although these bi-serial tests of significance show length of stay was positively associated with readmission, the tests indicate

that length of stay accounts for only a small percentage of the variability in readmissions in both Sample 1, r^2<1.0%, and Sample 2, r^2< 3.0%. In other words, approximately 98% of the variability in readmission status was accounted for by other variables. However, in accordance with the hypothesis, both datasets had a positive correlation between length of stay and readmission, indicating that the longer patients remains in the hospital, the greater chance they have to later readmit.

Table 4

Length of Stay	N	Minimum	Max	Mean	Std. Deviation	Pearson Correlation	Sig. (1 Tailed)
Sample 1	1377	1	52	6.01	5.088	0.084	0.001
Sample 2	1376	1	244	6.64	10.85	0.162	<.001

Variability In Readmissions Attributed To Length of Stay	
Sample 1	2.62%
Sample 2	0.71%

Hypothesis Two stated that compared with children and adults, adolescents and older adults will have a significantly higher frequency of readmissions to inpatient treatment within 6 months of discharge from that level of care. In Sample 1, there was a significant difference between the group of children and adults (n=1048) who readmitted (n=242, 23.1%), compared with the group adolescents and older adults (n=329) who readmitted (n=55, 16.7%), p=.014. In Sample 2, there was not a significant difference between the group of children and adults (n=1032) who readmitted (n=248, 24.0%), compared with adolescents and older adults (n=344) who readmitted (n=98, 28.5%), p=.099. The significant difference detected in Sample 1 was due to an elevation in the percentage of children and adults who readmitted, as opposed to the adolescents and older adults who readmitted. In sample 2, there was not a significant difference detected when comparing both age groups. Results indicate that one sample supports a greater

likelihood of children and adults readmitting, yet the other sample did not find a significant difference. Even though there is a statistically significant difference in one of the samples, both sample sets refute the hypothesis that adolescents and older adults are more likely to readmit to the hospital level of care.

Hypothesis Three stated that the presence of a psychotic disorder will positively correlate with a patient's likeliness of readmission to an inpatient psychiatric facility within a 6-month timeframe. In Sample 1, the presence of a psychotic disorder was positively correlated with readmission, (n=139), r=.059, p= .015 (one-tailed) (see Table 5). In Sample 2, the presence of a psychotic disorder was also positively correlated with readmission, (n=107), r=.101, p<.001 (one-tailed) (see Table 5). In accordance with the hypothesis, both datasets indicated that the presence of a psychotic disorder was positively correlated with readmissions to an inpatient psychiatric facility. Despite this, the tests indicate that the presence of a psychotic disorder accounts for only a small percentage of the variability in readmissions both in Sample 1, r^2<1.0%, and Sample 2, r^2=1.0%. Similar to hypothesis one, r variables other than the presence of a psychotic disorder accounts for approximately 99% of the variability in readmission status.

Table 5

	N	Frequency In Sample	Percentage In Sample	Pearson Correlation	Sig. (1 Tailed)
Sample 1	1377				
Psychotic Diagnosis		139	10.10%	0.059	0.015
Sample 2	1376				
Psychotic Diagnosis		107	7.80%	0.101	<.001

Variability In Readmissions Attributed To Having A Psychotic Diagnosis	
Sample 1	0.34%
Sample 2	1.02%

Hypothesis Four stated that having an inpatient psychiatric hospitalization in the past suggests that a patient will be more likely to readmit to the inpatient level of care within a 6-month time frame. In Sample 1, the participants with previous inpatient psychiatric hospitalizations (n=515) were more likely to readmit (n=297, 57.7%), p<.001 (two-sided). In Sample 2, the participants with previous inpatient psychiatric hospitalizations (n=589) were also more likely to readmit (n=346, 58.7%), p<.001 (two-sided). When participants did not have a prior admittance in either Sample 1 (n=862, 62.6%) or Sample 2 (n=787, 57.2%), it was not possible for them to have a readmission. In accordance with the hypothesis, both datasets indicated that having an inpatient psychiatric hospitalization in the past suggested that participants were more likely to readmit.

Hypothesis Five stated that members of full-risk accounts are less likely to readmit to an inpatient psychiatric facility within 6 months than were members of non-risk accounts. In Sample 1, there was no significant difference in readmissions between full-risk participants (n=156, 23.0%) and non-risk participants (n=141, 20.2), p=.211. In Sample 2, there was also no significant difference in readmissions between full-risk participants (n=162, 24.7%) and non-risk participants (n=184, 25.5%), p=.737. In contrast to the hypothesis, there was no significant difference in either sample to support full-risk account members being less likely to readmit to an inpatient psychiatric facility, when they were compared with non-risk accounts members.

Chapter 4

Discussion

The results of this investigation supported the hypotheses that increased lengths of stay, the presence of psychotic disorders, and the experience of previous psychiatric hospitalizations, increase a person's chances to experience an inpatient psychiatric rehospitalization. This section further discusses the results of each hypothesis and compares this study to the previous research, the implications that the results have on clinicians, facilities, and managed care settings, and the limitations of this study, including suggestions for future research.

Discussion of Hypotheses

Length of Stay. This researcher found that it was the participants who had longer lengths of stay in inpatient psychiatric facilities who were significantly more susceptible to experience a psychiatric readmission. This finding supports previous research showing a positive correlation between length of stay and readmissions (Mojtabai et al., 1997). It may be that the participants who tend to readmit have a long length of stay as a result of a more complex diagnosis, resulting in symptoms which take longer to stabilize. Length of stay may be indicative of medical comorbidity or substance abuse, which could increase a person's chance for relapse. Also, patients may have longer periods of stay because of non-compliance with treatment recommendations and medications, sometimes resulting in a court commitment for treatment; this may often result in a readmission. The findings of this study are similar to the study by Yohanna et al., 1998 in which the researchers found that patients with short hospitalizations experienced less frequent readmissions. The results of the present study do, however, conflict

with other previous research by Wickizer et al. (1999) and Craig et al. (2000) who found that shorter lengths of stay increase the chances for readmission. Mechanic et al. (1997) hypothesized that there was an inadequate amount of time spent on discharge planning within short lengths of stay, and that this led to higher readmission rates. The results of the present study did not find that short lengths of hospitalization led to inpatient readmissions, discouraging the focus of future research being placed on an early exit as a root cause leading to readmission. Although there is conflicting data surrounding the variable of length of stay, it is important to consider a historical confound which may relate to managed care and the variable of length of stay. Over time, managed care emerged and has become increasingly more prevalent as the standard form of health insurance. It appears that as managed care's tenure has increased, so has the scrutiny placed on hospital admissions. It appears that more recently, managed care requires patients to be more symptomatic and acutely ill in order to be eligible to receive approval for hospital services. If this is the case, it would seem logical that the more acutely ill patients who are occupying the hospitals will take more time to stabilize and are likely to be at higher risk for relapse and rehospitalization.

The types of treatment and the emergence of different levels of care may also play a key role in how the variable of length of stay impacts hospital readmissions. Patients who, historically, were admitted to the hospital level of care with less acute symptoms and shorter lengths of treatment are now able to be treated in residential, day hospital, and intensive outpatient levels of care. Not initially exposing many of these individuals to an inpatient hospital setting removes a large portion of potential readmitters. In other words, it is possible that the individuals who historically had short lengths of hospital treatment and were subsequently

readmitted are now given the opportunity to be treated in a lower level of care, leaving more acutely and chronically ill patients in the hospitals.

Age. This researcher did not find a significant result in the percentage of adolescents and older adults who were readmitted when this group was compared with children and adults. This finding is in opposition to the finding of Tucker and Brems (1993), who found that adolescents and older adults stay longer in psychiatric hospitals and readmit more. This researcher felt that the older adult and adolescent population together would result in more psychiatric readmissions because of their symptom complexity, combined with medical or substance abuse comorbidity. The older adult population was expected to have more psychiatric readmissions because of possible medical complications which often co-occur with an increase in age. The older adults were expected to have an increased sensitivity to medications, which typically results in fewer aggressive medication changes and readmissions due to medication ineffectiveness. The older adult population was also expected to readmit more frequently as a result of disposition issues and an increased difficulty in self-care. Adolescents seemed more likely to readmit to a hospital because of increased family conflict, identity confusion, legal involvement, and school difficulties. Because of the egocentric nature of adolescents, it would also seem that they would be more likely to be non-compliant with their treatment recommendations. Adolescents were also expected to readmit more due to their difficulty in developing insights into their mental illnesses and to the stressors which lead to hospital admissions. It was hypothesized that children and adults were likely to readmit less often because of their involvement with a support system, fewer severe symptoms, and increased coping skills. Children were expected to readmit less because they are more receptive to parental involvement and are more compliant with the

parental oversight of their medications and treatment recommendations. The symptoms of a mental health diagnoses in childhood were also expected to be less severe than a person who was older and had experienced more complex life stressors. Adults were expected to readmit less to a psychiatric hospital as a result of their increased ability to develop healthy coping skills to deal with their problems. Adults also were thought to have a support system including family, friends, an employer, and possibly outpatient providers. Adults were also expected to be healthier medically.

Although results of the present study did not detect a difference between age groups supporting the idea that adolescents and older adults are more likely to readmit, one of the two sample sets found a significant difference supporting the idea that children and adults are more likely to readmit. It is possible that many of the previously mentioned factors impact children and adults more severely than they impact adolescents and older adults. It is also possible that children are at increased risk for readmission because they are frequently monitored and supervised by their schools and parents. If difficulties arise for a child, it is possible that hospitalization may be offered as a solution. Adults also have unique factors making them more frequently at risk for readmissions. The added stress of being a parent may compound with a mental health disorder and lead to frequent rehospitalization. Also, the previously mentioned supports of having employment and family may also be significant forms of stress, increasing rather than decreasing chances for rehospitalization. Although the finding about children and adults was statistically significant, it should be interpreted with caution because it was detected in only one sample, and it reached significance only at the .05 level and not the .01 level. This result, at the least, supports further investigation into the relationship between age and readmission

Diagnosis. The results of the present study indicated that the presence of a psychotic disorder was positively correlated with readmission to an inpatient psychiatric facility. These findings were similar to the findings of Bernardo and Forchuk (2001), who found that patients diagnosed with Schizophrenia have a higher chance of readmission. Similarly, the results of this study are consistent with the study by Mojtabai et al. (1997), who found that patients diagnosed with Schizophrenia have longer lengths of stay and higher readmission rates. Additionally, Craig et al. (2000) found that the rate of readmission increased when depressed patients also presented with symptoms of psychoses. There are several possible reasons why a diagnosis of a psychotic disorder may increase the chance of an inpatient readmission. A psychotic disorder tends to be an acute and chronic diagnosis, often resulting in symptoms which can place the person or others at risk. These symptoms, such as paranoia or hallucinations may take time to stabilize with medications and often do not respond quickly. Medications used to treat the symptoms of psychotic disorders often take longer time to stabilize symptoms, possibly increasing the occurrence of medication non-compliance. When patients diagnosed with a psychotic disorder are discharged from the hospital and stop taking their medications, the acute symptoms of the diagnosis often reappear and require another inpatient hospitalization. These patients also seem to be readmitted to a hospital under court commitments for treatment because their bizarre behavior is often a byproduct of their psychotic disorder.

Previous Treatment. The results of the present investigation are consistent with previous findings that prior treatment increases a person's chances to have future psychiatric readmissions. Bernardo and Forchuk (2001) also found previous treatment to be the strongest

factor for readmission when they analyzed the spectrum of diagnoses in their study. Harris et al. (1993) also found that past treatment increases the readmission rate. It seems that if individuals have symptoms acute enough to require hospitalization once, they are prone to have other similar experiences. These individuals may have major stressors which trigger these symptoms and these symptoms may reoccur if the patients are not able to develop the coping skills or the insight, they need to be kept safe on an outpatient basis. Some patients may enjoy the security and support they receive while in the hospital. They may feel that they cannot get this kind of support unless they return to the hospital, possibly resulting in a dependency on the hospital for the support they crave. In addition to enjoying the security the hospital gives them, patients may also enjoy the increased attention they get from family members when they are in the hospital. In the present study, having a previous hospitalization was the strongest correlate to readmission and seems to warrant a significant amount of future considerations for clinical practice.

Account Funding Type. The present study did not find a significant difference in the readmission rates between non-risk and full-risk insurance account types. It was hypothesized that indeed there are different financial incentives associated with the different account types, therefore that there may be differences in the way cases are managed. If these differences existed and had a profound impact on treatment, it would be conceivable to find a difference in the readmission rates. However, based on this researcher's findings, one was not detected. Another study conducted by Fried et al. (2000) also found that there were no significant differences in readmission rates when assessing the variable of insurance account funding types. Fried et al. (2000) retrieved data from 198 mental health clinicians and administrators concerning their perceptions of utilization management procedures. Although some providers appeared to feel

that the authorization process was different based on the account type, Fried et al. (2000) did not find that this was the case. Instead, they found that "utilization review managers in both programs approach this function in much the same manner...clinical competence and cost considerations were the most prominent criteria used for authorization decisions" (p. 39).

Although this researcher's results match the results of Fried et al. (2000), it is important to note that there is limited research addressing the variable of insurance account funding types; therefore, it seems premature to dismiss potential differences. The outcome variable of readmission seems to encapsulate so many variables, that even if there were differences as a result of the account funding types, it is possible these may not be detected within the variable of readmission.

The differences that exist between the account types may be better associated with the cost and delivery of treatment. For example, care mangers from different account funding types may impact the length of stay within a treatment episode differently, but if they do not impact the inherent severity of someone's mental illness, the chances for a readmission may be similar. Some of the variables which impact the cost and service delivery include the length of stay, the frequency of authorization denials, the frequency of the telephonic reviews, and the quality of treatment recommendations which come from the individual care managers and psychiatrists who work for the managed care company and different account types. It is possible that the outcome for patients who experience a hospitalization, regardless of their account type are similar, but the aggressiveness with which they are treated may be drastically different.

Most of the research presently discusses the general impact that managed care has on the delivery of healthcare today. There are different opinions about whether or not managed care companies are impacting the rate of readmissions, and most of the articles focus on either

supporting or refuting the continuation of a managed care model. Based on the length of time that the managed care model has been in place, it seems more beneficial to assess the diverse processes within managed care companies, instead of arguing for or against their existence. Most studies have not examined the day to day operations of managed care and, thus, have not separated the cases being assessed to see if differences in the way that they are funded.

Implications for Treatment

Outpatient Clinicians and Facility Based Care. The present study found that longer lengths of stay, a diagnosis of a psychotic disorder, and a previous inpatient treatment episode increase the likelihood of a psychiatric inpatient readmission. The implications of these findings are important for psychiatric hospitals and outpatient providers. For patients who fall into the above categories, a treating facility or provider may want to conduct a more thorough assessment of the patient, including gathering as much information as possible about past treatment episodes. This can be achieved by evaluating the patient and the family members, gathering collateral information and medical records from outpatient providers and those who treated the patient in the past, and by contacting the patient's insurance company. Those who have treated the patient previously may want to educate the patient and the family about the patient's diagnosis, treatment, and the importance of medication compliance. The patient may also benefit if they create a readmission prevention plan (or crisis plan) prior to his or her discharge from treatment. This plan could outline the signs of decompensation for the patient, what to do when this happens, and who to contact as a means of preventing a hospital readmission. It may be beneficial for the treating facility to secure a concrete discharge plan for their patients. This may

involve several different aspects, including the following: a step down to a less intensive level of care, such as a day treatment program or an intensive outpatient program; involvement of community supports; more frequent outpatient appointments; and, or the involvement of community supports. All of these factors can help a patient by providing the monitoring and support that may be needed following discharge.

This study did not find consistently significant differences among readmission rates between the group of children and adults and the group of adolescents and older adults. This implies that it may not be age-specific developmental tasks which lead to a psychiatric readmission, but rather clinical commonalities among all age groups. Some of these commonalities may include diagnosis, medications, length of treatment, and types of treatment. There were also no significant differences detected in the readmission rate between the diverse account funding types for patients. These results suggest that all patients would benefit from the same standards and practices of treatment, regardless of their age or the type of account they may have through their managed care organization.

The results from the present study utilized a patient population across the United States and led to results that may not be applicable to all treatment centers and locations. It is suggested that treatment facilities and clinicians take into consideration the Local Clinical Scientist Model which calls for modification of empirically supported strategies based upon such factors as local base rates, consideration of a cultural or sub-cultural group and context-dependent meaning of personal life events (Striker & Trierweiler, 1995). There may be variables unique to certain populations and, or locations that may add to or supersede the findings of the present study. Clinicians and facilities should be sensitive to individual and cultural differences and should conduct a careful analysis of the specific local context in which they are working. Additionally,

clinicians need to be mindful of their own impact as observers and value the forms of treatment that empower patients. Last, the Local Clinical Scientist Model advocates that clinicians know that the proper application of scientific knowledge to clinical practice requires careful integration of general findings to complex, specific situations (Striker & Trierweiler, 1995). Accordingly, the present researcher agrees with and advocates for the use of this model.

Managed Care Organizations. It does not appear that managed care companies are negatively impacting readmission rates when they decrease the average length of treatment through the use of utilization management techniques. In fact, based on the results of the present study, there are several steps which managed care companies can take to help decrease the readmission rates of their members. For example, managed care companies can provide more intensive care management services to members who are diagnosed with psychotic disorders and who have inpatient treatment histories. It may be helpful for care managers to conduct more intensive clinical reviews, to obtain old medical records, to determine what helped, or what did not help the member in the past, and to discuss the primary stressors for each admission. It may be beneficial for care managers to review the salient clinical variables more frequently with a supervisor or psychiatrist, and to focus on the discharge plans for their members. The care manager for example, in collaboration with the psychiatrist, may recommend the use of decanoate medications when a patient is non-compliant with medications, suggest more frequent appointments with an outpatient psychiatrist, or encourage the involvement of family supports.

Managed care companies may benefit from allocating more resources to patients with longer periods of treatment or with past treatment episodes. Such resources may lead to an intensive outreach model which would include the involvement of community supports, regular

phone contact with the member, assistance with discharge planning, and education about mental health diagnoses and treatment through mailings and web sites. Managed care companies may wish to consider having a larger network of providers with increased availability so that a member is likely to be discharged from a facility with an aftercare appointment in place. Managed care organizations may also take the option to increase the use of 23 hour beds, or crisis observation beds, which may provide a safe place for a member in crisis. These crisis beds may be able to provide the structure and support which is needed for a patient in crisis, yet prevent a hospital readmission.

Although the above findings suggest factors which could be considered by managed care organizations, it does not appear that age or the account funding type have a profound impact on inpatient psychiatric readmission rates. Therefore, managed care companies may choose to continue to provide consistent care management to individuals of diverse ages and diverse account funding types. If managed care companies choose to provide different services based on age and account funding types, they may wish to examine their rationale, because these factors alone do not appear to impact readmission rates significantly

Limitations of the Study

The present study utilized archival data and therefore the investigator had limited control over the information collected. The information collected was third hand, meaning it was collected initially from the patient by a hospital and then communicated to the insurance company's staff to be recorded. It is possible that information was distorted when communicated to the insurance company, as well as the time when it was recorded by the care manager.

Because of the large sample size of this investigation, the final random case reliability check of the data represented a small percentage of the data, leaving room for data integrity concerns. There were several factors within this study that were not addressed in order to protect the confidentiality of the managed care company and the participants of the study. For example, specific policies and procedures that exist at the insurance company, the location of the site of the insurance company, the job types most prevalent among the accounts utilized, and the geographic location of the accounts studied were not addressed in the present study.

By utilizing archival data, it is possible that readmission factors existed within the inpatient mental health setting, but were not represented in this study due to the limitations of the data utilized. For example, the quantity and class of medications prescribed to patients, the level of experience of the treating psychiatrists, the geographic location of the treating facility, and the involvement of patients' families in their treatments were not present in the current data. It may benefit managed care companies to collect and to document diverse and more detailed information to aid in understanding treatment at the inpatient level of care.

The purpose of this study was to understand how different variables within mental health inpatient treatment impact recidivism. However, because this was an archival study, it is challenging to confirm the accuracy of the diverse variables in question. For example, this study attempted to determine if psychotic disorders were positively correlated with readmission. It is possible that within the dataset there were inaccurate diagnoses recorded by the insurance company. It is also possible that upon a patient's discharge, the treating facility failed to update their final diagnoses, leaving the initial assessment information in their records. Care managers may also have failed to update the diagnosis in their database upon the patient's discharge,

despite the hospital's having a different diagnosis on record. It is also possible that the primary diagnosis was labeled as secondary and therefore was not detected by the present study.

In addition to administrative errors, it is possible that the treating clinicians misdiagnosed the participants in the present study. Additionally, because the care managers at managed care organizations make treatment considerations, the experiences and personal characteristics of the care managers may have impacted the treating facility and possibly altered the outcome of treatment. The characteristics of the clinical personnel involved in the present study were not available.

Suggestions for Future Research

The present study found that longer lengths of treatment, a diagnosis of a psychotic disorder, and having a previous hospitalization positively correlated with inpatient psychiatric readmission rates. Although these results build upon the knowledge-base of literature that addresses psychiatric readmissions, there are many other variables and different approaches to the present variables which, if studied, could benefit the field of psychology. It was mentioned previously by the present researcher that a possible reason why longer hospitalizations were correlated with an increased risk for rehospitalization was that the patient profile for the inpatient level of care had changed. It would seem advantageous to study patient symptomology at the hospital level of care in an effort to understand the current variables that exist; this would allow researchers to differentiate between historic and current data. It is possible that if the symptoms of the patients at the hospital level of care have changed, that some of the previous research may be invalid or irrelevant. It is also possible that after researching the diversity of patients'

symptoms and circumstances that new variables could be identified, leading to new efforts for treatment.

The present study did not find a consistent and significant correlation between readmissions and the two age groups examined. It may be helpful to determine if the readmission rates for each individual age group were significant or if they also did not consistently differ from one another. For example, there may be a significant difference when comparing readmission rates of children to adolescents, children to adults, and so forth. Additionally, the sample size among the diverse age groups varied greatly. It could be valuable to stratify a new sample of subjects to include equal representation from each of the age groups. It is possible that the sample size of the groups, other than adults, was too small to detect a difference in the readmission rate.

Although the present study noted a correlation between a psychotic disorder and inpatient readmissions, it did not examine all of the aspects of a multiaxial diagnosis. For example, it would be beneficial to determine if Axis II diagnoses impacted readmission rates. In addition to the Axis II disorders, it would be interesting to study the role of chemical dependency and medical comorbidities, to determine the influence that they had on inpatient readmission rates. Last, studying different combinations of diagnoses from the multiaxial diagnostic system may prove beneficial.

According to a survey conducted by Fried et al. (2000), several clinicians and mental health providers felt that patients are treated differently, based on the account funding type of their benefit plans. Although would be crucial to gather more information about these perceptions and what they entail, it would be interesting to see if there is a difference in services rendered based on the account type. It may be insightful to examine the length of stay along with

the account funding type to determine if there is a correlation between the amounts of services rendered and the account funding type. In addition, it may also be beneficial to note if the cost of treatment based on a member's benefit plan prevents some members from seeking treatment.

Most of the research at this time discusses the general impact that managed care has on the delivery of healthcare today. Different opinions abound regarding how managed care companies are impacting readmissions rates. Based on the longevity of this model, it appears that it may be more constructive to assess the diverse processes within managed care companies, instead of arguing for or against the managed care model. Most studies have not examined the day-to-day operations of managed care and have not analyzed the wealth of information that managed care companies have access to. Upon future analysis and increased access to managed care information, there is ample room for growth in understanding psychiatric readmissions, which could improve the services delivered both by hospitals and by managed care companies, potentially increasing the quality of life for their patients.

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Appendix A

Criteria for Short Term Treatment of Acute Psychiatric Illness

Clinical Criteria for Admission

Must satisfy one of the following, with a DSM-IV diagnosis the basis for risk:

1.1 Imminent risk for self-injury, with an inability to guarantee safety, as manifested by any one of the following:

1.1.1 Recent, serious, and dangerous suicide attempt, indicated by degree of lethal intent, impulsivity, and/or concurrent intoxication, including an inability to reliably contract for safety.

1.1.2 Current suicidal ideation with intent, realistic plan, or available means that is severe and dangerous.

1.1.3 Recent self-mutilation that is severe and dangerous.

1.1.4 Recent verbalization or behavior indicating high risk for severe injury.

1.2 Imminent risk for injury to others as manifested by any of the following:

1.2.1 Active plan, means, and lethal intent to seriously injure other(s).

1.2.2 Recent assaultive behaviors that indicate a high risk for recurrent and serious injury to others.

1.2.3 Recent and serious physically destructive acts that indicate a high risk for recurrence and serious injury to others.

1.3 There is an active psychiatric disorder that can either be more efficiently treated or treated to more rapidly decrease the patient's suffering.

1.4 Acute and serious deterioration from the patient's baseline ability to fulfill age-appropriate responsibilities in one or more of the following areas:

1.4.1 education;

1.4.2 vocation;

1.4.3 family; and/or

1.4.4 social/peer relations

to the extent that behavior is so disordered, disorganized, or bizarre that it would be unsafe for the patient to be treated in a lesser level of care.

1.5 Imminent risk for acute medical status deterioration due to the presence and/or treatment of an active psychiatric symptom(s) manifested by *either*:

1.5.1 Signs, symptoms, and behaviors that interfere with diagnosis or treatment of a serious and acute medical illness requiring inpatient medical services.[2]

1.5.2 A need for acute psychiatric interventions (e.g., drug, electroconvulsive therapy [ECT], restraint) with a high probability of serious and acute deterioration of general medical and/or mental health.

1.6 Weight loss to a point that the patient is 15% below ideal weight or failure to make expected weight gain during a period of growth, leading to body weight 15% below that expected and any one of the following:

1.6.1 General medical complications that have resulted from the anorexia, including but not limited to severe malnutrition, emaciation, significant electrolyte or fluid imbalance, cardiac arrhythmias, hypotension, impaired renal function, or intestinal atony or obstruction.

1.6.2 Life threatening complications from bulimia nervosa that may include pancreatitis, gastric dilatation, esophagitis or esophageal tears, severe electrolyte disturbance, colitis, cardiac arrhythmias, impaired renal function, or intestinal atony or obstruction.

1.6.3 A complicating general medical condition such as cardiac disease, diabetes, or pregnancy present.

1.6.4 In addition to bulimia or anorexia, a severe concurrent drug or alcohol abuse problem.

Appendix B

Index of Psychiatric Disorders

Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence

Mental Retardation

- 317 Mild Mental Retardation
- 318.0 Moderate Mental Retardation
- 318.1 Severe Mental Retardation
- 318.2 Profound Mental Retardation
- 319 Mental Retardation, Severity Unspecified

Learning Disorders

- 315.00 Reading Disorder
- 315.1 Mathematics Disorder
- 315.2 Disorder of Written Expression
- 315.9 Learning Disorder NOS

Motor Skills Disorders

- 315.4 Developmental Coordination Disorder

Communication Disorders

- 315.31 Expressive Language Disorder
- 315.31 Mixed Receptive-Expressive Language Disorder
- 315.39 Phonological Disorder
- 307.0 Stuttering
- 307.9 Communication Disorder NOS

Pervasive Developmental Disorders

- 299.00 Autistic Disorder
- 299.80 Rett's Disorder
- 299.10 Childhood Disintegrative Disorder
- 299.80 Asperger's Disorder
- 299.80 Pervasive Developmental Disorder NOS

Attention-Deficit And Disruptive Behavior Disorders

- Attention-Deficit Hyperactivity Disorder
    - 314.01 Combined Type
    - 314.01 Predominantly Hyperactive-Impulsive Type
    - 314.00 Predominantly Inattentive Type
    - 314.9 Attention-Deficit Hyperactivity Disorder NOS
- 312.8 Conduct Disorder
- 313.81 Oppositional Defiant Disorder
- 312.9 Disruptive Behavior Disorder NOS

Feeding and Eating Disorders if Infancy or Early Childhood

- 307.52 Pica
- 307.53 Rumination Disorder
- 307.59 Feeding Disorder of Infancy or Early Childhood

Tic Disorders

- 307.23 Tourette's Disorder
- 307.22 Chronic Motor or Vocal Tic Disorder
- 307.21 Transient Tic Disorder
- 307.20 Tic Disorder NOS

Elimination Disorders

- Encopresis
    - 787.6 Encopresis, With Constipation and Overflow Incontinence
    - 307.7 Encopresis, Without Constipation and Overflow Incontinence
- 307.6 Enuresis (Not Due to a General Medical Condition)

Other Disorders of Infancy, Childhood, or Adolescenece

- 309.21 Separation Anxiety Disorder
- 313.23 Selective Mutism
- 313.89 Reactive Attachment Disorder of Infancy or Early Childhood
- 307.3 Stereotypic Movement Disorder
- 313.9 Disorder of Infancy, Childhood, or Adolescence NOS

Delirium, Dementia, and Amnestic and Other Cognitive Disorders

Delirium

- 293.0 Delirium Due to...[Indicate the General Medical Condition]
- 780.09 Delirium NOS

Dementia

- 290.10 Dementia Due to Creutzfeldt-Jakob Disease
- 294.1 Dementia Due to Head Trauma
    - 294.9 Dementia Due to HIV Disease
    - 294.1 Dementia Due to Huntington's Disease
    - 294.1 Dementia Due to Parkinson's Disease
- 290.10 Dementia Due to Pick's Disease
- 294.1 Dementia Due to...[Indicate Other General Medical Condition]
- 294.8 Dementia NOS
- Dementia of the Alzheimer's Type, With Early Onset
    - 290.10 Uncomplicated
    - 290.11 With Delirium
    - 290.12 With Delusions
    - 290.13 With Depressed Mood
- Dementia of the Alzheimer's Type, With Late Onset
    - 290.0 Uncomplicated
    - 290.3 With Delirium
    - 290.20 With Delusions
    - 290.21 With Depressed Mood
- Vascular Dementia
    - 290.41 With Delirium
    - 290.42 With Delusions
    - 290.43 With Depressed Mood

Amnestic Disorders

- 294.0 Amnestic Disorder Due to...[Indicate the General Medical Condition]

- 294.8 Amnestic Disorder NOS

Other Cognitive Disorders

- 294.9 Cognitive Disorder NOS

Mental Disorders Due to a General Medical Condition Not Elsewhere Classified

- 293.89 Catatonic Disorder Due to...[Indicate the General Medical Condition]
- 310.1 Personality Change Due to...[Indicate the General Medical Condition]
- 293.9 Mental Disorder NOS Due to...[Indicate the General Medical Condition]

Substance-Related Disorders

Alcohol-Related Disorders

- Alcohol
    - 305.00 Abuse
    - 303.90 Dependence
    - 291.8 -Induced Anxiety Disorder
    - 291.8 -Induced Mood Disorder
    - 291.1 -Induced Persisting Amnestic Disorder
    - 291.2 -Induced Persisting Dementia
    - 291.5 -Induced Psychotic Disorder, With Delusions
    - 291.3 -Induced Psychotic Disorder, With Hallucinations
    - 291.8 -Induced Sexual Dysfunction
    - 291.8 -Induced Sleep Disorder
    - 303.00 Intoxication
    - 291.0 Intoxication Delirium
    - 291.9 -Related Disorder NOS
    - 291.8 Withdrawal
    - 291.0 Withdrawal Delirium

Amphetamine (Or Amphetamine-Like) Related Disorders

- Amphetamine (or Amphetamine-Like)
    - 305.70 Abuse
    - 304.40 Dependence

- 292.89 -Induced Anxiety Disorder
- 292.84 -Induced Mood Disorder
- 292.11 -Induced Psychotic Disorder, With Delusions
- 292.12 -Induced Psychotic Disorder, With Hallucinations
- 292.89 -Induced Sexual Dysfunction
- 292.89 -Induced Sleep disorder
- 292.89 Intoxication
- 292.81 Intoxication Delirium
- 292.9 -Related Disorder NOS
- 292.0 Withdrawal

Caffeine-Related Disorders

- Caffeine
  - 292.89 -Induced Anxiety Disorder
  - 292.89 -Induced Sleep Disorder
  - 305.90 Intoxication
  - 292.9 -Related Disorder NOS

Cannabis-Related Disorders

- Cannabis
  - 305.20 Abuse
  - 304.30 Dependence
  - 292.89 -Induced Anxiety Disorder
  - 292.11 -Induced Psychotic Disorder, With Delusions
  - 292.12 -Induced Psychotic Disorder, With Hallucinations
  - 292.89 Intoxication
  - 292.81 Intoxication Delirium
  - 292.9 -Related Disorder NOS

Cocaine-Related Disorders

- Cocaine

- 305.60 Abuse
- 304.20 Dependence
- 292.89 -Induced Anxiety Disorder
- 292.84 -Induced Mood Disorder
- 292.11 -Induced Psychotic Disorder, With Delusions
- 292.12 -Induced Psychotic Disorder, With Hallucinations
- 292.89 -Induced Sexual Dysfunction
- 292.89 -Induced Sleep Disorder
- 292.89 Intoxication
- 292.81 Intoxication Delirium
- 292.9 -Related Disorder NOS
- 292.0 Withdrawal

Hallucinogen-Related Disorders

- Hallucinogen
  - 305.30 Abuse
  - 304.50 Dependence
  - 292.89 -Induced Anxiety Disorder
  - 292.84 -Induced Mood Disorder
  - 292.11 -Induced Psychotic Disorder, With Delusions
  - 292.12 -Induced Psychotic Disorder, With Hallucinations
  - 292.89 Intoxication
  - 292.81 Intoxication Delirium
  - 292.89 Persisting Perception Disorder
  - 292.9 -Related Disorder NOS

Inhalant-Related Disorders

- Inhalant
  - 305.90 Abuse
  - 304.60 Dependence

- 292.89 -Induced Anxiety Disorder
- 292.84 -Induced Mood Disorder
- 292.82 -Induced Persisting Dementia
- 292.11 -Induced Psychotic Disorder, With Delusions
- 292.12 -Induced Psychotic Disorder, With Hallucinations
- 292.89 Intoxication
- 292.81 Intoxication Delirium
- 292.9 -Related Disorder NOS

Nicotine-Related Disorders

- Nicotine
  - 305.10 Dependence
  - 292.9 -Related Disorder NOS
  - 292.0 Withdrawal

Opioid-Related Disorders

- Opioid
  - 305.50 Abuse
  - 304.00 Dependence
  - 292.84 -Induced Mood Disorder
  - 292.11 -Induced Psychotic Disorder, With Delusions
  - 292.12 -Induced Psychotic Disorder, With Hallucinations
  - 292.89 -Induced Sexual Dysfunction
  - 292.89 -Induced Sleep Disorder
  - 292.89 Intoxication
  - 292.81 Intoxication Delirium
  - 292.9 -Related Disorder NOS
  - 292.0 Withdrawal

Phencyclidine (Or Phencyclidine-Like)-Related Disorders

- Phencyclidine (or Phencyclidine-Like)

- 305.90 Abuse
- 304.90 Dependence
- 292.89 -Induced Anxiety Disorder
- 292.84 -Induced Mood Disorder
- 292.11 -Induced Psychotic Disorder, With Delusions
- 292.12 -Induced Psychotic Disorder, With Hallucinations
- 292.89 Intoxication
- 292.81 Intoxication Delirium
- 292.9 -Related Disorder NOS

Sedative-, Hypnotic-, or Anxiolytic-Related Disorders

- Sedative, Hypnotic, or Anxiolytic
  - 305.40 Abuse
  - 304.10 Dependence
  - 292.89 -Induced Anxiety Disorder
  - 292.84 -Induced Mood Disorder
  - 292.83 -Induced Persisting Amnestic Disorder
  - 292.82 -Induced Persisting Dementia
  - 292.11 -Induced Psychotic Disorder, With Delusions
  - 292.12 -Induced Psychotic Disorder, With Hallucinations
  - 292.89 -Induced Sexual Dysfunction
  - 292.89 -Induced Sleep Disorder
  - 292.89 Intoxication
  - 292.81 Intoxication Delirium
  - 292.9 -Related Disorder NOS
  - 292.0 Withdrawal
  - 292.81 Withdrawal Delirium

Polysubstance-Related Disorder

- 304.80 Polysubstance Dependence

Other (or Unknown) Substance-Related Disorder

- Other (or Unknown) Substance
    - 305.90 Abuse
    - 304.90 Dependence
    - 292.89 -Induced Anxiety Disorder
    - 292.81 -Induced Delirium
    - 292.84 -Induced Mood Disorder
    - 292.83 -Induced Persisting Amnestic Disorder
    - 292.82 -Induced Persisting Dementia
    - 292.11 -Induced Psychotic Disorder, With Delusions
    - 292.12 -Induced Psychotic Disorder, With Hallucinations
    - 292.89 -Induced Sexual Dysfunction
    - 292.89 -Induced Sleep Disorder
    - 292.89 Intoxication
    - 292.9 -Related Disorder NOS
    - 292.0 Withdrawal

Schizophrenia and Other Psychotic Disorders

- Schizophrenia
    - 295.20 Catatonic Type
    - 295.10 Disorganized Type
    - 295.30 Paranoid Type
    - 295.60 Residual Type
    - 295.90 Undifferentiated Type
- 295.40 Schizophreniform Disorder
- 295.70 Schizoaffective Disorder
- 297.1 Delusional Disorder
- 298.8 Brief Psychotic Disorder
- 297.3 Shared Psychotic Disorder

- Psychotic Disorder Due to...[Indicate the General Medical Condition]
    - 293.81 With Delusions
    - 293.82 With Hallucinations
- 298.9 Psychotic disorder NOS

Mood Disorders

Depressive Disorders

- 300.4 Dysthymic Disorder
- Major Depressive Disorder
    - Major Depressive Disorder, Recurrent
        - 296.36 In Full Remission
        - 296.35 In Partial Remission
        - 296.31 Mild
        - 296.32 Moderate
        - 296.33 Severe Without Psychotic Features
        - 296.34 Severe With Psychotic Features
        - 296.30 Unspecified
    - Major Depressive Disorder, Single Episode
        - 296.26 In Full Remission
        - 296.25 In Partial Remission
        - 296 21 Mild
        - 296.22 Moderate
        - 296.23 Severe Without Psychotic Features
        - 296.24 Severe With Psychotic Features
        - 296.20 Unspecified
- 311 Depressive Disorder NOS

Bipolar Disorders

- Bipolar Disorder
    - 296.80 Bipolar Disorder NOS

- Bipolar I Disorder, Most Recent Episode Depressed
  - 296.56 In Full Remission
  - 296.55 In Partial Remission
  - 296.51 Mild
  - 296.52 Moderate
  - 296.53 Severe Without Psychotic Features
  - 296.54 Severe With Psychotic Features
  - 296.50 Unspecified
- 296.40 Bipolar I Disorder, Most Recent Episode Hypomanic
- Bipolar Disorder I, Most Recent Episode Manic
  - 296.46 In Full Remission
  - 296.45 In Partial Remission
  - 296.41 Mild
  - 296.42 Moderate
  - 296.43 Severe Without Psychotic Features
  - 296.44 Severe With Psychotic Features
  - 296.40 Unspecified
- Bipolar Disorder I, Most Recent Episode Mixed
  - 296.66 In Full Remission
  - 296.65 In Partial Remission
  - 296.61 Mild
  - 296.62 Moderate
  - 296.63 Severe Without Psychotic Features
  - 296.64 Severe With Psychotic Features
  - 296.60 Unspecified
- 296.7 Bipolar I Disorder, Most Recent Episode Unspecified
- Bipolar I Disorder, Single Manic Episode

        - 296.06 In Full Remission
        - 296.05 In Partial Remission
        - 296.01 Mild
        - 296.02 Moderate
        - 296.03 Severe Without Psychotic Features
        - 296.04 Severe With Psychotic Features
        - 296.00 Unspecified
    - 296.89 Bipolar II Disorder
- 301.13 Cyclothymic Disorder
- Mood Disorder
    - 293.83 Mood Disorder Due to...[Indicate the General Medical Condition]
    - 296.90 Mood Disorder NOS

Anxiety Disorders

- 300.02 Generalized Anxiety Disorder
- Panic Disorder
    - 300.21 With Agoraphobia
    - 300.01 Without Agoraphobia
- 300.22 Agoraphobia Without History of Panic Disorder
- 300.29 Specific Phobia
- 300.23 Social Phobia
- 300.3 Obsessive-Compulsive Disorder
- 309.81 Posttraumatic Stress Disorder
- 308.3 Acute Stress Disorder
- Anxiety Disorder
    - 293.89 Anxiety Disorder Due to...[Indicate the General Medical Condition]
    - 300.00 Anxiety Disorder NOS

Somatoform Disorders

- 300.81 Somatization Disorder

- 300.81 Undifferentiated Somatoform Disorder
- 300.11 Conversion Disorder
- Pain Disorder
    - 307.89 Associated With Both Psychological Factors and a General Medical Condition
    - 307.80 Associated With Psychological Factors
- 300.7 Hypochondriasis
- 300.7 Body Dysmorphic Disorder
- 300.81 Somatoform Disorder NOS

Factitious Disorders

- Factitious Disorder
    - 300.19 With Combined Psychological and Physical Signs and Symptoms
    - 300.19 With Predominantly Physical Signs and Symptoms
    - 300.16 With Predominantly Psychological Signs and Symptoms
    - 300.19 Factitious Disorder NOS

Dissociative Disorders

- 300.12 Dissociative Amnesia
- 300.15 Dissociative Disorder NOS
- 300.13 Dissociative Fugue
- 300.14 Dissociative Identity Disorder
- 300.6 Depersonalization Disorder

Sexual and Gender Identity Disorder

Sexual Dysfunctions

- 625.8 Female Hypoactive Sexual Desire Disorder Due to...[Indicate the General Medical Condition]
- 608.89 Male Hypoactive Sexual Desire Disorder Due to...[Indicate the General Medical Condition]
- 302.71 Hypoactive Sexual Desire Disorder
- 302.79 Sexual Aversion Disorder
- 302.72 Female Sexual Arousal Disorder

- 302.72 Male Erectile Disorder
- 607.84 Male Erectile Disorder Due to...[Indicate the General Medical Condition]
- 302.73 Female Orgasmic Disorder
- 302.74 Male Orgasmic Disorder
- 302.75 Premature Ejaculation
- 302.76 Dyspareunia (Not Due to a General Medical Condition)
- 625.0 Female Dyspareunia Due to...[Indicate the General Medical Condition]
- 608.89 Male Dyspareunia Due to...[Indicate the General Medical Condition]
- 306.51 Vaginismus (Not Due to a General Medical Condition)
- 625.8 Other Female Sexual Dysfunction Due to...[Indicate the General Medical Condition]
- 608.89 Other Male Sexual Dysfunction Due to...[Indicate the General Medical Condition]
- Sexual Abuse
    - V61.1 Sexual Abuse of Adult
    - 995.81 Sexual Abuse of Adult (if focus of attention is on victim)
    - V61.21 Sexual Abuse of Child
    - 995.5 Sexual Abuse of Child (if focus of attention is on victim)
- 302.9 Sexual Disorder NOS
- 302.70 Sexual Dysfunction NOS

Paraphilias

- 302.4 Exhibitionism
- 302.81 Fetishism
- 302.89 Frotteurism
- 302.2 Pedophilia
- 302.83 Sexual Masochism
- 302.84 Sexual Sadism
- 302.3 Transvestic Fetishism
- 302.82 Voyeurism

- 302.9 Paraphilia NOS

Gender Identity Disorders

- Gender Identity Disorder
    - 302.85 in Adolescents or Adults
    - 302.6 in Children
    - 302.6 Gender Identity Disorder NOS

Eating Disorders

- 307.1 Anorexia Nervosa
- 307.51 Bulimia Nervosa
- 307.50 Eating Disorder NOS

Sleep Disorders

Primary Sleep Disorders

- 307.44 Primary Hypersomnia
- 307.42 Primary Insomnia
- 347 Narcolepsy
- 780.59 Breathing-Related Sleep Disorder
- 307.45 Circadian Rhythm Sleep Disorder
- 307.47 Dyssomnia NOS

Parasomnias

- 307.47 Nightmare Disorder
- 307.46 Sleep Terror Disorder
- 307.46 Sleepwalking Disorder
- 307.47 Parasomnia NOS

Other Sleep Disorders

- Sleep Disorder
    - Sleep Disorder Due to...[Indicate the General Medical Condition]
    - 780.54 Hypersomnia Type
    - 780.52 Insomnia Type
    - 780.59 Mixed Type
    - 780.59 Parasomnia Type

- 307.42 Insomnia Related to...[Indicate the Axis I or Axis II Disorder]
- 307.44 Hypersomnia related to...[Indicate the Axis I or Axis II Disorder]

Impulse-Control Disorders Not Elsewhere Classified

- 312.34 Intermittent Explosive Disorder
- 312.32 Kleptomania
- 312.33 Pyromania
- 312.31 Pathological Gambling
- 312.39 Trichotillomania
- 312.30 Impulse-Control Disorder NOS

Adjustment Disorders

- Adjustment Disorders
    - 309.9 Unspecified
    - 309.24 With Anxiety
    - 309.0 With Depressed Mood
    - 309.3 With Disturbance of Conduct
    - 309.28 With Mixed Anxiety and Depressed Mood
    - 309.4 With Mixed Disturbance of Emotions and Conduct