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Role of Health Insurance Status on Emergency Department Utilization and Subsequent Hospitalization in the Connecticut Emergency Mobile Psychiatric Services Population

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Role of Health Insurance Status on Emergency Department Utilization and Subsequent Hospitalization in the Connecticut Emergency Mobile Psychiatric Services Population

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Role of Health Insurance Status on Emergency Department Utilization and Subsequent Hospitalization in the Connecticut Emergency Mobile Psychiatric Services Population

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Introduction:

According to a 2000 report by the former Surgeon General David Satcher at his National Conference on Children's Mental Health, one in five children have a diagnosable mental disorder and one in ten youths have a serious emotional or behavioral disorder that is severe enough to cause substantial impairment in functioning at home, school, or in the community.¹ Kessler and colleagues found that half of Americans will meet DSM-IV disorders sometime during their lifetimes. Half of those cases start by age 14, and three-fourths by age 24.² One particularly disturbing example can be seen in a recent study from a Canadian surveying of almost 17,000 children, which found that by the age of 16-17, 24.1% of youths reported being exposed to suicide of a schoolmate, which led to increased suicidal ideation and attempts via a phenomena called "suicide contagion" in those children.³ Despite these alarming statistics, and the accurate utilization of the word "crisis" in describing the issue of child and adolescent mental health, it is widely accepted that only one-fourth to one half of youth with mental disorders receive any professional mental health services.⁴

The national trend over the past several decades of decreased rates of institutionalization, limited financial resources, and shorter lengths of hospital stays has led to increasing difficulties in treating and managing youth with psychiatric disorders.⁵ These factors are further exacerbated by the widely variable availability, quality and delivery of mental health care services by region. In the fragmented American healthcare system, an estimated 19% of non-elderly individuals, or roughly 49 million Americans, did not have any type of insurance before the implementation of the Affordable Care Act.⁶ One symptom of these difficulties has been the rising utilization of the emergency department (ED) by the population.⁷ Bound by the Emergency Medical Treatment and Active Labor Act (EMTALA) of 1986 to provide care for all patients, the ED is the only

form of universal healthcare in this country and has become the ultimate safety net for any patient regardless of their presenting issues or the ability to pay. According to the Centers for Disease Control and Prevention (CDC), the national volume of ED visits increased by 23% between years 1994 and 2003 overall, and continues to increase at alarming rates.⁷ The volume of ED visits for the child and adolescent population specific to mental health related issues has almost doubled during the same time frame, and has increased out of proportion to the increase in visits related to other chronic diseases.⁸ One solution to combat this rising crisis are the hospital and community based emergency psychiatric services (EPS), which have risen from a mere 154 programs nationwide in 1963 to over 3,000 by 1991.⁹

Connecticut data on ED utilization mirrors that of the national data trends. The Connecticut Emergency Mobile Psychiatric Services (EMPS) is one program that provides clinical intervention, case management, and support necessary for youths with psychiatric emergencies to stabilize and maintain them in their homes, with the goal of decreasing ED utilization and psychiatric hospitalization. EMPS services are available statewide for all children under 18, regardless of insurance status or ability to pay.

With the increased attention focused on child and adolescent mental health due to numerous incidents around the country, including the extremely tragic events of Newtown, CT, it has become more important than ever to examine mental health services delivery and utilization for children. This thesis examines the role of health insurance on ED utilization and psychiatric hospitalization among EMPS clients. The questions are: (1) Does health insurance status influence whether EMPS families utilize the ED or other avenues of access to EMPS as their first contact with the mental health care system for their psychiatric emergency? and (2) Does health

insurance status play any role in whether EMPS clients are dispositioned to inpatient psychiatric care or other mental health care services?

Due to the exceedingly complex nature of mental health care, where patient characteristics, environmental factors, and system resources all intersect to generate a disease presentation, it is important to develop a better understanding of the history, structure, and current practices in child and adolescent mental health care. An examination of the role that health insurance status plays in how EMPS clients utilize the mental health services in the state of Connecticut will help guide future EMPS outreach efforts and resource allocations. The findings of this project may also have public health policy implications for Connecticut with better understanding of barriers to mental health care access. Finally, the study will serve to inform EMPS and interested system partners if it succeeds in identifying particular groups of patients more likely to utilize the ED as their first point of contact with psychiatric services, and if insurance status acts as a barrier to appropriate care.

Background:

The advent of modern psychiatry can perhaps be traced back to the year 1949, when the passage of the National Mental Health Act led to the establishment of the National Institute of Mental Health (NIMH) as a component of the National Institutes of Health (NIH).¹⁰ In the past 65 years in American psychiatric services, there have been numerous advancements and changes in psychiatry as in other fields of medicine. The two major driving forces that have dominated the national debate have revolved around the location of treatment and the economics of service delivery.¹⁰

The philosophical and ideological debate in American psychiatric care that has dominated the field is the location of treatment between institutional care and community-based treatment.¹¹ Between 1954 and 1976, the census of public psychiatric hospitals decreased by 70 percent.¹¹ This was due to several co-occurring factors. After World War II, most state hospitals in the U.S. struggled with limited staffing and resources. One account describing a licensed nurse who was in charge of 700 patients, while the physician only appeared to sign death certificates.¹² The start of the psychopharmacologic era with the discovery of chlorpromazine in 1951, which subsequently provided the first “effective” treatment for many psychotic patients, thus allowing for acute stabilization and discharge of patients.¹⁰ Increasingly, the psychiatric field began to support the notion that patients would be better off receiving treatment close to family and out in the community.¹⁰⁻¹² This time period also saw many negative portrayals of state mental hospitals in the media. Many of these accounts were justified, as standards for state mental hospitals were nonexistent. This negative public perception was so powerful that the word asylum took on such a negative connotation, even though the word itself is synonymous with sanctuary. This mass exodus of patients out of state hospitals and into the community was dubbed the Deinstitutionalization Movement. This was in fact a movement of dehospitalization.¹⁰ One major unforeseen effect of dehospitalization was the new generation of severely mentally ill patients living in the community without appropriate supports or treatments. Without the asylums of yesteryear, these individuals often end up in other institutions, such as the justice system.¹³ It has been estimated that 15 to 20 percent the correctional population suffer from at least one serious mental illness, far greater than the estimated 4 percent in the general population.¹³ Many of these mentally ill patients living in the community lack the ability to withstand stress, are unable to form meaningful relationships, and suffer repeated setbacks that can lead to homelessness.¹⁴

Beginning in the early 1950s, a general framework of community care and treatment was set in motion. This framework stated that a patient should remain in his or her home community and be treated there whenever possible; early interventions should be available to avoid the need for hospitalization; and if necessary, hospitalization should be short, with a rapid return to outpatient services.¹⁵ In child and adolescent psychiatry, the predominant model currently is the community systems of care, where utilization of integrated interagency processes and wraparound services has led to success.¹⁶ These systems are discussed in detail in other sections of this paper.

The second major issue that has driven changes in mental health care, as well as American health care in general, are economics.¹⁷ Throughout the past six decades, the question of who should shoulder the burden of payment for mental healthcare has cast a long shadow on the field. One could argue that the dehospitalization movement was as much a financial movement as it was a medically beneficial one for patients. Even though the federal government has slowly progressed toward aiding patients with mental health care needs, as evidenced by the Mental Retardation Facilities and Community Mental Health Centers Construction Act of 1963, short admissions to hospitals, usually 2 to 4 days, with an immediate return to the community was not only expected, but often required by increasingly strict limitations set by insurance companies.¹⁷

Much debate in recent years has revolved around the issue of mental healthcare parity, or the requirement that health plans in the private health insurance market provide an equivalent level of coverage for mental health and general medical care.¹⁸ Several landmark legislations have pushed parity for mental and substance abuse care forward. First, the 1996 Mental Health Parity Act prohibited the use of annual and lifetime dollar limits on mental health insurance.¹⁹ In

1999, President Clinton used executive power to institute comprehensive mental health and substance abuse parity in the Federal Employee Health Benefits (FEHB) program. Subsequently, this effort culminated to the passage of the Paul Wellstone and Pete Domenici Mental Health and Addiction Equity Act in 2008, which imposed less restrictive limitations on mental health and substance abuse benefits when compared to medical/surgical benefits.¹⁹ By the time The Affordable Care Act that became effective in 2014, federal parity protections expanded for an additional 62 million Americans.²⁰ These efforts by the federal government to increase mental health care coverage reflected a general trend of understanding, awareness, and acceptance of mental disorders in the United States.

The child and adolescent population is an equally complex and fragmented system. As mentioned earlier, the mental health services in the United States for child and adolescents are in a state of crisis due to high number of youths with a moderate to severe mental disorder, and the concurrent lack of treatment for those individuals.¹ Historically, a series of court and legislative decisions focused on providing better care for children with disabilities, including emotional and behavioral disorders. These included the *Retarded Citizens v. Commonwealth* (1971), *Mills v. Board of Education of the District of Columbia* (1972), *Education for All Handicapped Children Act (EHA)* of 1975, and subsequent amendments to EHA through the 1980s and 1990s.²¹ Renewed focus has been placed on this topic since the Surgeon General Report in 1999.¹ In 2002, the President's New Freedom Commission on Mental Health was created by executive order and the Subcommittee on Children and Families put forth a vision to develop a community-based service delivery system built on efficiency and demonstrably effective practices.²² This vision included ten core principles: 1) Comprehensive home and community based services and supports; 2) Family partnerships and support; 3) Culturally competent care; 4)

Individualized care; 5) Evidence-based practices; 6) Coordination of services, responsibility, and funding; 7) Prevention, early identification, and early intervention; 8) Early childhood intervention; 9) Mental health services in schools; 10) Accountability.²² Despite the best of intentions, the vast majority of these visions have not been met. A recent examination of the adolescent supplement of the National Comorbidity Survey showed that half of adolescents with severely impairing psychiatric disorders still do not receive treatment for their mental health problems, with the treatment gaps especially pronounced for anxiety and substance use disorders.⁴ This finding was particularly troubling since the population of children with severe substance disorder are estimated to be 2 to 5 percent.²³

Another major issue in the realm of child and adolescent mental health care is racial/ethnic disparity. The Institute of Medicine's report in 2003 found overwhelming evidence that African Americans and other racial minority populations have poorer health and treatment outcomes than do Whites in a number of specialty areas, including mental health.²⁴ Specifically, minority persons are less likely than others to enter mental health treatment and among those that do receive services, a significant proportion of minority patients fail to continue care.²⁵ Inner-city, low-income minority adolescents are significantly more likely to seek mental health services in the school system rather than in community health centers, and these adolescents also receive services through primary health care providers and the juvenile justice system.^{26,27} Most of these children come to the attention of teachers and caretakers due to behavioral issues, which are the symptoms of externalizing disorders such as Attention-Deficit/Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), and Conduct Disorder.⁴ However, due to the lack of proper clinical evaluations, internalizing disorders such as Major Depressive Disorder,

Dysthymia, Generalized Anxiety Disorder, etc. are severely underdiagnosed and undertreated, further widening the racial/ethnic disparity gap.⁴

These unmet needs in child and adolescent mental health care are exacerbated by workforce shortage, public perception, scope of practice, and professional identity of the field of child and adolescent psychiatry. Workforce shortage in the field of psychiatry in general has been well documented.²⁸ Due to the additional training and licensing required to become a child and adolescent psychiatrist, it is not surprising that a critical shortage of qualified physicians exist in this field. Currently, it is estimated that over 30,000 child and adolescent psychiatrists are needed to adequately treat the nation's youth, with less than 7,000 currently in practice.²⁸ Among practicing psychiatrists, many do not participate with any insurance carriers due to lack of adequate reimbursement for the complex and lengthy process of diagnostic assessment.²⁹ As examined earlier through the history of American psychiatry, the public perception toward the field is overwhelmingly negative, especially since the subject of human experience is often personal, and emotionally charged.³⁰ This perception holds true in medicine as well, where mentors often actively discourage medical students from pursuing the field of psychiatry, and in association child and adolescent psychiatry.³⁰ Due to this critical workforce shortage and ever increasing demand, the scope of practice and professional identity of a child and adolescent psychiatrist has been forced to change. In today's mental health clinics, the physician's primary role is often that of a medication prescriber, while other professionals such as social workers and psychologists provide therapy and case management needs of patients.³¹ This fragmentation of care is less than optimal for children and their families. This limitation in scope of practice further discourages many current and would be child and adolescent psychiatrists.

A significant percentage (12.9%) of youth who receive mental health services such as therapy or medications during their lifetime enter the system via the general medical sector, since as many as 70% of adolescents have had a physician contact in a 12 months period.^{32, 33} Pediatric emergency departments around the country have seen a steep increase in the prevalence of mental health related visits, and disproportionally more to general medical visits.³⁴ In Connecticut, the pediatric ED at Yale reported an increase of 59% in psychiatric illness related visits between 1995 and 1999, with the most common complaints being behavioral changes, ingestions, suicide attempts, and violence.³⁵

Many emergency departments lack the proper funding and support staff to handle children and adolescents with mental health care needs. A statewide survey in California showed that only 10% of emergency programs had child psychiatrists available for consultation, and most of these physicians resided in academic institutions rather than community hospitals; less than 35% had general psychiatrists available, 15% had a psychiatric nurse present, and less than 50% had a social worker to assist in evaluation or disposition.³⁶ Education for emergency department physicians regarding recognizing causes, signs, symptoms, and optimal management of pediatric mental disorders is also severely limited in the current emergency medicine residency training programs.³⁷ Thus, most young people presenting to EDs with a psychiatric crisis are treated by clinical providers with little to no experience on how to meet their needs.

There remains a paucity of evidence to support consensus guidelines or standards of care in the emergency department setting.³⁷ Many of the national databases such as the National Hospital Discharge Survey, National Hospital Ambulatory Medical Care Survey, and the National Electronic Injury Surveillance System were developed when children's psychiatric

issues were less recognized.³⁸ The lack of clear guidelines in turn creates a difficult situation for clinical providers on the front lines.

ED physicians are trained to identify life threatening emergencies and stabilize patients before all other considerations.³⁹ Children who present with mental health emergencies in the ED often need medical stabilization before psychosocial interventions can take place. For example, an ED physician must have a low clinical threshold to suspect self-injurious behaviors such as attempted overdoses. Depending on the substance ingested, disastrous effects such as hyperthermia, rhabdomyolysis, gastrointestinal bleeding, liver failure, hypovolemic shock, coma, and death may occur.³⁹ After this step, the ED physician must then consider a broad differential diagnosis with focus on ruling out organic causes of aggressive or violent behavioral changes such as hypoglycemia and intracranial hemorrhage. If the patient is in a confused state, the physician must then assess for delirium versus dementia versus psychiatric disorders. Delirium is considered acute or subacute organic brain syndromes such as central nervous system (CNS) disease, systemic disorders, or substance-related disorders, whereas dementias include a constellation of chronic organic brain syndromes.³⁹ Once the ED physician has medically cleared the patient, he/she can finally tackle the mental health issues via patient or caretaker history. Along this process, additional imaging and laboratory studies such as a CT scan of head, a MRI of brain, blood and urine toxicology screenings, organ specific function assessments, and pregnancy tests may be needed.³⁹ Furthermore, if a patient is uncooperative or violent, the consideration for physical or chemical restraints must be made. If a patient poses risk of self-harm, a staff member must remain with the patient at all times. All of these factors lead to high level of resource utilization and prolonged stay in the pediatric emergency department.⁴⁰ These are some of the potential pathways a mental health case may progress in the ED.

Finally, the general environment in a medical emergency department is crowded, noisy, and highly stimulating. This can serve to worsen symptoms in children who are agitated, paranoid, traumatized or autistic.³⁷ Subsequently, it has been shown that boarding patients with mental illnesses in the ED has many deleterious effects on the health care of those patients and others.⁴¹ Furthermore, a recent national study on length of stay for pediatric mental health emergency department visits utilizing data from 2001 to 2008, the authors found that not only was the length of stay significantly longer for mental health related visits (169 minutes vs 108 minutes), the patients were also more likely to be admitted to the hospital (16.4% vs 7.6%).⁴² Clearly, child and adolescent mental health care needs are poorly met in the general medical emergency department setting.

Inpatient care for children and adolescents provides the most intensive and restrictive treatment setting in the mental health services system, most appropriate for individuals with severe levels of disturbance.⁴³ However, with the focus on keeping children in the community with their support network of family and friends, hospitalization of troubled youth is often seen as a failure of the mental health care system in general.⁴⁴ Information from the National Hospital Discharge Survey showed a discharge rate for mental illness principal diagnoses to be 9.4 per 10,000 in children under 15 years of age in 1985, subsequently rising to 16.7 per 10,000 in 1994.⁴⁵ Of course, stating that increased hospitalization of children with mental illnesses are purely due to financial gain would be detrimental to the understanding of an incredibly complex issue in mental health care.

In order to understand psychiatric hospital utilization in children and adolescents with mental illnesses many theories have been proposed. Due to the complexity of this topic, and the subjective nature of mental health care in general, it is currently difficult to assess the validity of

many theories and support one as the correct one. Nevertheless, general concepts should be stated to gain a common ground upon which to examine the topic. In general, there are two broad categories of determinants of hospitalization, one focuses on the characteristics of the child, and the other pertaining to system/community characteristics.⁴⁶

Characteristics pertaining to the child have been conceptualized into three subcategories: predisposing characteristics, enabling characteristics, and needs. Predisposing characteristics include demographic factors such as age, gender, race that may reflect biological and social factors that influence the likelihood of developing mental health disorders.⁴⁶ Family factors may also be included in predisposing characteristics since they can exacerbate mental health disorders in children with biological vulnerabilities. Furthermore, family attitudes may directly influence the pattern of service utilization since it is more likely for children to seek mental health services with their parents or caregivers. Enabling characteristics include the resources and previous experiences that influence service use. Resources in this case can include the ability to pay for services, type of insurance the child has, and transportation to and from service providers. Caregiver knowledge of services available to their children also plays a key role in utilization patterns, as well as their personal experiences with different type of services. The needs of the children and adolescents are the typical reasons many think about when they describe hospitalization, such as the medical severity of their symptoms, their specific diagnoses, or other emotional, behavioral, and developmental requirements in functioning properly. Even though the medical needs of the children should be first and foremost in determining the service utilization of children and adolescents with mental disorders, it is clear that other factors play a large and often underappreciated role.⁴⁶

One cannot ignore the system/community characteristics in which these children reside. First, provider characteristics play a large role on defining a comprehensive mental health care system. The volume, location, and training of providers often dictate the type of service availability in the local community, and subsequently the service utilization pattern of patients. Secondly, the importance of finances cannot be downplayed in any health care field. Even though the psychiatric hospitalization rates for child and adolescents has risen, the medium length of stay has decreased from 12.2 days in 1990 to 4.5 days in 2000, and they are continuing to decrease.⁴⁷ In a 1994 study using California hospital discharge data, the authors found that mental health diagnoses accounted for 14.8% of total hospitalizations for adolescents, and the mean hospital charge at \$11,233, totaling more than \$303 million in hospital charges.⁴⁸ Another study of youth in the State Children's Health Insurance Program (SCHIP) in 2000 reported that children and adolescents with serious emotional disturbances cost \$3,254 and \$3,011 respectively, compared to \$147 and \$345 for children and adolescents without serious mental health issues.⁴⁹ The pressure felt by providers to discharge patients from inpatient care has increased in the 2000s as the number of psychiatric beds has declined.⁵⁰ In the public sector, dehospitalization, privatization, and a focus on community based care has led the way to decreased funding for inpatient beds. In the private sector, ratio of cost to reimbursement has become so unfavorable that in order to maintain the bottom line, many hospitals are opting to replace their psychiatric beds with medical/surgical beds.⁵⁰ The reduced capacity for inpatient care has contributed to inadequate treatment for some of the most troubled youth, such as those with suicidality, substance use disorder, and unfair incarceration due to mental disturbances.

With this multifaceted system, and all the associated factors in play, several questions must be raised. First, can comprehensive, coordinated, community based services successfully

supplement the overburdened emergency department and hospital utilization for children and adolescents with mental health issues? Second, what type of community services specifically works best?

As stated previously, the focus of the mental health care system over the past several decades has shifted toward a community based model, with emphasis on maintaining patients in their home environments and out of hospitals.¹⁰ In the adult population, this is described by policy experts as a coordinated package of services, which includes ongoing case management and coordination, ongoing support for recovery-oriented supported employment services, evidence-based medication management practices, family education, support in accessing community resources, and integration across the team of providers serving each person.⁵¹ Overall, the evidence does suggest that these services can reduce psychiatric crisis visits, reduce emergency room visits for mental health problems, reduce number of hospital days, as well as reduce hospital length of stay.⁵² However, the long term impact of outpatient community based care should be examined more closely, as the benefit of treatment is largest immediately after the crisis, but tapers off over time.⁵³ Another major issue in the adult population is the lack of structure and standardization of these services, which makes exploration and discussions of these programs fairly difficult. Nevertheless, the idea that these services are capable of decreasing emergency room utilization and hospitalization makes them attractive to all levels of policy makers, as they can reduce the cost of care for patients with mental illnesses.

In the child and adolescent population, the debate between inpatient and community based treatment has been similar to their adult counterparts over the past several decades. More specifically, most experts agree that in order to divert inpatient treatment for mental illnesses, intensive family and community based alternatives are necessary. Over time the community

based services in the child and adolescent population has placed increased emphasis on the family as a whole unit.⁵⁴ Unlike the adult programs, in child and adolescent mental health care the system of care model has adopted on specified standards utilizing integrated interagency processes and wraparound services.

The integrated inter-agency practice began out of necessity to meet the challenges of providing adequate care to child and adolescent populations. As recognition of mental health disorders in children increased, the provision of mental health care can no longer solely rely on the medical sector.⁵⁵ School systems are a perfect example of this phenomenon, as more and more children are seeking mental health care through them. Similarly, studies have repeatedly shown that children in the juvenile justice system, as well as in the child welfare system, have significantly higher rates of mental, psychosocial and developmental vulnerabilities, and can benefit from coordinated interagency services.⁵⁵ Other populations such as youth with substance use disorders, developmental disabilities, and individuals transitioning out of the child and adolescent mental health services might also benefit from integrated inter-agency coordination. However, due to the complexity and resource intensive nature of integrated interagency care, success is highly variable among communities.

The Wraparound approach in the systems of care model is perhaps the one shining star in the dark sky. As the most commonly used model, his approach uses a family-driven, youth-guided approach and calls for an ongoing collaborative and coordinated effort between children, adolescents, their families, and service providers to meet the needs of the child and promote family self-sufficiency.⁵⁶ At its core, this approach empowers families and youth as drivers of the team process, in which their goals, preferences, needs, and strengths guide all efforts. Their personal experiences are valued as equally important when compared to the professional

expertise of the care team. Furthermore, no decisions regarding the care plan should be made without parent or caregiver input. Finally, the approach should be culturally relevant and elicit the help of natural supports for the child.⁵⁷ One unique hallmark of the Wraparound approach is inclusion of a “parent partner,” an individual whose own children have been through the service system. These parent partners provide peer support to parents and caregivers of the child receiving services, and use their personal experiences and knowledge to help guide the family in need.⁵⁸ Evidence has shown that the Wraparound approach can be highly successful in reducing externalizing behavioral problems, increasing level of function, reducing out of home placements, improving family management skills, and increasing consumer and family satisfaction.^{59,60} The Wraparound approach uses the Wraparound Fidelity Index(WFI), which can be used to measure the success of individual programs, thus standardizing the process itself. Those programs that are successful are considered High Fidelity Wraparound services.⁵⁸ This standardization allows for rigorous monitoring, quality improvement, and evidence based examination of the Wraparound approach.

It is important to mention other intensive community based interventions such as Multisystemic Therapy (MST), treatment foster care, and case management. MST was originally developed for juvenile offenders, and has been applied to other populations since then.⁵⁴ The evidence has demonstrated the efficacy of MST overall, but due to the fact that all care for the individual must be provided by the MST team, strict adherence is essential. Case management is a common strategy across all levels of care that generally includes a specialist case manager to help children and families navigate the care system.⁵⁷ All of these approaches have been supported by empirical evidence, and can serve the child and adolescent population well along with traditional outpatient services and intensive day hospitals.

Other service models were needed to fill the gap between inpatient and community based treatment. With increased pressure to keep patients with mental health issues out of the emergency room and the hospital, many institutions and communities developed psychiatric emergency services (PES). These services can take on many forms in order to meet the specific needs of individual communities, and have evolved over the years. Historically, most PES services focused on crisis intervention, but in recent years PES have begun to provide a wider array of professional psychiatric services.⁶¹ One major development in PES is the advent of mobile crisis services. The goal of the mobile crisis services are to provide crisis management in the natural environment of the patient, provide services to difficult to reach persons, and reduce hospitalization by mobilizing treatment resources and environmental support systems.⁶² Mobile crisis services vary with regard to staffing, availability, target patient population, community access, hours and days of operation, and types of situations they respond to.⁶³ A common driver of these services is to reduce hospitalization. Community-based mobile crisis services can also be used as outreach programs for high risk patients discharged from the ED. For example, due to limitation of resources, patients with suicidal ideation are often referred to outpatient treatment from the ED if they are not actively in danger of harming themselves. This approach is highly risky however, since follow-up is low. Thus, mobile crisis services can act as a bridging service to ensure that these high risk patients complete their outpatient follow-up.⁶⁴

Evidence supports the effectiveness of mobile crisis services in reducing hospitalization and other treatment goals for patients with mental health issues. One study of a community-based mobile crisis intervention showed an eight percent reduction in hospitalization rates when compared to hospital based interventions.⁶⁵ Another study indicated patients were more than three times as likely to be hospitalized if assessed by the hospital based component of the

emergency service than if assessed by the mobile community based component, regardless of presenting symptom acuity.⁶⁶ This body of evidence, along with the theory that these services in turn reduce cost of care by preventing hospitalization, established a foundation for the popularity of mobile crisis services around the country. Evidence of the cost-effectiveness of mobile crisis teams is scant. Developing and implementing a mobile crisis system itself requires considerable funding, especially if a care team is structured around master's level or higher trained professionals. Since these services are already an integral part of the mental health service delivery system, it is imperative to examine their strengths and weaknesses to provide policy makers with clear guidelines on when and if they should establish such a service in their communities to best meet the psychiatric needs of the child and adolescent population.

In Connecticut in 2002, after the Surgeon General Report, Emergency Mobile Psychiatric Services (EMPS) was a major component of the Connecticut Community KidCare Initiative designed and implemented to aid youth with mental health needs.⁶⁸ By the year 2013, Department of Children and Families (DCF) had active contracts with numerous behavioral health agencies to fund 15 EMPS sites across the state. Staffing requirements varied between these sites. EMPS provides clinical interventions, case management, and supports necessary to prevent hospitalization and maintain children and adolescents in their home environments. This program provides a consistent, locally based point of access for children and adolescents that are in crisis. The EMPS system is designed to serve all children in Connecticut, and is available across child welfare, juvenile justice, and the school systems. The crisis hotline can be accessed by dialing 2-1-1, and is active 24 hours per day, 7 days a week. EMPS programs are required to have mobile capacity to perform face-to-face crisis assessment and triage within 45 minutes on weekdays between 10AM-7PM, as well as between 1PM-7PM on weekends and holidays.

Another important feature of the EMPS model in Connecticut is that the programs not only provide short term crisis response and intervention, they also facilitate the Wraparound approach by providing up to 8 weeks of intensive treatment and family stabilization.^{67,68} In addition to their clinical duties, EMPS programs also provide outreach and education for parents, family advocates, community supports, schools, police, juvenile courts, health clinics, pediatricians, local public agencies, and local EDs and hospitals. Outreach is seen as a crucial component of EMPS as awareness of the existence of this program is a prerequisite for its utilization.

From the very beginning, EMPS met with barriers such as staff shortages, responsibilities for crisis response/resolution, and limited hours of operation.⁶⁸ However, one issue of major importance to this paper is the EMPS relationship with EDs in hospitals. The EMPS system is designed to prevent hospitalization of youth due to mental health related issues, yet once a youth has been admitted to the ED, it becomes more difficult to divert or prevent inpatient admission. This is likely due to EDs having significant concerns regarding their liability, their own attitudes toward EMPS as a viable treatment option, as well as their bias to treat these individuals in a more traditional and well known medical setting.

There is little research on the role that health insurance status plays in ED utilization and hospitalization due to mental health issues in children. This is a salient issue because of the abundant evidence that support a wide gap in insurance coverage, specifically for minority populations. Research has shown that African Americans are almost twice as likely as whites, and Hispanics almost three times as likely as whites to be uninsured.⁶⁹ This finding, along with widely known disparities in general health care access for minority populations promote the notion that the uninsured and underinsured children and adolescents are less likely to seek mental health services, and/or over utilize the ultimate safety net, the EDs.⁶⁹ Instead of crystallizing the

issue by providing answers, the few studies on this topic only serve to create more ambiguity. A study published in 1995 looking at factors associated with inpatient and outpatient treatment in child and adolescents with serious mental illnesses, and found that almost 65% of hospitalized youths are covered by private insurance.⁷⁰ while only 24% of outpatient youths have private insurance, and inpatients are less likely to have public insurance or to have no payment resources.⁷⁰ Another study reported that children in low income families had lower rates of insurance coverage for mental health services than other children, and that they were more likely to suffer from serious mental disorders, 25.7% suffering serious mental disorder in the poverty category vs 9.7% in the high income category.⁷¹ However, the lack of insurance coverage did not appear to affect the ability of children and adolescents to obtain mental health services.⁷¹ The paucity of research on this important topic and the lack of up-to-date information led to the advent of this thesis.

Research Objectives:

The research objective in this study is to examine whether and how role of health insurance status in the EMPS child and adolescent population affects ED utilization and subsequent hospitalization. More specifically, does insurance status play a role independent of other variables on whether children and adolescents utilize the ED as their primary entry point into the EMPS, or do they enter EMPS through other avenues such as schools, police, self or family? Secondly, is insurance status associated with children and adolescents' admission to inpatient treatment after their entry into EMPS?

Methodology:

Design:

This is a retrospective secondary analysis of the EMPS data from fiscal year 2013 (July 2012-June 2013). As mentioned previously, EMPS is designed to serve all children and adolescents in the state of Connecticut with mental health issues or psychiatric crisis. This database was obtained from the EMPS Performance Improvement Center residing at the Child Health and Development Institute of Connecticut, the study was approved by the Connecticut DCF, as well as the University of Connecticut Health Center's Institutional Review Board. The database itself was created for administrative and quality improvement purposes and was not designed specifically for research. It encompasses every aspect of an EMPS encounter, from first intake to discharge of the client and often spanning the entire eight weeks of service. In the original dataset, there are 916 separate data elements, many containing personal identifying information, but due to the de-identified nature of the current study, only 262 data elements were obtained by the investigator.

This study examined the unique role of health insurance status on how clients first entered EMPS. That is, we examine whether these clients were referred by the ED or other sources, controlling for demographic characteristics (age, gender, race), and primary presenting problems such as depression, self-harm, substance use, etc. (Figure 1). Next, we investigated whether health insurance status played a role in the subsequent disposition of these individuals, specifically whether they were hospitalized due to psychiatric reasons. This was done by controlling for the same variables, age, gender, race, and primary presenting problems, while adding the referral source (ED or other sources) to the analysis (Figure 2). Due to the episodic nature of the service, only first EMPS episodes were included. Furthermore, services provided to

individuals designated as current EMPS clients are excluded from the study to decrease the likelihood of skewing the results by counting their entry method multiple times.

Figure 1: Role of Insurance status on Entry into EMPS

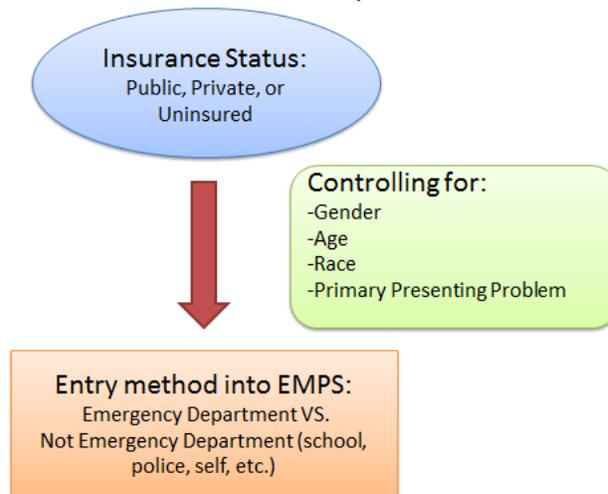
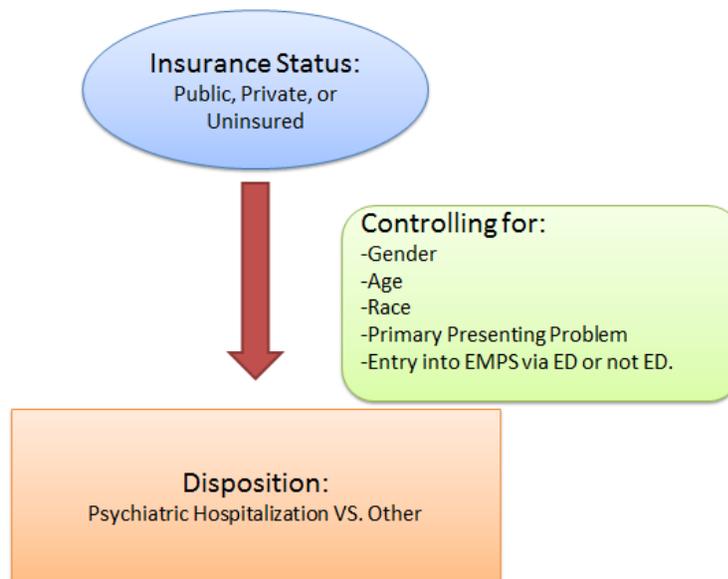


Figure 2: Role of Insurance Status on Psychiatric Hospitalization



Variable Descriptions:

A record of health insurance was coded to indicate only Medicaid (Medicaid, Husky A, Husky B), private insurance, and no insurance. Gender was coded as male or female. Age was

coded as a continuous variable in the final analysis, but will be presented in groups for ease of visualization. Race in EMPS were coded as American Indian/Alaska Native, Asian, Black/African American, Native Hawaiian/Pacific Islander, White, and Other. The Primary Presenting Problem variable constitutes the primary reason for initiation of EMPS episode of care such as disruptive behavior, self-harm, psychosis, etc. Referral Source was coded to indicate whether the client entered the EMPS dataset via ED referral, or other sources such as self/family, school, police. Reason for Discharge was recoded to indicate whether clients were dispositioned from EMPS to inpatient psychiatric hospitalization or other services such as completing services, intensive outpatient care, regular outpatient follow up, home care.

Analysis:

Data analysis for this study was completed using SPSS software version 21.⁷² Sequential logistic regression was used since the outcome variables, Referral Source (ED VS Other), and Reason for Discharge (Psychiatrically Hospitalized VS Other) are both dichotomous outcomes. In the first model, Referral Source was the outcome variable, and simple contrast logistic regression analysis was conducted to control for Gender, Age, Race, and Primary Presenting Problems respectively. Subsequently, the role of Insurance Status on ED referral or non-ED referral was entered into the model. Due to the three subcategories of public insurance, private insurance, and no insurance in the Insurance Status variable, a difference contrast was used for the logistic regression analysis, where each category of the predictor variable except the first category was compared to the average effect of previous categories. This means the effect of public insurance vs private insurance was examined first, then some type of insurance vs no insurance at all was examined. In the second model, Reason for Discharge was the outcome variable, and again Gender, Age, Race, and Primary Presenting Problems were entered and

controlled in that order. Next the model controlled for the effect Referral Source has on Reasons for Discharge. Finally, the role of Insurance Status was examined to determine how it affects clients' disposition.

Results:

Study Population:

In FY 2013, there were 8,501 first EMPS episodes. However, after excluding cases labeled as Current EMPS Client, the working dataset contained 6,346 cases. Of these cases, 4,718 contained information regarding referral source and 4,547 also contained disposition information which serves as the final analytical sample. Cases/encounters were the units of analysis.

As shown in Table 1, the majority of clients (60.1%) in the EMPS dataset had state funded Medicaid at, followed by private health insurance(34%), with only 5.9% being uninsured. There was a fairly even distribution between gender in this dataset, with males (49.2%) and females (50.8%) . The majority of clients seen by EMPS were adolescents aged 13 or older., The largest percentage of cases were between age 13-15 (38.4%). The population served by EMPS was predominantly White (62.5%), followed by those categorized as Other (18.6%), and Black/African American (17.1%). Among cases with primary presenting problem identified, almost one-third of clients (31.4%) entered EMPS due to Harm/Risk of Harm to Self. Disruptive behavior (20.4%), and depression (16.9%) were the other major presenting problems in seeking care. Almost one out of five (18.1%) of cases did not have information available regarding primary presenting problems. ED referrals accounted for 10.9% of clients entered the EMPS dataset via, while 89.1% entered via other avenues such as school, police, self/family referrals.

Reason stated for discharge indicated that 5.6% of clients were discharged from EMPS due to being psychiatrically hospitalized, while the remainder (94.4%) were discharged due to other reasons.

Table 1: EMPS Client Characteristics

Client Characteristics	Categories	Number of Cases	Percentage
Health Insurance	Medicaid	2837	60.1
	Private Health Insurance	1602	34
	No Health Insurance	279	5.9
Gender	Male	2319	49.2
	Female	2399	50.8
Age	5 and Under	167	3.5
	6-8	477	10.1
	9-12	1162	24.6
	13-15	1813	38.4
	16-19	1099	23.3
Race	White	2689	62.5
	Other	799	18.6
	Black/African American	738	17.1
Primary Presenting Problems	Harm/Risk of Harm to Self	1213	31.4
	Disruptive Behavior	788	20.4

	Depression	655	16.9
	Anxiety	245	6.3
	Harm/Risk of Harm to Others	242	6.3
Referral Source			
	Emergency Department	514	10.9
	School	2042	43.3
	Self/Family	1712	36.3
	Other	448	9.5
Reason for Discharge			
	Client Hospitalized: Psychiatrically	253	5.4
	Completed Treatment	3511	74.4
	Family Discontinued	664	13.3
	Other	290	6.9

In Model 1, the analysis examines whether the role of insurance status was related to how clients were referred to EMPS, whether through the ED or otherwise (Other = 0, ED = 1). A Simple contrast Logistic Regression was completed for Gender (Male = 1, Female = 2). The resulting contrast was $-0.246(0.11)$, $p=0.025$, indicating that males were more likely than females to have utilized the ED before being referred to EMPS. After controlling for gender, examining age as a continuous variable, the resulting contrast was $0.099(0.18)$, $p<0.001$, indicating that as the age of children increased, they were more likely to have utilized the ED, before they entered EMPS. There were no differences according to race after controlling for gender and age. For primary presenting problems, several individual categories showed statistical significance, or a

trend toward significance: disruptive behavior (2): 0.964(0.531) $p=0.070$; harm/Risk to harm self (8): 0.962(0.523) $p=0.066$; harm/risk to harm others (9): 1.15(0.557) $p=0.039$; hyperactive/impulsive (10): 1.317(0.68) $p=0.053$; alcohol (17): 2.32(0.923) $p=0.012$; and developmental delays (20): 1.566(0.761) $p=0.040$. Finally, health insurance status had no significant effect on referral source overall. Specifically, comparing public versus private insurance did not have a significant effect on whether patients entered EMPS via the ED or other sources, 0.032(0.123), $p=0.794$. In comparing any type of insurance to no insurance, there was no significant effect on referral source, -0.184(0.236), $p=0.436$ (Appendix: Model 1, Block 4).

In Model 2, the outcome variable was Reason for Discharge from EMPS, specifically, whether clients were hospitalized for psychiatric reasons or not (Other = 0, Psychiatric Hospitalization = 1). Gender and race were not related to psychiatric hospitalization. Age however, was predictive, 0.124(0.025), $p<0.001$, indicating that as age increased, children are more likely to be hospitalized due to psychiatric reasons. The analysis also showed that the children's primary presenting problems were not significantly associated with psychiatric hospitalization. When the result referral source was examined (Other referral source = 0, ED referral = 1), indicating that clients referred to EMPS by the ED were less likely to be hospitalized psychiatrically, -0.54(0.197), $p=0.006$. When health insurance status was examined, the data indicated that there was no significant relationship with psychiatric hospitalization. More specifically, having public insurance coverage compared to private insurance had no significant relationship on psychiatric hospitalization, 0.087(0.166), $p=0.601$. Nor did having some type of insurance vs no insurance make a difference in the likelihood of psychiatric hospitalization, -0.117(0.294), $p=0.691$ (Appendix Model 2).

Discussion:

Does insurance status play a role independent of other variables on whether children and adolescents utilize the ED as their primary entry point into the EMPS? Do they enter EMPS through other avenues such as schools, police, self or family? Does insurance status have an impact on whether children and adolescents are admitted to inpatient treatment after their entry into the mental health care system via ED or EMPS?

Male gender, increasing age, and certain primary presenting problems did predict a greater likelihood of ED referral. After controlling for demographic characteristics, primary presenting problems, health insurance status of the clients in the EMPS, there was no significant association with whether these clients entered the mental health services via the ED or other sources first. More specifically, there were no significant associations when comparing clients with public versus private insurance to determine if they utilized the ED as entry point into the EMPS. When the comparison was made for any type of health insurance versus no health insurance, there was again no significant association on if the clients utilized ED or other sources as their entry. Further, the results of the analysis showed that insurance status was not associated with whether the clients in the EMPS network were hospitalized psychiatrically upon discharge from the EMPS service. After controlling for gender, age, race, primary presenting problems, as well as Referral Source (ED referral into EMPS vs. other), the results indicated again that there were no significant associations. More specifically, public insurance versus private insurance had no significant relationship with clients being hospitalized psychiatrically upon discharge from EMPS. When some type of insurance vs. no insurance comparison was made, there was no significant association with psychiatric hospitalization. However, the results from this study suggests that health insurance status does not have significant role on whether children and adolescents utilize the ED as their entry point to EMPS services when compared to other sources

of entry. It appears to have no significant role on whether children and adolescents are hospitalized psychiatrically when discharged from EMPS.

The results seem to counter a commonly held perception that being uninsured and underinsured would lead to more restricted access to mental health care. In this case, the restricted access is expected to lead to more utilization of the ED since they are required to provide services to everyone, as well as limitations on gaining access to inpatient treatments. These findings are consistent with findings from other earlier studies.⁷¹ There are several plausible explanations for these results. First, EMPS has been implemented in Connecticut for more than a decade, thus allowing the program to become well established and integrated into the children's mental health system. The EMPS utilizes local mental health care clinics to carry out the mobile crisis management function, and outreach and community education are major components of the EMPS network. Thus, it is plausible that the lack of significant findings in this study reflects the successful education and outreach of potential clients or referral sources on how and when to utilize different aspects of EMPS. Recognizing the child and adolescent mental health crisis in this country, Connecticut has made a concerted effort across sectors to "do the right thing" by reducing barriers to access to care, and in so doing created a care environment where medical necessity and treatment needs are more important to care providers than the clients' ability to pay. With the increased focus on this issue nationally and locally, more funding has become available from public and private sectors for care providers to offset treatment costs, which in turn reduces the cost burden of individual clients when compared to the adult population. Thus, the role of health care insurance of the individual child plays a decreased role in accessing treatment for children and adolescents with mental health needs.

There were some significant associations between individual characteristics of the children served by EMPS and the outcome variables in this study that may interest other researchers. First, gender was significantly associated with ED referrals, more specifically, males were more likely to have gone to the ED first as their entry point into the EMPS database than females. This is consistent with existing literature that indicates that males are much more likely to exhibit externalizing disorders such as Attention-Deficit/Hyperactivity Disorder, Oppositional Defiant Disorder, or Conduct Disorder, which are manifested by disruptive behaviors that more often lead to treatment in the ED as a crisis.⁴ Second, age was significantly associated with both ED referral and subsequent psychiatric hospitalization in EMPS clients. As age increased, the clients were more likely to utilize the ED as their entry point into the service, and more likely to be admitted to a psychiatric unit of a hospital upon discharge from. This is again consistent with existing literature showing that the majority of psychiatric illnesses manifest in the adolescent years, and consequently, many diagnoses cannot be made until patients reach a certain age.²

Third, race was not significantly associated with either ED referral or hospitalization in this study. This is somewhat inconsistent with existing literature. However, it is likely due to the out dated variable classification used in this particular dataset; for example, this classification does not distinguish between Hispanics and Non-Hispanics.

Particular primary presenting problems were also significantly associated with clients' referral from the ED first, but not with subsequent hospitalization. These associations of disruptive behavior, harm/risk to harm self, harm/risk to harm others, hyperactive/impulsive behavior, alcohol abuse, and developmental delays as presenting problems are consistent with the mental health crisis seen in EDs.^{4, 8, 23} The lack of significant association between presenting problems and eventual psychiatric hospitalization is likely due to the varying severity of disease

at initial presentation. Once EMPS is initiated, mental health care providers utilize their clinical judgment to determine treatment needs. This means that the primary reason for initiating service is usually only a small part of the decision tree. Finally, there was a significant association between referral source and psychiatric hospitalization, where patients that utilized the ED to enter EMPS were less likely to have psychiatric hospitalization recorded. This seems counter intuitive as it was expected that clients who utilize the ED would have more severe disease burdens.

Limitations:

It is important to note that this dataset does not capture the patients that utilize the ED and are subsequently admitted to inpatient psychiatry units directly. This database only captures those individuals who went to the ED first and then were referred to EMPS. Thus, it is likely that the ED physicians differentiated between patients who needed immediate hospitalization and those who might more appropriately be served by EMPS.

There are several other limitations present in the current study. First, this database was not created for research purposes, thus many variables were not measured with that goal in mind. This led to difficulty in assessing the validity of certain variables, and made recoding of certain variables such as race problematic. Second, a limitation common to all large administrative databases are missing values, which subsequently decrease the number of valid cases for analysis. Fortunately, due to the large population served by EMPS, the number of cases was adequate for the purposes of this study. Third, due to paucity of similar studies and inconsistent findings in other related studies, selection of control variables among the >900 available

elements in the EMPS database was difficult. There are certainly other relevant variables that may influence the final results, such as urbanicity, single parent families, parent/guardian education levels, and exposure to trauma. Fourth, this database does not capture all children and adolescents that utilize the ED as their entry point into the mental health care system, as some may be hospitalized directly, others may be referred to outpatient services other than EMPS, and some others will be discharged home from the ED directly. Thus, this database only captures a small fraction of ED utilizers that are referred to EMPS. Finally, accurate clinical information was not available in this dataset, and the role of health insurance status on how specific diagnoses are handled cannot be studied. Nevertheless, this study can serve as a starting point for future researchers to explore the topic of child and adolescent mental health care in the state of Connecticut.

Conclusion:

Even though this study is limited in scope, it provides some important implications for policy makers and future researchers. The lack of significant association between insurance status and ED utilization and hospitalization reflects well on how child and adolescent mental health services are functioning in Connecticut. Thus, continued funding for EMPS is important as it is an essential part of the service network in the state and serves as a crisis management service, increasing access and appropriate use of the children's mental health system. There should be continued effort in community outreach and education in the general medical sector to decrease disparity in access to health care by the underinsured and uninsured patients. In the research arena, future studies should focus on utilizing both clinical and administrative data to assess the importance of insurance status on access to mental health care in children and adolescents. This effort will serve to give clarity on this topic as there is currently a lack of

empirical evidence. Future researchers can also focus on specific disorders and how insurance status affects children's treatment options. Other entry points into EMPS such as school referrals, self/family referrals should be examined further to determine whether health insurance status plays a role. Finally, it is important for other researchers to utilize the EMPS dataset specifically in the future to further assess the effectiveness of the program based on other measurements such as decreased ED visits, decreased hospitalization, and decreased lengths of stay if hospitalized.

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Appendix:

Model 1: Role of Health Insurance Status and Referral into EMPS

Case Processing Summary

Unweighted Cases ^a		N	Percent
	Included in Analysis	3532	74.9
Selected Cases	Missing Cases	1186	25.1
	Total	4718	100.0
Unselected Cases		0	.0
Total		4718	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Other	0
Emergency Department	1

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
	Step	5.043	1	.025
Step 1	Block	5.043	1	.025
	Model	5.043	1	.025

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	Sex(1)	-.246	.110	5.011	1	.025	.782	.631	.970
	Constant	-2.135	.055	1510.942	1	.000	.118		

a. Variable(s) entered on step 1: Sex.

Block 2: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
	Step	32.821	1	.000
Step 1	Block	32.821	1	.000
	Model	37.864	2	.000

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
	Sex(1)	-.124	.112	1.230	1	.267	.883	.710	1.100
Step 1 ^a	ReportedAgeOfChild	.099	.018	29.669	1	.000	1.104	1.065	1.144
	Constant	-3.433	.252	185.646	1	.000	.032		

a. Variable(s) entered on step 1: ReportedAgeOfChild.

Block 3: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
	Step	2.617	5	.759
Step 1	Block	2.617	5	.759
	Model	40.481	7	.000

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
	Sex(1)	-.126	.112	1.260	1	.262	.882	.708	1.098
	ReportedAgeOfChild	.098	.018	28.984	1	.000	1.103	1.064	1.143
	Race			.473	5	.993			
Step 1 ^a	Race(1)	-19.097	13383.895	.000	1	.999	.000	.000	.
	Race(2)	-.098	.491	.040	1	.841	.906	.346	2.372
	Race(3)	-.017	.190	.008	1	.927	.983	.677	1.427
	Race(4)	.198	1.089	.033	1	.856	1.219	.144	10.294
	Race(5)	.062	.146	.183	1	.669	1.064	.800	1.416
	Constant	-6.614	2230.649	.000	1	.998	.001		

a. Variable(s) entered on step 1: Race.

Block 4: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
	Step	39.819	20	.005
Step 1	Block	39.819	20	.005
	Model	80.299	27	.000

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Sex(1)	-.158	.117	1.826	1	.177	.854	.680	1.074
ReportedAqeOFC hild	.106	.019	30.467	1	.000	1.112	1.071	1.155
Race			.226	5	.999			
Race(1)	-18.965	13099.307	.000	1	.999	.000	.000	.
Race(2)	-.103	.494	.043	1	.836	.902	.343	2.377
Race(3)	-.033	.192	.030	1	.863	.967	.664	1.410
Race(4)	.103	1.092	.009	1	.925	1.108	.130	9.413
Race(5)	.028	.147	.036	1	.850	1.028	.770	1.372
Presenting Problem Primary			23.843	20	.249			
Presenting Problem Primary(1)	.861	.580	2.364	1	.124	2.367	.789	7.096
Presenting Problem Primary(2)	.964	.531	3.294	1	.070	2.623	.926	7.432
Presenting Problem Primary(3)	.576	.534	1.161	1	.281	1.779	.624	5.070
Presenting Problem Primary(4)	.742	1.186	.391	1	.532	2.100	.205	21.485
Presenting Problem Primary(5)	-17.623	40192.652	.000	1	1.000	.000	.000	.
Presenting Problem Primary(6)	-17.675	23109.724	.000	1	.999	.000	.000	.
Presenting Problem Primary(7)	.759	.580	1.711	1	.191	2.137	.685	6.664
Presenting Problem Primary(8)	.962	.523	3.385	1	.066	2.617	.939	7.292
Presenting Problem Primary(9)	1.150	.557	4.271	1	.039	3.159	1.061	9.405
Presenting Problem Primary(10)	1.317	.680	3.752	1	.053	3.730	.965	14.134
Presenting Problem Primary(11)	.895	1.185	.571	1	.450	2.447	.240	24.939
Presenting Problem Primary(12)	.610	.735	.689	1	.407	1.840	.436	7.762
Presenting Problem Primary(13)	.473	.733	.416	1	.519	1.605	.381	6.757
Presenting Problem Primary(14)	.969	.745	1.691	1	.193	2.636	.612	11.359
Presenting Problem Primary(15)	-.597	.781	.585	1	.445	.551	.119	2.543
Presenting Problem Primary(16)	-18.017	13847.469	.000	1	.999	.000	.000	.
Presenting Problem Primary(17)	2.320	.923	6.311	1	.012	10.176	1.665	62.178
Presenting Problem Primary(18)	.639	.803	.634	1	.426	1.895	.393	9.141
Presenting Problem Primary(19)	-18.212	6068.570	.000	1	.998	.000	.000	.
Presenting Problem Primary(20)	1.566	.761	4.232	1	.040	4.786	1.077	21.270
Constant	-10.269	3187.309	.000	1	.997	.000		

a. Variable(s) entered on step 1: Presenting Problem Primary.

Block 5: Method = Enter

Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step	.684	2	.710
Step 1 Block	.684	2	.710
Model	80.983	29	.000

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Sex(1)	-.159	.117	1.861	1	.172	.853	.679	1.072
ReportedAgeOfChild	.107	.019	30.239	1	.000	1.112	1.071	1.156
Race			.173	5	.999			
Race(1)	-18.972	13098.712	.000	1	.999	.000	.000	.
Race(2)	-.112	.497	.051	1	.822	.894	.337	2.370
Race(3)	-.034	.192	.031	1	.860	.967	.663	1.409
Race(4)	.123	1.091	.013	1	.910	1.131	.133	9.604
Race(5)	.017	.151	.012	1	.912	1.017	.756	1.367
Presenting Problem Primary			23.860	20	.249			
Presenting Problem Primary(1)	.858	.561	2.340	1	.126	2.358	.786	7.075
Presenting Problem Primary(2)	.962	.531	3.278	1	.070	2.618	.924	7.419
Presenting Problem Primary(3)	.571	.535	1.142	1	.285	1.770	.621	5.047
Presenting Problem Primary(4)	.714	1.188	.361	1	.548	2.042	.199	20.959
Presenting Problem Primary(5)	-17.615	40194.075	.000	1	1.000	.000	.000	.
Presenting Problem Primary(6)	-17.676	23106.354	.000	1	.999	.000	.000	.
Presenting Problem Primary(7)	.762	.580	1.723	1	.189	2.142	.687	6.684
Presenting Problem Primary(8)	.961	.523	3.372	1	.066	2.613	.937	7.284
Presenting Problem Primary(9)	1.155	.557	4.306	1	.038	3.175	1.066	9.454
Presenting Problem Primary(10)	1.310	.680	3.713	1	.054	3.706	.978	14.049
Presenting Problem Primary(11)	.880	1.185	.551	1	.458	2.411	.236	24.594
Presenting Problem Primary(12)	.603	.735	.674	1	.412	1.828	.433	7.719
Presenting Problem Primary(13)	.480	.734	.428	1	.513	1.616	.384	6.805
Presenting Problem Primary(14)	.983	.745	1.739	1	.187	2.673	.620	11.522
Presenting Problem Primary(15)	-.597	.781	.586	1	.444	.550	.119	2.542
Presenting Problem Primary(16)	-18.023	13847.077	.000	1	.999	.000	.000	.
Presenting Problem Primary(17)	2.298	.924	6.180	1	.013	9.950	1.626	60.892
Presenting Problem Primary(18)	.625	.803	.606	1	.436	1.869	.387	9.018
Presenting Problem Primary(19)	-18.211	6070.000	.000	1	.998	.000	.000	.
Presenting Problem Primary(20)	1.562	.762	4.205	1	.040	4.768	1.072	21.214
HealthInsuranceIntake			.660	2	.719			
HealthInsuranceIntake(1)	.032	.123	.068	1	.794	1.033	.811	1.315
HealthInsuranceIntake(2)	-.184	.236	.608	1	.436	.832	.524	1.321
Constant	-10.319	3187.264	.000	1	.997	.000		

a. Variable(s) entered on step 1: HealthInsuranceIntake.

Model 2: Role of Health Insurance Status and Psychiatric Hospitalization

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	3499	74.2
	Missing Cases	1219	25.8
	Total	4718	100.0
Unselected Cases		0	.0
Total		4718	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Other	0
Client Hospitalized: Psychiatrically	1

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	2.742	1	.098
	Block	2.742	1	.098
	Model	2.742	1	.098

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	Sex(1)	-.242	.146	2.723	1	.099	.785	.590	1.046
	Constant	-2.806	.073	1469.449	1	.000	.060		

a. Variable(s) entered on step 1: Sex.

Block 2: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	27.247	1	.000
	Block	27.247	1	.000
	Model	29.989	2	.000

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Sex(1)	-.099	.148	.441	1	.507	.906	.677	1.212
Step 1 ^a ReportedAgeOfChild	.124	.025	23.869	1	.000	1.132	1.077	1.189
Constant	-4.452	.358	154.312	1	.000	.012		

a. Variable(s) entered on step 1: ReportedAgeOfChild.

Block 3: Method = Enter

Omnibus Tests of Model Coefficients			
	Chi-square	df	Sig.
Step	2.365	5	.797
Step 1 Block	2.365	5	.797
Model	32.353	7	.000

Variables in the Equation								
	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Sex(1)	-.098	.149	.432	1	.511	.907	.678	1.214
ReportedAgeOfChild	.125	.025	24.124	1	.000	1.133	1.078	1.191
Race			1.290	5	.936			
Step 1 ^a Race(1)	-18.527	13378.898	.000	1	.999	.000	.000	
Race(2)	-.510	.742	.471	1	.492	.601	.140	2.574
Race(3)	-.018	.244	.006	1	.940	.982	.609	1.583
Race(4)	.739	1.094	.456	1	.499	2.093	.245	17.851
Race(5)	-.099	.188	.278	1	.598	.905	.626	1.310
Constant	-7.464	2229.816	.000	1	.997	.001		

a. Variable(s) entered on step 1: Race.

Block 4: Method = Enter

Omnibus Tests of Model Coefficients			
	Chi-square	df	Sig.
Step	94.384	20	.000
Step 1 Block	94.384	20	.000
Model	126.738	27	.000

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Sex(1)	-.055	.157	.121	1	.728	.947	.696	1.288
ReportedAgeOfChild	.108	.027	15.869	1	.000	1.114	1.056	1.175
Race			1.184	5	.946			
Race(1)	-18.056	12927.887	.000	1	.999	.000	.000	.
Race(2)	-.510	.749	.463	1	.496	.601	.139	2.606
Race(3)	.087	.248	.124	1	.724	1.091	.671	1.774
Race(4)	.550	1.111	.245	1	.621	1.734	.196	15.304
Race(5)	-.052	.192	.073	1	.786	.949	.652	1.382
PresentingProblemPrimary			63.440	20	.000			
PresentingProblemPrimary(1)	17.222	4416.481	.000	1	.997	30165884.147	.000	.
PresentingProblemPrimary(2)	17.458	4416.481	.000	1	.997	38174627.843	.000	.
PresentingProblemPrimary(3)	18.159	4416.481	.000	1	.997	78971065.857	.000	.
PresentingProblemPrimary(4)	-.046	13963.594	.000	1	1.000	.955	.000	.
PresentingProblemPrimary(5)	.612	40434.293	.000	1	1.000	1.843	.000	.
PresentingProblemPrimary(6)	.408	23478.707	.000	1	1.000	1.503	.000	.
PresentingProblemPrimary(7)	17.553	4416.481	.000	1	.997	42010787.111	.000	.
PresentingProblemPrimary(8)	18.891	4416.481	.000	1	.997	160086476.437	.000	.
PresentingProblemPrimary(9)	19.260	4416.481	.000	1	.997	231469805.565	.000	.
PresentingProblemPrimary(10)	.360	7088.668	.000	1	1.000	1.434	.000	.
PresentingProblemPrimary(11)	.127	13294.364	.000	1	1.000	1.136	.000	.
PresentingProblemPrimary(12)	18.085	4416.481	.000	1	.997	71469608.458	.000	.
PresentingProblemPrimary(13)	19.459	4416.481	.000	1	.996	282328356.442	.000	.
PresentingProblemPrimary(14)	17.763	4416.481	.000	1	.997	51825372.811	.000	.
PresentingProblemPrimary(15)	17.631	4416.481	.000	1	.997	45411842.702	.000	.
PresentingProblemPrimary(16)	.243	14534.835	.000	1	1.000	1.275	.000	.
PresentingProblemPrimary(17)	-.314	15817.967	.000	1	1.000	.730	.000	.
PresentingProblemPrimary(18)	17.691	4416.481	.000	1	.997	48218964.032	.000	.
PresentingProblemPrimary(19)	17.462	4416.481	.000	1	.997	38323861.220	.000	.
PresentingProblemPrimary(20)	.162	9374.114	.000	1	1.000	1.176	.000	.
Constant	-15.205	3389.994	.000	1	.996	.000		

a. Variable(s) entered on step 1: PresentingProblemPrimary.

Block 5: Method = Enter

Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step	6.913	1	.009
Step 1 Block	6.913	1	.009
Model	133.650	28	.000

ReferralSource(1)	-.540	.197	7.541	1	.006	.583	.396	.857
Constant	-14.915	3388.957	.000	1	.996	.000		

a. Variable(s) entered on step 1: ReferralSource.

Block 6: Method = Enter

Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step	.417	2	.812
Step 1 Block	.417	2	.812
Model	134.067	30	.000

HealthInsuranceIntake			.416	2	.812			
HealthInsuranceIntake(1)	.087	.166	.274	1	.601	1.091	.787	1.512
HealthInsuranceIntake(2)	-.117	.294	.158	1	.691	.890	.500	1.582
Constant	-14.920	3388.861	.000	1	.996	.000		

a. Variable(s) entered on step 1: HealthInsuranceIntake.