Family and Clinician Effects on Costs of Psychiatric Emergency Services Dispositions

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Dissertation submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

In

Human Development

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March 26, 2009
Blacksburg, VA

Keywords: Marriage and family therapy, psychiatric emergency services, Hierarchical Linear Modeling, cost, clinicians

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Families play a key role in psychiatric emergency services (PES). Given the cost of PES in terms of dollars and restrictiveness, clients, families, providers, payers, and policymakers involved in these services need more understanding of how families affect these key PES outcomes. Marriage and family therapy theories offer frameworks for understanding family and provider system dynamics in PES. This study explores how family presence and family quality influence restrictiveness and cost of PES dispositions, and how they moderate the effect of suicide risk, homicide risk, and inability to care for self on those outcomes. The sample of 306 clients and 33 clinicians was drawn from the records of a mobile PES unit serving a rural area. A regression-based, quantitative methodology, Hierarchical Linear Modeling (HLM), was employed to explore associations between restrictiveness and client risk and family factors, as well as differences in dispositions between PES clinicians. In order to extend practical implications, the same questions were also examined in monetary terms by translating restrictiveness into cost of dispositions. Results show inability to care for self and suicide risk to be the strongest predictors of increased restrictiveness and cost. Family quality appeared to reduce restrictiveness but not cost and only when not considering interactions with individual risk factors. When interactions were considered, family quality exhibited a statistically significant disordinal interaction with inability to care for self. That is, when clients were unable to care for self, positive family quality worked toward increasing restrictiveness and cost, perhaps due to families seeking help for the client. However, when clients were able to care for self, positive family quality worked in the opposite direction (i.e., toward reducing restrictiveness and cost). Theoretical and practical implications of this interaction were considered. There was found no significant variability in
dispositions and associated costs between clinicians, which may be evidence of standardized clinician training and procedures. Non-standardized instrumentation, lack of comparison with other programs or sites, and limited cell sample size are limitations of the study. This study shows the complexity of family systems in PES and provides basis for recommendations for future research and clinical practice.
Acknowledgements

This project was accomplished as much by my wife, Donna, as by me, and could not have progressed without the support and understanding of my children. It is ultimately a product not only of work but of prayer, faith, irrational hope, persistence and patience, and in sum, the hand of God. I have sensed the support of parents and extended family, friends, and colleagues too numerous to name. I owe thanks to the excellent team of professionals at NRVCS for their understanding and for allowing me access to the data. I also owe thanks to my chairs, Drs. Meszaros and Miyazaki, for their patience and instruction over the years.
Dedication

This paper is dedicated to the other two members of my committee for life, my wife, Donna, and
my Higher Power, to whom I owe whatever benefit comes of writing.
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CHAPTER ONE

Introduction

Violent, suicidal killings such as the Virginia Tech incident on April 16, 2007 force the stark reality of psychiatric emergencies into the forefront of public attention, at least for brief moments in time. Much is said and written after such events about the improvements that could be made in the systems that deal with people who are suicidal, homicidal, or otherwise incapacitated due to mental illness and/or substance abuse. Legal and clinical reforms follow, and new patterns for dealing with psychiatric emergencies develop.

Mental health clinicians from various fields provide psychiatric emergency services (PES). For the present purposes, reference to psychiatric emergency services means the immediate, one-time assessments and interventions aimed at protection and help for individuals who are at risk of harm to self or others or who are incapacitated as a result of mental illness or substance abuse. As a psychiatric emergency services worker in Blacksburg, Virginia, before, during, and after April 16, 2007, I have been intimately familiar with the practice of that field in hundreds of high-risk situations. Further, as a student of Marriage and Family Therapy (MFT) in the Human Development department at Virginia Tech during the same period of time, I have often reflected on the limited understanding in the field of family dynamics in psychiatric emergencies.

For decades, writers have pointed to the need to attend to family dynamics in psychiatric emergencies (Perlmutter, 1986; Sadler, 1986). In fact, de Clercq (1999) decried the breakdown of the family as the root cause of the modern increase in psychiatric emergencies. Others have called on the psychiatric emergency services field to make family involvement a primary goal for PES providers and acknowledged the importance of family in accomplishing the objectives of PES interventions (McCartney, 1994). Some have specifically called for integrating families into...
PES for children and adolescents (Christy, Kutash & Stiles, 2006; Fields & Ogles, 2002). Mental health crisis intervention theorists have acknowledged the importance of family (Brown, Shiang & Bongar, 2003). And at least one writer has argued for greater integration of family as a potentially more culturally appropriate way to deliver PES (Lettich, 2004).

In light of these calls, it seems only natural that the marriage and family therapy field, with its experience working with families in distress, might be able to contribute valuable insights into how to integrate family systems into psychiatric emergency services by evaluating and harnessing family dynamics in psychiatric emergencies. Family systems thinking (Bateson 1972a, 1972b; Keeney, 1983; von Bertalanffy, 1968a, 1968b) forms the basis of many MFT theories and provides a fitting theoretical framework for describing the systems involved in PES. Some MFT models, such as Milan systemic therapy (Boscolo, Cecchin, Hoffman, & Penn, 1987), provide excellent ways to understand the complexity of the interlocking, sometimes hierarchical systems at work in PES. After all, many MFT models were first developed for use, and have often thereafter been used, with families in crisis.

Yet in spite of the repeated exhortation to better include families in PES, and in spite of all that marriage and family therapy may have to offer, actually and successfully integrating families into PES practice has lagged behind. Twenty years ago, Morgan (1989) outlined how stressful psychiatric emergencies are for families, how they often turn to multiple places for help before finding it, and how they end up generally dissatisfied with PES received. Families, according to Morgan, felt that clinicians failed to see the extent of their problem, while clinicians saw families as less credible than families viewed themselves.

One might hope that families’ relations with PES professionals had improved over the years, yet more recent research shows that this may not be the case. In the midst of the tension
created in psychiatric emergencies, families continue to be critical of how PES clinicians use or integrate them into their interventions, often complaining of providers’ unprofessional behavior, minimizing risk, or not communicating the planned course of treatment (Cerel, Currier & Conwell, 2006). Clients who eventually receive PES often first turn to their families for help, but families find themselves not capable of coping with these crises without professional intervention (Carpenter, Schecter, Underwood, Tyrka & Price, 2003). Further, when clients finally do receive services, they (clients) often expect family therapy to be an available service, only to find it generally is not (Carpenter et al.).

The PES field is gaining understanding of some facets of family involvement in PES. For example, families can potentially provide protective support for clients (Baca-Garcia et al., 2004). Research has explored some interventions that integrate families into PES approaches, generally concluding that involving family can be part of effective service delivery (Ampelas et al., 2003; Bressi et al., 1999; Henggeler et al., 2003; Kruesi et al., 1999; Martinez & Garcia, 2002; Rotheram-Borus, Piacenteni, Cantwell, Belin & Song, 2000; Spooren, van Heeringen & Jannes, 1998; White, Bateman, Fisher & Geller, 1995; Young et al., 2005). On the other hand, families can be a primary contributor to a PES client’s crisis (Allen, Carpenter, Sheets, Miccio & Ross, 2003) and that the absence of family can be a major contributor to repeated emergency interventions (Arfken et al., 2004; Young et al., 2005).

This leads us to consider not only how the family is involved in the crisis situation but the impact of that involvement on the outcome of the PES intervention. Only a handful of published research articles have linked family to PES outcomes (in this case meaning the disposition or final decision made in the crisis situation; Arfken et al., 2004; Baca-Garcia et al., 2004; Mulder, Koopmans & Lyons, 2005; Way, 2005; Young et al.; 2005). All of them indicate that families
may, indeed, influence those outcomes. A further analysis of these articles is included in the literature review.

In the present societal context of mental health services, discussion of service provision must extend beyond modes and outcomes of interventions only. There are at least three areas which are critical directions in which to expand that discussion: ethics, cost, and the role of the clinician. The notion of least restrictive alternative is a primary ethical issue in PES, and a review and analysis of the literature in that area and how it relates to family is included in the literature review. Its importance in this study arises from the fact that all PES dispositions theoretically vary in degree of restrictiveness, and hence dispositions are not just an outcome but a level of restrictiveness.

Further, dispositions in PES relate not only to restrictiveness but to cost, in that the more restrictive the disposition the higher the cost associated with that disposition. The relevance of cost in this study is inherent as the study’s primary objective is to explore the impact of family variables on cost of PES. It should be noted that while restrictiveness and cost rise together, the conceptual interplay between the ethics of least restrictive alternative and the pragmatics of cost can be very complex.

The Virginia Department of Medical Assistance Services (DMAS; 2007) calculated the total payments from Medicaid alone for mental health treatment for the Virginia fiscal year 2006 to be $418,936,499. Of that amount, $165,977,307 was paid for inpatient mental health treatment, and the remaining amount contains other costs (unspecified in the report) related to emergency services. The daily rate at the Southwestern Virginia Mental Health Institute, the state hospital serving the population from which the sample in the current study was drawn, was $627.73 (Virginia Department of Medical Assistance Services, n.d.).
These figures demonstrate the tremendous financial strain created by psychiatric emergencies. Further, these publicly accessible figures related to the Virginia Medicaid program do not include figures that were not available to the researcher for expenses born by other payers for emergency services. Nor do they include the costs of unreimbursed care, which the Joint Legislative Audit and Review Commission (JLARC; n.d.) estimated for 2005 to be $25 million for inpatient psychiatric care and $45 million for psychiatric emergency department care in Virginia.

In light of the economic cost of psychiatric emergencies, it is evident that any insights into factors that can potentially lower costs become particularly salient. Unfortunately, few studies connect family to PES costs (Arfken et al., 2004; Sheidow et al., 2004; Young et al., 2005). This leaves an area with much potential for further study, and it is my hope to make some contribution in this study by linking family variables to the costs associated with the dispositions of the interventions.

Regarding the role of the clinician, we will see in the literature review that very little research addresses this area. The idea of the influence of clinician factors on dispositions and costs is incorporated in this study for exploration. Theoretical backing for including such an idea exists in the systems thinking of many marriage and family therapy approaches. Inasmuch as there is little research on the subject, a review of applicable theoretical concepts in MFT is included in the literature review.

It should be noted that “family” is not often defined in the writings of the PES field, and seems, rather, to be assumed. Given the nature of PES, a useful definition of family would be one that broadly captures the notion of the PES client’s social support network. A suitable definition of family in this study might be one similar to that provided by Cerel et al. (2006, p. 342): “Those individuals whose loved one or friend, a consumer, was seen in the ED [emergency
department] following a suicide attempt (i.e., individuals included as family members were not necessarily family relations).” In this study, this definition would be adapted to be, “Those individuals whose loved one or friend, a client, was seen by a psychiatric emergency services clinician.” Such a definition could potentially include almost any individual who plays a significant non-professional role in the client’s life, and could be extended to include even professionals when acting in roles that blood-related family might normally fill (such as group home staff).

Purpose

As a step in fulfilling the gaps in our understanding in PES, the purpose of this study is to explore the effect of family dynamics and clinician differences on the restrictiveness and cost of PES dispositions. Family systems thinking provides the theoretical underpinning for the study, and the overarching research questions of the study are to explore how family variables moderate the power of risk factors to predict restrictiveness and cost, and how clinician differences affect restrictiveness and cost in PES dispositions. In reference to the above-mentioned shootings on April 16, 2007, given that the sample comes from the population of PES clients in the area in and around Blacksburg, Virginia, an additional analysis will be included of the potential cohort effect those shootings may have caused for this population.

Summary

The need to better understand and integrate the family into PES is great. While some progress has been made, our understanding remains limited. Research has touched on family presence or absence, support or dysfunction, and integration into some interventions. Very little
is known about the impact of family dynamics on critically important aspects of PES
dispositions, such as least restrictive alternatives and cost.

Marriage and family therapy has the potential to help expand our understanding of the
influence of families in PES because of its roots in systems theory thinking. Drawing on MFT
for a conceptual foundation, the primary purpose of this study is to investigate the relationship
between family and clinician variables and restrictiveness and cost of PES dispositions. This will
fulfill an essential, unmet need to analyze how families and clinicians affect the individual civil
liberties of PES clients and the financial costs associated with those liberties or their restrictions.

The benefits of better understanding family and clinician dynamics in PES can potentially
apply to PES clients and their families, to PES providers, to government and private payers, to
future researchers, and to society.
CHAPTER TWO

Review of Literature

All clinicians, including marriage and family therapists, will inevitably face clients at risk of harming themselves or others or who are so seriously mentally impaired that they are unable to care for themselves. At the time of these crises, clinicians must be keenly aware of and able to manage the dynamic forces at work that place the client at risk or serve to protect them. Family systems are a critically important factor in psychiatric crises for this very reason. Psychiatric emergency services (PES) clinicians, as well as clinicians in general, need to have a thorough understanding of how the family system affects the psychiatric crisis situation and its potential outcomes. Specific understanding is needed in three areas: the influence of the presence or absence of a family system in the PES crisis; the influence of a family system’s involvement in a PES disposition; and, the influence of the positive or negative quality of the client’s family system on the PES disposition.

Psychiatric crises and interventions are enormously complex, but often focus on a single point of interest, the PES disposition. The PES disposition is the decision made by the PES clinician regarding the service the client needs and the setting in which to receive it. Dispositions may include release with a simple safety plan for follow-up, release with a safety plan and referral to outpatient services, voluntary admission to a residential crisis stabilization unit or psychiatric hospital, or involuntary admission to a psychiatric hospital. To comprehend family dynamics in PES, therefore, we need to understand the impact of the family forces on PES dispositions.

To fully understand this question requires understanding a key ethical issue, least restrictive alternative (LRA), and a key practical consideration, cost, that are intrinsic in PES
dispositions. This review will look beyond family factors in the clinical processes and outcomes (dispositions) of psychiatric emergency services, and will examine the connections in the literature between family factors and least restrictive alternative and cost in PES.

Another purpose of this study is to begin exploration of how clinicians affect PES dispositions, and this review will also look at any literature addressing that question. A section addressing theoretical considerations will be included to further frame the literature in terms of MFT theory. In the process of this review, I hope to show how the literature has exposed the potential value of researching family variables in PES, and how that research potential remains largely unrealized. A final section will highlight methodological aspects of research in the field and show how this study’s examination of a rural sample served by a mobile PES unit, its primary focus on family and cost and the link between the two, and the hierarchical design it employs provide valuable contributions to the field in terms of methodology.

Need to Include Family

Literature in PES has often treated psychiatric crises as events involving individuals, with families playing a secondary role, if any. To view an individual in psychiatric crisis as a part of a family system provides an important shift in viewpoint from that individualistic perspective. Such a family systems view holds potential for valuable contributions to research and practice in the field of PES. Further, the literature surrounding families in PES indicates there are real theoretical and practical needs to understand and include family systems in PES.

Theoretical Need to Include Family

Multiple authors have expressed an ideological need for a family-oriented view of PES. Over 20 years ago, Sadler (1986) described how aspects of family systems theory might be
applied to psychiatric emergency interventions and proposed that service providers account for such family systems dynamics in their work. In a similar but further articulated vein, Perlmutter (1986) argued that integrating family systems thinking into PES could increase both the effectiveness of the intervention and the comfort of the client in a time of crisis. He called for the integration of family systems understanding and approaches into the training of PES clinicians.

Such calls have not been entirely dismissed since that time, and subsequent writers’ ideas further stressed the need to include families in PES, albeit in scattered fashion. Brown et al. (2003), for instance, in describing their theory of crisis intervention, made a peripheral call for family involvement. McCartney (1994) argued but did not expound upon the argument that family involvement is or should be a primary goal of PES services and that families are a valuable, if peripheral, resource in meeting other key goals in PES. Christy et al. (2006) also made brief mention that family involvement is a central goal in PES for adolescents and children but did not expand the idea. Fields and Ogles (2002) went a small step further, articulating some points around family in their discussion of least restrictive alternatives for children, and holding out hope for more family and community based alternatives to inpatient treatment for children and adolescents. A further valuable point was made by Lettich (2004), who argued for involvement of family members as a key part of culturally sensitive practice in providing PES.

While scant and scattered has been the articulation of the theoretical need to address family in psychiatric emergencies, there is an important, underlying reality that must be faced by the PES field. As de Clercq (1999) points out, the rise of PES use in recent decades coincides with the deterioration of family support systems over the same time period. Whether that deterioration has caused the rise in PES use or not, the relationship is unmistakable. Acknowledging its implications adds urgency and import to DeClercq’s (1999) call for family-
targeted PES interventions. As will be seen later in this chapter, MFT systems theories have the potential to aptly describe that theoretical need and to guide the present study and other research attempting to meet that need.

Practical Need to Include Family

In spite of an awareness in the literature of the theoretical need to include families in PES, an analysis of the existing literature shows that the practical need for more family-oriented PES practice remains largely unmet. Cerel et al. (2006) surveyed 254 family members of 465 PES clients and found most to be highly critical of how PES providers used and involved them. Carpenter et al. (2003) found that over half of the PES clients in their study went to family or friends for help before seeking PES and that clients expected family therapy services to be available at the time PES occurred, but they found no such family therapy services available to them. Stewart, Manion and Davidson (2002) found in their literature review that family therapy is often recommended but never studied for adolescent PES clients. Dhossche and Ghani (1998) indicate from their chart review of 311 clients that the number one way that clients arrive at the site of PES services is via family or friend, but make no more mention of family beyond the role of transporter. Allen et al. (2003) echo this finding in the results of their data from emergency services forums and a survey, and additionally report that the number two reason for client crises is relationship problems—yet from there they make virtually no further mention of family in their writing, except a brief suggestion to make sure clients have a support system when planning for discharge. Morgan (1989) reported high stress and low satisfaction in interviews with 60 family members of PES clients and described how families feel providers do not know the full extent of the problem, while at the same time providers view families as less credible than families see themselves. Yates, Nordquist and Schultz-Ross (1996), in their study of 227 clients
for whom psychiatrists completed questionnaires, articulate the need to address family issues in more effective ways for malingering clients who fake symptoms in order to avoid family responsibilities. Husted and Nehemkis (1995) found in their study of family members’, police officers’, and mental health workers’ (24 data sets from each group) reactions to vignettes, that although families perceived the need for inpatient treatment similar to how PES providers perceived that need, they did not consider it as legally viable as did PES providers.

What We Know About Family Systems in PES

Considering the theoretical and practical need to include families in PES, what does the literature say regarding this crucial force? The literature tends to cluster around three core concepts, each reviewed here: the influence of family presence or absence in the PES intervention, the influence of the family system’s involvement in the PES disposition, and the influence on the disposition of the positive or negative quality of the client’s family system.

Family Presence or Absence

The mere presence or absence of families at the time of PES crises has been examined to some degree. That they are frequently present is clear, as found by Allen et al. (2003) and Dhossche and Ghani (1998), who found that families often bring or accompany PES clients to the location where services are provided. It is also clear that their presence can be a positive factor, as demonstrated by Baca-Garcia et al. (2004) in their study of clinical factors involved in hospitalization for 509 suicide attempters in Spain. They found that a belief in the client that suicide would affect someone besides themselves, demonstrating an attachment to a family system, and the very presence of family support both served as protective factors for the PES client.
On the other hand, lack of a family system often drives up use and costliness of emergency services interventions. Arfken et al. (2004), in their interviews and chart reviews comparing 74 high-use clients with 74 low-use clients, report that repeated PES clients that could not name an emergency contact, who would usually be a family member, or that reported no family support were more likely to be committed to inpatient care than those that could name at least one potentially supportive person. Young et al. (2005), in studying 179 clients via interview and database review, discovered similar findings that homelessness and less contact with family predict both greater use and cost of PES. Reynolds and Wilber (1999) in their database review of 1,534 clients, illustrate the same point differently. While they found that the number of people in a client’s family support system did not significantly influence whether they were sent to an open or a locked facility, they describe how, in that geographical area, a client by statutory definition had to lack a supportive family system to even be considered a PES client in crisis.

*The Role of Family Involvement*

Beyond the simple presence or absence of family is the question of how the family is involved in the PES disposition. The primary manifestation of this idea in the research is the effect of family’s wishes on PES dispositions, specifically, whether PES clients are sent to inpatient treatment or released. Over 20 years ago, Perlmutter (1986), in observing PES intervention interviews over a two-year period, pointed out the phenomenon of how family wishes do, indeed, affect dispositions. And, as recently as 2005, Mulder et al. (2005) have confirmed this to be the case in their study of clinicians’ ratings of 720 clients. Way (2005) adds to this discussion in his study of 465 psychiatrists’ dispositions by showing that the preferences not only of family members but of PES clients and other involved parties from the community are all strong predictors of PES dispositions. While these studies address the question of whether
family preferences influence PES dispositions, it leaves unknown how the client’s actual family quality influences dispositions.

*Impact of Family System Quality*

Beyond the impact of the mere presence or absence of family, discerning the positive or negative quality of the client’s family system is also critical to understand. Kleespies, Niles, Kutter and Ponce (2005) spoke about this need specifically to family therapists. They emphasized that clinicians facing clients in crisis must assess how the family system may be a contributor to the client’s problem or a source of support for the person. Such a distinction is a key point in assessing crisis situations.

It has been shown that family systems may be a protective factor for PES clients. Baca-Garcia et al. (2004) found that the presence of family support acted as a risk-reducing factor (i.e., indicating that the person may be safe and not in need of hospitalization), as did the belief that suicide would affect others. The key is whether family support is present beyond just family presence, and the assumption is that the client believed that someone cared whether they killed themselves. The potentially positive power of family systems is clear.

Such evidence should not be construed to mean that all families are supportive of clients in times of psychiatric crises. Additionally, such a statement should not be misconstrued to mean that those families who are not supportive are part of the problem. It may be that some family systems of PES clients may simply not have the ability to cope with family members in psychiatric crisis. There is some evidence to support this view. Often, individuals in crisis have already turned to family and friends for help before becoming involved with PES (Carpenter et al., 2003). Some of those families may have wished to provide that help but found themselves
unable. Further, according to Morgan’s (1989) family member interviews about their experience with psychiatric emergencies, families often deal with clients’ crises for days or weeks and try getting help from multiple sources prior to their finally seeking help from PES providers. Thus, rather than simply saying that families that fail to be supportive of PES clients are part of the problem, it may be more accurate to view PES clients as members of family systems that have tried and failed to cope with their crises.

Nonetheless, there is evidence that families can be a major contributor to the PES client’s crisis. Consider the following examples. Allen et al. (2003) found through forums and surveys of 59 consumers that the second most common reason clients gave for being in crisis was relationship problems. Rabinowitz, Slyuzberg, Salamon and Dupler (1995) show in their study of 656 client records that family problems and family referrals to PES are common antecedents to inpatient treatment. Stewart et al. (2002), in their review of the literature regarding adolescents that attempt suicide, found family dysfunction to be a significant risk factor. Yates et al. (1996) found in their study of psychiatrist questionnaires for 227 clients that avoiding family responsibilities appears to be a primary motivation for malingering PES clients to feign symptoms. Perlmutter and Jones (1985) cite evidence that suicide and violence are correlates of unhealthy family attachments. Martinez and Garcia (2002) overview studies of interventions aimed at a possible link between family emotional dynamics/stress levels and relapse into inpatient care for people with schizophrenia and found that how well families cope with a client’s psychotic symptoms has a great influence on whether the client will face re-hospitalization. While more literature exists similar to Martinez and Garcia’s work with families of people with schizophrenia after an initial crisis and intervention, a full review of such is beyond the present scope as this study’s sample is limited to clients receiving first-time
interventions for a broader range of crises than psychotic episodes only. The key point, however, is illustrated, that families can play a role in psychiatric emergencies and their resolution.

To summarize, what has begun to be known about family factors in psychiatric emergencies is that there appear to be at least three aspects of family systems that may have an influence: the influence of family presence or absence in PES interventions, the influence of family involvement in the PES disposition, and the influence of the positive or negative quality of the PES client’s family system on PES outcomes. Nevertheless, this knowledge is only fledgling and primarily gleaned from peripheral examination of families in PES. There exists little exploration and analysis in which family dynamics are a central focus, and there is little depth or development to discussions of the importance of families and of understanding family dynamics. Furthermore, too little connection has been made between the family and the key issues of restrictiveness and cost. Lastly, there exists no significant mention of the influence of clinician differences in PES. The purpose of this study is to further our knowledge of family dynamics, connect that knowledge to the meaningful outcomes of restrictiveness and cost, and to make an initial exploration of the possibility of clinician differences.

*Family and Least Restrictive Alternatives, Cost, and Clinical Systems Contexts*

Having reviewed what is known about the direct relationship between family systems and PES interventions, it is clear what next steps might be taken. For example, given the suggested relationship between family variables and PES dispositions, we need a more specific look at how family factors relate to the most meaningful aspects of those dispositions, i.e., least restrictive alternative (LRA) and financial cost. In addition to this, we also need to explore how different
PES clinicians may affect restrictiveness and cost in order to begin to understand the true impact of their presence in PES.

*Family Systems and Least Restrictive Alternative (LRA)*

No single concept has so greatly impacted the shape and form of PES as has the notion of the least restrictive alternative (LRA). As Fields and Ogles (2002) point out, there is much discussion and little agreement about the meaning of the phrase “least restrictive alternative.” However, the core concept might be summarized for purposes of this study as the intervention that infringes least on a person’s freedom of choice. While much of the writing about LRA focuses on the concept of mandatory outpatient treatment and less on its application to initial PES interventions, many of the thoughts expressed in the literature are salient to the present discussion of families in PES.

Authors have frequently voiced the need for treatment alternatives that are less restrictive than inpatient treatment for PES clients. Allen et al. (2003) call for less restrictive alternatives after finding that PES clients had such adverse experiences with inpatient treatment. Atkinson and Garner (2002), writing in Scotland, call for the development of LRA to inpatient treatment when considering mental health legislation because inpatient is actually too restrictive for many receiving it but there exist no LRA. Fields and Ogles (2002) call for greater family and community alternatives to inpatient for the treatment of children and adolescents.

However, the ethical arguments surrounding LRA to inpatient treatment are varied and complex. Wysoker (1999) discusses LRA as one of many client rights that sometimes cooperate, sometimes contradict, and sometimes compete with each other in terms of priority. This is important to remember in any discussion of PES dispositions, because it means that at times
LRA may be more or less important or provide impetus for or against a decision. The complexity of the issue extends beyond even this consideration, however. Lin (2003), for instance, examines the different ethical bases for LRA, including liberalism, utilitarianism, and communitarianism. From this analysis, Lin explains the ethical need to move beyond the simple argument of individual liberties in LRA to cost effectiveness in considering the best (not just least restrictive) alternative for PES clients. While considering cost may seem ideologically crass when speaking of real people in terrible crisis situations, it is a practical reality in any service field, and the argument of a right to cost effective services is compelling to all in light of the cost of PES to individuals and society as outlined in Chapter One. As has been stated, it is my intent in this study to extend our understanding of families in PES not only to LRA, but to cost, in order to reach out toward not only the ethical but the practical aspects of PES.

Adding to this debate regarding the most important priorities in considering LRA, Boudreau and Lambert (1993) point out how different ethical platforms upon which LRA stands often conflict. Civil libertarianism, which implies that all treatment is restrictive and no treatment is the least restrictive alternative, stands in opposition to a parens patriae perspective that treatment is a right, and therefore must be received by the mentally ill who cannot decide for themselves because of their illness.

In perhaps the most thorough analysis of the complexity involved in considering LRA, Miller (1982) examines the legal, political/economic, and clinical ethical perspectives by which we may choose to view LRA. Miller’s writing includes clarifying questions and arguments that expose the often hidden agendas that constitute the strengths and limitations of each perspective. Miller vigorously attacks the sometimes suggested idea that LRA is equivalent to “anything but
inpatient treatment,” pointing out that, in many cases, no inpatient treatment equals the “psychiatric ghetto,” or incarceration.

To illustrate the complexity of the LRA issue in a clinical example, Troutman, Myers, Borchardt, Kowalski and Burrick (1998), describe a case study in which physical restraints in an inpatient setting were used for a psychotic and aggressive teen. Such restraints, they argued, were the least restrictive alternative because they allowed the teen to participate in and receive other treatments that led to a healthy reintegration with society. This echoes the critical thinking of Belcher and Blank (1989-90), who explore the ethical grounds for inpatient treatment as the LRA, pointing out that the legal cases usually cited as the foundation for LRA were never intended to be interpreted as “not inpatient.”

To be sure, the concept of LRA is exceedingly complex in its application to PES. One might think that families would take a central place in the midst of such discussions families, but such is not the case. In all the writing about LRA in mental health, there is very little mention or discussion of family. As Fields and Ogles (2002) point out, family factors receive scant attention in considering LRA. They went on to reference thoughts on how freedom to interact with family in healthy ways might be included in the concept of LRA, and called for development of greater family and community alternatives for the treatment of children and adolescents. Given what evidence we have of the influence, or at least potential influence, of families on PES dispositions, it seems meaningful that the discussion of LRA for PES clients has not included more articulation of the impact of families on restrictiveness. There is some evidence that the connection is simply assumed and needs no articulation. Many of the family-involved intervention approaches discussed below argue for the involvement of families seemingly based on the assumed but not expressed potential of families to play a role in reducing restrictiveness
of treatment. Whatever the case may be, researchers and writers of the current literature seem to have paid insufficient attention to this paramount issue.

*Family Systems and Cost Issues*

Intertwined with and extending beyond this discussion of LRA in PES is a discussion of the connection between family systems and PES costs. Recall that it was Lin (2003) who, while describing the ethical bases of LRA, argued for adding cost effectiveness to our modern view of LRA. This is a valuable growth in perspective beyond overly simplistic views of PES as a civil rights issue. It makes clear that practical aspects such as cost must be addressed in order to translate ideals into real benefits for clients. In support of this notion, recall also Miller (1982), who clearly articulated how, for better and for worse, *political* and *economic* agendas shape LRA as much as do legal and clinical agendas.

This is not to imply that cost issues fit easily and naturally with the ethical ideal of LRA. Boudreau and Lambert (1993) capture the complexity of mingling LRA and cost effectiveness by showing how one ethical perspective may absolutely demand cost effectiveness while another may not acknowledge it at all. But sophisticated integration of the two concepts is developing. For instance, Davison (2000) makes the link between LRA and cost in his discussion of the elements of “stepped care,” the spirit of which is to match the restrictiveness *and* cost of services to client needs (not more or less than is needed). He argues the need for carefully studied and reported cost data involving families of PES clients, warning that inflated claims of cost effectiveness lead third party payers to make unrealistic demands of service providers, impairing providers’ abilities to serve clients according to their actual need.
Relatively few studies have examined family variables in relation to cost in PES. Arfken et al. (2004) show that frequent PES clients incurred almost 6 times the cost of infrequent clients and tended to be homeless and to not give the name of even one friend or family member who knew them well that could be interviewed. Young et al. (2005) found that homelessness and less family contact for the client predicted higher use and costliness of PES interventions. Addressing post-crisis treatment, Sheidow et al. (2004) demonstrate in their study of 115 families using researcher-administered assessment batteries how Multi-Systemic Therapy (MST), an intensive family-based intervention for at-risk youth, yielded better short-term and equal long-term cost effectiveness when compared to inpatient treatment.

The minimal attention to the potential of family systems to impact cost in PES leaves a gap that needs to be further investigated. Given the previous arguments showing that family dynamics do affect PES, the field needs additional understanding of the impact of family systems variables on PES costs.

*Family Systems and Clinicians*

Given the value placed by many in the helping professions on mindfulness of the effect of our own presence as clinicians, this discussion of client processes and outcomes would not be complete without examining what providers bring to the table. Particularly, when speaking of a service as systemically complex as PES, to ignore the place of the clinician within the web of systems would be remiss. Precisely because PES embodies such a complex intersection of systems, theories based on systemic views can add valuable perspective. In this case, we can see that value in the way some family systems-based theories may be able to incorporate both the family and the provider system in one theoretical view. Consider Milan systemic family therapy, for example, which seems particularly suited to this question in the way that it captures not only
family systems but the clinician and even the supervisory systems that interact with those family systems (Boscolo et al., 1987). Inasmuch as the end goal of any intervention research is to improve practice, a look at some of the theoretical approaches that have integrated family systems into services addressing psychiatric emergencies is essential. Further, given the paucity of research directly addressing clinician effects, a more theoretical discussion of the issue is appropriate.

A number of writers have described theoretically how clinicians might be integrated in dealing with families involved in psychiatric emergencies. For example, in a handbook for training MFT’s, Kleespies et al. (2005) describe how marriage and family therapists could therapeutically handle a variety of crises within couples and families. Over 20 years ago, Perlmutter and Jones (1985) explained how to integrate family into PES crises through their description of a family systems approach to PES. Perlmutter (1986) also argued that integrating family systems thinking into PES approaches can increase clinician comfort and effectiveness. Sadler (1986) wrote along much the same line, applying family systems concepts to PES.

However, there is little research application of this notion in the literature. Davison (2000) speaks of the research problem posed by un-accounted for influence of clinical judgment and experience in experimental and other studies in PES. Baca-Garcia et al. (2004) call attention to this same problem of lack of incorporating clinician factors in research, suggesting that future research needs to address individual clinicians and their decisions. Lettich (2004) similarly calls for awareness of the influence of clinician culture in PES. A sound understanding of the influence of clinicians on the outcome of the initial PES assessment and intervention is a logical foundation for developing effective post-initial intervention treatments that involve families. Expanding this understanding is a primary goal of this study.
This review found only one published study of the impact of actual PES clinician characteristics on the PES process, though earlier studies may exist. Tolbert (1989) illustrates in a qualitative study observing 10 clinicians in 76 interviews how clinicians made their decisions, but did not comment on possible differences between clinicians. Thus, it is plain to see that if clinician differences exist, they and the impact they have in PES remain virtually unexplored territory.

*Families in PES Interventions and Treatments*

While research directly addressing clinician factors is scant, research has examined some PES interventions and treatments that include families. Because the primary purpose of this study is to examine the impact of family dynamics on PES outcomes at the time of initial contact, an in-depth analysis of those treatments and interventions that follow first-time contact exceeds the present purpose. However, a brief mention of research into family-inclusive interventions and treatments may be helpful in establishing context. This is because it is the assumption and hope underlying this study that any knowledge gained about family dynamics might ultimately be applied to service provision. Studies of interventions that incorporate family systems in PES interventions are relatively numerous compared to the paucity of research in some of the areas discussed so far. Some focus on family-based initial PES interventions, while others focus more on the treatments received after the initial intervention.

Among those looking specifically at the initial intervention are Ampelas et al. (2003) and Zeltner et al. (2002), who describe a mobile, in-home model of PES operating in France that integrates the family directly into the PES process. Robin et al. (2001) report case studies of the use of this French model. Robin et al. (1999) found overall satisfaction with this model among community professionals. Kruesi et al. (1999) found that a parent education program effectively
motivated parents to significantly reduce their children’s access to lethal means of suicide in
their follow-up phone survey of 103 parents. Rotheram-Borus et al. (2000) described an
emergency room intervention that included family therapy that effectively reduced repeat suicide
attempts at 18 months for adolescents. Spooren et al. (1998) report that family involvement in
PES increased clients’ follow-through with outpatient services after an inpatient stay in their
controlled study of 647 clients. White et al. (1995) report in their study of 206 clients that client
and family involvement in PES resulted in higher rates of private hospitalization versus public
hospitalization (considered a positive). And finally, Young et al. (2005) report that family
involvement in PES improves treatment outcomes and prevents re-hospitalization in a sample of
179 high-use clients surveyed.

Among those that look at treatment beyond the initial intervention are Henggeler et al.
(2003, N=156) and Sheidow et al. (2004, N=115 Medicaid families from among the original
156), who report results from the use of a family systems therapy approach (MST) with
adolescent PES clients as an alternative to inpatient treatment, finding it effective overall in
achieving that objective. In reference to the Milan systemic family therapy (Boscolo et al., 1987)
mentioned above, Bressi et al. (1999) describe a family systems-based intervention utilizing the
Milan approach in PES case study and claimed success in a difficult case. Martinez and Garcia
(2002) describe several studies that find family interventions successful at reducing re-
hospitalization of schizophrenic clients.

Theoretical Considerations

Marriage and family therapy stands in a unique position to make a valuable contribution
to our understanding of both families and clinicians in PES, given its theoretical and practical
expertise with families and larger systems. This study builds upon an underlying theoretical
foundation of systems thinking to form a conceptual frame for the study. Specifically, it is a family systems perspective that informs the research questions addressing family variables.

Further building on a family systems philosophy, Milan systemic therapy informs the inclusion of clinician influence in the study.

Family Systems Theory: Basis for Family-Related Research Questions

The basic premise of family systems theory that underlies the current research interest in families in PES is that individuals exist in relation to their family members, that those relationship systems have identities and dynamics of their own beyond the individuals in those systems, and that those dynamics have tremendous impact on the individuals in those systems.

The writings of von Bertalanffy (1968a) provide an excellent source for understanding the original conception and description of system theory. While systems theory has earlier conceptual foundations, von Bertalanffy was one of the first to write about a “general system theory” (1968a, p. 32) that organizes into a coherent whole principles that apply to and govern relationships in all settings (e.g., physical sciences, social sciences, mathematics, etc.). He defines systems and gives examples of general systems principles; following are some of those principles and how they relate to the present study.

First, systems are “Complexes of elements standing in interaction” (p. 33). Any given psychiatric emergency includes individuals, family members, clinicians, and possibly law enforcement personnel, medical doctors and nurses, psychiatric hospital admission staff, school personnel, or others who may be elements of the interaction.

Second, the system involved in psychiatric emergencies is more open, meaning it “Maintains itself in a continuous inflow and outflow, a building up and breaking down of
components” (p. 39), as opposed to closed, or “Isolated from their environment” (p. 39). There is a constant shifting of who is part of that PES system and what role they play, and these factors are greatly influenced by the context or environment in which the PES situation occurs.

In these open systems there is some degree of equifinality, meaning “The same final state may be reached from different initial conditions and in different ways” (p. 40), as opposed to closed systems processes, where “The final state is unequivocally determined by the initial conditions” (p. 40). Every psychiatric emergency presents “different initial conditions,” each must be handled as an individual case with a great deal of variance and possibility in the outcomes that is never determined at the outset.

There is a struggle between evolution in the PES system, or “A transition towards higher order, heterogeneity, and organization” (p.41), and entropy, “The general trend of events in physical nature...toward states of maximum disorder and levelling [sic] down of differences” (p. 40), as clinicians seek to create sense, order, and safety out of a chaotic crisis situation.

Clinicians, clients, and family members display teleology, or “Directed behavior (p. 46)...of elements in mutual interaction (p. 45)” as the governing principle of action, versus causality, the view that “The aimless play of the atoms, governed by...laws...[produce] all phenomena in the world, inanimate, living, and mental” (p. 45). In other words, all of the people in the psychiatric emergency system have power to and do act for themselves, and while they influence each other, none actually determines the others’ actions. Information is the currency used in systems in communicating between elements, manifest in the processes of “Decisions” and “Feedback” (p. 42), and cybernetics, or the idea that “Mechanisms of a feedback nature are the base of teleological or purposeful behavior” (p. 44) and govern information processes. In PES, this
means involved parties continuously base their actions on the information and feedback they receive.

Von Bertalanffy did not originally apply his systems theory to the world of mental health, but further writings have bridged that gap and applied systems theory to families. From his original foundation of a general theory of systems, Von Bertalanffy did later apply systems theory to psychology (1968b). Bateson further developed the idea of human systems, particularly using the concepts of cybernetics and circular causality (1972a), and then applied these ideas to family therapy (1972b). A more thorough expounding of the cybernetic and systems theory ideas that thereafter sprang from these roots can be found in Keeney (1983).

It is evident that families are involved in PES situations (Allen et al., 2003, and Dhossche & Ghani, 1998). It is also clear that families affect PES processes and outcomes (Baca-Garcia et al., 2004; Way, 2005; Young et al., 2005). It is evident from these sources that the family effect can be positive or negative, and that should provide enough justification for researchers and clinicians to try to understand these forces better. It is also evident from a systems theory standpoint and from a practical perspective that an exploration of the influence of individual clinicians is also important.

Milan Systemic Therapy: Theoretical Inclusion of Provider Systems

There exists theoretical basis in MFT to believe that provider systems impact individual and family factors and outcomes. After all, the concept of systems in family systems can mean networks of relationships, not just relationships between individuals. Further, general systems theory, in which MFT also has roots, applies the concept of systems not only to families but to all living and natural existence. Certainly, then, the concept of systems applies to the PES
provider system, and a theoretical interpolation can be constructed of interlocking family and provider systems, each mutually affecting each other.

Milan systemic therapy (Boscolo et al., 1987) provides a fitting theoretical example that captures these ideas. Milan systemic therapy propounds several concepts particularly salient to clinicians in this regard. As can be seen, such an approach can indeed integrate client, family, provider, and other systems. From this perspective, clinicians can serve clients and families by being mindful of themselves and other entities as part of the system that has been created in the PES situation and conceptualizing events not as “the system creates the problem” but as “the problem creates the system” (Boscolo, et al., p. 14). In other words, the crisis itself brings into a temporary existence a system capable of coping with it.

Based on this foundation, clinicians can then look beyond simple systems of behaviors and consider systems of meanings, exploring the messages of the behaviors they are assessing. They can and should also maintain neutrality or multipositionality in the family and other systems, not aligning with any one party, and keeping a lateral versus hierarchical status in the system as much as possible, allowing people to act as equals. There is a limitation of this perspective in psychiatric emergencies, given the practical need at times to act with decisiveness and authority when needed, but the spirit of the concept remains intact, to attempt to bring all parties into harmony, if not agreement.

Clinicians must be able to work both within and between systems, including systems larger than the family. They must be able to view the client and family as positive, or attributing benevolent motives to their behavior, which can help stimulate positive change in clients and families—this may present a particular challenge in light of the stress present in the situation.
They must also view the interaction as circular or reciprocal and functional or purposeful, not linear or unilaterally causal nor necessarily malicious or worthy of blame. This is particularly important in PES as the clinician seeks solutions that meet the needs, preferences, and contextual constraints of so many players within so many systems.

Clinicians, from the Milan perspective in psychiatric emergencies, would have a primary goal of disrupting maladaptive, destructive, or controlling interactions. They must be wary of seeking a particular outcome, and realize that the intent of the intervention is to change the course of the client/family system toward something different and often unpredictable. In that regard, they must be continually exploring and learning. They would use hypothesizing and circular questioning at times in order to get at underlying meanings for both assessment of and intervention into systemic interactions.

In sum, Milan systemic therapy provides a prime example of the potential of marriage and family therapy theories to enhance and improve the field of PES. Drawing on the theoretical foundation of systems-based theories, researchers can take what is already known and logically develop further understanding of families in psychiatric emergencies.

**Review of Methodologies**

Inasmuch as the literature related to families and PES reflects a variety of methodologies, a review of main methodological considerations is in order. This section will examine what the literature reflects regarding research settings, samples, designs, instruments, and analyses, and make clear the present study’s methodological contribution to the literature.

**Settings**
This study makes a valuable addition to existing literature in regards to the setting of the research. There are generally two modes of delivery for initial contact PES interventions: via psychiatric emergency departments and via mobile PES units that respond to community locations. Most of the studies in the literature reviewed looked at services delivered in emergency department settings (either psychiatric emergency departments or general hospital emergency departments with psychiatric interventions). Few of those reviewed specifically studied mobile PES, and these were located in France (Ampelas et al., 2003; Robin et al., 2001; Robin et al., 1999) and Netherlands (Mulder at al., 2005). Some articles did not describe the service setting in great enough detail to discern whether it was an emergency department or a mobile unit. Because the present study looks at a mobile PES unit delivering interventions in the United States, it helps to address the sparseness of literature in that area, a meaningful methodological contribution. This is not to say that mobile PES units are not in existence throughout the United States and other countries, but they do appear to be less frequently studied. It should be noted that the French model was unique in that services were provided to the client and family in the home and were not the usual services but a developing program being evaluated. Services studied in the current project are not provided in client homes but in community locations in which another community partner can monitor a client’s physical presence during times when the clinician is not present.

Samples

This study is also a valuable addition to the literature in terms of sample. Most of the studies reviewed that specified such described services provided in urban areas. The present study’s focus on a rural population makes it a significant methodological contribution in this regard as well. The focus on urban populations in much of the literature coincides with the
predominant focus on psychiatric emergency room settings, which are more likely to exist in urban areas. Clinically, sample populations vary in the literature to include studies of all PES clients, frequent users of PES, post-suicide attempt clients, and adolescents, with less attention directed toward geriatrics. This study’s focus is on first-time or initial interventions of all ages and situations, without the complication of multiple or repeat interventions being mixed into the sample. This increases the parsimony of the study results. Further, most studies that include family factors focus primarily on individual clients and only secondarily on family, whereas family is a key sample component in this study. Study demographics in the literature are typical, reflecting higher or lower numbers of minorities depending on the geographical region sampled. Sample sizes typically ranged from less than one hundred to several hundred, excepting case studies of as few as one and some samples from data bases of thousands. The sample demographics and sample size in the present study is comparable to those found in the literature and is described more fully in following chapters.

*Designs*

The present study adds much to existing literature by placing family and cost at the center of focus. While families were often included in some way in studies reviewed, the primary focus tended to be the individual client. Further, only one study had as a central purpose an examination of cost (Henggeler et al., 2003; Sheidow et al., 2004), the research question being cost-effectiveness of Multi-Systemic Therapy (MST) versus inpatient treatment for adolescents. Some of the studies reviewed focused on initial contact assessment and intervention similar to the present study, while some focused on treatment subsequent to initial contact. Most relied on retrospective data with fewer collecting clinical data in the course of service provision. Very few studies were experimental or quasi-experimental (Martinez & Garcia, 2002; Spooren et al.,
This study does not differ from most in its focus on initial contact, use of retrospective design, and lack of control or comparison group.

**Instrumentation**

In order to study the field realistically, data was gathered from actual clinical instruments used in PES, and because these were non-standardized, variables were constructed to be as non-reactive as possible. Many studies in the literature used common research instruments such as surveys, interviews, record reviews, standardized instruments, and data bases. In this regard, the current study is not unique in its employ of record review, but does add an attempt to translate clinical documentation into researchable variables.

**Analyses**

Use of multilevel or hierarchical linear modeling in the present study represents a unique methodological contribution to the body of literature reviewed. While the vast majority of studies reviewed were quantitative in nature, employing various levels of statistical complexity from simple frequencies and percentages to Chi-squared and t-test comparisons to regressions of various types, none were found that used Hierarchical Linear Modeling (HLM) or a research design that acknowledged nestedness of data structure. This study is, therefore, a fitting methodological next-step in its use of HLM to address clinician variables and nestedness of data. Only a few of the studies reviewed used qualitative analyses (Allen et al., 2003; Cerel et al., 2006; Robin et al., 1999), and a few more presented case studies.

In sum, this study repeats some methodological aspects already represented in the literature, but contributes to the methods already described in literature through its look at PES of
a mobile unit in a rural area, with a primary focus on family and cost, and employing HLM to examine possible nested data structure.

Summary

There exists a definite need, both theoretical and practical, to include families in PES. The current body of PES literature provides some knowledge of how families are involved in PES situations: families are often present during PES interventions; family input affects PES dispositions; and the supportive or problematic quality of the family system is a significant dynamic in PES. Knowledge is limited in regards to the impact of these family dynamics on LRA and cost, and there has been virtually no exploration of the effect of the clinician or provider systems in PES. Systems theory concepts as found in the MFT field can be applied to PES and provide a theoretical understanding that can integrate both family and clinician systems into PES. It would appear from an analysis of the existing literature that research that draws on that theoretical foundation to fill in gaps in understanding families in PES could benefit clinicians, educators, and researchers interested in improving the quality of service to individuals and families in psychiatric crisis.
CHAPTER THREE

Methods

The purpose of this chapter is to describe the design and methodology of the current study. The chapter will begin with a description of psychiatric services in Virginia, necessary for understanding the subsequent sections. Following this will be a description of participants and the sampling process, the research questions and hypotheses of the study, a description of the variables and instrumentation, and the methods of data analyses employed.

Psychiatric Emergency Services in Virginia

Individual states have responsibility to provide psychiatric emergency services (PES) to their residents. In Virginia, PES are provided through community service boards that serve a specified geographical area. The proposed study focuses on data gathered from PES provided through the New River Valley Community Services Board, or NRVCS. The NRVCS catchment area is located in southwestern Virginia and incorporates Montgomery, Pulaski, Giles, and Floyd Counties and Radford City. The Access Department of NRVCS has a PES unit comprised of a team of approximately 5 daytime (Monday through Friday, 8:00 a.m. to 8:00 p.m.) clinicians and a team of approximately 10 relief (overnights, weekends, and holidays) clinicians. Clinicians typically hold Masters degrees or higher in a mental health-related field. Clinicians are based in Montgomery County, but provide services throughout the NRVCS catchment area at hospitals, law enforcement agencies, outpatient mental health and physicians’ offices, nursing homes, schools, and other community locations as needed.

Psychiatric emergency services are comprised of mental health evaluation and crisis intervention. The mental health evaluation includes an assessment of an individual’s risk of harm to themselves or others or inability to care for themselves, due to mental illness or substance
abuse. It also includes a judgment of the person’s capacity and willingness to consent to services and a decision about the least restrictive setting in which to address risk factors. A mental status exam and diagnostic assessment are also performed. Crisis intervention includes any interview, counseling, referral, or other skills and services provided to the client and significant others as needed, including addressing inter-systemic issues with other community entities. Typical interventions in the NRVCS Access program consist of a clinician meeting with a person in crisis, interviewing them, reviewing relevant records, speaking with appropriate collaterals, making a decision with the client and concerned parties, creating safety and follow-up plans, negotiating admission to in- or out-patient services, and performing any actions necessary to sufficiently address risk for and provide help to the client and others.

Psychiatric emergency services can be initiated by any individual or institution that feels a person (themselves or someone else) may be at risk of harm to themselves or others or unable to care for themselves due to mental illness or substance abuse. Access to services is provided by a centralized hotline that operates 24 hours per day, seven days per week. Calls are answered by trained staff and volunteers who pass calls to clinicians that need the attention of a mental health professional. In cases where immediate face to face services are required, clinicians travel to designated community sites to perform those services or clients may travel to an NRVCS office to meet with a clinician.

Clients needing PES may be seen on a voluntary or involuntarily basis. Involuntary services are provided when probable cause to believe a person is at risk of harm or unable to care for self due to mental illness or substance abuse is presented to a magistrate or law enforcement officer and the person is either unwilling to obtain or incapable of obtaining PES on their own. If such probable cause is presented to a magistrate, the magistrate can issue an emergency custody
order (ECO) for law enforcement to take the person into custody for evaluation. If probable cause is presented to a law enforcement officer, the officer may take a person into custody for evaluation without a paper order as needed.

There are four possible outcomes (dispositions) of the PES intervention, listed here in order from least to most restrictive. In virtually every case, what the clinician recommends is what actually occurs; in those few instances where the initial clinician recommendation changes to another disposition, the disposition as used in this study is defined to include only what the actual outcome is, or what actually occurs.

1. Release with no subsequent mental health/substance abuse services;
2. Release with referral to outpatient community services;
3. Voluntary residential or inpatient treatment;

The services available to clients and clinicians based on these dispositions fall along this spectrum as well. Outpatient community services may include outpatient counseling, psychiatry, assessment, or other mental health services. Voluntary residential services are provided by the New Horizons program, established in 2006 as a “crisis stabilization unit,” while voluntary inpatient treatment is provided in psychiatric hospital settings. Involuntary inpatient treatment is provided in psychiatric hospital settings as well. The psychiatric hospitals most commonly utilized around the NRVCS catchment area include three private hospitals, St. Alban’s, Lewis-Gale, and Roanoke Rehab, and one state operated facility, Southwestern Virginia Mental Health Institute (SWVMHI).
Referral to outpatient services is generally provided by the clinician by either referring the client to a provider they already have, setting an appointment with a provider, or giving the client phone numbers or other instructions to access outpatient providers. Referrals to voluntary residential and inpatient services are facilitated by the clinician, who makes arrangements over the phone, after which the client travels to the designated facility. Referrals for involuntary inpatient treatment are made by the clinician who arranges an inpatient placement then calls the magistrate and presents probable cause as earlier described. The magistrate, if in agreement, then issues a temporary detention order (TDO) for the person to be admitted to the designated facility. Almost invariably, magistrates find probable cause as described by the clinician, and issue the TDO.

Costs of services also vary in the same way, with inpatient costing more than residential which costs more than outpatient. Further, clients receiving residential and inpatient treatment typically are referred to outpatient services on discharge.

Sample

The sample for this study is comprised of clients receiving PES through NRVCS from January 1, 2006 to June 30, 2008, and the clinicians that provided those services. Permission to obtain data was obtained from the NRVCS executive director and from the Virginia Tech Institutional Review Board (IRB). The procedures below describe how and from where the sample data was selected and gathered.

Client participants (N=306) were people generally residing in the NRVCS catchment area who were experiencing crisis related to mental health and/or substance abuse and who received PES intervention for the first time. Client ages ranged from six to 93 years. Genders were
approximately equally represented (149 male, 157 female). Most were white (289) while few were minorities (12 black, 3 Asian, 2 Hispanic). One hundred seven were single adults; 89 were married adults; 39 were divorced adults. Fifty one were minors and thirteen were widowed. Seven resided in some form of institutional setting.

Clinician participants (N=33) were all employees of NRVCS who performed PES during the time period of the study (January 2006 to June 2008). Eighteen were full-time while 15 were part-time on-call clinicians. They ranged in PES experience from five months to almost 18 years and came from a variety of mental health-related disciplines (12 from psychology, 8 from social work, 5 from marriage and family therapy, 4 from counseling, 2 from education, 1 from pastoral counseling, and 1 from criminal justice).

Procedures

Client and family data for the present study were collected from charts located at the Montgomery Center office of NRVCS in the Access Department emergency services file room. At the time of data collection, that file room housed all charts of clients seen by PES clinicians from 2006 to present. There are seven file cabinets in the room, each having four drawers, for a total of 28 drawers; one of these (the top left) is designated for folders awaiting a formal chart to be made. Drawers are arranged alphabetically with A being the second-from-the-top, left-most drawer, and Z being the bottom, right-most drawer. For purposes of describing sampling procedures, drawers may be considered numbered from one to 27 following alphabetical order, top to bottom, left to right.

Systematic sampling followed the procedure described here until 30 or more clinicians’ data was collected. Every chart from every ninth drawer beginning with drawer nine was
reviewed and data collected. Entire drawers were selected for sampling to simplify the process and minimize potential disturbance because charts were being continually made and frequently pulled for use. Systematic selection of drawers was used to obtain a representative sample. After gathering data from every ninth drawer (three drawers total), a sufficient number of clinicians were represented in the sample. If an insufficient number of clinicians had been represented, every chart of every third drawer beginning with drawer three would have been reviewed. If there had remained an insufficient number of clinicians represented, every chart of every drawer beginning with drawer one would have been reviewed. More than 30 clinicians have worked in PES for NRVCS since 2006, therefore an ultimate number of 30 or greater was assured, and further sampling of older charts was not pursued.

Clients are seen by the first available clinician at the time of the PES call. There is no consideration of name in assigning a call to a clinician, therefore there appears to be no systematic bias in sampling alphabetically. Therefore, the sample can be reasonably regarded as a simple random sample from a population of clients who received PES through NRVCS from January 1, 2006 to June 30, 2008.

From the statistical power perspective in Hierarchical Linear Modeling (Raudenbush, 1997), 30 or more clinicians was the designated cutoff number for clinicians. A greater average number of clients per clinician was also desired in order to increase the precision of the estimates of the parameters in the HLM models, which will be described later. As will be shown below, for the purposes of this study, clients are considered “nested within clinicians,” in order to capture different dispositional tendencies between clinicians by taking into account the potential similarities of dispositions among multiple clients served by the same clinician. In the present study, 10 clients per clinician on average, i.e., a total of 300 clients, was the aim in order to
provide reasonable statistical power for hypothesis testing. Sampling stopped when the minimum sample size requirements (30 clinicians and 300 clients) were met. Note that even though there was wide variety in the number of clients per clinician in the sample, HLM is sufficiently flexible for handling such unbalanced data and provides stable estimates as long as there are sufficient numbers of macro-units (clinicians) and the average number of clients per clinician is a reasonable size. Thus, keeping these two numbers (i.e., number of clinicians and a total number of clients for an acceptable average per clinician) in mind, I continued examining clinical records until all of the minimum sample size requirements were achieved. The sample ultimately included 33 clinicians and 306 clients, an average of 9.3 clients per clinician.

Certain information was gathered about the clinicians such as their academic degree (professional discipline), start date (used to calculate experience), and employment status (full-time or on-call). The potential pool of clinicians whose data might have been collected, i.e., the population of clinicians, can be defined as any clinician who worked in PES for NRVCS after January 1, 2006, and prior to June 30, 2008. The actual sample of clinicians was determined by the charts reviewed, and sampling stopped after 30 or more clinicians had been included. Clinician data were collected from the human resources department of NRVCS.

Data were collected for every screen present in the charts sampled. This included prescreens that predated 2006 so long as at least one prescreen was present dated after January 1, 2006. In cleaning the data, prescreens from prior to that date were eliminated because they were not a representative sample of clients or prescreens from prior to 2006. All screens of clients with at least one release to other settings besides those that were typical (e.g., jails, medical hospitals, group homes, etc.) were also eliminated because they could not be accurately represented by the outcome variable. Finally, it was determined to include only initial screens of
clients because of the confounding effect of having present in the sample multiple prescreens of the same client done by multiple different clinicians. To handle this complexity of the combination of clients and clinicians, a cross-classification model was considered, but given the relatively small samples that would be generated in such a model because clinicians rarely screened the same client more than once or twice it was determined unsuitable for the current study.

**Research Questions and Hypotheses**

The research questions that this study addresses are:

1. How much do client risk factors (i.e., suicide risk factors, homicide risk factors, inability to care for self due to mental illness or substance abuse) increase restrictiveness and cost of PES dispositions?
2. How do family variables (i.e., family presence at the time of the intervention, family involvement in the disposition, and positive or negative quality of a client’s family) affect restrictiveness and cost and moderate the power of client risk factors to predict restrictiveness and cost of PES dispositions?
3. How do clinician variables (i.e., individual clinician differences, clinician discipline, clinician experience, and clinician status as daytime or relief) affect restrictiveness and cost of PES dispositions?

These research questions lead to the following hypotheses:

1. More suicide risk factors will predict greater restrictiveness and cost in PES dispositions.
2. More homicide risk factors will predict greater restrictiveness and cost in PES dispositions.
3. Being judged unable to care for self will predict greater restrictiveness and cost in PES dispositions.

4. Greater family presence will predict less restrictiveness and cost and will moderate (reduce) the impact of client risk factors.

5. Greater degrees of family involvement in the disposition will predict less restrictiveness and cost and will moderate (reduce) the impact of client risk factors on restrictiveness and cost.

6. The quality of the client’s family system will predict restrictiveness and cost, with negative family quality predicting greater restrictiveness and cost and positive family quality predicting less restrictiveness and cost, and will moderate (reduce) the impact of client risk factors in the same manner.

7. Individual clinician differences will impact restrictiveness and cost.

8. Clinician discipline will impact restrictiveness and cost.

9. Clinician experience will impact restrictiveness and cost.

10. Clinician status will impact restrictiveness and cost.

Regarding hypotheses 7-10, it should be noted that the lack of directionality is due to the lack of empirical evidence or existing theory indicating any specific direction in which to hypothesize. These hypotheses represent a truly exploratory aspect of this study, the impact of clinicians on PES outcomes. On the one hand, systems theory might suggest that individual clinicians, being different from each other and being part of the system formed at the time of crisis, would tend individually toward higher or lower restrictiveness or cost; experience, status, and discipline would then present themselves as possible factors in that variance. On the other hand, clinicians belong to a greater system of mental health services that trains and monitors
clinicians for appropriateness of disposition, a systemic force opposing the notion of individual clinician differences in disposition.

Variables and Instrumentation

Data were gathered directly from the clinical forms used by PES clinicians at NRVCS. This section will review those forms and the data (variables) gathered from them. Some data (i.e. some cost and clinician data) were gathered from other sources.

The PES Clinician’s Forms

The primary data gathering instrument for PES clinicians performing their evaluation and crisis intervention is the Uniform Pre-Admission Screening Form (the “prescreen;” Appendix A). At the time of data collection for this study this form had 13 sections in which the clinician can document a comprehensive range of information. The form changed in some aspects after legal reform in the field took effect on July 1, 2008, but because data was gathered prior to that time none of the new forms were included in the sample. Two other forms commonly accompany the prescreen, the Access Crisis Contract (Appendix B) and the Petition for Certification for Involuntary Admission or Treatment (TDO Petition; Appendix C). A shorter screening form (Crisis Assessment Form; Appendix D) is used solely at times when the disposition is to release with no services or outpatient services. Permission to use these forms and gather non-identifying information was obtained from NRVCS prior to data collection.

Restrictiveness of Disposition Data

Data regarding the disposition of the PES evaluation and intervention were obtained from forms described above. In this study, dispositions were coded as follows, in order from least to
most restrictive, to reflect the degree of restrictiveness in ascending order. Although ordinal in nature, disposition was treated as a continuous variable using values as a rough approximation of the distance between categories. This use of the ordinal variable disposition was necessary in order to achieve the primary goal of the study to answer the research questions in terms of cost, because, as is described later, cost is constructed based on disposition. Voluntary residential and voluntary inpatient treatments were grouped together because of their similarity in level of restrictiveness.

0 = Release to community (non-institutional) with no mental health/substance abuse services

1 = Release to outpatient services

2 = Voluntary residential or inpatient treatment

3 = Involuntary inpatient treatment

Data were originally collected for cases with other dispositions, such as release to institutional settings such as jails, nursing homes, group homes, or medical hospitals. Such cases are clear exceptions to the normal course of PES, and these cases were later eliminated because there can be no clear judgment of restrictiveness or cost related to such dispositions. Releases to other institutional settings such as nursing homes and jails are atypical in terms of this spectrum of restrictiveness because they have an inherent level of restrictiveness to a large degree unrelated to the psychiatric crisis for which PES was initiated. It would be inappropriate to apply the above scale of restrictiveness to such situations and, therefore, such cases were separated out and not included in this analysis.

Cost Data
Cost, as used in this study, means the potential cost of a given disposition. Actual client-specific costs were, unfortunately, not available for this study. However, because cost is such an important practical consideration, it was estimated in this study despite this limitation. This was done by creating cost figures for each category of disposition, considering them ordinal but using them as continuous, as earlier described. Cost rises as restrictiveness rises, so the same conceptual scale was applied as with restrictiveness, being ordered from least to most costly (ordinal) but treated as a continuous variable. This compromise had to be made in order to reach the overall goal of the research, to answer the research questions in terms of cost. As a type of sensitivity analysis, two estimates of cost (high and low) were created and used as different forms of the outcome. Thus, there were a total of three manifestations of the outcome variable: restrictiveness, high cost estimate, and low cost estimate. Including two representations of cost in addition to restrictiveness allowed for sensitivity analysis, or the ability to compare costs and benefits using multiple measures (Pike-Urlacher, Mackinnon, & Piercy, 1996). Results can be examined to see whether they vary based on manifestation of the outcome.

For the first disposition category (release with no services), there was no cost ($0) for both high and low estimates. For the second disposition category (release to outpatient services), the average cost of outpatient services was used by calculating the mean cost of all outpatient services per client at NRVCS in the calendar year of January 1 to December 31, 2007. Two figures were created, one being the average standard billed cost ($546.42 per client) and one being the average actual cost charged to the client ($238.88 per client). The second was expected to be significantly lower than the first, reflecting the practice of the agency to waive fees based on income and personal circumstance. These two figures became the high and low cost estimates, respectively. To obtain these mean costs, total costs charged to clients for outpatient
services were summed and then divided by the total number of outpatient clients. Only billable services were included. Raw data for calculating outpatient costs was obtained from the NRVCS information system through the assistance of A. Turner (personal communication, February 19, 2008). Unfortunately, there was no way to separate outpatient services received by clients only after a PES intervention, so all outpatient clients’ cost data were included in this calculation as the best representative number for the cost of outpatient services for PES clients. This means, of course, that there exists the possibility that actual costs for PES clients alone differ from the costs for the outpatient population as a whole. Whether more or less would be difficult to say; one might argue that PES clients might need more outpatient services than the average outpatient client, while on the other hand, one may argue that clients who receive PES tend not to use outpatient as frequently, hence ending up in crisis more often than if they would increase their use of outpatient services. The outpatient services that were included in this calculation include mental health and substance abuse assessment and treatment for individuals, families, and groups.

For the third disposition category (voluntary residential or inpatient treatment), cost estimates were calculated based on a weighted average of the mean cost of care per client at New Horizons (Cost_{NH}) and the cost of inpatient care (Cost_{volIP}) as described below. New Horizons is a residential crisis stabilization unit that can house up to six clients for a maximum of 15 days. The use of such residential crisis stabilization programs has grown in Virginia, and there exists empirical support for the efficacy of these programs in treating PES clients (Nuttbrock, Rahav, Rivera, Ng-Mak, & Struening, 1997). Clients must be (a) experiencing a mental health crisis, (b) willing to stay at New Horizons, and (c) able to consent to treatment at New Horizons. New Horizons diverts a large percentage of potential voluntary hospital admissions. Once the numbers
of clients in the sample that were referred to New Horizons \( (N_{NH}) \) and voluntary inpatient
treatment \( (N_{volIP}) \) were known, the percentage of clients going to New Horizons \( \left( \frac{N_{NH}}{N_{NH} + N_{volIP}} \right) \)
were multiplied by the mean cost per client at New Horizons (total costs for all clients divided by
total clients, \( Cost_{NH} \), data obtained from D. Whitten-Williams, personal communication,
September 17, 2008), and the percentage going voluntarily to inpatient hospitalization
\( \left( \frac{N_{volIP}}{N_{NH} + N_{volIP}} \right) \) were multiplied by the cost of inpatient (explained below, \( Cost_{volIP} \)). Those two
products were summed to obtain the cost of New Horizons/voluntary inpatient care, being
combined, as explained earlier, because of their similarity in terms of restrictiveness. Inasmuch
as clients going to New Horizons or the hospital are referred to outpatient, cost of outpatient
\( (Cost_{OP} ; \$546.42 \) for high and \$238.88 \) for low estimates, described earlier as the estimates for
the second disposition category) was added to form the final cost number for voluntary
residential/inpatient treatment, \( Cost_{NH/volIP} \). As with outpatient, there was a standard \($3307\) and
an actual \($2980.38\) cost for New Horizons; there was also a high \($4840.02\) and a low
\($3753.83\) estimate of the cost of inpatient. Using these figures, both high \($4335.23\) and low
\($3409.65\) cost estimates for voluntary residential/inpatient treatment were generated. The
formula used is as follows:

\[
Cost_{NH/volIP} = \frac{(N_{NH}Cost_{NH} + N_{volIP}Cost_{volIP})}{(N_{NH} + N_{volIP})} + Cost_{OP}
\]

For the fourth disposition category (involuntary inpatient treatment), the high estimate of
cost was obtained for use in this study from the mean cost of treatment per client \($4840.02\) at
the New River Valley Medical Center which houses the inpatient psychiatric facility most
commonly used in the NRVCS area, St. Alban’s. This is a crude estimate in that it does not discriminate between medical clients and psychiatric clients, but it was the only figure available to the researcher for this study. St. Alban’s was chosen because it is one of a few private facilities that serve the NRVCS area, it is the facility that accepts the greatest numbers of clients from that area who are in need of hospitalization, and private facilities tend to be more costly than state facilities. Inasmuch as clients receiving inpatient care typically also receive subsequent outpatient treatment, the high cost estimate for outpatient services ($546.42) was added to form a final high cost estimate for involuntary hospitalization, $5386.44.

The low estimate of the cost of involuntary inpatient treatment was calculated by taking a per diem rate ($627.73, Virginia Department of Medical Assistance Services, n.d.) commonly used by Southwestern Virginia Mental Health Institute (SWVMHI) to pay for clients to stay in private facilities instead of transferring to the state hospital and multiplying that rate by the mean number of days (5.98) for inpatient clients in that funding program (D. Burton, personal communication, August 25, 2008). This produced a mean cost per client for care at SWVMI, $3753.83. The actual cost of inpatient treatment varies tremendously by client, facility, and payer (i.e., private insurance, Medicaid, Medicare, or no insurance). SWVMHI’s per diem rate was selected as representative for this sample in that it is the state hospital that serves the NRVCS area. The per diem rate itself was selected as a publicly available figure known to be a conservative estimate of cost. The low cost estimate for outpatient services ($238.88) was added to this figure because clients receiving involuntary inpatient are typically provided outpatient services afterward. The final low cost estimate for involuntary hospitalization was $3992.71.

Table 1 shows the final cost calculations used in the statistical analyses. One can see from Table 1 and from Figure 1 that there is a considerable jump in cost between outpatient services
and any form of inpatient care. Because of this, as Figure 1 shows, the transformation of disposition into cost is non-linear, but this transformation still preserves the same order as the disposition categories.

Table 1

*Cost Estimates for Disposition Categories*

<table>
<thead>
<tr>
<th>Disposition Category</th>
<th>High estimate</th>
<th>Low estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release, no services</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Release to outpatient services</td>
<td>546.42</td>
<td>238.88</td>
</tr>
<tr>
<td>Voluntary residential/inpatient</td>
<td>4335.23</td>
<td>3409.65</td>
</tr>
<tr>
<td>Involuntary inpatient</td>
<td>5386.44</td>
<td>3992.71</td>
</tr>
</tbody>
</table>
Figure 1. Cost estimates for categories of disposition. Cost rises with restrictiveness, although not quite linearly.
Family variables data were gathered from the forms mentioned above. They are described below with operational definitions utilized in this study.

*Degree of family presence at the time of the intervention (FP).* The degree of family presence is the level of contact a clinician documents as having with a client’s family at the time of the intervention. Categories were arranged conceptually to be ordinal and numerical values were assigned to each category to reflect the degree of family presence and the approximate distance between categories, with zero being the least degree of family presence (no family even named), and three being the greatest degree of family presence (face-to-face). Having so structured the categories, this variable was then treated as continuous. Similar schemes of handling the numerical values of variables were applied to the other family variables as well.

0 = No evidence that client has any family

1 = Evidence of the existence of family (e.g., emergency contact named or family mentioned) but no or failed attempts to contact

2 = Phone contact with family is documented

2.5 = Contact with family is documented, but it is unclear if it was by phone or face-to-face. It was known prior to data collection that it might be common to find documented contact with family that did not specify phone or face-to-face. This value was chosen to represent that phenomenon, and 2.5 chosen as the midway point to provide a balanced representation when it is unclear whether family contact was via phone or face-to-face.

3 = Face-to-face contact with family
Degree of family involvement in the disposition (FI). The degree of family involvement in the disposition is the level of responsibility accepted by the family in the disposition. It only represents overtly manifest acceptance of responsibility and does not necessarily represent the family’s input in, influence on, or desires in regards to the disposition. Families may be more or less passive or active in the process of arriving at a disposition. Unfortunately, data collected by clinicians does not capture that dynamic with such specificity. This variable was created to represent at minimum the family’s final, outwardly expressed agreement to take on some degree of responsibility. There are specifically four possible values reflecting this, represented from the least personal responsibility for the client to the greatest, utilizing a similar construction as that used in the family presence variable, wherein values are ordinal with distances approximated and the overall variable being treated as continuous.

0 = Family not involved or it is not documented that family was involved in the disposition

1 = Family expresses their agreement that involuntary inpatient care is needed as evidenced by their signature on a TDO petition (responsibility lies in that it will be known to the client that that family member agreed to hospitalization)

2 = Family agrees to facilitate voluntary residential/inpatient as documented on a crisis contract or in the prescreen (responsibility to take client into their care long enough to get them to a facility)

3 = Family agrees to take responsibility for the client on release from PES services as documented on a crisis contract or in the prescreen (responsibility to monitor and care for client in the community and assist them in obtaining any outpatient services)
Quality of the client’s family system (FQ). Quality of the client’s family system is the positive or negative nature of the family documented at the time of the intervention. This was evidenced by clinicians documenting statements or observations that indicate family quality. This would typically documented in the text of the prescreen in section seven or in the check boxes in section 11. A similar structure was used as described above, with values given to represent an ordinal scale and differences approximated such that the variable was treated as continuous. In order to make the scale as non-reactive as possible, values were assigned as simply and concretely as possible; for instance, if the clinician noted any positive or supportive family influence a +1 was assigned; if the clinician noted any negative or stressful family influence a -1 was assigned; if both positive and negative, or neither, were noted, a 0 was assigned. Finding a more sophisticated measure of family quality was suggested, but no such measure was actually in practice or use by clinicians serving the sample population. The construction of this family quality variable in this manner was, therefore, the best attempt to capture the essence of whether the family system was a positive, negative, or neutral force in the client’s life.

-1 = Family noted as a contributing stressor in the client’s crisis

0 = Family quality not noted, or neutral, or both a stressor and a support. These were grouped together in order to represent that clinically, the clinician did not document a clearly positive or negative family quality.

1 = Family noted as a positive support at the time of the client’s crisis

The three family factors just described are the family variables of interest in the present study. Data for a fourth family factor, family structure, was also gathered, but not used in the
analysis because of the statistical limitations imposed by the number of clients per clinician. It was attempted to conceptually order family structure categories ordinally, on a scale of “most potentially supportive” to “least potentially supportive” family structure, and to use them as a single, continuous variable; however, there appeared insufficient reasoning to bind these categories together in such manner. Therefore, in order to include family structure, six additional dummy variables would have had to be created, too many for the present sample to adequately include.

*Family structure (FS).* Family structure means the position of a client in a family system.

1 = Minor

2 = Married adult

3 = Never married adult

4 = Divorced adult

8 = Widowed adult

9 = Residing in an institutional setting that has a primary duty to care for the client (e.g., nursing home, group home, jail, etc.)

*Individual Client Variables*

Individual variables were also gathered from the above instruments. These are described below with their operational definitions as used in this study.

*Suicide risk (SR).* Suicide risk means the number of suicide risk factors documented as present in the prescreen. This variable will be a frequency count of how many out of nine
possible risk factor items are noted as present in section 10 or elsewhere in the prescreen. Each item response was dichotomous (i.e., 0 = risk factor not present, 1 = risk factor present) and thus the possible range of values for this variable is zero to nine, the greater the number of risk factors being equated to greater suicide risk. The nine specific suicide risk factors included in the prescreen are history of attempts, current attempt, ideation, intent, plan: vague, plan: defined, means, psychosis, and current substance abuse. Conceptually, then, each risk factor item was weighted equally, although this may not be the case from situation to situation, and the variable was treated as continuous.

*Homicide risk (HR).* Homicide risk means the number of homicide risk factors documented as present in the prescreen. This variable will be a frequency count of how many out of nine possible risk factor items are noted as present in section 10 or elsewhere in the prescreen. Again, each item response was dichotomous (i.e., 0 = risk factor not present, 1 = risk factor present) and thus the possible range of values for this variable is zero to nine, the greater the number of risk factors being equated to greater homicide risk. The nine specific homicide risk factors included in the prescreen are history of assaults, attempts, ideation, psychosis, plan: vague, plan: defined, means, intent, and current substance abuse. As described in suicide risk, each risk factor item was weighted equally, although they may differ in each client’s situation, and the variable was treated as continuous.

*Inability to care for self (IC).* Inability to care for self means the judgment of the clinician that the client either is or is not able to care for themselves, as documented in section 11 of the prescreen. It is a dichotomous, categorical variable and thus takes the value of 0 (is able to care for self) or 1 (is not able to care for self). While categorical in its measurement, it may be conceptualized as representing endpoints on a continuum of ability to care for self, and as such,
basic descriptive statistics for this variable can be thought of as theoretically symbolic although not actual measures. Clinicians typically judge clients unable to care for self when, due to mental illness, they cannot care for basic bodily needs, meaning failure to eat, perform basic hygiene, take necessary medications, or make decisions basic to daily living needs. Such inability is distinguished from unwillingness, in which a person is capable but, for whatever reason, chooses not to perform these actions (for example, laziness, eating disorders, alcoholism). Inability related to mental illness typically stems from such clinical presentation as psychosis or severe mood disorders, in which judgment, thought content, and thought processes are so impaired as to render the person unable to care for self.

These three client factors are the risk factors of interest in the present study. Data for other demographic and contextual variables (listed below) were also collected, though they were not used in the analysis because they were not part of the interest or focus of the current study.

*Number of prescreen (NS).* Number of prescreen means the sequential number of the current prescreen counting all prescreens present in the chart. This number ranged from 1 to however many prescreens were present in the chart. The current sample included only first-time screens occurring between January 1, 2006, and June 30, 2008, because of the complicating factor of representing multiple screens per client in the analysis. In the raw data, the maximum number of screens in a single client’s chart was 14.

*Staffed with a supervisor (SS).* Staffed with a supervisor means whether the clinician staffed the crisis situation with a supervisor, as documented in section 4 (0=No, 1=Yes). This variable, again, was not used in the analysis because of the relatively small sample size of the number of clients per clinician.
Age (*AGE*). Age means the chronological age of the client noted in section 1.

*Gender* (*GEN*). Gender means the sex of the client noted in section 1 (0 = male, 1 = female).

*Race* (*RACE*). Race means the race of the client noted in section 1. This variable will be coded as below; should future analyses include race as a predictor, four dummy variables would be created for minority race categories.

1 = Caucasian

2 = Hispanic

3 = African American

4 = Asian

5 = Other

**Clinician Variables**

Clinician variables were derived from prescreening data and information given by human resources at NRVCS.

*Clinician discipline* (*CD*). Clinician discipline means the field of graduate school training of the most advanced degree earned or currently pursued by the clinician. This information was obtained from the NRVCS human resources department. Values used for each field category are listed below. Dummy variables would represent each discipline in statistical analyses if included.

1 = Counseling
2 = Education

3 = Marriage and family therapy

4 = Pastoral counseling

5 = Psychology

6 = Social Work

7 = Criminal Justice

**Clinician experience (CE).** Two forms of clinician experience were created: experience at the time of prescreen and overall experience. Date of screen was obtained from the prescreen; date of hire was obtained from the NRVCS human resources department. Experience in this case means experience as a PES clinician with NRVCS. Experience at the time of prescreen means the number of days or months after the date of hire of the clinician that the prescreen occurs. Overall experience means the number of days, months, or years from the clinician’s start date to the end date of the study (June 30, 2008). Two values for clinician experience were created to explore the impact of clinician experience on both level-2 (overall or average experience of a given clinician) and level-1 (a client being seen by a clinician of a given level of experience) in the statistical modeling intended.

**Clinician employee status (CS).** Clinician employee status means whether the clinician was a full-time day clinician (1) or an on-call relief clinician (2). This information was obtained from the NRVCS human resources department.

*Data Analysis*
Hierarchical Linear Modeling (HLM) (Raudenbush & Bryk, 2002) was chosen as the analytical method for addressing this study’s research questions regarding risk, family, and clinician factors. HLM is synonymous with multilevel modeling (Luke, 2004), although it also references the particular statistical software by that name (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2004). As used here, HLM refers primarily to the multilevel analytical method by that name, but the HLM computer application is also the statistical software package used in this study. The ability of HLM to analyze data of a nested nature meant the ability to look at clinician variables by grouping clients together by clinician throughout the study. Nestedness in this way means that clients are “nested” within clinicians. In HLM, this means that client variables (individual and family variables) are level-1, while clinician variables are level-2. This ability to study nested data allows me to examine simultaneously in a single analysis not only differences between clients and client families but differences between clinicians. It should be noted that clinician differences might have surfaced as either differences in clinical approach between clinicians or differences in measurement (“paperwork”) between clinicians or both.

The steps of the analysis plan are described below. The term “outcome variables” as used in this document from this point on includes the following three variables, previously described: disposition, high estimate of cost, and low estimate of cost. Separate HLM analyses were performed using each of the outcome variables; each analysis followed precisely the same steps, and so the analysis will only be described once. The steps in the HLM analysis were taken sequentially in the following way:

1. To gauge whether significant between-clinician variability exists by running an unconditional HLM for outcome variables;

2. To determine the main effects of risk factors on outcome variables;
3. To determine the main effects of family factors on outcome variables after controlling for risk factors;

4. To determine the presence and strength of the impacts of risk-family interactions (moderation); and

5. To determine the presence and strength of the impacts of clinician variables on outcome variables.

Step one is a starting point for the HLM analysis. Step two addresses research question one and hypotheses one through three regarding the strength of risk factors in predicting outcomes. Steps three and four address research question two and hypotheses four through six regarding the presence and strength of moderator relationships between risk and family factors. Step five addresses research question three and hypotheses seven through ten regarding the presence and strength of clinician effects on outcomes.

With these objectives in mind, the first step in the analysis was to establish an unconditional model:

L-1: \( Y_{ij} = \beta_{0j} + r_{ij}, r_{ij} \sim N(0, \sigma^2) \)

L-2: \( \beta_{0j} = \gamma_{00} + u_{0j}, u_{0j} \sim N(0, \tau_{00}) \)

where:

- \( Y_{ij} \) is the outcome variable for client \( i \) of clinician \( j \);
- \( r_{ij} \) is the level-1 random error and \( r_{ij} \) are assumed to be independent and identically distributed with mean of zero and variance of \( \sigma^2 \); and
• $u_{0j}$ is the level-2 residual term and $u_{0j}$ are assumed to be independent and identically distributed with mean of zero and variance of $\tau_{00}$. It is also assumed that $r_{ij}$ and $u_{0j}$ are uncorrelated.

The second step was to then include risk factors in the model by adding risk factors to level one. It was hypothesized that all three risk factors will drive up outcomes significantly, that is, that their slopes would prove statistically significant.

\[
\begin{align*}
L-1: \quad Y_{ij} &= \beta_{0j} + \beta_{1j}SR_{ij} + \beta_{2j}HR_{ij} + \beta_{3j}IC_{ij} + r_{ij}, r_{ij} \sim N(0, \sigma^2) \\
L-2: \quad \beta_{0j} &= \gamma_{00} + u_{0j}, u_{0j} \sim N(0, \tau_{00}) \\
\beta_{qj} &= \gamma_{q0} (q = 1, 2, 3)
\end{align*}
\]

where:

• $SR_{ij}$ is the number of suicide risk factors for client $i$ of clinician $j$ and will be grand mean centered ($SR_{ij} - \overline{SR}.$ will be used in the place of $SR_{ij}$ in the above equation);

• $HR_{ij}$ is the number of homicide risk factors for client $i$ of clinician $j$ and will also be grand mean centered ($HR_{ij} - \overline{HR}.$ will replace $HR_{ij}$);

• $IC_{ij}$ is the judgment of the clinician about whether client $i$ of clinician $j$ is capable of caring for him/herself, also grand mean centered ($IC_{ij} - \overline{IC}.$ will replace $IC_{ij}$). By centering these variables, the level-1 intercept and slopes can be interpreted as follows:
• $\beta_{0j}$ is the adjusted mean of the outcome variable for PES clients of clinician $j$ with the typical number of suicide risk factors, the typical number of homicide risk factors, and where the typical judgment of ability to care for themselves was made;

• $\beta_{1j}$ is the partial slope of the number of suicide risk factors related to outcomes for PES clients of clinician $j$, i.e., the increase in the outcome variables for a unit increase in suicide risk (i.e., an increase of one suicide risk factor), controlling for homicide risk and inability to care for self;

• $\beta_{2j}$ is the partial slope of the number of homicide risk factors related to outcomes for PES clients of clinician $j$, i.e., the increase in outcome variables for a unit increase in homicide risk (i.e., an increase of one homicide risk factor), controlling for suicide risk and inability to care for self;

• $\beta_{3j}$ is the partial slope of the clinicians’ judgment of a client as unable to care for self related to outcomes for PES clients of clinician $j$, i.e., the increase in outcome variables for a one unit increase in inability to care for self (i.e., going from “Able to care for self” to “Not able to care for self”), controlling for suicide risk and homicide risk;

• $r_{ij}$ is the random error in the client outcome that remains unexplained by risk factors or inability to care for self;

• $\gamma_{00}$ is the average outcome for typical PES clients, i.e., those who have the typical sample values for SR, HR, and IC;

• $u_{0j}$ is the random error of the level-1 intercept, $\beta_{0j}$, and it is a unique effect of clinician $j$ in terms of adjusted mean disposition (or cost) generated by clinician $j$; it varies randomly while all other level-1 regression slopes are fixed because of the relatively
small sample size of the data. Then, the other level-2 fixed effect parameters can be interpreted as follows:

- $\gamma_{10}$ is the average slope for SR adjusting for HR and IC;
- $\gamma_{20}$ is the average slope for HR adjusting for SR and IC;
- $\gamma_{30}$ is the average slope for IC adjusting for SR and HR.

Once the predictive power of individual risk factors was evaluated, the third step was to add family factors at level-1 to determine their main effects on outcomes after being adjusted for the risk factors. It should be noted that in attempting to create the risk plus family factors model certain problems became evident, namely, collinearity between the family involvement (FI) variable and family presence (FP), and between family involvement and disposition, as well as a possible underlying problem with discriminant validity of the construct measured by this family involvement variable. First, family involvement values largely presupposed family presence; any value greater than zero for the family involvement variable meant a value of at least two for family presence. How could a family be involved in the disposition if they were not present in some way to express that involvement? Second, family involvement values did not vary independent of disposition, i.e., they were collinear. Value three on family involvement, responsibility to care for client after release, almost always equated to value one on disposition, release with referral to outpatient; value two, assist with voluntary, equated to value two, voluntary inpatient/New Horizons; and value one, sign petition for involuntary, to value three, involuntary inpatient. The only real variation between the two variables came from cases where family involvement was zero (none); those cases had a variety of dispositions. It was felt that conceptually this made family involvement too confounding. It was not a predictor of disposition, it simply correlated with disposition because it occurs temporally at the same time as
the disposition, and the way that family involvement is defined and measured in this study makes no claim to measure the influence of family dispositional wishes (there is no way to tell if the family actually influenced the disposition, only that they were involved in it). Nor was it independent of family presence, in that it presupposes family presence. It was for these reasons that family involvement was ultimately excluded from the model. Thus, the risk plus family factors model was:

L-1:  \[ Y_{ij} = \beta_{0j} + \beta_{1j}SR_{ij} + \beta_{2j}HR_{ij} + \beta_{3j}IC_{ij} + \beta_{4j}FP_{ij} + \beta_{5j}FQ_{ij} + r_{ij}, r_{ij} \sim N(0, \sigma^2) \]

L-2:

\[ \beta_{0j} = \gamma_{00} + u_{0j}, u_{0j} \sim N(0, \tau_{00}) \]
\[ \beta_{qj} = \gamma_{q0} (q = 1,2,3,4,5) \]

where:

- \( FP_{ij} \) is the level of presence of the family system at the time of the PES intervention for client \( i \) of clinician \( j \) and will be grand mean centered (\( FP_{ij} - \overline{FP} \) will replace \( FP_{ij} \) in the above equation);

- \( FQ_{ij} \) is the family quality mentioned at the time of the PES intervention for client \( i \) of clinician \( j \) and will be grand mean centered (\( FQ_{ij} - \overline{FQ} \) will replace \( FQ_{ij} \));

- \( \beta_{0j} \) now becomes the typical mean disposition (or cost) for clinician \( j \) for clients with typical risk factors and typical levels of family presence and family quality;
• $\beta_{1j}$ through $\beta_{3j}$ retain their interpretation, equivalent to $\beta_{1j}$ through $\beta_{3}$ in the risk factors only model, except that family presence and family quality were adjusted for in addition to the risk factor variables;

• $\beta_{4j}$ is the partial slope of family presence related to outcomes for clients of clinician $j$, i.e., the amount of change in outcome for one unit change in level of family presence;

• $\beta_{5j}$ is the partial slope of family quality related to outcomes for clients of clinician $j$, i.e., the amount of change in outcome for a one unit change in family quality;

• $r_{ij}$ is the residual level-1 random error associated with the outcome that remains for the client unexplained by risk factors and family factors combined;

• $u_{0j}$ retains the same interpretation as in the previous model except that the adjustment was made for the family variables in addition to the client risk factor variables.

Once the family factors main effects were included, the fourth step was to include interaction effects between risk variables and family variables in order to determine the presence and strength of risk-family moderator relationships (i.e., interactions). This level-1 risk-family moderation model was:

**Level-1**

\[
Y_{ij} = \beta_{0j} + \beta_{1j}(SR_{ij} - \overline{SR}..) + \beta_{2j}(HR_{ij} - \overline{HR}..) + \beta_{3j}(IC_{ij} - \overline{IC}..) + \\
\beta_{4j}(FP_{ij} - \overline{FP}..) + \beta_{5j}(FQ_{ij} - \overline{FQ}..) + \beta_{6j}[(FP_{ij} - \overline{FP}..) \times (SR_{ij} - \overline{SR}..)] + \\
\beta_{7j}[(FP_{ij} - \overline{FP}..) \times (HR_{ij} - \overline{HR}..)] + \beta_{8j}[(FP_{ij} - \overline{FP}..) \times (IC_{ij} - \overline{IC}..)] + \\
\beta_{9j}[(FQ_{ij} - \overline{FQ}..) \times (SR_{ij} - \overline{SR}..)] + \beta_{10j}[(FQ_{ij} - \overline{FQ}..) \times (HR_{ij} - \overline{HR}..)] + \\
\beta_{11j}[(FQ_{ij} - \overline{FQ}..) \times (IC_{ij} - \overline{IC}..)] + r_{ij} \sim N(0, \sigma^2)
\]
where interaction terms were represented by the product of two terms, one from one of the risk factor variables and the other from one of the family variables. For example, the interaction between family presence and suicide risk was represented by 

\[ (FP_{ij} - FP_{..}) \times (SR_{ij} - SR_{..}) \]. Since there are two kinds of family variables and three kinds of client risk factor variables, six interaction terms were created in this model to represent all possible combinations.

The level-2 model stayed the same as before:

\[ \beta_{0j} = \gamma_{00} + u_{0j}, u_{0j} \sim N(0, \tau_{00}) \]
\[ \beta_{qj} = \gamma_{q0} (q = 1, \ldots, 11) \]

\[ \beta_{6j} \] through \( \beta_{5j} \) retain their interpretation as before except that all potential interactions are controlled in this model. \( \beta_{6j} \) through \( \beta_{8j} \) are the interaction effects (moderator relationships) of family presence with the three risk factors, indicating the amount of change in the impact of each risk factor on the outcome for a unit change in family presence. \( \beta_{9j} \) through \( \beta_{11j} \) are the interaction effects (moderator relationships) of family quality with the three risk factors, indicating the amount of change in the impact of each risk factor on the outcome for a unit change in family quality. If the moderator relationships exist as hypothesized, family factors would decrease the effects of risk factors on outcomes.

The fifth and final step in the analysis was to determine the presence and strength of clinician effects. This step began by returning to the unconditional model and examining the
variability of $u_{0j}$ for statistical significance. As will be reported in the results section, the variance of $u_{0j}$ was not statistically significantly different from zero and, therefore, no further level-2 clinician variables were added. Even though overall level-2 between clinician differences were found statistically non-significant, such differences are theoretically reasonable. Therefore, the level-2 model that allows the varying level-1 intercept was retained in the HLM model. The interaction effects model described above became the final risk-family moderator model.

It should be noted that a Chi-square analysis was also performed to examine whether there were significant differences in disposition from before the shootings of April 16, 2007, to after (potential cohort effect), as such would clearly impact the integrity of results.
CHAPTER FOUR

Results

This chapter presents the results of the analyses conducted in this study. Sample and variable information is presented first, including client, clinician, and variable descriptive statistics and correlations. Hierarchical Linear Modeling (HLM) results are then presented, organized by research question and following the outline of the steps of the analysis described in the methods. A final section presents a Chi-square analysis of a possible cohort effect.

Sample and Variable Descriptions

Client sample demographics are presented first, including gender, race, age, and family structure. Description of clinicians follows, including discipline, employment status, and experience. Descriptive statistics and correlation coefficients are then presented for variables included in the study.

Client Sample Demographics

Client demographics are presented in Table 2. There were 306 total clients in the sample. Sample demographics generally reflected the demographics of the population of the geographical area from which the sample was drawn. Gender composition of the clients in the sample was approximately equal (male \( n = 149, \ 48.7\% \); female \( n = 157, \ 51.3\% \)). In terms of race/ethnicity, clients were predominately white \( (n = 289, \ 94.4\% \). The average age of psychiatric emergency services (PES) clients in the sample was 34.6 years with the standard deviation of 17.5 and range from six to 93 years old; the great majority of clients \( (n = 233, \ 76.1\% \) were non-geriatric adults (18 or older and below age 65). Minors made up 16.7\% \( (n = 51 \) of the sample, and geriatrics made up 7.2\% \( (n = 22 \). Clients came from a variety of family structures, with the greatest
proportion being single adults \((n = 107, 35.0\%)\), followed by married adults \((n = 89, 29.1\%)\), minors \((n = 51, 16.7\%)\), divorced adults \((n = 39, 12.7\%)\), widowed adults \((n = 13, 4.2\%)\) and clients residing in institutional settings \((n = 7, 2.3\%)\).
Table 2

*Client Demographics (N=306)*

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male (0)</td>
<td>149</td>
<td>48.7</td>
</tr>
<tr>
<td>Female (1)</td>
<td>157</td>
<td>51.3</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian (1)</td>
<td>289</td>
<td>94.4</td>
</tr>
<tr>
<td>Hispanic (2)</td>
<td>2</td>
<td>0.7</td>
</tr>
<tr>
<td>African American (3)</td>
<td>12</td>
<td>3.9</td>
</tr>
<tr>
<td>Asian (4)</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>Other (5)</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Age Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minor (0-17)</td>
<td>51</td>
<td>16.7</td>
</tr>
<tr>
<td>Adult (18-64)</td>
<td>233</td>
<td>76.1</td>
</tr>
<tr>
<td>Geriatric (65+)</td>
<td>22</td>
<td>7.2</td>
</tr>
<tr>
<td><strong>Family Structure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minor (1)</td>
<td>51</td>
<td>16.7</td>
</tr>
<tr>
<td>Married Adult (2)</td>
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<td>29.1</td>
</tr>
<tr>
<td>Single Adult (3)</td>
<td>107</td>
<td>35.0</td>
</tr>
<tr>
<td>Divorced Adult (4)</td>
<td>39</td>
<td>12.7</td>
</tr>
<tr>
<td>Widowed (8)</td>
<td>13</td>
<td>4.2</td>
</tr>
<tr>
<td>Institutional Setting (9)</td>
<td>7</td>
<td>2.3</td>
</tr>
</tbody>
</table>

*Note.* With the exception of age group, numbers in parentheses indicate coding used in analysis.
Clinician Sample Demographics

There were 33 clinicians in the sample. They screened a total of 306 clients, an average of 9.3 clients per clinician, with a standard deviation of 10.2. The majority of clinicians (n = 23, 69.7%) screened less than 10 clients. Clinicians screened from a minimum of one to a maximum of 36 clients.

Descriptive information for clinician variables is reported in Table 3, which shows the number and percentage of clinicians from each discipline, as well as the number and percentage of clients screened by clinicians of those disciplines. The discipline with both the highest number of clinicians (12 clinicians, 36.4%) and clients screened (76 clients, 24.8%) was psychology. Marriage and family therapy ranked third in number of clinicians (five clinicians, 15.2%), but second in number of clients screened (63 clients, 20.6%). Social work ranked second in number of clinicians (eight clinicians, 24.2%) but fourth in number of clients screened (36 clients, 11.8%). Pastoral counseling and criminal justice both had only one clinician representing that field. Differences in the percentages of clinicians of various types and the percentages of clients they screen are a product of the differences in numbers of clients screened per clinician.

Differences in numbers of clients screened by a clinician stem from differences in length of time worked during the timeframe of the study and status as full-time or on-call (which is part-time work, thus tending toward lower numbers of clients per clinician). Clinician experience as calculated in this study (as explained in chapter three) did not necessarily indicate more clients seen because experienced clinicians may have terminated employment shortly into the study’s timeframe, or have worked only minimally part-time during the timeframe of the study. Table 3 summarizes clinician experience. Average clinician experience was 4.3 years (SD=4.1).
Experience ranged from five months to nearly 18 years. Twenty four clinicians (72.7%) had less than five years of experience, and 15 (45.4%) had less than three years of experience. Only three clinicians (9.1%) had over 10 years of experience.

Table 3 also shows the number and percentage of clinicians that were full-time and on-call, as well as the number and percentage of clients screened by full-time and on-call clinicians. Full-time clinicians (n = 18, 54.5%) accounted for the majority of clients seen (n = 202, 66.0%), while on-call clinicians (n = 15, 45.5%) screened the lesser proportion (n = 104, 34.0%).
Table 3

Clinician Descriptors

<table>
<thead>
<tr>
<th>Clinician Disciplines</th>
<th>Clinicians</th>
<th></th>
<th></th>
<th>Clients by Clinician Type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Counseling (1)</td>
<td>4</td>
<td>12.1</td>
<td>45</td>
<td>14.7</td>
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<tr>
<td>Education (2)</td>
<td>2</td>
<td>6.1</td>
<td>25</td>
<td>8.2</td>
<td></td>
</tr>
<tr>
<td>MFT (3)</td>
<td>5</td>
<td>15.2</td>
<td>63</td>
<td>20.6</td>
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</tr>
<tr>
<td>Pastoral Counseling (4)</td>
<td>1</td>
<td>3.0</td>
<td>29</td>
<td>9.5</td>
<td></td>
</tr>
<tr>
<td>Psychology (5)</td>
<td>12</td>
<td>36.4</td>
<td>76</td>
<td>24.8</td>
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<tr>
<td>Social Work (6)</td>
<td>8</td>
<td>24.2</td>
<td>36</td>
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<td></td>
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<tr>
<td>Criminal Justice (7)</td>
<td>1</td>
<td>3.0</td>
<td>32</td>
<td>10.5</td>
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</tr>
<tr>
<td></td>
<td><strong>N</strong></td>
<td><strong>33</strong></td>
<td><strong>306</strong></td>
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Clinician Experience

<table>
<thead>
<tr>
<th>Experience</th>
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<th></th>
<th>Clients by Clinician Type</th>
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</thead>
<tbody>
<tr>
<td>&lt; 3 Years</td>
<td>15</td>
<td>45.5</td>
<td>108</td>
<td>35.3</td>
<td></td>
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<tr>
<td>3-6 Years</td>
<td>11</td>
<td>33.3</td>
<td>140</td>
<td>45.8</td>
<td></td>
</tr>
<tr>
<td>6-10 Years</td>
<td>4</td>
<td>12.1</td>
<td>34</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td>&gt; 10 Years</td>
<td>3</td>
<td>9.1</td>
<td>24</td>
<td>7.8</td>
<td></td>
</tr>
<tr>
<td><strong>N</strong></td>
<td><strong>33</strong></td>
<td><strong>306</strong></td>
<td></td>
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</table>

Clinician Status

<table>
<thead>
<tr>
<th>Status</th>
<th>Clinicians</th>
<th></th>
<th></th>
<th>Clients by Clinician Type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time (1)</td>
<td>18</td>
<td>54.5</td>
<td>202</td>
<td>66.0</td>
<td></td>
</tr>
<tr>
<td>On-call (2)</td>
<td>15</td>
<td>45.5</td>
<td>104</td>
<td>34.0</td>
<td></td>
</tr>
<tr>
<td><strong>N</strong></td>
<td><strong>33</strong></td>
<td><strong>306</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. Numbers in parentheses indicate values used in coding.*
Descriptive Statistics for Dependent and Independent Variables

Frequencies and percentages for variable categories for those variables constructed as ordinal but approximated for use as continuous (see previous chapter), such as disposition/cost, family presence, and family quality are presented in Table 4. Involuntary inpatient \((n = 130)\) dispositions, 42.5% and release to outpatient \((n = 129)\) dispositions, 42.2% were the most frequent dispositions. Families tended to be present in person \((n = 128, 41.8\%)\), while family quality was overwhelmingly negative \((n = 144, 47.1\%)\) or neutral \((n = 148, 48.4\%)\), with few \((n = 14, 4.6\%)\) reported as positive. Frequencies and percentages of clients able and not able to care for self are also included in Table 4. Most clients were judged able to care for themselves \((n = 221, 72.2\%)\).
Table 4

*Frequencies and Percentages of Categorical Variables (N=306)*

<table>
<thead>
<tr>
<th>Outcome (Disposition, High Cost, Low Cost)</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involuntary IP (3) High: $5386.44 - Low: $3992.71</td>
<td>130</td>
<td>42.5</td>
</tr>
<tr>
<td>Voluntary IP (2) High: $4335.23 - Low: $3409.65</td>
<td>35</td>
<td>11.4</td>
</tr>
<tr>
<td>Release to OP (1) High: $546.42 - Low: $238.88</td>
<td>129</td>
<td>42.2</td>
</tr>
<tr>
<td>Release, No Services (0) High: $0 - Low: $0</td>
<td>12</td>
<td>3.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inability to Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Able (1)</td>
</tr>
<tr>
<td>Able (0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Family Presence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face-to-face (F2F) (3)</td>
</tr>
<tr>
<td>F2F or Phone Unclear (2.5)</td>
</tr>
<tr>
<td>Phone (2)</td>
</tr>
<tr>
<td>Mentioned, No Contact (1)</td>
</tr>
<tr>
<td>No Family Mentioned (0)</td>
</tr>
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<table>
<thead>
<tr>
<th>Family Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive (1)</td>
</tr>
<tr>
<td>Neutral/Ambivalent (0)</td>
</tr>
<tr>
<td>Negative (-1)</td>
</tr>
</tbody>
</table>

*Note.* Numbers in parentheses indicate values used in coding.
As described in Chapter Three, numerical values were assigned to variable levels as displayed in Table 4. In the case of disposition/cost, degree of family presence, and family quality, values were assigned to approximate the order and distance between categories, and variables were treated as continuous. Mean (Mean), standard deviation (SD), minimum (Min), and maximum (Max) values were calculated using assigned values, and are presented in Table 5. Descriptive statistics are also presented in Table 5 for the other variables treated as continuous (suicide risk and homicide risk). Statistics for the categorical variable inability to care for self variable are included as a theoretical representation of the conceptual continuum of ability to care for self. Average disposition restrictiveness was 1.92 on a scale of 0 to 3. The mean high estimate of costs incurred for clients receiving a PES intervention was $3014.57, while the average low cost estimate was $2186.94. Average suicide risk (1.64) was higher than average homicide risk (.57), both being on the same 0 to 9 point scale. Seventy seven (25.2%) clients had three or more suicide risk factors, 229 (74.8%) had fewer than three suicide risk factors, and 107 (35.0%) of those had no suicide risk factors. Fifteen (4.9%) clients had three or more homicide risk factors, 291 (95.1%) had fewer than three homicide risk factors, and 199 (65.0%) of those had no homicide risk factors. Family variable means reflected that families tend to be present (mean = 2.29 on scale of 0 to 3) and of negative quality (mean = -.42 on scale of -1 to 1) as mentioned previously.
Table 5

*Descriptive Statistics for Study Variables (N=306)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposition (DISP)</td>
<td>1.92</td>
<td>1.00</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Cost-High (COSTHI)</td>
<td>3014.57</td>
<td>2352.04</td>
<td>0.00</td>
<td>5386.44</td>
</tr>
<tr>
<td>Cost-Low (COSTLO)</td>
<td>2186.94</td>
<td>1831.57</td>
<td>0.00</td>
<td>3992.71</td>
</tr>
<tr>
<td>Suicide Risk (SR) [Range 0-9]</td>
<td>1.64</td>
<td>1.82</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Homicide Risk (HR) [Range 0-9]</td>
<td>.57</td>
<td>1.01</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Inability to Care for Self (IC)</td>
<td>.28</td>
<td>.45</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Family Presence (FP)</td>
<td>2.29</td>
<td>.86</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Family Quality (FQ)</td>
<td>- .42</td>
<td>1.34</td>
<td>-1</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note.* Acronyms in parentheses indicate variable code name.

*Bivariate Association Among Variables*

Correlation coefficients among outcome and independent variables are presented in Table 6. From Table 6 one can see that the form of the outcome variable does not have much influence on correlation coefficients. For inability to care for self (IC), suicide risk (SR), and homicide risk (HR), all had positive correlations with outcomes (disposition and cost) from 0.206 to 0.565, $p < 0.01$. This implies that higher risk associated with greater restrictiveness and cost. Among risk factors, inability to care for self (IC) had the highest correlation with all forms of the outcome (0.565, 0.530, and 0.518 for disposition, high cost, and low cost, respectively). Although technically categorical, it was included, as previously mentioned, because the values can be conceptualized as endpoints on a continuum of ability to care for self. Family quality (FQ) had significant negative correlations (less than -0.133, $p < 0.01$) with outcomes, while
family presence (FP) had no significant correlations. All three risk factors (SR, HR, IC) correlated positively with each other at least at the 0.05 level, while only one (HR) correlated significantly with family quality (-0.148, p < 0.01). No risk factors correlated with family presence.

Table 6

**Variable Correlations with Disposition (High Cost) [Low Cost]**

<table>
<thead>
<tr>
<th></th>
<th>DISP (COSTHI)</th>
<th>SR</th>
<th>HR</th>
<th>IC</th>
<th>FP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(.440)**</td>
<td>(.213)**</td>
<td>(.565)**</td>
<td>(-.045)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(.439)**</td>
<td>(.208)**</td>
<td>(.530)**</td>
<td>(.052)</td>
</tr>
<tr>
<td>SR</td>
<td></td>
<td>(.436)**</td>
<td>(.344)**</td>
<td>(.143)*</td>
<td>(.085)</td>
</tr>
<tr>
<td>HR</td>
<td></td>
<td>(.206)**</td>
<td>(.209)**</td>
<td>(.029)</td>
<td>(.006)</td>
</tr>
<tr>
<td>IC</td>
<td></td>
<td>(.518)**</td>
<td>(.062)</td>
<td>(.038)</td>
<td></td>
</tr>
<tr>
<td>FP</td>
<td>(-.157)**</td>
<td>(-.099)</td>
<td>(-.148**)</td>
<td>(.062)</td>
<td></td>
</tr>
<tr>
<td>FQ</td>
<td>(-.137)**</td>
<td>(-.133)**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Correlation is significant at the p = 0.01 level (2-tailed)**

* Correlation is significant at the p = 0.05 level (2-tailed)
**Hierarchical Linear Modeling Analyses**

The following sections present results of the Hierarchical Linear Modeling (HLM) analyses performed in attempting to answer the research questions posed in the current study. The first section presents the results of the unconditional model and examines between clinician variance. The second section examines the predictive power of the risk factors considered in the study. The third section examines the main effects of the family variables retained in the study. The fourth section explores the moderator relationships, or interaction effects, between risk and family factors. Note that I used a conventional significance level of $0.05 (\alpha = 0.05)$ to claim statistical significance throughout the HLM analyses.

Tables 7-9 show the results of the fixed and random effects for all HLM models run. These include the (1) unconditional, (2) risk, (3) risk and family, and (4) risk, family, and interaction models that were explained in chapter three. Model building proceeded in the order stated in chapter three. That is, the (1) unconditional model was run first to obtain the fundamental decomposition of variance and the overall mean level of the outcome variable. In the second model (2), risk factors were included—suicide risk, homicide risk, and inability to care for self. In the third model (3), family presence and family quality were added to assess their main effects while controlling for risk factors. In the fourth model (4), risk-family interaction effects were included to examine the presence and strength of moderator relationships. If significant between-clinician variance had existed, clinician factors would have then been added in a fifth model.

*The Unconditional Model & Clinician Differences*
Regarding the unconditional model, \( \gamma_{00} \) represents the overall mean of the outcome variable in any form for all PES clients without consideration of any predictors at either level. According to the table, the estimate of \( \gamma_{00} \) was 1.93 for disposition (i.e., restrictiveness), $3025.81 for high cost estimate, and $2195.78 for low cost estimate, and the double asterisk (**) indicates that these values are statistically different from zero at the .01 level of significance.

Examination of the estimates of the variance component parameters in the unconditional model shows the fundamental decomposition of the total variance \( (\sigma^2 + \tau_{00}) \), that is, what proportion of the total variance can be attributed to within- \( (\sigma^2) \) and between- \( (\tau_{00}) \) clinicians variability. The within-clinician variance \( (\sigma^2) \) represents how much variability of the outcome variable exists among clients within each clinician and the between-clinician variance \( (\tau_{00}) \) captures the amount of variability in the outcome (disposition and its monetary cost variants) across clinicians. In the present data, \( \hat{\sigma}^2 = .988 \) and \( \hat{\tau}_{00} = .014 \) for disposition as the outcome variable. Thus, only 1% of the total variance lies at the clinician level, which indicates that there is not much variability between clinicians in terms of disposition decisions, while 99% of the total variability lies at the client level. Further, \( \chi^2 \)-test for \( H_0: \tau_{00} = 0 \) reveals that \( \tau_{00} \) is not statistically different from zero (\( \chi^2 (df = 32) = 35.72, p\text{-value} = 0.298 \)). The same conclusion was drawn for high cost and low cost as alternative outcome variables. That is, \( \hat{\tau}_{00} = 52962.65, \chi^2 (df = 32) = 35.16, p\text{-value} = 0.320 \) for high cost and \( \hat{\tau}_{00} = 29497.68, \chi^2 (df = 32) = 35.18, p\text{-value} = 0.320 \) for low cost (Tables 8 & 9).

**Risk Factors Effects**
The first primary research question of this study was, “How much do client risk factors (suicide risk factors, homicide risk factors, and inability to care for self due to mental illness or substance abuse) increase restrictiveness and cost of PES dispositions?” As Tables 7-9 show, in the risk factors only model (3rd column in Tables 7-9), both suicide risk and inability to care for self proved strong, positive predictors of increased restrictiveness of disposition and cost. This supports the first and third hypotheses of the study, which state that “More suicide risk factors will predict greater restrictiveness and cost in PES dispositions” and “Being judged unable to care for self will predict greater restrictiveness and cost in PES dispositions.” Suicide risk increases restrictiveness by 0.21 ($p < .01$) for each one unit increase in the suicide risk factor, and increases cost by $499.54 ($p < .01$; high estimate) or $387.65 ($p < .01$; low estimate) per risk factor, depending on cost estimate used. Being judged unable to care for self results in a 1.17 ($p < .01$) point increase in restrictiveness and a $2556.21 ($p < .01$; high estimate) or $1942.20 ($p < .01$; low estimate) increase in cost.

Homicide risk, on the other hand, did not prove to be a significant predictor of restrictiveness and cost after controlling for these two variables, in spite of the expectation implied by the statistically significant correlation between homicide risk and outcomes (0.213, 0.208, and 0.206 for disposition, high cost, and low cost respectively, $p < .01$) as found in Table 6. This finding appears not to support this study’s second hypothesis, “More homicide risk factors will predict greater restrictiveness and cost in PES dispositions,” but such a conclusion is tentative because the literal statistical interpretation is that homicide risk, in this sample, does not uniquely predict restrictiveness and cost, after controlling for other risk factors.

*Family Factors Effects*
As Tables 7-9 show, when family factors were added to the risk model, suicide risk and inability to care for self retained their significance with little change in strength. Family quality appeared to be a significant negative predictor of disposition (decrease of 0.16 in restrictiveness for one step difference in family quality, $p = .025$), which implies that increase in family quality reduces restrictiveness, but less so of cost (decrease in cost of $311.02$, $p = .082$ for high estimate, $230.79$, $p = .102$ for low estimate). Family presence proved insignificant in predicting any of the three variants of the outcome. These findings about the main effects of the family variables relate to the first part of the second research question, which states, “How much do family variables (family presence at the time of the intervention, family involvement in the disposition, and positive or negative quality of a client’s family) impact restrictiveness and cost and moderate the power of client risk factors to predict restrictiveness and cost in PES dispositions?” For reasons described in chapter three, family involvement was not included in the HLM analyses. The findings also address the first parts of hypotheses four and six which state, “Greater family presence will predict lesser restrictiveness and cost and will moderate (reduce) the predictive power of client risk factors,” and “The quality of the client’s family system will predict restrictiveness and cost, with negative family quality predicting greater restrictiveness and cost and positive family quality predicting lesser restrictiveness and cost, and will moderate (reduce) the predictive power of client risk factors in the same manner.” The findings give some support to hypothesis six regarding better family quality reducing restrictiveness and cost. They do not appear to support hypothesis four regarding family presence having an impact on those outcomes.

*Interaction Effects*
This study’s second research question addressed not only main family effects but moderator effects of family variables on risk factors. These moderator relationships can be detected in HLM by including interaction variables into the model. Interaction variables between family presence and risk factors and family quality and risk factors were therefore added, and the resultant family/risk interaction model became the final HLM model. The presence of significant interaction effects would indicate the presence of significant moderator relationships, the strength of the coefficient representing the degree to which family factors influence the power of risk factors to drive up restrictiveness and cost.

As Tables 7-9 show, in adding interaction effects, the intercept and main effects for suicide risk and inability to care for self retained approximately the same degrees of strength and in the same direction. The final coefficient for suicide risk was .21 for disposition, $489.66 for high cost estimate, and $386.04 for low cost estimate, all values significant at the .01 level. Homicide risk rose in value to virtually neutral and was still not significant. The final values for inability to care for self were 1.17 for disposition, $2552.66 for high cost estimate, and $1961.00 for low cost estimate, all with \( p < .01 \). The family presence main effect decreased in value and remained non-significant. The family quality main effect decreased in strength (-.13 for disposition, -$212.41 for high cost estimate, and -$162.97 for low cost estimate with similar \( p \)-value as before, i.e., marginally non-significant at the .05 level).

Hypotheses four and six predicted the existence of negative moderator relationships, meaning family variables would reduce the impact of risk factors on outcomes. Only one interaction effect proved to be statistically significant—the interaction between family quality and inability to care for self (.46 for disposition, $1059.78 for high cost estimate, and $746.94 for low cost estimate, all significant at the .05 level). The strongest interaction effects were those
relating inability to care for self and family variables. This is partially due to the magnitude of
the strength of the inability to care for self main effect, which magnified any relationships with
that variable. The interaction between family quality and inability to care for self was significant
but positive, or opposite the direction hypothesized. The interaction between family presence and
inability to care for self was also positive, but not of sufficient strength to be considered
significant. These findings appear at first glance not to support hypotheses four and six, but
rather to refute the notion that family presence and family quality reduce the impact of risk
factors on restrictiveness and cost; however, further examination reveals a much more complex
interpretation.

Findings support the idea of family quality moderating the effect of inability to care for
self, but in a positive direction, meaning that better family quality increases the impact of
inability to care for self on restrictiveness and cost. Upon close inspection, however, it is clear
that what is really occurring in the sample is that positive family quality leads to greater
restrictiveness and cost only for those who are not able to care for self. These would be the only
clients with a non-zero value for the family quality/inability to care for self interaction, while
those clients who are able to care for self would have an interaction effect value of zero. For
those who are able to care for self, positive family quality actually reduces restrictiveness and
cost. Conversely, while negative family quality leads to lesser restrictiveness and cost for clients
who are not able to care for self, it leads to greater restrictiveness and cost for clients who are
able to care for self. This, then, lends partial support to hypotheses four and six, at least for
clients who are able to care for self, while revealing a significant moderation effect in the
opposite direction for clients not able to care for self. The interaction between family quality and
inability to care for self is depicted in Figures 2, 3, and 4. The upper slope shows how
restrictiveness and cost increase for clients who are unable to care for themselves as family quality increases. The lower slope shows how restrictiveness and cost decrease for clients who are able to care for themselves as family quality increases. Figures 5, 6, and 7 show another way of visualizing this interaction by showing how the slope of the effect of inability to care for self increases as family quality increases; note in particular that the slopes intercept, showing that the effect of family quality actually reverses from able (positive family quality associated with lesser restrictiveness and cost) to not able (positive family quality associated with greater restrictiveness and cost). This interaction effect was of such a nature that, after accounting for it, the main effect of family quality was reduced (i.e., from -$311.02, $p = .082, to -$212.41, $p = .247, in the high cost estimate, see Table 8). Still, the main effect of family quality on outcomes was negative (i.e., the overall effect of family quality after controlling for other factors was to reduce restrictiveness and cost) as hypothesized. Explanations for these finding are discussed in detail in the following chapter.

Clinician Effects

The third primary research question was, “How much do clinician variables (individual clinician differences, clinician discipline, clinician experience, and clinician status as daytime or relief) affect restrictiveness and cost in PES dispositions?” The first step in assessing these effects was to return to the unconditional model and examine whether there existed significant overall level-2 variance, represented by $\tau_{00}$ in the random effects. This is the amount of variance in the outcome variables that can be attributed to differences between clinicians. In the unconditional and subsequent models, $\tau_{00}$ was not significant, meaning that insufficient evidence was found in the current sample to support the notion that clinicians’ dispositions (and associated
costs) vary significantly across clinicians in the population. As a result, the third research question was answered for this study: there existed no significant difference between clinicians in terms of outcomes in this sample; therefore, clinician variables do not appear to affect outcomes in any significant way.

*Sensitivity Analysis*

As can be seen, then, in spite of the not-quite-linear relationship between disposition and cost described in Chapter Three (see Figure 1), results do not vary much between manifestations of the outcome variable. In fact, the only variation is in the family and risk factors models where the family quality main effect was significant ($p = .025$) with restrictiveness but not with cost ($p = .082$ for high cost estimate, $p = .102$ for low estimate). Significance and non-significance of all other results remained consistent regardless of outcome manifestation.

*HLM Tables and Figures*
Table 7

Hierarchical Linear Modeling Final Estimation of Fixed and Random Effects for Disposition

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Unconditional model</th>
<th>Risk model</th>
<th>Family &amp; risk model</th>
<th>Interaction model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient (SE)</td>
<td>Coefficient (SE)</td>
<td>Coefficient (SE)</td>
<td>Coefficient (SE)</td>
</tr>
<tr>
<td>INTERCEPT, $\gamma_{00}$</td>
<td>1.93** (0.06)</td>
<td>1.94** (0.05)</td>
<td>1.94** (0.05)</td>
<td>1.93** (0.05)</td>
</tr>
<tr>
<td>SR, $\gamma_{10}$</td>
<td></td>
<td>.21** (0.03)</td>
<td>.21** (0.03)</td>
<td>.21** (0.03)</td>
</tr>
<tr>
<td>HR, $\gamma_{20}$</td>
<td>-0.02 (0.05)</td>
<td>-0.03 (0.05)</td>
<td>-0.01 (0.05)</td>
<td></td>
</tr>
<tr>
<td>IC, $\gamma_{30}$</td>
<td>1.17** (0.10)</td>
<td>1.16** (0.10)</td>
<td>1.17** (0.10)</td>
<td></td>
</tr>
<tr>
<td>FP, $\gamma_{40}$</td>
<td></td>
<td>-0.00 (0.05)</td>
<td>-0.01 (0.05)</td>
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</tr>
<tr>
<td>FQ, $\gamma_{50}$</td>
<td>-1.16** (0.07)</td>
<td></td>
<td>-1.13** (0.07)</td>
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</tr>
<tr>
<td>FPxSR, $\gamma_{60}$</td>
<td></td>
<td>.00 (0.03)</td>
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</tr>
<tr>
<td>FPxHR, $\gamma_{70}$</td>
<td></td>
<td>-.01 (0.05)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FPxIC, $\gamma_{80}$</td>
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<td>.16 (0.11)</td>
<td></td>
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</tr>
<tr>
<td>FQxSR, $\gamma_{90}$</td>
<td></td>
<td>.02 (0.04)</td>
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</tr>
<tr>
<td>FQxHR, $\gamma_{100}$</td>
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<td>.02 (0.10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FQxIC, $\gamma_{110}$</td>
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<td>.46* (0.12)</td>
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<table>
<thead>
<tr>
<th>Random effects</th>
<th>Variance</th>
<th>$\chi^2$</th>
<th>$p$-value</th>
<th>Variance</th>
<th>$\chi^2$</th>
<th>$p$-value</th>
<th>Variance</th>
<th>$\chi^2$</th>
<th>$p$-value</th>
<th>Variance</th>
<th>$\chi^2$</th>
<th>$p$-value</th>
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</thead>
<tbody>
<tr>
<td>Clinician mean, $u_{0j}$</td>
<td>0.014 [0.118]</td>
<td>32</td>
<td>35.72 (0.298)</td>
<td>0.016 [0.128]</td>
<td>32</td>
<td>37.28 (0.239)</td>
<td>0.018 [0.135]</td>
<td>32</td>
<td>39.24 (0.177)</td>
<td>0.012 [0.108]</td>
<td>32</td>
<td>34.88 (0.332)</td>
</tr>
<tr>
<td>Level-1 error, $r_{ij}$</td>
<td>0.988 [0.994]</td>
<td>0.539 [0.734]</td>
<td>0.533 [0.730]</td>
<td>0.529 [0.727]</td>
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<td></td>
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</tbody>
</table>

**p < 0.01, *p < 0.05, †p = 0.025, ‡p = 0.082
### Table 8

**Hierarchical Linear Modeling Final Estimation of Fixed and Random Effects for High Cost**

<table>
<thead>
<tr>
<th></th>
<th>Unconditional model</th>
<th>Risk model</th>
<th>Family &amp; risk model</th>
<th>Interaction model</th>
</tr>
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<td><strong>Fixed effects</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTERCEPT, $\gamma_{00}$</td>
<td>3025.81** (145.55)</td>
<td>3046.96** (122.95)</td>
<td>3048.27** (124.41)</td>
<td>3014.96** (102.64)</td>
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<tr>
<td>SR, $\gamma_{10}$</td>
<td>499.54** (60.92)</td>
<td>493.50** (61.15)</td>
<td>489.66** (62.09)</td>
<td></td>
</tr>
<tr>
<td>HR, $\gamma_{20}$</td>
<td>-42.03 (110.07)</td>
<td>-63.46 (110.55)</td>
<td>.16 (126.78)</td>
<td></td>
</tr>
<tr>
<td>IC, $\gamma_{30}$</td>
<td>2556.21** (238.12)</td>
<td>2548.20** (237.86)</td>
<td>2552.66** (236.18)</td>
<td></td>
</tr>
<tr>
<td>FP, $\gamma_{40}$</td>
<td>-33.44 (121.27)</td>
<td>-61.18 (120.64)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FQ, $\gamma_{50}$</td>
<td>-311.02$^+$ (178.59)</td>
<td>-212.41$^{++}$ (183.08)</td>
<td></td>
<td></td>
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<tr>
<td>FPxSR, $\gamma_{60}$</td>
<td>5.80 (77.66)</td>
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<td>FPxHR, $\gamma_{70}$</td>
<td>-42.00 (121.06)</td>
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<td>FPxIC, $\gamma_{80}$</td>
<td>381.49 (265.33)</td>
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<td>FQxSR, $\gamma_{90}$</td>
<td>46.62 (110.13)</td>
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<tr>
<td>FQxHR, $\gamma_{100}$</td>
<td>133.17 (232.44)</td>
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<tr>
<td>FQxIC, $\gamma_{110}$</td>
<td>1059.78* (446.46)</td>
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<tr>
<td><strong>Random effects</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinician mean, $u_{0j}$</td>
<td>52962.65 [230.14]</td>
<td>32 35.16 (0.320)</td>
<td>82405.96 [287.06]</td>
<td>32 36.78 (0.257)</td>
</tr>
<tr>
<td>Level-1 error, $r_{ij}$</td>
<td>5484690.35 [2341.94]</td>
<td>3189947.23 [1786.04]</td>
<td>3172472.01 [1781.14]</td>
<td>32 38.32 (0.204)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>892.13 [29.87]</td>
</tr>
</tbody>
</table>

**Note:** $p < 0.01$, $^*p < 0.05$, $^{+}p = 0.082$, $^{++}p = 0.247$
Table 9

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Unconditional model</th>
<th>Risk model</th>
<th>Family &amp; risk model</th>
<th>Interaction model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient (SE)</td>
<td>Coefficient (SE)</td>
<td>Coefficient (SE)</td>
<td>Coefficient (SE)</td>
</tr>
<tr>
<td>INTERCEPT, $\gamma_{00}$</td>
<td>2195.78** (112.70)</td>
<td>2213.08** (96.40)</td>
<td>2214.14** (97.52)</td>
<td>2203.19** (92.27)</td>
</tr>
<tr>
<td>SR, $\gamma_{10}$</td>
<td>387.65** (47.97)</td>
<td>382.99** (48.17)</td>
<td>386.04** (49.06)</td>
<td></td>
</tr>
<tr>
<td>HR, $\gamma_{20}$</td>
<td>-31.90 (86.68)</td>
<td>-47.81 (87.11)</td>
<td>1.67 (99.89)</td>
<td></td>
</tr>
<tr>
<td>IC, $\gamma_{30}$</td>
<td>1942.20** (187.47)</td>
<td>1936.30** (187.37)</td>
<td>1961.00** (187.25)</td>
<td></td>
</tr>
<tr>
<td>FP, $\gamma_{40}$</td>
<td>-28.32 (95.53)</td>
<td>-45.69 (95.57)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FQ, $\gamma_{50}$</td>
<td>-230.79+ (140.73)</td>
<td>-162.97++ (143.47)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FPxSR, $\gamma_{60}$</td>
<td>3.77 (61.53)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FPxHR, $\gamma_{70}$</td>
<td>-36.95 (95.13)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FPxIC, $\gamma_{80}$</td>
<td>318.30 (209.08)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FQxSR, $\gamma_{90}$</td>
<td>43.64 (86.67)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FQxHR, $\gamma_{100}$</td>
<td>100.52 (182.42)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FQxIC, $\gamma_{110}$</td>
<td>746.94* (351.47)</td>
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</table>

<table>
<thead>
<tr>
<th>Random effects</th>
<th>Variance [SD]</th>
<th>df</th>
<th>$\chi^2$ (p-value)</th>
<th>Variance [SD]</th>
<th>df</th>
<th>$\chi^2$ (p-value)</th>
<th>Variance [SD]</th>
<th>df</th>
<th>$\chi^2$ (p-value)</th>
<th>Variance [SD]</th>
<th>df</th>
<th>$\chi^2$ (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinician mean, $u_{0j}$</td>
<td>29497.68 [171.75]</td>
<td>32</td>
<td>35.18 (0.320)</td>
<td>49468.63 [222.42]</td>
<td>32</td>
<td>36.74 (0.258)</td>
<td>54276.92 [232.97]</td>
<td>32</td>
<td>38.17 (0.209)</td>
<td>35781.47 [189.16]</td>
<td>32</td>
<td>35.25 (0.317)</td>
</tr>
<tr>
<td>Level-1 error, $r_{ij}$</td>
<td>3328312.43 [1824.37]</td>
<td>1978980.97 [1406.76]</td>
<td>1970534.85 [1403.76]</td>
<td>1959843.25 [1399.94]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < 0.01, *p < 0.05, +p = 0.102, ++p = 0.257
Figure 2. Interaction between family quality and inability to care for self in terms of disposition.

Restrictiveness rises with higher family quality for clients not able to care for self, while restrictiveness falls with higher family quality for clients able to care for self.
Figure 3. Interaction between family quality and inability to care for self in terms of high cost estimate. Cost rises with higher family quality for clients not able to care for self, while cost falls with higher family quality for clients able to care for self.
Figure 4. Interaction between family quality and inability to care for self in terms of low cost estimate. Cost rises with higher family quality for clients not able to care for self, while cost falls with higher family quality for clients able to care for self.
Figure 5. Interaction between inability to care for self and family quality in terms of disposition. The rise in restrictiveness (slope) is greater with positive family quality and lesser with negative family quality.
Figure 6. Interaction between inability to care for self and family quality in terms of high cost estimate. The rise in restrictiveness (slope) is greater with positive family quality and lesser with negative family quality.
Figure 7. Interaction between inability to care for self and family quality in terms of low cost estimate. The rise in restrictiveness (slope) is greater with positive family quality and lesser with negative family quality.
Analysis of Potential Cohort Effect

The final analysis included in this study was a chi-square analysis of differences in dispositions from before to after the April 16, 2007 shootings at Virginia Tech to determine if there existed a significant cohort effect due to that event. Chi-square test of association compares the frequencies of bivariate category combinations, in this case, the frequencies of different dispositions (four categories) as they occurred before and after a specific date (two categories). The resultant significance test reveals whether there exists statistically significant variance in those frequencies.

Table 10 shows the results of the Chi-square analysis. As is evident, there was no statistically significant change in dispositions from prior to April 16, 2007 to after ($\chi^2$ (df = 3) = 6.231, $p = .101$). In fact, what change existed, though not statistically significant, tended in the opposite direction expected, with an increase in releases and a decrease in involuntary hospitalizations. It had been thought that involuntary hospitalizations might increase as a reaction of the PES provider system to the shootings.
Table 10

*Chi-Square Analysis of Changes in Disposition from Before to After April 16, 2007 (N=306)*

<table>
<thead>
<tr>
<th>Disposition</th>
<th>Pre-April 16, 2007</th>
<th>Post-April 16, 2007</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Column %</td>
<td>Overall %</td>
</tr>
<tr>
<td>Involuntary Inpatient</td>
<td>73</td>
<td>49.0</td>
<td>23.9</td>
</tr>
<tr>
<td>Voluntary Inpatient</td>
<td>15</td>
<td>10.1</td>
<td>4.9</td>
</tr>
<tr>
<td>Release to Outpatient</td>
<td>54</td>
<td>36.2</td>
<td>17.6</td>
</tr>
<tr>
<td>Release, No Services</td>
<td>7</td>
<td>4.7</td>
<td>2.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>149</td>
<td>100.0</td>
<td>48.7</td>
</tr>
</tbody>
</table>

*Notes.* 1. Pearson Chi-Square = 6.231, df = 3, p = .101. 2. For $\chi^2$ test of association, all of the cells had expected frequencies of at least five, which satisfies one of the assumptions made for this test, i.e., normality assumption.
CHAPTER FIVE

Discussion

This chapter will summarize the major findings of the study and relate findings to the literature in the field of families in psychiatric emergency services (PES). Implications for theory will then be discussed, followed by an in-depth look at the study results. Limitations of the study will be described, and recommendations for future research and implications for practice, including for MFT, will be given.

Summary of Findings

Meaningful (if unexpected) results were found in regards to homicide risk, family presence and family quality main effects, as well as risk/family interaction effects, particularly the moderator relationship of family quality and inability to care for self. Further meaningful findings include those related to clinician differences, costs, and cohort effect. This section will give a brief summary of these findings in order to frame the discussion that follows.

Homicide risk was not a significant predictor when controlling for suicide risk and inability to care for self, which in turn surfaced as the strongest predictors of restrictiveness and cost. Main effects of family presence and family quality were relatively weak when compared to risk factors. Family presence was not statistically significant in predicting restrictiveness or cost, while family quality only predicted restrictiveness and not cost at a statistically significant level, and then only when not considering interaction effects.

Family quality and inability to care for self were the only statistically significant interaction effects, or moderator relationships. The direction of this interaction was positive, meaning family quality increased the impact of inability to care for self on outcomes, instead of
the hypothesized negative moderator relationship, in which family quality was expected to reduce the impact of inability to care for self on outcomes. Positive family quality predicted lower restrictiveness and cost for clients who were able to care for self. For clients not able to care for self, positive family quality predicted greater restrictiveness and cost. All other interaction effects between family and risk variables were not statistically significant. There were no statistically significant differences between clinicians in terms of outcomes, contrary to what was hypothesized. There was also no significant cohort effect from the April 16, 2007 shootings at Virginia Tech, according to a Chi-square analysis.

Predictive factors were given dollar values in the Hierarchical Linear Modeling (HLM) analyses. Table 11 provides a summary of the restrictiveness and cost per unit for the factors that proved significant (amount of rise in the outcome per one unit increase in the factor). The first row is the restrictiveness and cost incurred by the typical PES client (the intercept). The last factor is the moderator effect of family quality on inability to care for self, i.e., the amount of increase in the effect of inability to care for self on the outcome for a one-unit increase in family quality for clients not able to care for self.
Table 11

*Restrictiveness and Cost Per Unit for Significant Factors*

<table>
<thead>
<tr>
<th>Factor</th>
<th>Restrictiveness</th>
<th>Cost (High)</th>
<th>Cost (Low)</th>
</tr>
</thead>
<tbody>
<tr>
<td>For the Typical Client</td>
<td>1.93</td>
<td>$3014.96</td>
<td>$2203.19</td>
</tr>
<tr>
<td>Suicide Risk</td>
<td>.21</td>
<td>$489.66</td>
<td>$386.04</td>
</tr>
<tr>
<td>Homicide Risk</td>
<td>-.01</td>
<td>$0.16</td>
<td>$1.67</td>
</tr>
<tr>
<td>Inability to Care for Self</td>
<td>1.17</td>
<td>$2552.66</td>
<td>$1961.00</td>
</tr>
<tr>
<td>Family Quality</td>
<td>-.13</td>
<td>-$212.41</td>
<td>-$162.97</td>
</tr>
<tr>
<td>Family Quality/Inability to Care for Self Interaction</td>
<td>.46</td>
<td>$1059.78</td>
<td>$746.94</td>
</tr>
</tbody>
</table>

*Findings as They Relate to the Literature*

This section relates the study’s findings to the literature on families in PES as earlier reviewed in chapter two. Specifically, findings in the areas of family presence, family quality, family quality moderation of inability to care for self, and clinician differences are connected back to literature related to each of those subjects where possible. Aspects of the study and its results are then also related to literature about restrictiveness and cost.

This study responds to the need described by de Clercq (1999), Lettich (2004), McCartney (1994), Perlmutter (1986), and Sadler (1986) to integrate family systems thinking into PES. Further, by including minors, this study responds to calls from authors such as Christy et al. (2006) and Fields and Ogles (2002) to address families and restrictiveness in PES for children and adolescents. The aforementioned authors were advocating for inclusion of family into PES practice—this study, while not directly addressing family-based interventions, does
make a contribution toward understanding the effect families can have in PES with the purpose of being able to use that understanding to improve practices. Further, the findings related to the interaction of family quality and inability to care for self demonstrate the importance of in-depth examination of the complex influence of families in PES.

Examining degree of family presence and family quality together builds on the observations of Allen et al. (2003) and Dhossche and Ghani (1998) that families were often both present and part of the problem. This study supports those conclusions in its own findings, showing that families are generally present during PES interventions and generally of a negative or at best mixed or neutral quality. This study extends beyond those earlier studies, however, by attaching family presence and family quality to restrictiveness and cost. Based on observations in this study, the conclusion can be tentatively drawn that family presence itself does not affect disposition directly, but that other family dynamics, such as family quality, do have an impact on dispositions and their subsequent costs.

Family presence had no statistically significant impact on restrictiveness and cost, while family quality appears to have some degree of impact. The finding that positive family quality may reduce restrictiveness and cost lends support to the conclusions of Baca-Garcia et al. (2004) that a family perceived as supportive by a PES client can be a protective factor. The finding of no relation between family presence and outcomes seems not to support the conclusions of Arfken et al. (2004) and Young et al. (2005), who found that lack of family leads to greater involuntary inpatient care. However, it should be noted that this study focused on initial screenings only, while both of those studies just cited focused on clients who frequently used PES and hospitalization. Since the study found so few (14) screens noting positive family quality this supports the notion illustrated by Reynolds and Wilber (1999) that lack of family support
may be considered inherent in the definition of psychiatric crisis. The finding that so many screens noted family quality as negative (144) or neutral or ambivalent (either absent or both negative and positive; 148 screens) complements the findings of Allen et al. (2003), Martinez and Garcia (2002), Perlmutter and Jones (1985), Rabinowitz et al. (1995), and Stewart et al. (2002) all of whom point in various ways to family dysfunction or relationship problems as contributors to psychiatric crises.

Specific examination of family as both a main effect and a moderator effect adds to previous studies that have examined families in PES. While family factors have been included in past studies as predictors of hospitalization, analysis of the relationship directly between risk and family (moderator effects) adds a logical next step and increases the sophistication of those models. This study’s finding that family quality moderates—in this case strengthens—the impact of inability to care for self on outcomes seems to enter new territory. That finding is not reflected in the literature, and bears further exploration, and an in-depth discussion of this finding is presented below.

This study did not include a measure of family wishes, and therefore cannot speak directly to the phenomenon mentioned by Perlmutter (1986) and studied by Mulder et al. (2005) and Way (2005) that family preferences affect dispositions. The focus instead was on the systemic dynamic of how family presence and quality affect dispositions implicitly, versus the impact of explicitly stated family wishes. This study provides research for the need identified by Kleespies et al., (2005) that clinicians should consider the nature of the family system of a client in crisis and appropriately address and utilize that consideration, a step in understanding that extends beyond family preferences alone.
Attaching family factors not just to hospitalization but directly to the concept of least restrictive alternatives (LRA) makes a contribution to this gap in the literature. Findings give some indication that positive family quality may reduce the restrictiveness of client dispositions, at least for clients able to care for self. The finding that positive family quality may lead to increased restrictiveness and cost seems to reinforce in a more quantitative study the case study published by Troutman et al. (1998) who argued that sometimes involuntary options are in the spirit of “least restrictive” because they are the only means by which clients can ultimately return to health. This also echoes the argument made by Lin (2003) that providers must consider what is best, not just what is least restrictive, for a client.

This study provides a research response to the need identified by Lin (2003) for including cost and cost effectiveness in discussing LRA because it attaches a continuum of restrictiveness to a continuum of cost as an outcome. This study responds to that author’s argument that considering cost is in line with best practices, not simply least restrictive. In doing so, this study illustrates, if only partially, one issue raised by Miller (1982), that economic agendas often underlie restrictiveness. It also reflects the spirit of the concept of “stepped care” presented by Davison (2000) of matching services to clients based on both restrictiveness and cost. As is always the case in such discussions, however, the concept of restrictiveness was in this study too complex to either measure concisely or simply attach to cost. While cost does tend to rise with restrictiveness, equating the two as closely as was done in this study may oversimplify the relationship in light of the issues raised in the literature. Nonetheless, the findings in this study indicate that family quality can affect costs in PES, as positive family quality lowered cost for those able to care for self and increased cost for those not able to care for self.
In terms of cost studies, this study appears unique in its direct attachment of family factors to the costs associated with various initial intervention dispositions. Studies have examined family factors that drive up hospital usage and hospital cost (Arfken et al., 2004; Young et al., 2005) and cost comparisons of family-based and inpatient treatments following initial intervention for adolescents (Sheidow et al., 2004), but no previous studies were found that examined the relationship between family and the costs attached to the various dispositions of initial interventions. This is due in part to the fact that most PES research has originated in locales using psychiatric emergency departments, in which the disposition is more straightforwardly dichotomous—inpatient or release. The mobile PES model used by NRVCS demands greater choices of outcomes, each of which is associated with a cost. Hence, costs incurred as a result of initial prescreening and intervention are more diverse and perhaps more relevant. This study’s focus on a rural, mobile PES are an addition to the present literature in that regard.

Another area in which this study makes a contribution to the literature is in its analysis of potential clinician differences. Little previous attention has been given to this area in the literature on families in PES, so the finding in this area—that there were no significant clinician differences—is a contribution. This finding points to a need to evaluate theoretical frameworks for how effectively they include client, family, clinician, and provider system dynamics.

This study does not venture past post-initial assessment and intervention to include treatment; therefore there is little it adds to that body of literature, although the need remains for future research addressing family-based treatments (Carpenter et al., 2003; Stewart et al., 2002; Yates et al., 1996). In spite of this, this study is aimed at providing knowledge that can be used both in initial PES assessments and interventions and in subsequent treatment. Many other
practical needs of families in PES remain unmet in focusing on the link between family and PES outcomes. Therefore, future research is needed to address families’ perceptions, criticism or satisfaction, all important dynamics described by Cerel at al. (2006), Husted and Nehemkis (1995 and Morgan (1989).

In sum, this study takes steps toward filling some of the gaps in the literature on families in PES by attaching family factors directly to restrictiveness and cost in PES for a variety of dispositions, by examining moderator relationships in addition to main effects, and by exploring clinician differences in PES outcomes. It lends support to previous research such as families generally being present and of a negative quality in PES. It does not support and even contradicts other research in the literature, such as lack of family leading to greater inpatient dispositions and positive family quality predicting less restrictiveness and cost for PES clients. This study makes contributions to what we know about the role of risk, families, clinicians, and the interactions of these variables in determining restrictiveness and cost in PES dispositions.

Integration with Theory

This study drew on systems theory concepts as found in marriage and family therapy to form a theoretical foundation for its design and analyses. Psychiatric emergency services (PES) constitute an illustrative social science example of von Bertalanffy’s (1968a, p. 33) “Complexes of elements standing in interaction.” Just as complex as the human interactions is the interplay of factors involved in PES outcomes—the relationship of family quality, inability to care for self, and disposition, for example. PES systems are open and subject to equifinality. This seems evident as tremendously complex crisis situations are simplified into a small set of possible outcomes. Evolution, entropy, and teleology are at work using the currency of information
flowing in a cybernetic manner and underlie PES through the unfolding drama of each situation and the mutual struggle between intents to harm or chaotic behavior and intents to repair and restore order. This study constitutes an attempt to study the systems encountered in such situations.

The primary findings of this study might be related back to these systems theory concepts in the following ways. Suicide, homicide, and inability to care for self might be viewed as evidence of a system yielding to entropy, in which the natural forces of evolution are waning in their ability to maintain order. In that state, teleological behavior becomes increasingly destructive on the one hand and protective on the other. As the system approaches a point of destruction for itself or a family member, cybernetic information systems begin to fail to adequately serve the protective elements of the system, and those elements, being teleological entities in an open system, seek help from outside systems they perceive to be strong enough to prevent damage.

The finding in this study that suicide risk and inability to care for self account for practically all of the variance in outcomes that could be attributed to the study’s independent variables may be an indicator of the system’s attempt to maintain and restore order (evolution) by limiting damage to a single system element or family member. This means that clinicians encountering systems in crisis must be much more prepared to deal with risk of harm to the client due to suicide or inability to care for self than risk of harm from the client. Finding that positive family quality can have a direct effect on reducing the restrictiveness necessary to mitigate client risk may indicate that evolutionary forces can be empowered to restore order and protection to some degree. Clinicians, therefore, could proactively seek to engage and activate protective, supportive family elements, and to reduce negative, destructive family elements.
Understanding that positive family quality can lead to greater restrictiveness and cost for clients not able to care for self could be evidence that inability to care for self is a problem more difficult for a system to cope with than other forms of risk. This can be a signal to the clinician that such families have protective elements whose coping capacity is close to being overwhelmed and which are seeking help, regardless of restrictiveness or cost. In such cases clinicians may be able to exercise their own “teleology” and work to mobilize such family systems to reduce cost and restrictiveness to clients while still meeting client needs. Clinicians may also be aware of the possibility that negative family quality somehow tends to lead to dispositions that could be insufficiently intensive for people not able to care for self, and clinicians can subsequently work to obtain the appropriate outcome in spite of the family system’s negative quality. This might be considered evidence of equifinality.

Finding that no significant clinician differences existed may indicate the presence of a larger PES supervisory system (or element of a system) working to standardize and maintain equality among clinicians. This is similar to systems as described in the Milan systemic therapy approach (Boscolo et al., 1987). This finding may also suggest that clinicians are generally successful at maintaining neutrality or multipositionality in their work, as defined in that approach. The large variation in client/family level factors compared to the small variation between clinicians could be a product of the nature of the unique and temporary crisis systems that form in PES situations. Finding that family quality is so rarely noted as being positive may suggest to clinicians a need to try to seek and maintain a positive view of families of PES clients and to elicit and strengthen previously rare positive family elements. Clinicians’ dispositions are shaped by client, family, and other factors, lending credence to the idea that interactions are circular and functional. On the other hand, the lack of difference between clinicians in terms of
outcomes suggests that families and clients do not dictate but only inform dispositions, possible indications of clinicians successfully interrupting destructive interactions and directing the system toward positive change.

Additionally, the role of larger system contexts must be acknowledged in PES. The reality of limited bed space at inpatient or residential facilities, delayed access to outpatient services due to the volume of need for those services, and discrepancies in services received between clients due to differences in insurance or other financial resources are all real systemic forces in any given crisis situation. Further, public perceptions and opinions, the current legislative milieu, macroeconomic forces, various aspects of the technology of the day, and relevant local, state, and national issues at the time of the crisis all have a systemic influence in the provision of PES.

**In-depth Discussion of Findings**

This section will present in-depth discussion of all findings that failed to fully support the hypotheses of the study. These include the non-significant results for homicide risk and family presence main effects, the weak results for the family quality main effect, the non-significant results for most interaction effects, the moderation effect of family quality and inability to care for self that occurred in the opposite direction than expected, the confounding effect of the family involvement variable, the lack of differences between clinicians, and the lack of cohort effect.

**Homicide Risk**

Homicide risk was not significant in any models containing suicide risk or inability to care for self which was contrary to what was hypothesized. In attempting to understand what was
occurring, homicide risk was added to the unconditional model by itself and yielded a significant positive result, indicating that, without consideration for other factors, homicide risk does increase restrictiveness and cost. Once suicide risk or inability to care for self are added to the model (i.e., controlled), homicide risk no longer proved a significant predictor of outcomes. This indicates that homicide risk did not uniquely contribute to explaining variation in outcomes in this sample, but that the outcome variation associated with homicide risk is subsumed in suicide risk and/or inability to care for self. This does not mean that significant homicide risk does not exist in clinical terms, but it does suggest that whenever homicide risk is present, other risk factors are also present that can account for the outcome. In other words, clients at risk of harm to others are almost always at risk of harm to self or not able to care for self. Conversely, both suicide risk and inability to care for self occur beyond the presence of other risk factors to a degree that they significantly drive up cost and restrictiveness even when controlling for other factors. There may be several reasons for why homicide risk does not drive up cost and restrictiveness in the presence of other risk factors. Explanations may be given based on possible relationships between homicide risk and suicide risk and inability to care for self.

One explanation may be that homicide risk only occurs as suicide risk or inability to care for self increase to a certain level—a sort of spillover effect. It could be that clients experiencing the distress of mental illness and/or substance abuse develop suicide risk or inability to care for self in response to that distress as a mechanism for escaping or defeating it. As the distress heightens, the suicide risk or inability to care for self heightens, and if they continue to rise, impulses to harm may “spill over” to include harm toward others as part of a strategy to cope with distress, or as evidence of lack of ability to control such impulses. In such cases, suicide risk or inability to care for self would always be precursor to and of a greater magnitude than
homicide risk. In this sample, there were many more clients with suicide risk than homicide risk, and the number of risk factors was far greater for suicide than for homicide, possibly lending support to this explanation.

Another possible explanation for the finding that homicide risk did not contribute uniquely to outcome variation may be the inverse of the argument above. It could be that clients develop homicidal risk in response to distressing external stimuli (e.g., a negative relationship), then develop suicide risk or inability to care for self as a strategy for controlling homicide risk. Suicide risk or inability to care for self would then be the coping mechanism, a means to attempt to curb or eliminate homicidal tendencies. In such cases, suicide risk and inability to care for self would of necessity be present and be of greater magnitude than the homicide risk that exists.

A third explanation concerning the relationship between homicide risk and suicide risk or inability to care for self may be that the disorders that underlie suicide risk or inability to care for self also underlie homicide risk—i.e., that both kinds of risk develop simultaneously in the course of the development of the disorder, but that suicide risk or inability to care for self develop more frequently and to a greater degree than homicide risk with those disorders. For instance, depressive or psychotic episodes may sometimes lead to suicide risk or inability to care for self without homicide risk, or to suicide risk or inability to care for self that is of greater severity and homicide risk that is of lesser severity as the disorder develops and perceptions, impulses, and behaviors become less and less healthy.

The significant negative correlation between homicide risk and family quality (\(-.148, p < .01\)) might be explained in that homicide risk is inherently interpersonal and as such is more likely to include family members in a negative relationship. Suicide risk and inability to care for
self may or may not correlate as strongly with such interpersonal negativity. Thus, family systems may or may not play a role in developing, maintaining, interrupting, heightening, or reducing, such risk factor dynamics. Whatever the explanation, it does appear that clients tend to be at much greater risk of harm to self or inability to care for self than of harm to others.

*Family Presence Main Effect*

The finding that family presence did not significantly predict outcomes failed to support the hypothesis that greater degree of family presence would reduce restrictiveness and cost. At least two assumptions underlying the hypothesis may not have proven accurate, and these are explored along with other possible explanations for this finding.

The first assumption is that any family is at least potentially willing to accept responsibility for the client on release just by virtue of being present, and thus their presence at least affords greater potential for release (i.e., to the care of the family). This simply may not be the case—it may be that families who are present are not generally more willing to take responsibility for a client than those who are not present and that family presence alone may or may not affect clinicians’ decisions about release. Perhaps families who are present are just as likely to advocate for hospitalization as for release, and thus become a factor supporting greater restrictiveness and cost for those clients. It may be that family presence and family willingness to monitor a client on release are completely independent constructs, each with different effects (or lack of effects) on outcomes. This notion is partially supported by the lack of significant correlation (.038, \( p > .05 \), in Table 6) between the two. In order to better explore this first assumption, the numbers and percentages of dispositions were summed for two categories, family present (face-to-face and phone combined), and family not present (family named but no
contact and no family named combined). This was done in order to see if clients with family present were indeed released more frequently than clients without family present. Table 12 shows that clients with family present were released (with or without outpatient services) 47.2% of the time total, whereas clients without family present were released 41.8% of the time. Conversely, 58.2% of those without family present were placed inpatient (voluntary or involuntary) or residential at New Horizons, where 52.7% of those with family present went to inpatient/New Horizons. While these figures show that clients with family present are released more frequently, the differences are modest, showing that family presence alone may not necessarily be a determining factor in whether a client is released. In fact, the results of a chi-square test of association revealed that disposition and family presence were not significantly related ($\chi^2 (df = 3) = 2.043, p = .564$). Further, Cramer’s $\phi$ ($\phi_c$), which is a measure to indicate the substantive importance of a relationship, was .082, which is considered to be a negligible relationship with very small effect size.
Table 12

Disposition Category Frequencies for Clients with Family Present or Not Present

<table>
<thead>
<tr>
<th>Disposition</th>
<th>Family Present</th>
<th></th>
<th>Family Not Present</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Column</td>
<td>Overall</td>
<td>N</td>
<td>Column</td>
</tr>
<tr>
<td>Involuntary Inpatient</td>
<td>99</td>
<td>41.4</td>
<td>32.4</td>
<td>31</td>
<td>46.3</td>
</tr>
<tr>
<td>Voluntary Inpatient</td>
<td>27</td>
<td>11.3</td>
<td>8.8</td>
<td>8</td>
<td>11.9</td>
</tr>
<tr>
<td>Release to Outpatient</td>
<td>105</td>
<td>43.9</td>
<td>34.3</td>
<td>24</td>
<td>35.8</td>
</tr>
<tr>
<td>Release, No Services</td>
<td>8</td>
<td>3.3</td>
<td>2.6</td>
<td>4</td>
<td>6.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>239</strong></td>
<td><strong>100.0</strong></td>
<td><strong>78.1</strong></td>
<td><strong>67</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Note. 1. Pearson Chi-Square = 2.043, df = 3, p = .564. 2. Cramer’s $\phi (\phi_c) = .082, p = .564.*

Given the modest differences in dispositions but trend toward greater release for clients with families present, it could be that a study with greater sample size could attain sufficient statistical power to see that family presence does have an effect. It may be that the trend for more releases when families are present was not significant because of the limited sample size and subsequent limited statistical power of this study.

A second possibly faulty assumption underlying the hypothesis of family presence leading to less restrictiveness and cost is that more restrictive dispositions are indicators of lack of supportiveness from family. In reality, as Husted and Nehemkis (1995) point out, families and professionals may not see eye to eye on the assumption that more support equals less restrictiveness. Seeking involuntary hospitalization may be a supportive action taken by family in order to cope with the crisis and involuntary hospitalization may be a product of that type of
family support. Release to family care may not be the only disposition that is evidence of family support.

Another explanation of why family presence was not significant may be that it simply did not have as great an effect as suicide risk or inability to care for self. To test this, family presence was added to the unconditional model to see if it was significant without consideration of other risk factors. It was not, showing that regardless of control for other factors, family presence does not have a significant impact on outcomes.

A final consideration regarding why family presence did not significantly predict outcomes is that they may have a non-linear relationship. It could be, for instance, that low and high degrees of family proximity lead to greater restrictiveness and cost, while mid-levels lead to less restrictiveness and cost; or the inverse may be true, or a log-linear or other curvilinear relationship exist.

Regardless of the explanation, the finding that family presence does not in and of itself predict outcomes may be a manifestation of two dynamics noted in the literature. For example, Morgan (1989) found that families often try to cope with clients’ crises for days and weeks using other resources prior to turning to PES providers. It may be that families following this pattern are present during the PES intervention and advocate for involuntary inpatient because they feel they can no longer cope. On the other hand, Carpenter et al. (2003) found that clients had already turned to family and friends for help prior to seeking help from PES providers. It may be that clients following this pattern find the PES intervention successful at mobilizing family resources in forming a safety plan for client’s release when through their own efforts they had not succeeded.
Family Quality Main Effect

The main effect of family quality on outcomes was greater in the models that did not include interaction effects than in the final models. That family quality was significant as a predictor of disposition at the .05 level ($p = .025$) when not accounting for interaction effects gives some indication that family quality can have an influence on dispositions, but that the relationship between family quality and disposition is more complex than can be summed in the main effect alone. Family quality was not statistically significant when controlling for interaction effects, and in fact had a significant moderator effect on inability to care for self in the direction opposite the main effect. The models related to cost showed a similar pattern, but the initial main effect of family quality when not controlling for interactions was not statistically significant. The most straightforward explanation of why the family quality main effect was not a stronger predictor of outcomes compared to risk factors is that this is evidence that risk factors simply have far greater influence on dispositions than does family quality. This is to be expected given that the core issue in PES is risk. An explanation of why the family quality main effect weakens in the interaction model adds a layer of interpretation, however, which needs to be examined in a future study.

Interaction Effects

A primary purpose of this study was to explore moderator effects of family variables on risk. Family presence did not significantly moderate the effect on outcomes of suicide risk or inability to care for self, indicating that the relationship between family and suicide risk is unclear and family presence alone does not reveal that relationship. For instance, family dynamics could have a causal relationship with risk (family relations lead to risk), family
dynamics could have a contemporary but independent relationship with risk (what is occurring in the family is happening at the same time but not related to risk), or family dynamics could be the object of risk (risk may be directed toward family and the cause of family dynamics). These examples could all be possibilities for the relationship of family dynamics to suicide risk, homicide risk, or inability to care for self, and all of these examples illustrate how family presence is not a manifestation of any one kind of relationship between family and risk.

Family quality did not moderate suicide risk. This finding may be related to the weak main effect of family quality on outcomes itself. However, it may also be that family quality and suicide risk are simply independent forces, that suicide risk is too severe and too much in the control of the client for family quality to greatly moderate its effect. In regards to homicide risk, there was virtually no effect for family quality to moderate (in the final models, coefficients for homicide risk had probabilities of $p > .8$ for disposition, and $p > .9$ for the models of cost, showing almost no effect of homicide risk on outcomes).

*Family Quality and Inability to Care for Self Moderator Effect*

The moderator effect of family quality on inability to care for self could have several possible explanations. The finding that positive family quality can lead to increased restrictiveness and cost for clients not able to care for self could be because families with a positive quality may be less concerned about restrictiveness and may bring to bear more financial resources than families of a more negative quality, who may be more apathetic and less resourceful toward clients. Those clients who are unable to care for self who have families of a negative quality may have less social support, and decisions about their care may be left more to the clinician. Clinicians may be more concerned about restrictiveness and more guarded about
use of costly resources than they would be if families of positive quality were there to advocate for the client, and the end result is a less restrictive, less costly disposition.

Conversely, a person’s inability to care for self is more distressing to a family of positive quality, who become a more vocal advocate of more costly and restrictive outcomes such as involuntary hospitalization for the client’s sake. If it were then true that inability to care for self is perceived by the clinician to be less dramatic or acute than suicide risk, it may be that the clinician seeks more restrictive or costly services due in part to the advocacy of the family. On the other hand, a family of negative quality may not be as distressed and vocal about a client’s inability to care for self and their need, and because the clinical presentation is less dramatic or acute, the clinician seeks less restrictive and costly options.

Positive family quality predicted lower restrictiveness and cost for clients who were able to care for self. This may occur because those families with a more positive quality may feel more confident and competent in personally intervening with, for example, suicide risk, but less capable of personally meeting the needs of a family member not able to care for self. When faced with inability to care for self, they may advocate for more professional help, including more restrictive and costly services, out of a sense of their own inability to care for the person that cannot care for self. When faced with suicide risk, they may be more likely to personally take responsibility for safety and care, so long as the person can take care of their own basic needs.

The types and/or severity of disorders underlying inability to care for self may explain why outcomes rise with inability to care for self but fall when clients are able to care for self when positive family quality is present. It may be that those disorders or levels of severity likely to lead to inability to care for self (e.g., psychotic episodes, extreme depressive or bipolar
disorders) simply cannot be treated at present with less restrictive alternatives due to lack of
capacity to consent, lack of willingness, or lack of resources for doing so. If the type and severity
of the disorder are such that a person is able to care for self, they may more often have capacity
to consent, be willing for treatment, and have more treatment options of a less restrictive nature.
Such an argument illustrates that, based on the results of this study, it may be helpful to consider
whether clients who are able to care for self may in some ways be a different population than
those who are not able.

Findings related to family quality must be interpreted guardedly because of the low
number of clients in the sample with positive family qualities (14 of 306, see Table 13), only one
of which was judged unable to care for self. It should be noted that it is not at all certain that
there were only 14 clients with actual positive family quality, only that there were 14 so
documented by clinicians. It could be that clinicians tended not to document positive family
quality when it actually existed. This could occur because of clinicians’ training to identify risk
factors and stressors, in which process they may overlook positive family qualities, or it may
simply that clinicians do not routinely or thoroughly document protective family factors and
supports.

Table 13 shows the disposition/cost category frequencies, means and standard deviations
for bivariate combinations of family quality and inability to care for self categories. Upon close
inspection, one can see that the outcome means for those not able rise with higher family quality
values, while the outcome means fall with higher family quality scores for those judged able,
thus reflecting the moderator or interaction effect. There was only one observation of positive
family quality for a person judged not able to care for themselves, and the total number of clients
with a positive family quality rating was 14. This represents a definite problem and limitation of the sample, and results should therefore be interpreted cautiously.
Table 13

Disposition (High Cost) & [Low Cost] Means for Family Quality by Inability to Care for Self

Categories

<table>
<thead>
<tr>
<th>Family Quality</th>
<th>Inability to Care</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall</strong></td>
<td><strong>Total</strong></td>
<td>306</td>
<td>1.92</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(3014.57)</td>
<td>(2352.04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[2186.94]</td>
<td>[1831.57]</td>
</tr>
<tr>
<td></td>
<td>Not Able</td>
<td>85</td>
<td>2.84</td>
<td>.53</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(5020.06)</td>
<td>(1250.50)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[3714.01]</td>
<td>[967.48]</td>
</tr>
<tr>
<td></td>
<td>Able</td>
<td>221</td>
<td>1.57</td>
<td>.92</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2243.23)</td>
<td>(2218.28)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[1599.61]</td>
<td>[1745.24]</td>
</tr>
<tr>
<td><strong>Positive</strong></td>
<td><strong>Total</strong></td>
<td>14</td>
<td>1.07</td>
<td>.73</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1084.71)</td>
<td>(1624.84)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[699.37]</td>
<td>[1279.74]</td>
</tr>
<tr>
<td></td>
<td>Not Able</td>
<td>1</td>
<td>3.00</td>
<td>-</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(5386.44)</td>
<td>(1250.50)</td>
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<td></td>
<td></td>
<td></td>
<td>[3992.71]</td>
<td>[967.48]</td>
</tr>
<tr>
<td></td>
<td>Able</td>
<td>13</td>
<td>.92</td>
<td>.49</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(753.80)</td>
<td>(1095.18)</td>
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<td></td>
<td></td>
<td></td>
<td>[446.03]</td>
<td>[894.89]</td>
</tr>
<tr>
<td><strong>Neutral</strong></td>
<td><strong>Total</strong></td>
<td>148</td>
<td>1.90</td>
<td>1.00</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(2994.75)</td>
<td>(2343.88)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>[2177.89]</td>
<td>[1826.68]</td>
</tr>
<tr>
<td></td>
<td>Not Able</td>
<td>42</td>
<td>2.88</td>
<td>.45</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(5130.93)</td>
<td>(1050.14)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[3800.07]</td>
<td>[810.96]</td>
</tr>
<tr>
<td></td>
<td>Able</td>
<td>106</td>
<td>1.51</td>
<td>.89</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2148.33)</td>
<td>(2170.73)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[1535.13]</td>
<td>[1716.11]</td>
</tr>
<tr>
<td><strong>Negative</strong></td>
<td><strong>Total</strong></td>
<td>144</td>
<td>2.03</td>
<td>.99</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(3222.57)</td>
<td>(2345.88)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[2340.88]</td>
<td>[1826.32]</td>
</tr>
<tr>
<td></td>
<td>Not Able</td>
<td>42</td>
<td>2.79</td>
<td>.61</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(4900.46)</td>
<td>(1438.91)</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>[3621.32]</td>
<td>[1114.34]</td>
</tr>
<tr>
<td></td>
<td>Able</td>
<td>102</td>
<td>1.73</td>
<td>.95</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2531.67)</td>
<td>(2301.81)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[1813.64]</td>
<td>[1804.40]</td>
</tr>
</tbody>
</table>
**Family Involvement Variable**

The variable termed family involvement in this study turned out to be a complicating factor that was ultimately removed for a number of reasons as outlined in chapter three. The primary issue was that a family’s involvement in the disposition as evidenced by their signing to some degree of responsibility (e.g., monitor and assist on release, facilitate voluntary, recommend involuntary) did not fully reflect the meaning of or precursors to that involvement.

The question is whether the family influenced the clinician to arrive at the disposition or whether the clinician influenced the family to agree to the disposition. The answer to that question could not be determined in this study, but it may very well be both. Families may influence dispositions by the information, opinions, offers to help, or negative quality they communicate to the clinician. Clinicians may influence families by persuading them to see the logic of their decision and soliciting their agreement. In many situations this may be a reciprocal dynamic, an example of cybernetic information exchange. Such complexity and possible circularity of cause could not be revealed or properly represented by families’ signatures to various dispositions.

**Clinician Differences**

It seems most logical to attribute the lack of statistically significant differences in outcomes between clinicians to standardization of practices within NRVCS. All clinicians receive extensive and essentially equal training about the PES process. Further, the expectation of the agency is that all clinicians follow such standardized procedures in order to arrive at dispositions in the same manner. The expectation in this study, nonetheless, based on the theoretical arguments presented in chapter two, was that there would be at least some discrepancy between clinicians in spite of the agency’s best efforts to standardize. Clinicians,
diverse in so many ways, would have at least slight tendencies toward certain dispositions. That there was no statistical difference between clinicians in terms of outcomes suggests that the agency’s objective of standardized practices was met over the individual differences of the clinicians, tendencies or not. This could be seen as a tribute to the PES clinicians and NRVCS for achieving such consistency. However, statistical non-significance does not mean that there is no variability of dispositions among clinicians in the population. Even with training and oversight, differences between clinicians remain possible. That no differences were detected in the present sample does not necessarily mean that differences are not present in the population. Further study is warranted to revalidate this issue by increasing the sample size of clinicians since the current study used the minimum sample size due to the limitation of resources.

*Cohort Effect*

The finding of no statistically significant cohort effect from the April 16, 2007 shootings may also speak to the standardization and consistency of the PES provided by clinicians at NRVCS. That finding suggests that while emotions and anecdotes abounded after the incident, clinicians did not allow them to significantly sway their decision-making process. Or it may be that the shootings caused distress and impact on mental health in the population, but not in a way or to a degree that hospitalization would be needed. Larger context forces (such as lack of hospital beds) may have been in play at the time, preventing a rise in hospitalizations. It may also be that most of the population of clients served by NRVCS was far enough removed emotionally that the shootings simply did not play a major part in crises occurring afterward, or it may be that PES clients generally have such significant personal trauma history of their own that the shootings did not significantly change the clinical picture generally encountered by clinicians. It was this author’s experience as a PES clinician at the time that services were provided just as
they were prior to the incident with essentially no change, and this seems to have been the case upon empirical observation.

**Strengths and Limitations of the Study**

A major strength of this study is that it analyzes both restrictiveness and cost in PES and explores the relationship of risk, family and clinician factors to those outcomes. It also adds a layer to that analysis by exploring moderator effects of family on risk factors. Its use of HLM to capture nestedness of data and its use of clinical records are steps toward more accurately reflecting PES “in the field” reality. Each of these strengths is a contribution toward better understanding families in PES. The findings of this study also provide information that may be useful in improving services to clients and families by increasing providers’ understanding of key aspects of PES and informing future researchers and educators in the field. Further, the focus on rural, mobile PES and the attempt to construct non-reactive variable scales from clinical documents constitute a methodological contribution to the field.

There are limitations to this study in terms of validity, such as the lack of standardized instruments (i.e., clinical forms not created for research), the lack of standardized scales used for variables, and the possible discrepancies in documentation between clinicians. Attempts were made to compensate for these limitations by constructing non-reactive scales looking only at data consistently collected by clinicians. Further limitations include lack of comparison group, and the lack of actual, client-specific cost data; both of these could hopefully be remedied in future studies. As is the case when studying any complex systemic phenomena, the statistical analyses (no matter how sophisticated) cannot fully apprehend the complexity of PES. Decisions regarding each of these issues were made out of practical constraints related to the form of the
data analyzed and the limitations imposed on the design by the situation in order to make the study accomplishable. Cell sample sizes are small, especially the number of clients with positive family quality. This limitation could be addressed in future research by increasing both the number or clients per clinician and the number of clinicians to achieve greater statistical power.

The limits to generalizability include the sample coming from a limited time period in a single agency in a circumscribed geographical area in a state with specific laws regarding PES, race (clients were predominately white), and sample size. Results and interpretations should not necessarily be inferred to other time periods, agencies with different modes of service, locales, states/legislative jurisdictions, races other than white, or larger populations than the one from which the sample was drawn.

**Recommendations for Future Research**

The findings in this study point to several possible directions for future research. Certainly, further exploration of the interaction between family quality and risk factors is needed, with increased overall and cell sample sizes. Attempts should be made to further isolate risk-family interactions in PES processes and outcomes. Marriage and family therapy researchers can apply other fitting theories to further research and develop understanding in this area.

Homicide risk also needs further explored. Finding that it did not significantly predict restrictiveness and cost after controlling for other risk factors should lead researchers to question what it’s role and influence is in PES. Marriage and family therapy researchers could, in particular, examine homicide risk from a family context, and explore whether it is mitigated by intra- or inter-personal factors, or both.
Much more research could focus on the present study’s finding of no significant difference between clinicians in terms of dispositions. More research is needed to explore the what influence the clinician has in PES processes and outcomes. The field would greatly benefit from research that compares PES across agencies within the same state and in other states, that compares different processes and outcomes of different models of PES, and that extends to include both post-initial contact treatments and subsequent multiple crisis interventions provided by different PES programs. Researching family variables in PES across agencies and programs would allow multiple perspectives on and further understanding of the subject.

In retrospect of what occurred with the family involvement variable, one next step for research could be to explore family involvement in the disposition as an outcome, perhaps trying to answer questions such as, “What predicts families’ desire for or agreement to the clinician’s disposition, or to specific dispositions?” An additional layer may be added, exploring what the family and client have already done in attempting to cope with the crisis, and whether those efforts and their results predict what disposition families desire and to what dispositions they ultimately agree.

Incorporating direct client and family input into research would be an ideal element in future research. Also needed is to extend research to family dynamics in post-initial crisis treatment. Other practical concerns such as families’ perceptions, criticism, or satisfaction, also remain important areas of focus, as pointed out by Cerel at al. (2006), Husted and Nehemkis (1995), and Morgan (1989). Finally, there is a need in future PES research relying on clinical records for use of more standardized instruments in measuring family factors. Also of value would be actual, client-specific cost data and a standardized measure of restrictiveness.
Implications for Practice

This study’s findings reveal some key considerations for PES providers. The interaction between family quality and inability to care for self has particularly salient applications. This finding suggests that family quality is of great import in PES dispositions, but that its effect may well be in opposite directions based on a client’s ability to care for self. For clients able to care for self but at risk in other ways, positive family quality may be a key component to effective safety planning and confident referral to outpatient services. For clients not able to care for self, family quality may be a critically important element in a client receiving the appropriate help, help that the client cannot seek on their own. Family therapists and other PES providers need to be aware of these differing dynamics and to be comfortable integrating and utilizing these dynamics appropriately in their interventions. They need to realize the potential positive effect in both directions—the potential savings in liberties and costs for those clients able to care for themselves, and the potential to access appropriate resources for clients not able to care for self. This finding also seems to suggest the importance of listening to family systems and their report of a client’s ability to care for self and what they feel the client needs, and acting on that input. For those clients able to care for self, this may mean more active recruiting of any positive family systems that can take responsibility for the client, while for those clients not able to care for self, this may mean being more willing to push for more restrictive and costly options as being the most appropriate. Marriage and family therapists can and should lend insight and tailor approaches to this dynamic and assist providers of PES in developing appropriate interventions for clients and families.

Finding that homicide risk does not significantly affect dispositions after controlling for suicide risk and inability to care for self should direct clinicians’ attention more to suicide risk
and inability to care for self as key considerations. Suicide and inability to care for self appear much weightier issues than homicide risk when it comes down to dispositions. That homicide risk by itself did predict dispositions without controls for other variables adds a voice of caution, however, to not overlook any real threats to safety.

The conclusion that significant differences in dispositions do not exist between clinicians should be heartening and encouraging news for PES providers in human services fields where the complexity of human dynamics so often disrupt attempts to arrive at consistent outcomes. Providers in other systems should seek to replicate these findings, then compare outcomes between provider systems to see if consistency can be achieved only within systems or also between systems. A similar level of consistency could perhaps be a goal for key family issues in PES.

There remains a primary implication for PES providers in general for clinicians and provider systems to have an increased awareness of the potential dynamics of family systems in crisis interventions and to develop better ways of assessing, measuring, and integrating those dynamics in PES interventions. This could include particularly assessment and utilization of positive family qualities. Program developers and administrators need to research and select PES intervention models that successfully incorporate families in interventions with an aim at reducing restrictiveness and cost as well as achieving other key goals. It would be particularly helpful for PES providers to work from testable theoretical approaches with standardized, reliable instrumentation such that evaluation research can more effectively inform the field. A specifically family systems-based theory and practice model of PES could be developed. PES instructors and trainers can instill awareness of family dynamics and teach skills for evaluating, intervening in, and using family dynamics. Policymakers can encourage these goals of theory
development, statistically standardized instrumentation aimed at measurement of multiple (including family) dynamics, and evaluative research, particularly cost effectiveness analyses.

As for implications to PES clients and families, they can advocate for the appropriate inclusion of family in theory, practice, and research. They can develop family psychiatric emergency plans, in which they delineate the roles, privileges, and responsibilities of family members (including friends) should the client be in crisis. Such plans could be created with the assistance of a counselor. Perhaps most importantly, families can take responsibility to the fullest extent of their capacity for the wellbeing and recovery of clients in crisis, thus activating any positive benefit that can come from families. The implication of this study is that families sometimes hold valuable keys to PES clients’ recovery and success, keys families can use to help unlock those benefits for clients in crisis.
References


Appendix A

Uniform Pre-Admission Screening Form or “Prescreen”
New River Valley Community Services
UNIFORM PRE-ADMISSION SCREENING FORM

Time spent under ECO: Start time ________ a.m./p.m. Time ECO ended ________ a.m./p.m. Time spent - ________
Crisis Intervention time: Start time ________ a.m./p.m. Time ended ________ a.m./p.m. Time spent - ________
TOTAL TIME SPENT - ________

DISPOSITION: Released Voluntary TDO & TDO # ________

1. PERSONAL DATA

NAME- ____________________________________________ Age - ________ Date of Birth - ____ / ____ / ________
Address - ____________________________________________

Street City/County State ZIP

Phone - (____) __________________________ Marital Status - M S D W SS # - ________ - ________ - ________ - ________

(M F) (Race) ft. _____ in. _____ lbs. (Weight) (Hair color) (Eye Color)

Physical Description - ____________ (Sex) ________ (Height)

Emergency Contact - __________________________ Relationship to Client - ____________

Address - ____________________________________________

Street City/County State ZIP

Phone - (Home) (____) __________________________ Work (____) __________________________

Monthly Income - $__________ SSI/SSDI - $__________ Payee - ______________ Veteran? Y N

Insurance? N Y Name of Insurance Company Group/Plan Number

Medicaid? N Y # ______________ Medicare? N Y # ______________

School Attending - __________________________ Grade - ________ Special Ed? Y N

CSB of Origin - NRVCS or __________________________ Contacted - Y N N/A PRAIS Code ________ ________ ________ ________

Name of CSB Staff Contacted - __________________________ Phone - (____) __________

Name of CSB Staff Contacted - __________________________ Phone - (____) __________

2. LEGAL DATA: Pending Legal Charges? N Y If YES, complete the following information - If no, skip:

Nature of Charges? __________________________________________ Presently Serving a Sentence? Y N

Court of Jurisdiction - __________________________ Court Date? __________________________

NGRI Conditional Release? Y N Probation/Parole? Y N Contact - __________________________

3. COLLATERAL SOURCES OF INFORMATION

<table>
<thead>
<tr>
<th>Source of Information</th>
<th>YES</th>
<th>NO</th>
<th>N/A</th>
<th>Name of agency/individual and relationship to client</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client Record</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual requesting evaluation</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Primary therapist</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Family member</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

4. IV FOR LOCAL USE -

Receiving facility - Bed Reserved by - Dr. accepting -

Check facilities tried and indicate reasons denied: [ ] New Horizons [ ] St. Alban’s [ ] Lewis Gale [ ] Roanoke Rehab

[ ] Life Center ________

REASON CODES FOR DECLINING ADMISSION -

1. No timely return call 6. Compliance issues
2. Medical complications/clearance 7. Dangerousness
3. No appropriate bed 8. No benefits/benefits exhausted
4. Long term needs 9. Acuity Pt/Unit too high
5. No available bed 10. Other – (briefly explain)

DSM-IV DX - V71.09

☐ Disposition staffed with: Charge nurse ____________ Supervisor: __________ Magistrate: __________
Other: ________________________________ Copy left with facility? Y ☐ N

Page 1 of 5
5. MEDICAL
Primary Care Provider and phone #, if known - __________________________
Medical History and current problems/symptoms - __________________________
☐ Client was screened for medical issues prior to screening  ☐ Client was referred to PCP/Health Dept. for medical eval

MEDICATION - Current prescribed medications (? = unknown)  _____ None prescribed

<table>
<thead>
<tr>
<th>Name of Medication</th>
<th>Dosage</th>
<th>?</th>
<th>Schedule</th>
<th>?</th>
<th>Length of Time taken</th>
<th>?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

Recent Medication Changes?  N  Y  (If YES, explain) __________________________
Allergies or adverse side effects to medications?  N  Y  (If YES, explain) __________________________

Has client complied with recommended medication and treatment plans?  Y  N  (If NO, explain) __________________________

6. MENTAL HEALTH AND SUBSTANCE ABUSE TREATMENT: both current and past
InpatientFacility  Doctor  Dates of treatment

Outpatient treatment  Therapist  Date last seen

7. PRESENT SITUATION (Include precipitating events, stressors and variation, if any from baseline of functioning)
8. **MENTAL STATUS EXAM** - **CIRCLE ALL THAT APPLY AND EXPLAIN BELOW**

<table>
<thead>
<tr>
<th>Behavior/motor Disturbance -</th>
<th>WNL</th>
<th>Agitated</th>
<th>Guarded</th>
<th>Tremor</th>
<th>Manic</th>
<th>Impulse Control</th>
<th>Psychomotor Retardation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mood -</td>
<td>WNL</td>
<td>Depressed</td>
<td>Angry</td>
<td>Euphoric</td>
<td>Anxious</td>
<td>Anhedonic</td>
<td>Withdrawn</td>
</tr>
<tr>
<td>Thought Content -</td>
<td>WNL</td>
<td>Delusions</td>
<td>Grandiose</td>
<td>Paranoid</td>
<td>Obsessions</td>
<td>Phobias</td>
<td>Ideas of Reference</td>
</tr>
<tr>
<td>Thought Process -</td>
<td>WNL</td>
<td>Blocking</td>
<td>Circumstantial</td>
<td>Tangential</td>
<td>Perseveration</td>
<td>Flight of Ideas</td>
<td>Loose Associations</td>
</tr>
<tr>
<td>Perception -</td>
<td>WNL</td>
<td>WNL</td>
<td>Hallucinations -</td>
<td>Auditory</td>
<td>Visual</td>
<td>Olfactory</td>
<td>Tactile</td>
</tr>
<tr>
<td>Appetite -</td>
<td>WNL</td>
<td>Poor</td>
<td>Weight Loss</td>
<td>Weight Gain</td>
<td>Increased Appetite</td>
<td>Decreased Appetite</td>
<td></td>
</tr>
<tr>
<td>Orientation -</td>
<td>WNL</td>
<td>Disoriented -</td>
<td>Time</td>
<td>Place</td>
<td>Person</td>
<td>Situation</td>
<td></td>
</tr>
<tr>
<td>Memory -</td>
<td>WNL</td>
<td>Impaired -</td>
<td>Recent</td>
<td>Remote</td>
<td>Immediate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speech -</td>
<td>WNL</td>
<td>WNL</td>
<td>Pressured</td>
<td>Slowed</td>
<td>Soft</td>
<td>Loud</td>
<td>Slurred</td>
</tr>
<tr>
<td>Appearance -</td>
<td>WNL</td>
<td>Unkempt</td>
<td>Bizarre</td>
<td>Tense</td>
<td>Rigid</td>
<td>Poor Hygiene</td>
<td></td>
</tr>
<tr>
<td>Range of Affect -</td>
<td>WNL</td>
<td>WNL</td>
<td>Constricted</td>
<td>Flat</td>
<td>Labile</td>
<td>Inappropriate</td>
<td></td>
</tr>
<tr>
<td>Sleep -</td>
<td>WNL</td>
<td>Hypersomnia</td>
<td>Onset problem</td>
<td>Maintenance problem</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Insight -</td>
<td>WNL</td>
<td>WNL</td>
<td>Blaming</td>
<td>Little</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Estimated intellectual functioning capacity</strong> -</td>
<td></td>
<td>Average</td>
<td>Above Average</td>
<td>Below Average</td>
<td>Diagnosed MR</td>
<td></td>
<td></td>
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<tr>
<td><strong>Adaptive Functioning</strong></td>
<td>WNL</td>
<td>Impaired ADLS</td>
<td>Impaired Decision-making</td>
<td>Other -</td>
<td></td>
<td></td>
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</tbody>
</table>

Explain clinically significant findings - __________________________________________________________
__________________________________________________________________________________________
__________________________________________________________________________________________
__________________________________________________________________________________________
__________________________________________________________________________________________
__________________________________________________________________________________________
__________________________________________________________________________________________
__________________________________________________________________________________________
__________________________________________________________________________________________

9. **SUBSTANCE ABUSE ASSESSMENT** - [ ] No Current Use Reported

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Hx</th>
<th>Past 24 hr</th>
<th>Blood Present</th>
<th>Drug of Choice</th>
<th>Frequency</th>
<th>Method</th>
<th>Last Used</th>
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<tbody>
<tr>
<td>Vomiting</td>
<td></td>
<td></td>
<td>Y N</td>
<td>Pri:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diarrhea</td>
<td></td>
<td></td>
<td>Y N</td>
<td>Sec:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DT’s</td>
<td></td>
<td></td>
<td>BAC _____</td>
<td>Breathalyzer results ___________</td>
<td>[ ] Unable to test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seizures</td>
<td></td>
<td></td>
<td>Screening tool used -</td>
<td>[ ] SSI</td>
<td>[ ] SASSI</td>
<td>[ ] Unable to test due to ___________</td>
<td></td>
</tr>
<tr>
<td>Tremors</td>
<td></td>
<td></td>
<td>COMMENTS -</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
10. RISK ASSESSMENT

<table>
<thead>
<tr>
<th>SUICIDAL POTENTIAL</th>
<th>HOMICIDAL RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>HX of ATTEMPTS</td>
<td>INTENT</td>
</tr>
<tr>
<td>CURRENT ATTEMPT</td>
<td>PLAN: VAGUE</td>
</tr>
<tr>
<td>IDEATION</td>
<td>PLAN: DEFINED</td>
</tr>
</tbody>
</table>

Explain anything checked above -

If recommending hospitalization, is the client an elopement risk?  N  Y

11. FINDINGS

<table>
<thead>
<tr>
<th>IS</th>
<th>IS NOT</th>
<th>IS</th>
<th>IS NOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mentally ill and/or abusing substances</td>
<td>Capable of consenting to voluntary treatment/hospitalization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>An imminent danger to self or others</td>
<td>Willing to be treated voluntarily</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Able to care for self</td>
<td>ARE</td>
<td>ARE NOT</td>
<td>THERE .....</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Less restrictive community alternatives</td>
</tr>
</tbody>
</table>

Community Alternatives – Positive factors
Check all that apply

- [ ] Ability to implement safety watch
- [ ] Cooperative with interviewer
- [ ] Stability of lifestyle
- [ ] No hx of attempts

- [ ] Able to identify a safety plan on their own
- [ ] Future oriented
- [ ] Religious beliefs
- [ ] Strong support system

- [ ] OP services available immediately and client is willing to attend
- [ ] Someone is willing to stay with them until treatment begins

- [ ] No substance abuse
- [ ] No plan
- [ ] No recent loss
- [ ] Little or no hostility
- [ ] Positive experiences with tx in the past

- [ ] Mild or nonexistent depressive symptoms
- [ ] Other: __________________________________________________________

12. DISPOSITION RECOMMENDATION

CHECK the appropriate box for each statement –

PRE – DETENTION - if evaluation is conducted prior to the issuance of a TDO
PRE – HEARING – if evaluation is conducted after the issuance of a TDO but prior to the commitment

Pre – Detention

- [ ] Client does not meet criteria for hospitalization and/or commitment and should be encouraged to participate in community based services.

- [ ] Voluntary hospitalization because client does not meet criteria for involuntary commitment, has the capacity to consent to voluntary treatment, requires treatment in a hospital and has requested said treatment.

- [ ] Involuntary hospitalization because client meets criteria for involuntary hospitalization and is incapable of consenting to voluntary treatment.

- [ ] Involuntary hospitalization because client meets criteria for involuntary hospitalization, is capable of consenting to voluntary treatment, but is unwilling to be treated voluntarily.
13. **TREATMENT AND DISCHARGE PLANNING** *(To be completed ONLY if inpatient treatment is recommended)*

Individuals who can assist in treatment and discharge planning (i.e. family, discharge planner, therapist, family physician, etc.)

<table>
<thead>
<tr>
<th>NAME</th>
<th>Phone Number</th>
<th>Relationship to Client</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

Inpatient treatment goals -

**Services to be considered in planning for discharge** –

- Medication Management
- Substance Abuse services
- Housing/residential services
- Case Management
- Financial support/entitlement
- Medical/dental/nutritional services
- Outpatient (indiv, family, group)
- Transportation
- Adult or child protective services
- Legal assistance/advocacy
- Psycho-social/day treatment
- Nursing home care
- OTHER -

_____________________________________________________________________________________________________

______________________________     ____________________________
Signature of Pre-screener / DATE                  Printed Name

**HEARING RESULTS** -

Committed / Vol / Diverted to: ____________________________  Court ordered OP: app’t on __________ at ______

Comments - __________________________________________________________________________________________

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Appendix B

Access Crisis Contract
ACCESS CRISIS CONTRACT

Client Name: _____________________________________________ Client #: ______________or □ # Unknown

I agree to the following:

☐ 1. To be with ____________________________________________at all times for the next ________hours.

☐ 2. To call ACCESS between the hours of__________ and ____________ to discuss my current condition.

☐ 3. To call the clinic or ACCESS for immediate help if I have thoughts of harming myself or anyone else.

☐ 4. To sign a Consent to Release Information for significant others to facilitate my follow-up care.

☐ 5. To check-in to New Horizons by ________________________________on________________________.

☐ 6. To use no substances unless prescribed by my doctor.

☐ 7. Other: _______________________________________________________________________________.

I realize that I am responsible for my own actions and that I accept the responsibility to ask for help.

_____________________________________________    ____________________________________________
Client Signature                                    Date                                    Clinician Signature                      Date

********************************************************************************************

I, _______________________________________ agree to remain with the person listed above, for the next

___ hours and to assist the client in following the instructions listed above. I also agree to call ACCESS

immediately if for any reason I am unable to follow thru with this agreement, or if I have additional

concerns about the persons safety.

_____________________________________________    _____________________________________________
Responsible Party                                   Date                                    Clinician                                Date

Raft and ACCESS Services can be reached by calling the following numbers 24 hours a day.

Montgomery, Radford, Pulaski, Giles - 961-8400
Floyd - 1-888-717-3333
Appendix C

Petition for Certification for Involuntary Admission or Treatment (TDO Petition)

COMMONWEALTH OF VIRGINIA
Va. Code §§ 37.2-809 through 37.2-819

DEPARTMENT OF MENTAL HEALTH, MENTAL RETARDATION AND
SUBSTANCE ABUSE SERVICES
PETITION FOR CERTIFICATION FOR INVOLUNTARY
ADMISSION OR TREATMENT

TDO Facility (if applicable) ________________________ Case/TDO # ________________________
City
County of ________________________

In the matter of

FIRST NAME ________________________ MIDDLE NAME(S) ________________________ LAST NAME ________________________
Social Security # ________________________ Birth Date ________________________ Sex ________________________

PERMANENT ADDRESS/STREET AND NUMBER OR ROUTE NUMBER ________________________ CITY OR POST OFFICE ________________________ STATE ________________________ ZIP CODE ________________________

Resident of ________________________ County ________________________ City, ________________________
a person alleged to be ☐ a danger to oneself ☐ a danger to others ☐ unable to care for oneself,
who is now located at ☐ the above address, or ☐ ________________________
The undersigned petitioner alleges that the above person has mental illness and is in need of hospitalization or treatment. In support of
this allegation, the petitioner submits the following facts:

☐ Prescreening evaluation has been made and the report is attached.

Wherefore, the petitioner prays that the person named above be examined and accorded such assistance provided by law.

Date ________________________ , 20 ______ Signed ________________________

Relationship to person named above ________________________ Address ________________________

Telephone number(s) at which you may be reached:

HOME ________________________ OFFICE ________________________ OTHER ________________________
The foregoing petitioner, being duly sworn, says that the statements set forth above are true and correct to the best of his knowledge
and belief.

Subscribed and sworn to before me on this ________________________ day of ________________________ , 20 ______

JUDGE, MAGISTRATE, SPECIAL JUSTICE, OR NOTARY PUBLIC

PRINT NAME ________________________ TELEPHONE NUMBER ________________________

My Commission expires on ________________________ , 20 ______ Title ________________________

Page 1 of 4
Appendix D

Crisis Assessment Form

New River Valley Community Services Board
Crisis Assessment Form

Access

Name: ___________________________  DOB: ______ Age: ______  Case number: ______

Address: ____________________________  Phone: ____________________________

SS#: ____________________________

Type of insurance: ☐ None/Unknown ☐ Medicaid ☐ BC/BS ☐ Other: ____________________________

*Assessment Information*

Type: ☐ F/I crisis ☐ other: ____________________________

Reason: ☐ ER  ☐ Jail  ☐ Sheriff Dept  ☐ Police Dept  ☐ Clinic  ☐ Other: ____________________________

Petitioner contacted: Y ☐ N ☐

Collateral contacts: ☐ Family  ☐ Agency  ☐ Other: ____________________________

Others present? ☐ Y ☐ N ☐

Present situation

Precipitating events, significant events/stressors and variation from baseline level of functioning:

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

Mental Status Exam (circle all that apply):

<table>
<thead>
<tr>
<th>Behavioral Motor Disturbance</th>
<th>WNL</th>
<th>Agitated</th>
<th>Guarded</th>
<th>Tense</th>
<th>Manic</th>
<th>Impulsive</th>
<th>Psychomotor retardation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mood</td>
<td>WNL</td>
<td>Depressed</td>
<td>Angry</td>
<td>Euphoric</td>
<td>Anxious</td>
<td>Anhedonic</td>
<td>Withdrawn</td>
</tr>
<tr>
<td>Thought content</td>
<td>WNL</td>
<td>Delusional</td>
<td>Grandiose</td>
<td>Parasympathetic</td>
<td>Obsessive</td>
<td>Guilt</td>
<td>Ideas of reference</td>
</tr>
<tr>
<td>Thought process</td>
<td>WNL</td>
<td>Blocking</td>
<td>Circumstantial</td>
<td>Tangential</td>
<td>Preservative</td>
<td>Flight of ideas</td>
<td>Loose associations</td>
</tr>
<tr>
<td>Perception/Assessment</td>
<td>WNL</td>
<td>Hallucinations</td>
<td>Auditory</td>
<td>Visual</td>
<td>Auditory</td>
<td>Tactual</td>
<td>Command</td>
</tr>
<tr>
<td>Appetite</td>
<td>WNL</td>
<td>Poor</td>
<td>Weight loss</td>
<td>Weight gain</td>
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<td>Orientation</td>
<td>WNL</td>
<td>Disoriented</td>
<td>Time</td>
<td>Place</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td>WNL</td>
<td>Impaired</td>
<td>Recent</td>
<td>Remote</td>
<td>Immediate</td>
<td></td>
<td></td>
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<tr>
<td>Speech</td>
<td>WNL</td>
<td>Pressured</td>
<td>Slurred</td>
<td>Soft/Loud</td>
<td>Slurred</td>
<td>Impoverished</td>
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</tr>
<tr>
<td>Appearance</td>
<td>WNL</td>
<td>Unemotional</td>
<td>Blunted</td>
<td>Tense</td>
<td>Numb</td>
<td>Poor hygiene</td>
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<tr>
<td>Range of affect</td>
<td>WNL</td>
<td>Constipated</td>
<td>Hair</td>
<td>Labile</td>
<td>Inappropriate</td>
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<td></td>
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<td>Sleep</td>
<td>WNL</td>
<td>Hyperactive</td>
<td>Goofy</td>
<td>Maintenance</td>
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<td></td>
<td></td>
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<tr>
<td>Insight</td>
<td>WNL</td>
<td>Blaming</td>
<td>Material</td>
<td>Little</td>
<td>None</td>
<td>Unknown</td>
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<tr>
<td>Self harm</td>
<td>WNL</td>
<td>Solitary</td>
<td>Ideation</td>
<td>Ideation</td>
<td>Ideation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
History of mental health and substance abuse treatment: □ None reported

History of self-harm or harm to others (Include family members history): □ None reported

Substance Abuse Current Use and History: □ None reported

Medication and/or significant medical information:
□ Client screened for medical issues prior to assessment □ Client referred to PCP/Health Dept for medical eval

Positive factors:
□ Future oriented □ Religious beliefs □ Able to set up and agree to a safety plan □ No history of attempts
□ Strong support system □ Able to implement safety watch □ Cooperative □ Stability of lifestyle
□ No substance abuse □ No recent losses □ Little or no hostility □ Mild or no depressive symptoms
□ OP services immediately available and client is willing to start □ Positive exp. w/tx in the past

Explain:

Disposition / Recommendations / Release Criteria

□ Safety contract signed □ Releases for significant others □ Releases for outside treatment providers

If seen at an hospital, case staffed out with:

If client was an ECO, case staffed with:

Diagnosis
Axis I: ___________________________ Axis II: ___________________________
Axis III: ___________________________ Axis IV: ___________________________ Axis V: ___________________________

Clinician Signature: ___________________________ Date: ____________

Start Time: ____________ ECO Signed Off: ____________ Amount of time spent under ECO ____________
Finish Time: ____________ Total time: ____________ 04/26/04