May 2008

A Cost Analysis of the Bexar County, Texas, Jail Diversion Program

Report 2: An Analysis of Cost-Shifting between the Treatment and Criminal Justice Systems

Prepared for

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PREAMBLE

For too many years, thousands of people have been jailed because of behaviors resulting from untreated mental illness. Most of these people could have and should have been treated in appropriate settings instead of in jails. This is a national tragedy that is now beginning to get attention and is being addressed at local, state, and national levels.

Throughout the country, jail diversion programs appear to be getting widespread support. However, there are few outcome studies that have systematically examined the effectiveness of diversion programs using client and program outcome data. Existing literature offers little information on whether current programs benefit the targeted recipients in terms of symptom stabilization, reduced jail time, higher levels of community adjustment, and stable participation in community mental health services.

Fewer studies have assessed the costs and benefits of jail diversion implementation and operation. No studies have looked at jail diversion programs that address the full continuum of diversion from initial arrest to release from jail or other incarceration institutions. Consequently, many questions have been asked about how to develop, fund, operate, and sustain a jail diversion program. The fiscal viability of these programs must also be considered by decision makers who deal with the reality of local, city, county, and state policies.

Research data have shown that approximately half of all prison and jail inmates have a mental health problem. People with mental illnesses serve longer sentences than other offenders convicted of equivalent crimes. Many offenders with mental illnesses have committed an offense that is often a manifestation of their illness rather than the result of criminal intent. For each individual who receives treatment for a psychiatric illness in a hospital, about five others with mental health conditions are treated, or confined without treatment, in penal facilities. Hospitals report that 6 in 10 emergency physicians surveyed indicate that the increase in psychiatric patients is negatively affecting access to emergency medical care for all patients, causing longer wait times, fueling patient frustration, limiting the availability of hospital staff, and decreasing the number of available emergency area beds. Studies also show that it costs approximately 75% more to incarcerate individuals with mental illness than other inmates who have been convicted of similar offenses.

With this information in hand, in 2002, local community leaders in Bexar County embarked on an ambitious effort to create a full-spectrum jail diversion program. Through dedicated and extensive community collaboration, the program was developed based on targeted community outcomes that included a tenacious focus on data collection. The program met with great success based on data outcomes. The National Council of Behavioral Health Care in Washington, DC, recognized the program with its "National Service Excellence Award," and the American Psychiatric Association presented the program with its "2006 Gold Award"

for its successful community innovation and collaboration initiatives. From the program we developed the diversion tool kit.

It is our hope that the information from the cost benefit study, provided with the tool kit, will help the creation, implementation, and evaluation of your communities' jail diversion initiatives. Such information will contribute to ensuring that mental illness is treated in the appropriate settings while reducing individual suffering in a cost-effective manner.

Dr. Roberto Jimenez
Chairman of the Board of Managers
University Health System

Leon Evans
President and Chief Executive Officer
The Center for Health Care Services

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- Bexar County District Attorney's Office
- Bexar County Information Services
- Bexar County Pre-Trial Services
- Bexar County Sheriff's Office
- Center for Health Care Services
- City of San Antonio San Antonio State Hospital
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- Magistrate's Community Court
- National Association for the Mentally Ill
- San Antonio Police Department
- Texas Correctional Office on Offenders with Medical or Mental Impairments
- Texas Department of Criminal Justice
- Texas Health & Human Services Commission
- University Health System
- University of Texas Health Science Center at San Antonio

EXECUTIVE SUMMARY

This report is the second in a series of reports on a cost analysis of the jail diversion program in Bexar County, Texas. The overall study addressed three main questions:

- What does it cost to divert one person?
- How does diversion shift costs between the criminal justice system and the treatment system?
- What is the cost-effectiveness of jail diversion?

This report presents results for the second question: How does diversion shift costs between the criminal justice system and the treatment system? The study combined a strong research design with detailed data on criminal justice and treatment resources that were underwritten either in part or in full by Bexar County and the city of San Antonio. The main findings are as follows.

ES.1 Pre-Booking Diversion

- Combining criminal justice and treatment costs during pre-booking diversion was associated with $3,200 in lower costs per person during the first 6 months after diversion.
- In the absence of pre-booking diversion, cross-system (i.e., criminal justice and treatment) costs would have been more than $1.2 million higher during the 6 months immediately after diversion.
- Criminal justice resource needs—a large proportion of which are underwritten through local funds—may have been more than $1.4 million higher had pre-booking diversion not been in place.
- The study did not find reliable evidence on the impact of pre-booking diversion on treatment costs. However, the findings did indicate that, in the 12- to 18-month and 18- to 24-month periods, diversion was associated with improved access to treatment.

ES.2 Post-Booking Diversion

- Post-booking diversion was associated with about $1,200 in lower costs per person more than the 18- to 24-month period after entry into diversion.
- Across the criminal justice and treatment systems combined, had post-booking diversion not been in place, costs would have been $700,000 higher.
- Post-booking diversion was also associated with $400,000 in lower criminal justice costs in the 18 to 24 months after diversion.
- There was little reliable evidence on the degree to which costs were shifted into treatment. Limited evidence indicated some improved access to the Center for Health

Care Services (CHCS) in the 6- to 12-month period and indicated that treatment costs overall were actually lower in the 12- to 18-month period.

As Bexar County continues to expand its public safety net, it now has strong evidence that one of its cornerstone programs can be justified on fiscal grounds. Its jail diversion program encompasses the two major types of diversion—pre-booking and post-booking diversion—and is designed to help people with mental health problems and people in need of treatment along the spectrum of criminal justice interactions. Both pre-booking and post-booking jail diversion were associated with lower taxpayer costs particularly criminal justice costs. The program provides hope to jail diversion participants that they can obtain the treatment they need and integrate safely back into the community rather than getting stuck in the repetitive criminal justice cycle. This study has demonstrated that the program also helps contain public costs and is an effective use of scarce community resources.

1. INTRODUCTION

1.1 The Need for Diversion

This report documents the findings for the second of three objectives in a cost analysis study of the Bexar County, Texas, jail diversion program. Jail diversion treats people with mental illness in the community rather than housing them in jail.

The promise of jail diversion to taxpayers lies in two sets of findings. First, Texas jails and prisons hold a disproportionate number of people with mental illness; estimates suggest that the proportion of people with mental illness in jail is up to three times higher than the proportion in the community (Sprow, 2005). Second, national data suggest that approximately 15% of persons detained, incarcerated, or under supervision have a mental health problem (Broner et al., 2005). People with mental illness who are incarcerated for nonviolent offenses may experience a cycle of worsening behavioral symptoms—being arrested for a low-level offense and then being detained and released without being treated for the mental health condition that precipitated the initial arrest. Treating the disease in the right setting could reduce individual suffering and could save taxpayer resources.

1.2 What Is Jail Diversion?

Jail diversion seeks to use resources efficiently and to help provide appropriate treatment to those who need it. Jail resources are known to be stretched, and people with mental illness are known to be high resource users when involved in the criminal justice system. Thus, treating people with mental illness in the community instead of in jail is likely to have two benefits: (1) the person will have access to the appropriate treatment, and (2) the jail can make better use of scarce resources.

The primary goal of jail diversion is to both *divert people from* the criminal justice system and *divert them to* treatment. Diverting from the criminal justice system may mean averting the arrest. If a booking occurs, diversion may mean reducing time detained in jail or reducing or eliminating charges upon meeting certain conditions. Instead, the person is diverted to the appropriate treatment in the community.

There are two basic types of jail diversion: pre-booking and post-booking. Pre-booking diversion diverts people before they are formally booked, either on the street or at a police station. Pre-booking diversion has been implemented through a number of models (Steadman et al., 2001). The "Memphis model" has been used widely (Cowell et al., 2004) and has been adapted by Bexar County; it involves the use of Crisis Intervention Teams (CITs) of specially trained police officers.

Post-booking diversion diverts people after formal booking and before sentencing. The models of post-booking vary by point in the adjudication process at which diversion occurs

and the role and intensity of specific resources (Broner et al., 2004; Munetz and Griffin, 2006).

Aside from the two types of diversion, specific programs are defined by characteristics of the target population and the activities used to conduct the diversion. The target population depends on a combination of the severity of the offense, criminal record, presenting behavioral symptoms, and medical history (Broner et al., 2004; Broner, Mayrl, and Landsberg, 2005; Steadman, Cocozza, and Veysey, 1999). Programs most commonly target people with serious mental illness (often comprising schizophrenia, major depression, and bipolar disorder) and a low-level nonviolent offense (e.g., a misdemeanor). The literature documents considerable variations in the program eligibility conditions and the characteristics of the population actually served. For a nationwide select sample of programs, Lattimore et al. (2003) found poorer functioning and more severe substance use among people served by post-booking programs than among people served by pre-booking programs. Moreover, recent research suggests that the demographic and criminal characteristics of the diverted population differ from the general detainee population. Naples et al. (2007) argue that the decision process for jail diversion programs may lead to the acceptance of a disproportionate number of women, whites, those who are older, and those with nonviolent and nonfelony offenses compared with the general detainee population.

Three activities are common to most programs: screening, assessment, and negotiation between criminal justice and the treatment systems for a diversion disposition (Steadman, Barbera, and Dennis, 1994). These activities have evolved over time to distinguish diversion from standard criminal justice processes; examples include a centralized drop-off location for police diversion and a mental health docket for a court program (Broner, Borum, and Gawley, 2002; Lattimore et al., 2003). Programs have also expanded to target felony-level offenders and have adapted drug court and supervision models to address those with co-occurring mental and addictive disorders (Broner et al., 2003). Steadman et al. (1995) defined the specific practices required for a successful diversion program as integrated services, key agency meetings, boundary spanners, strong leadership, early identification, and appropriately qualified case management.

Those eligible for the Bexar County program have a class B misdemeanor or less and have been assessed with one or more of three diagnoses: major depression, schizophrenia (including schizoaffective disorder), or bipolar disorder. Bexar County offers both pre-booking and post-booking diversion. This fact alone makes the Bexar County program stand out among the many programs nationwide, which typically offer only one of the two types. Bexar County offers pre-booking diversion through specially trained peace officers. The county also offers two forms of post-booking diversion—via a bond (typically at arraignment) and via a mental health docket.

1.3 The Importance of Examining Resource Use

Because Bexar County incorporates both types of diversion, the program is more likely to divert those who need diversion. The Bexar County program thus promises many benefits. It may help transform people's lives for the better—treating their mental illness and reducing their criminal behavior—and help improve the communities in which they live.

Diversion also has a fiscal impact. By spending sufficient resources to divert a person and treat the underlying mental illness in a timely fashion, criminal justice resources may be averted later. To understand how diversion may change the use of taxpayer resources, compare Figures 1-1 and 1-2.

The study focused on three main questions:

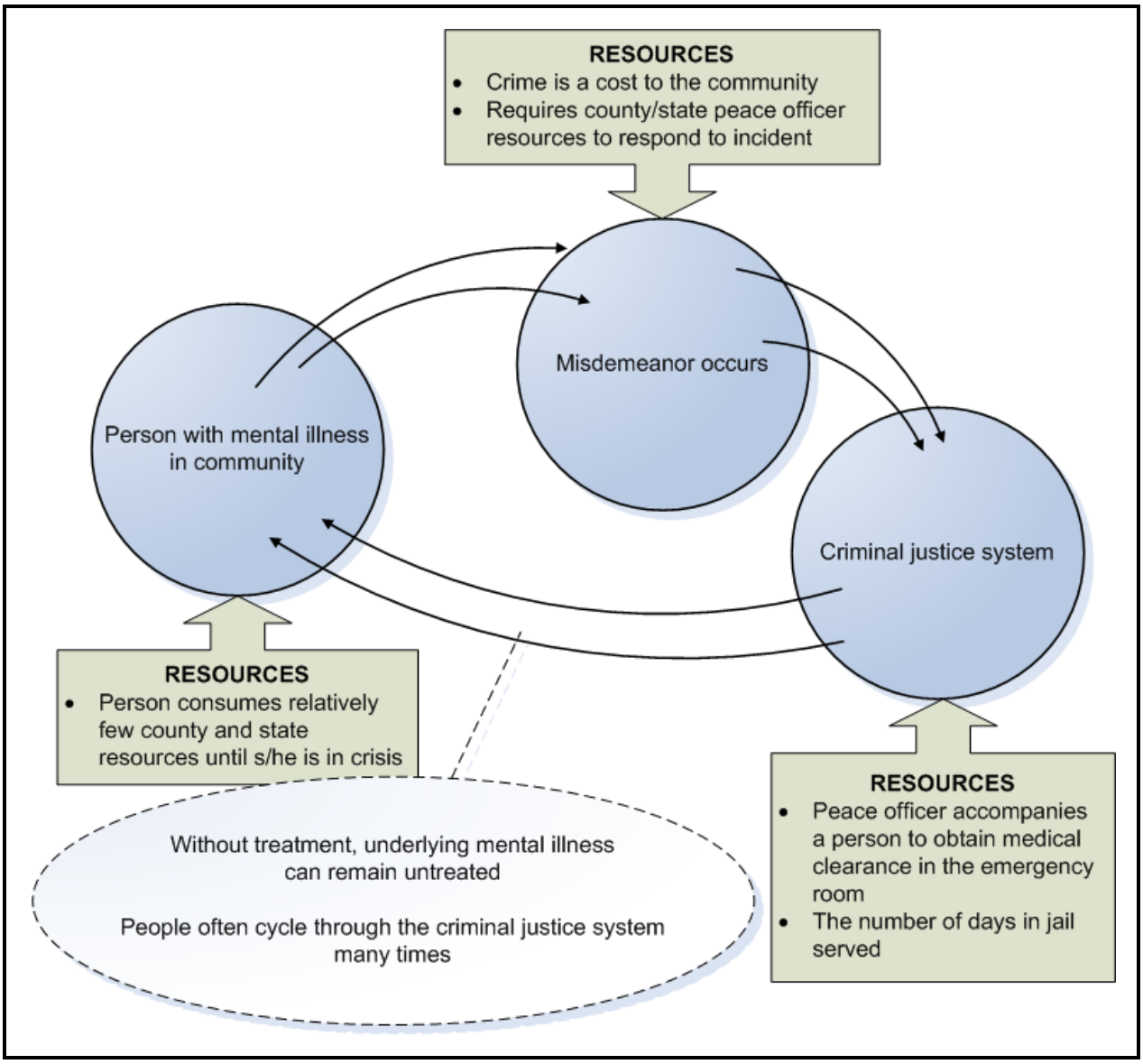
- *What does it cost to divert one person?*
- *How does diversion shift costs between the criminal justice system and the treatment system?*
- *What is the cost-effectiveness of jail diversion?*

Figure 1-1 shows that, in the absence of a diversion program, persons with mental illness cycle into and out of the criminal justice system. Someone with untreated mental illness in the community may well use fewer public resources until the illness reaches a crisis state. This worsening of behavioral symptoms may then precipitate interactions with law enforcement officers. For example, a person shouting incoherently near a storefront may be arrested for misdemeanor trespass. At that point, considerable criminal justice system resources are needed. The person is arrested, requiring peace officer resources; arraigned and adjudicated, requiring court resources; frequently detained before and after judgment, requiring jail resources; and interacting with numerous other agencies that provide supervision and care. Importantly, people who do not receive the necessary mental health treatment may cycle back through the criminal justice system after being released into the community.

Figure 1-2 shows that, by providing access to needed mental health care, diversion can break the repeating cycle of a person with mental illness moving between the community and the criminal justice system. In Bexar County, efforts are made to focus diversion treatment resources on a person up front. Diversion is intended to intercept a person at the point of arrest or at booking and divert that person into treatment; thus, many scarce criminal justice resources are conserved for other uses. By treating the person's illness appropriately, the chances of the person cycling back through the criminal justice system and requiring further criminal justice resources may be reduced.

Figure 1-1. How Resources Are Spent Without Jail Diversion

In the absence of diversion, people often cycle between the criminal justice system and the community.

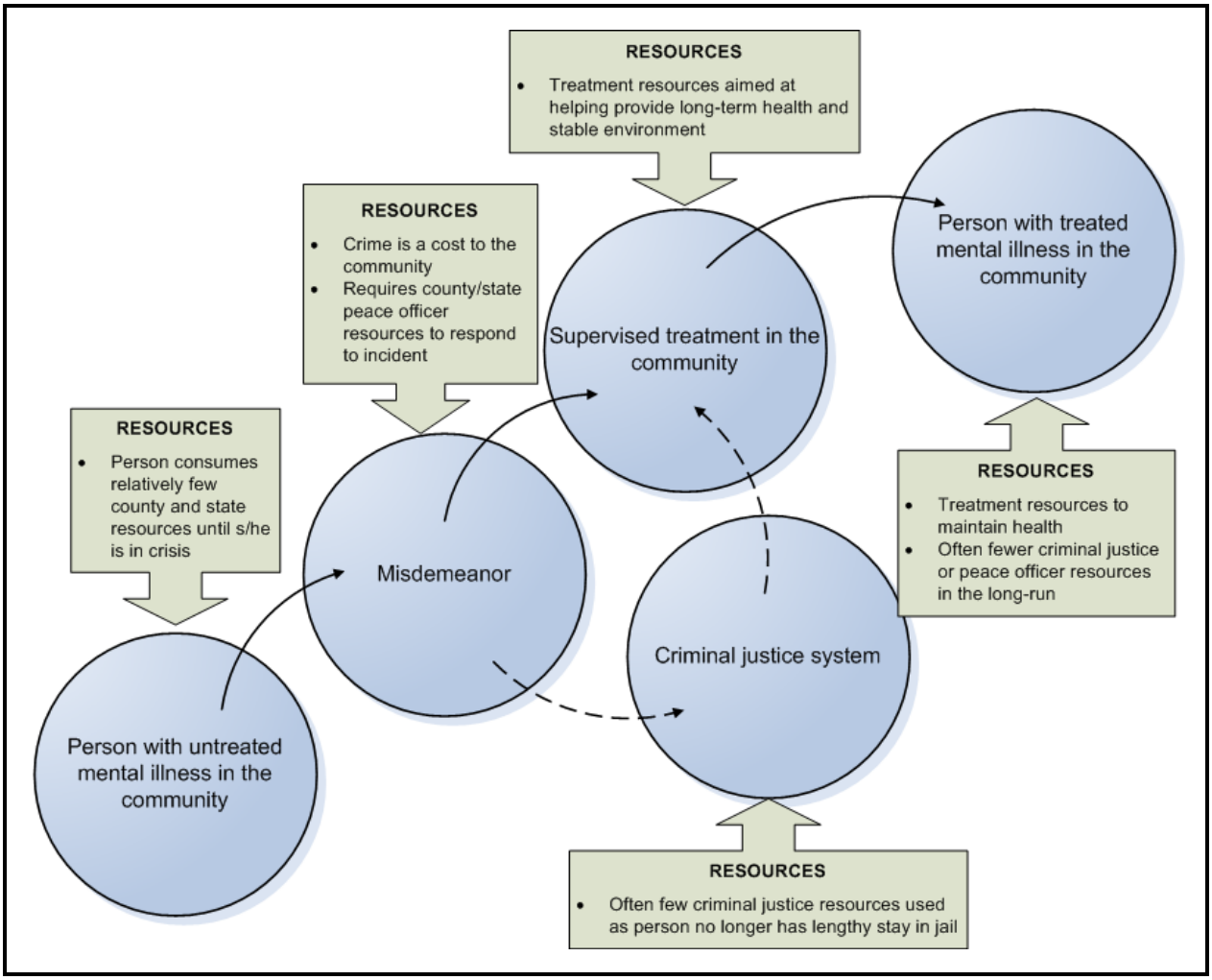


This report presents the results of a study funded by Bexar County, Texas, to assess the cost of county resources used in diverting people with mental illness from unnecessary incarceration. The study focused on three main questions:

- What does it cost to divert one person?
- How does diversion shift costs between the criminal justice system and the treatment system?
- What is the cost-effectiveness of jail diversion?

Figure 1-2. How Resources Are Spent With Jail Diversion

With diversion, fewer people may cycle between the criminal justice system and the community.



The rest of this report addresses the second of these three questions: How does diversion shift costs between the criminal justice system and the treatment system? Section 2 provides background information on jail diversion and the typical resource flow in Bexar County's program. Section 3 describes the methods, Section 4 presents results, and Section 5 describes specific policy lessons that can be drawn from this study.

2. BACKGROUND

Bexar County's jail diversion program is often acknowledged as a model both state and nationwide (Mann, 2006). Because the program contains several points of diversion in one location, whereas other programs typically only contain one point, the findings of the program's fiscal impact should have lessons for other jurisdictions (Broner et al., 2004; Steadman, Cocozza, and Veysey, 1999).

Most counties in Texas need criminal justice diversion for people with mental illness. The state has a large prison population, and a large proportion of that population likely has a mental illness. The State of Texas Legislative Budget Board (2005) recently estimated that more than 154,000 people would be incarcerated in Texas during the 2006–2007 biennium and that this number would increase to more than 165,000 by the end of fiscal year 2010. National data from the Bureau of Justice Statistics indicate that 56% of state prisoners and 64% of local jail inmates were found to have a mental health problem (U.S. Department of Justice, 2006). These national estimates of the prevalence of mental health needs in prison and jail are likely reflected in Texas.

If it were feasible to treat a sizeable portion of people with mental health treatment needs in the community instead of incarcerating them, taxpayers could potentially benefit. However, there is little reliable and detailed research to document the likely fiscal impacts. Of the available data to date, estimates suggest that the cost of sending an offender to residential treatment is less than one-fourth that of sending a prisoner to jail. It costs $44.00 per day for the Texas Department of Criminal Justice to confine an adult, whereas it costs $7.75 per day for a patient to be treated for mental illness by the Texas Department of Mental Health and Retardation (Alvarado, 2006). Moreover, it costs $200 per day to house a prisoner with mental illness in a separate unit with increased supervision and medical care.

Legislators and providers at the state and local levels understand the need for diversion. For example, a recent Texas Senate bill (S.B. 909) appropriated $5 million to fund pre-trial diversion activities. The same bill included other mandates, such as mandatory studies of recidivism and prison-alternative programs. For decision makers to determine how scarce public resources should be used, a necessary first step is to understand the lessons from the Bexar County jail diversion program.

2.1 The Need for Jail Diversion in Bexar County

The diversion program in Bexar County serves a large population, the majority of which are Hispanic. As of 2002, 1.4 million people lived in Bexar County and just over 56% identified themselves as Hispanic (Wilson et al., 2004). Moreover, the population of the county and city has outpaced the general U.S. population. Census data show that, between 1990 and

2000, the populations of the city of San Antonio and Bexar County grew by 22.3% and 17.5%, respectively. By comparison, the U.S. population increased 13.1%.

The need for jail diversion in Bexar County has been heightened by the rapid population growth in the county. As the population grows, so does the number of people with mental illness requiring treatment and the number of offenses committed in the area. The growth of any area requires a commensurate expansion of public infrastructure, including buildings supporting the criminal justice system, such as the county jail. Since the Bexar County Adult Detention Facility was built in 1988, the county population has grown by approximately 370,000 people. In a recent interview with local media, the county jail administrator, Dennis McKnight, said that the jail resources were "beyond critical" (ABC13 News, 2007). He also noted that the county could either build a new facility or consider a "complete change in thinking as to who gets arrested and why … because frankly, I've pulled all the rabbits out of my hat." Estimates suggest that a large proportion of that population needs mental health treatment: 14% have severe mental illness and 75% of the severely ill have co-occurring substance abuse problems (Mann, 2006). Dee Wilson, director of the Texas Correctional Office on Offenders with Medical or Mental Impairments, noted in 2005 that the proportion of mentally ill persons is typically three times higher in county jails than it is in the general population (Sprow, 2005).

Jail diversion is needed not only to reduce the number of inmates in overcrowded facilities but also because people with mental illness often require a disproportionately large share of resources. Those resources may include increased monitoring or supervision, which require appropriately trained staff; diagnosis, therapy, and medication, which require qualified health care providers and pharmacy services; and, in some cases, separation from the jail's general population.[1] A 2004 article in *County* magazine documents how failing to appropriately treat persons with mental illness can place unnecessary strain on the people in need of treatment and the agencies in the criminal justice system with which these people interact (Smith, 2004).

2.2 The Evolution of the Jail Diversion Program

As part of developing a social safety net, Bexar County has created a jail diversion program that explicitly addresses the frequent interaction between people with mental illness and the criminal justice system. In 2000, the program had little formal structure, offered a rudimentary diversion only once someone had been booked, and provided no way for peace officers to preemptively divert people before booking them (Sprow, 2005). Today, the program has become a state and national example. Program administrators routinely

[1] Diverting persons with mental illness from jail also may help prevent the county from being exposed to liability lawsuits. These lawsuits are likely infrequent, but they can be expensive. For example, in 2006, Bexar County paid $82,500 to a person with schizophrenia who claimed he was beaten and forcibly shaved in jail (*San Antonio Express-News*, 2006).

provide advice to representatives from other jurisdictions that are looking to begin new programs or strengthen existing ones.

2.2.1 Removing Barriers

The vision for the current jail diversion program in Bexar County began with Mr. Leon Evans, president and chief executive officer of the Center for Health Care Services (CHCS). He identified the need to establish safety net services for people with mental illness who lack the resources for treatment. In September 2000, Bexar County hired Mr. Gilbert Gonzales to head the jail diversion initiative. Before jail diversion could be implemented successfully, it was necessary to identify and address why jail diversion was not already in place. The initial assessment by the county found that jail diversion could not exist without a strong crisis care system. Establishing crisis care, in turn, required removing two barriers. The first barrier was inadequate collaboration between key treatment, law enforcement, and criminal justice stakeholders. There was little collaboration between the county CHCS, the state-run San Antonio Hospital, and the University Health System (UHS) providers. Moreover, these treatment providers had no formal arrangements with either the city police or the county sheriffs. Thus, people with mental illness who were arrested almost always went to jail.

A second barrier was the limited access to crisis intake. Events in the county that could be addressed between 8:30 a.m. and 4:30 p.m. on a weekday had an intake at a downtown facility. However, events at all other times had to be processed at the San Antonio State Hospital, which is about 10 miles south of the center of town. Thus, even if the stakeholders had collaborated to divert persons with mental illness from jail, the necessary crisis care infrastructure was not in place to route a sufficient proportion of clients to the appropriate treatment. Successful jail diversion requires more than merely removing people from jail who do not belong there; it requires public systems in the community to appropriately address the needs of those diverted from jail.

2.2.2 Stakeholder Collaboration

On April 18, 2002, the county initiated a collaboration between the stakeholders and started to remove the barriers to diversion. Critical to the program's success was that the stakeholders had sufficient authority to affect the direction of resources. For example, Captain Harry Griffin was delegated the authority by Chief Ortiz of the San Antonio Police Department to commit law enforcement resources to the jail diversion effort. Before any significant resources were allocated to diversion, a process for creating and maintaining a program was developed. Two elements were deemed critical to the process: defining products to deliver (with task leaders and deadlines) and consolidating established data systems to assess performance.

Despite its focus on mental health status, until early 2002, the roster for the mental health docket was formed without consulting mental health providers. Thus, a natural first step was to create formal linkages with mental health providers to help identify, assess, and place people on that docket.

As the process and direction for creating and maintaining a diversion program was finalized, resources began to be incorporated into the program. The first component of the new jail diversion program was to modify the existing mental health docket, which deals with people identified as being eligible for specific services because of a mental health condition.

Three milestone events that followed the modification of the mental health docket gave the Bexar County diversion program its current shape. First, CHCS gradually established formal links with Pre-Trial Services (PTS). These links led to innovations in the conditions and supervision of defendants being released on bond. This bond helps ensure the availability of diversion for people who have been booked but have not yet progressed through the criminal justice adjudication as far as the mental health docket. The working relationship between the two organizations also ensures that mental health specialists provide regular and systematic input to PTS' tasks of screening defendants' criminal histories and providing supervision.

Second, the county used funds to make the central office that assessed and helped treat persons' mental health conditions available 24 hours a day, 7 days a week. Previously, the central office had been open only during regular office hours on weekdays. Any off-hours needs were handled at other, less convenient locations. The greater convenience for law enforcement officers who had persons with mental health conditions in their custody led to the third event: the formation of the pre-booking diversion program in June 2003.

Pre-booking diversion requires several stakeholders to coordinate and commit resources, especially health care providers and law enforcement (Broner et al., 2004; Steadman et al., 2001). In the case of Bexar County, CHCS and UHS worked together to help ensure continuous care. In addition, CHCS employees worked with the two law enforcement agencies in the area—the Bexar County Sheriff's Office and the San Antonio Police Department—to provide front-end training and to ensure the buy-in needed for peace officers to use the pre-booking diversion in the first place.

2.2.3 Crisis Care

The program in Bexar County has grown and evolved significantly since the formation of the pre-booking program. In June 2003, the federal Substance Abuse and Mental Health Services Administration (SAMHSA) awarded the county grant funds to expand its capacity. In 2004, the state of Texas gave discretionary funds to Bexar County to expand and promote the program. (The discretionary funds are part of a rebate agreement between the state Medicaid authority and the pharmaceutical company AstraZeneca.) These and other funds have helped springboard existing and sustained jail diversion activities.

The most recent development has been the establishment, in August 2005, of a crisis care center (CCC). Crisis care facilities are in the frontline of assessing, diverting, and treating people with mental illness and continue to be recognized as a critical component in any successful diversion program. The Texas legislature recently provided more than $80 million for the 2007–2008 biennium to support much-needed crisis care throughout the state (Texas Department of State Health Services, 2007).

The CCC is the drop-off and processing point for persons potentially eligible for pre-booking diversion. Importantly, this center provides a one-stop shop for mental and physical health screening, assessment, and treatment: It provides both mental health services and medical facilities in one place.

Documented wait times are, on average, almost 12 hours at the emergency room. Using the CCC instead to obtain medical clearance promises to greatly reduce the law enforcement resources required.

Before the CCC, if a person in custody with evident need for mental health treatment also needed medical care, medical treatment would have to be sought at the nearest emergency room. The person could not continue through law enforcement processing until medical clearance had been obtained. The peace officer would be required to escort and wait for that person to receive treatment. Documented wait times are, on average, almost 12 hours at the emergency room (Hnatow, 2007); thus, obtaining medical clearance was frustrating and expensive. By offering the means to obtain medical clearance on site, the CCC promises to greatly reduce the law enforcement resources required both for jail diversion and for the standard processing of people with medical needs at the time of arrest.

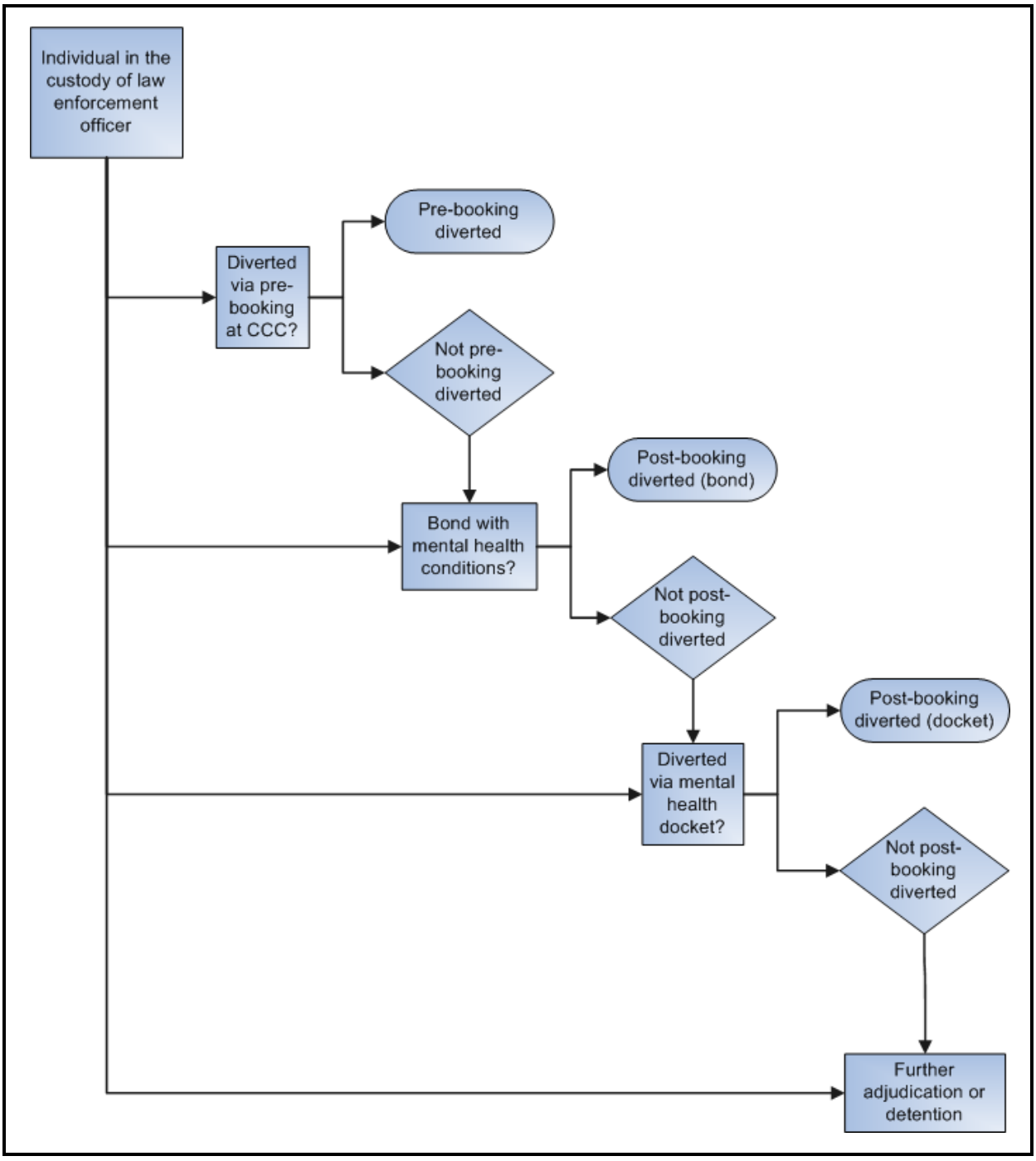
2.3 Diversion Today in Bexar County

2.3.1 Overview

The Bexar County program has three points of diversion that are interconnected and sequential. Figure 2-1 provides an overview and shows how each of these points is sequenced to identify and divert people who may be eligible for diversion. At the first point—pre-booking diversion—a peace officer may transfer the custody of a person at the CCC. The next two possible points at which a person may be diverted occur once the person is booked and screened and assessed for the adjudication process. The second possible point of diversion is early in the adjudication process, whereby the person may be released on commercial bond with mental health conditions. If the bond is not granted or the person is not eligible for a bond, the third and final point of diversion occurs in court, via a mental health docket.

Figure 2-1. The Three Diversion Points in Bexar County

With three sequential points of diversion, the jail diversion program helps ensure that people who should be diverted are diverted.



Note: CCC = crisis care center.

The eligibility conditions for diversion are the same across all three points of diversion. A person may be eligible for diversion only if both the diagnostic and offense criteria are met. The diagnostic criteria allow for someone to be diverted only if at least one of three diagnoses is made at screening/assessment:

- bipolar disorder
- major depression
- schizophrenia (including schizoaffective disorder)

Importantly, several other conditions are currently screened out of diversion (such as many behavioral disorders). Additionally, suicidal behavior would route someone to appropriate care but also would make that person ineligible for the formal diversion program.

In addition to the diagnostic criteria, a person also must have been charged with an offense that is a class B misdemeanor or lower (such as a class C misdemeanor). Someone accused of a more serious (class A) misdemeanor or a felony may not be diverted. For example, as long as the diagnostic criteria are met, someone accused of criminal trespass on nondomicile property (usually a class B misdemeanor) may be diverted. On the other hand, someone accused of unlawfully carrying a weapon (class A misdemeanor) or burglary of a building (felony) may not be diverted.

2.3.2 Point of Diversion 1: Pre-Booking Diversion

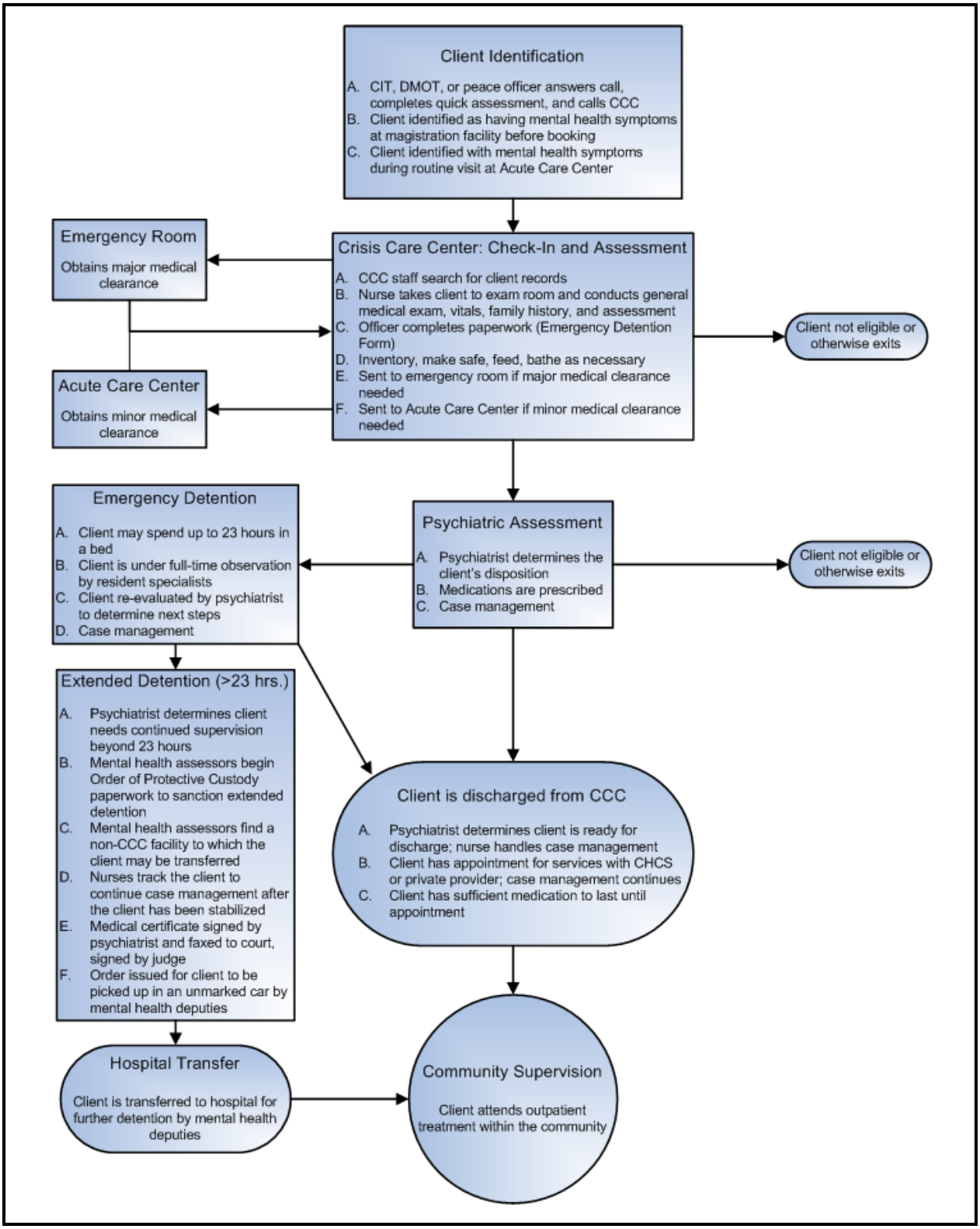
To understand how resources are used in the jail diversion program, we describe each of the points of diversion in greater detail. Figure 2-2 describes the resources that may be required to help process a person through pre-booking diversion.

The first set of resources is spent identifying the client. Pre-booking diversion relies on dispatch calling a police officer who is specially trained as part of a CIT to intervene with a suspect exhibiting behavioral problems. The CIT training is provided by CHCS and requires a full week of police officer attendance. Additionally, the program has a Deputy Mobile Outreach Team in which trained county sheriff officers may be accompanied by mental health professionals. The training and coordination require significant law enforcement and service provider resources.

After placing the client in custody, the officer takes the client to be assessed for pre-booking diversion at the CCC. Additional law enforcement resources may be needed to accompany the client, if the client is not eligible for diversion, or to the emergency room, in the case of a medical emergency. Once the officer brings the client to the CCC, the bulk of the resources used to assess, detain, and treat the client are incurred by CHCS. These resources include case management time, psychiatric assessment, and any time spent monitoring the client on site.

Figure 2-2. The Pre-Booking Diversion Process

Specially trained peace officers place the client in custody and transfer the person to the CCC.



Note: CCC = crisis care center; CHCS = Bexar County's Center for Health Care Services; CIT = Crisis Intervention Team; DMOT = Deputy Mobile Outreach Team.

2.3.3 Point of Diversion 2: Post-Booking Bond

Once a person is booked (usually within 4 hours and almost always within 24 hours after arrest), the next potential point of diversion is to be offered a commercial bond with mental health conditions (Figure 2-3). People are booked at the magistrate's facility (the "Mag"), arraigned in front of a magistrate judge at the Mag, and then transferred to the county jail, which is a separate building. Clients are identified as being eligible for diversion either at the Mag or, failing that pre-screen, at the jail. At both facilities, PTS works with nurses to identify those eligible.

PTS resources are used to assign a caseworker, clinician, and pre-trial bond officer (PBO), as needed. These resources are drawn upon throughout the process, from identifying the client to processing the paperwork to adjudicating or resolving the case. Court resources are used in arraigning the client, reviewing the paperwork for bond application and conducting any additional interviews with the client, and granting or declining the bond. Finally, jail resources are used to detain and transport the client during this process.

2.3.4 Point of Diversion 3: Post-Booking Mental Health Docket

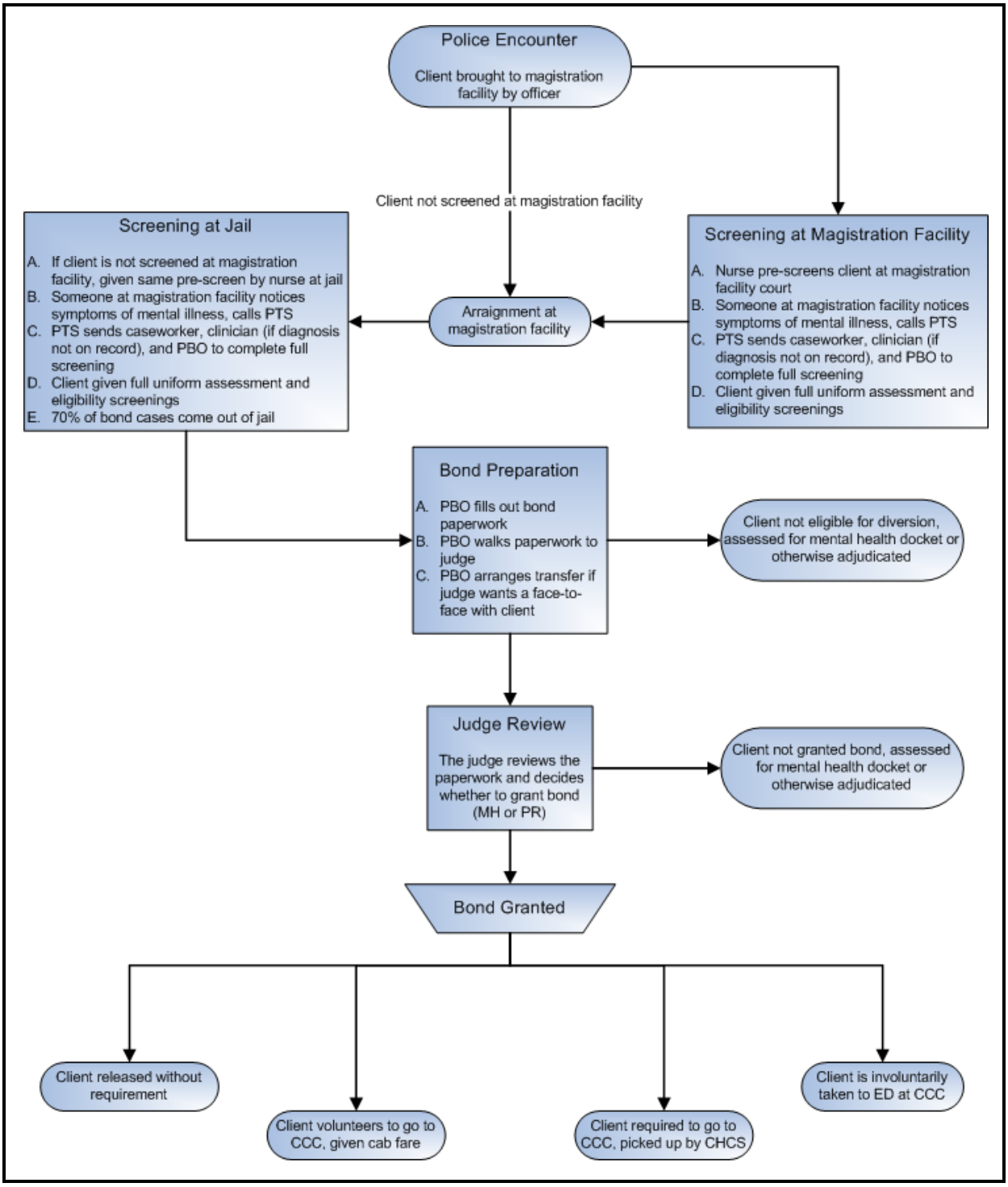
The mental health docket is one of the original components of diversion. It represents the third and final point at which someone may be diverted from jail. The mental health docket occurs once a week and focuses solely on persons with mental illness.

Figure 2-4 describes how resources are used to identify clients and assess their eligibility for diversion via the docket. A client is identified in three main ways. First, a family member or friend may notify the jail that the client's medical history indicates mental illness. Second, the client may have been previously identified as eligible for release on bond with mental health conditions but then either refused an offer of release on bond or was denied release on bond. Third, the client may be identified through ongoing monitoring of the Client Assessment Registry (CARE) Match database. The CARE data come from the Texas Department of Health and Human Services Commission and contain identifiers for everyone who has recently used a community mental health center in the state. These data are matched to other databases by jail staff to help identify potential clients. A population monitor employed by Bexar County reviews daily reports from the jail staff to determine whether clients require further screening in order to determine eligibility. Thus, identifying clients draws on significant jail and other county resources.

In addition to court resources used to adjudicate the client on the docket, county resources are frequently used to provide additional diagnostic information. Once diverted, the client is referred to a community treatment program, which usually is provided by CHCS. These programs include Omega, Manos, and outpatient care at Palo Alto. The Genesis program, for example, provides outpatient intensive case management and is funded by the Texas Correctional Office on Offenders with Medical or Mental Impairments. Typically, Genesis clients receive services for between 12 and 18 months.

Figure 2-3. The Post-Booking Bond Diversion Process

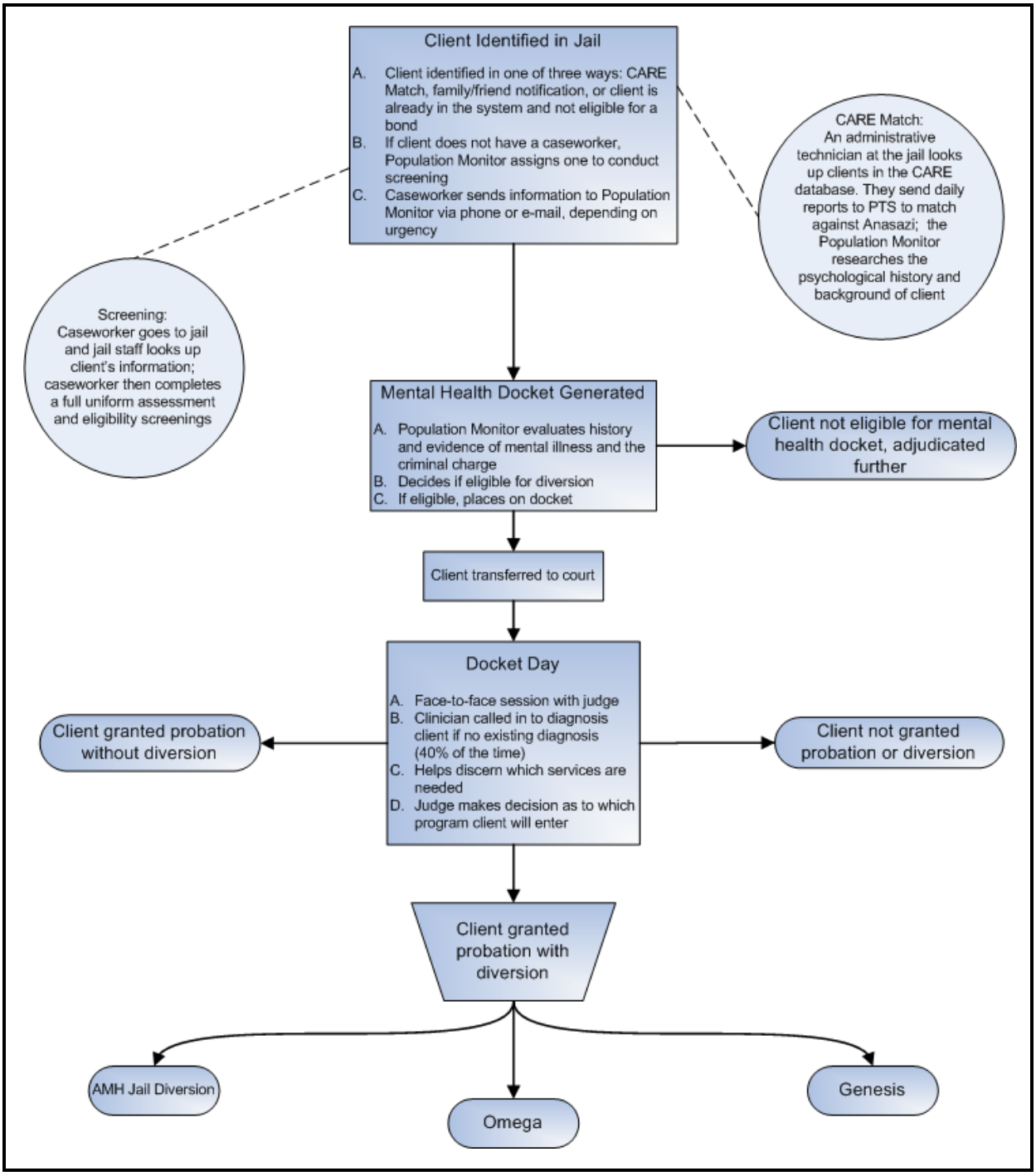
Clients are adjudicated for release on a commercial bond with mental health conditions.



Note: CCC = crisis care center; CHCS = Bexar County's Center for Health Care Services; ED = emergency detention; MH = mental health; PBO = pre-trial bond officer; PR = personal recognizance; PTS = Pre-Trial Services.

Figure 2-4. The Post-Booking Mental Health Docket Diversion Process

The mental health docket is a weekly docket for persons identified with mental illness.



Note: AMH = Adult Mental Health; CARE = Client Assessment Registry; PTS = Pre-Trial Services.

2.4 How Lessons from Bexar County Can Inform Others

The Bexar County jail diversion program continues to be recognized by stakeholders in other jurisdictions as a successful model that provides lessons for how to implement and sustain diversion. A snapshot of program administrators' calendars for a year shows many meetings with representatives from Texas and other states, all eager to learn about Bexar County's program. For other counties in Texas, this consultative role has been critical and immediate. In the 2003/2004 legislative session, Texas passed House Bill 2292, which consolidated many health care provider agencies statewide and legislated the creation of diversion programs in every Texas county. To date, almost all other counties' programs are in their infancy.

Decision makers in other Texas counties look to Bexar County to provide informal technical assistance and stand to gain from any study examining the resource implications of its jail diversion program.

Lessons from the Bexar County program also will inform jurisdictions in other states and the broader research literature for two main reasons. First, whereas most other jurisdictions offer one or two points of diversion, the Bexar County program offers three. Through its funding and evaluation of targeted capacity expansion grants, SAMHSA continues to gather vital information on the scope and success of other programs. The evidence from those SAMHSA initiatives suggests that the Bexar County program is unusual because it provides a rich set of resources at each of the three points of diversion.

A second reason that Bexar County's program will contribute to the broader research is that the current peer-reviewed literature provides limited reliable evidence on the costs and resource implications of diversion. Perhaps the most comprehensive study to date, Cowell, Broner, and Dupont (2004), examined programs in four jurisdictions. The authors found mixed evidence in favor of jail diversion and noted that further research was needed. Thus, decision makers can look to Bexar County's program for technical assistance and data on the resource implications of jail diversion.

3. METHODS

For Objective 2, we estimated the association between the Bexar County jail diversion program and three broad categories of cost: criminal justice, treatment, and the combination of criminal justice and treatment. As for the larger cost study, the resources examined here are those controlled by Bexar County and the city of San Antonio.

The study was designed to provide the most reliable information for policy makers given the data available. Administrative data on a sample of diverted people were used to track their specific resource use in the treatment and criminal justice systems before and after diversion. The analyses also included similar data on a comparison sample of similar people who had not been diverted initially.

An important feature of the study was to maintain the confidentiality of the persons on whom the data were obtained, regardless of the agency providing the data. To do so, RTI worked with CHCS and with its institutional review board (IRB) to develop strict procedures. Before RTI obtained any data on any person, CHCS would first receive the data and replace all individual identifiers with a unique encrypted study number (ESN). The data containing the ESN were then passed to RTI. CHCS were the sole repository of the crosswalk between the ESN and any meaningful identifying information (such as a person's name). This procedure ensured that RTI never handled data containing information that could be used to identify individual people. This also helped CHCS develop procedures to continue to evaluate its program beyond the study.

3.1 Analysis Samples

To construct the analytic data set, we first constructed four samples of data. Two of the samples comprised people who had experienced pre-booking diversion and people who had experienced post-booking diversion. Additionally, two comparison samples were constructed, one to compare with the pre-booking sample and the other to compare with the post-booking sample.[2] People with multiple diversion events were assigned exclusively to one sample based on their first diversion event. For example, a person may have been diverted via pre-booking at one point in time and then a year later diverted via post-booking diversion; this person would have been assigned to the pre-booking diversion sample in this analysis. Table 3-1 summarizes the number of observations and span of dates for each of the samples.

[2] To summarize the eligibility conditions detailed in Section 2, a person may be eligible for diversion only if both the diagnostic and offense criteria are met. The diagnostic criteria are bipolar disorder, major depression, or schizophrenia (including schizoaffective disorder). The offense criteria are a class B misdemeanor or lower (such as a class C misdemeanor). Someone accused of a more serious (class A) misdemeanor or a felony may not be diverted.

Table 3-1. Summary of Analysis Periods and Observations per Diversion Group

Diversion Group	Observation	Analysis Period
Pre-booking	N = 121	Sept. 1, 2003 to June 1, 2005
Pre-booking comparison	N = 347	Feb. 1, 2001 to Sept. 1, 2001
Post-booking	N = 381	Sept. 1, 2003 to June 1, 2005
Post-booking comparison	N = 105	Sept. 1, 2003 to June 1, 2005

As shown in Table 3-1, we identified the pre-booking diversion sample from CHCS records. To form this sample, RTI worked with CHCS to select all people who had been diverted via pre-booking between September 1, 2003, and June 1, 2005. The beginning of that sample window, September 1, 2003, is the date immediately following full implementation of the diversion program. As noted in Section 2, up to this point in time, Bexar County had been building its diversion program for 2 years. Until this date, some form of post-booking diversion had existed, but very little pre-booking diversion had taken place. The end of the sample window, June 1, 2005, allowed the analysis to track the service use and costs for each person for a period of time (24 months) that was sufficiently long for the results to provide meaningful guidance to policy makers. Studies of this kind typically follow people for at least 1 year. Because some jurisdictions place restrictions on those diverted for some months after the potential point of diversion, data on people up to 2 years after the potential point of diversion ensure a sufficiently long follow-up period. This sample comprised 121 people.

The comparison sample for pre-booking was created to be as close a match as possible to those actually diverted via pre-booking diversion. The sample was drawn from the February 1, 2001, to September 1, 2001, period, which is the time immediately preceding the date that Bexar County hired someone to head a jail diversion effort and began building its program. As shown in Table 3-1, the sample was identified using inputs to CARE. Information on misdemeanor arrests were matched to information on mental health diagnoses to identify occurrences of misdemeanor arrests (class B or C) for persons who had a recent diagnosis of one of three mental illnesses: bipolar disorder, major depression, or schizophrenia. Thus, people in the pre-booking comparison group can be thought of as those who would have been diverted in Bexar County had a formal diversion program existed at the time. This sample comprised 347 people.

The post-booking sample comprised all those who were diverted via either post-booking route (bond or docket) between September 1, 2003, and June 1, 2005. For the main analyses, the two types of post-booking samples were combined so that the sample contained a sufficient number of observations for statistically reliable and precise estimates.

That the data contain information on each person for 2 years after the potential point of diversion is particularly important for this sample because, unlike pre-booking diversion, post-booking diversion provides a program of services that must be completed for the person to be released from criminal justice oversight. Typically, this program of services lasts 12 months and sometimes up to 18 months. Therefore, to provide useful guidance on how costs change after completing diversion requires data for more than 18 months after the initial potential point of diversion. This sample comprised 381 people.

The post-booking comparison sample comprised those who were offered the diversion program but refused it. Anecdotal evidence suggests that those who refused diversion were acting on the specific advice of the public defense attorney. As noted above, post-booking diversion carries with it treatment requirements for full compliance. Clients in jail weigh the perceived burden of the treatment requirements against the expected disposition and time remaining in detention or supervision. Given the lack of reliable data on the motivation behind the decision to refuse diversion, we speculate that some combination of four main factors come into play: (1) the person expects that the treatment requirements will be too burdensome, (2) the person expects a favorable disposition at adjudication, (3) the person has a short remaining period of detention and supervision, and/or (4) the person believes that that the conditions of supervision or restitution in the absence of diversion would be less burdensome. This sample comprised 105 people.

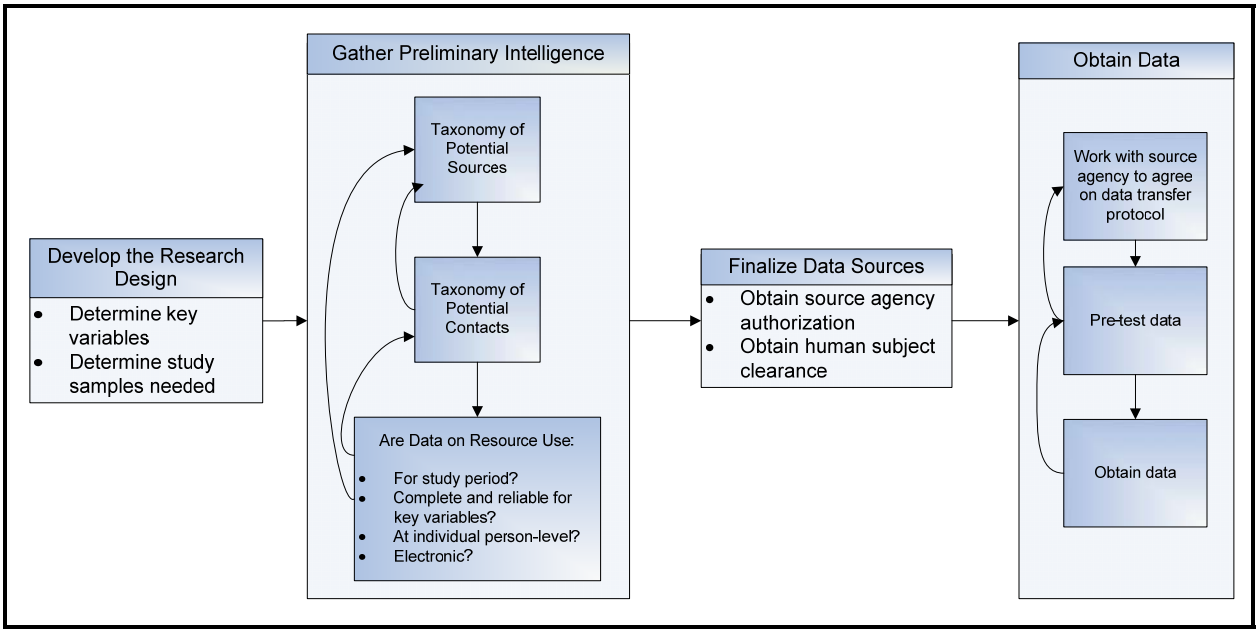
3.2 Data Acquisition Process

Data collection for this study followed the process outlined in Figure 3-1. We first outlined a research design to determine key analytic variables and the study samples. We then gathered preliminary intelligence on the data gathered, which involved several iterative steps. A taxonomy of potential data sources is a comprehensive record of all data types and their sources. Compiling this taxonomy required initial discussions with data contacts. Once we knew which data were obtainable, the necessary agency authorizations were obtained and any additional human subjects concerns were addressed via the RTI and UHS IRBs. The data met the criteria for a Limited Data Set for the purposes of research under Health Insurance Portability and Accountability Act (HIPAA) requirements. In addition to meeting other criteria, the data used by RTI contained no identifying information.

To obtain the data, RTI worked with CHCS and each agency to agree on a data transfer protocol. Frequently, subsets of the data were pre-tested before full files of the data were transferred to assess key fields of the data for completeness and reliability. Based on these pre-tests, and as needed, we then revised the transfer protocols.

Figure 3-1. The Data Acquisition Process

The process contains several iterative steps.



3.3 Data Sources

For each person, we obtained comprehensive and detailed data for the treatment and criminal justice systems that were funded by Bexar County and the city of San Antonio. Additionally, these detailed event data were required for the full period of analysis, from September 1, 2003, to June 1, 2005, for the pre-booking, post-booking, and post-booking comparison samples, and from February 1, 2001, to September 1, 2001, for the pre-booking comparison sample.

The data on resource use contain two main elements: the quantity of the resource used (*Q*) and its unit price (*P*). Table 3-2 summarizes the data sources and methods used to obtain the *P* and *Q* data for each of the major cost domains, which are used to categorize the major resource stakeholders in Bexar County and San Antonio.

Resource use in the criminal justice system—comprising arrests, court appearances, and days in jail—is largely drawn from Bexar County Information Services (BCIS). To estimate the value of those resources, we used a combination of existing estimates and a series of semistructured stakeholder interviews.

Table 3-2. Data Source Summary

Detailed data for all relevant stakeholders help ensure that estimates of the value of resources are accurate and comprehensive.

Cost Domain	Agency/Type of Cost	*P*[a]	*Q*[b]
Law enforcement	San Antonio Police Department, Bexar County Sheriff's Office	Semistructured stakeholder interviews	Bexar County Information Services
Court and community supervision	Municipal and county court	Semistructured stakeholder interviews	Bexar County Information Services
Court and community supervision	Pre-Trial Services (PTS)	Semistructured stakeholder interviews; PTS records	Bexar County Information Services
Court and community supervision	Defense and prosecution	Semistructured stakeholder interviews; existing estimates	Bexar County Information Services
Jail	Bexar County jail	Semistructured stakeholder interviews; existing estimates	Bexar County Information Services
Treatment	Center for Health Care Services (CHCS)	Anasazi data system	Anasazi data system
Treatment	Medication	CHCS; medications were dispensed by University Health System and a private pharmacy	CHCS; medications were dispensed by University Health System and a private pharmacy
Treatment	University Health System	University Health System data system	University Health System data system

[a] *P* is price per resource unit (e.g., the cost of a counseling session).

[b] *Q* is the number of resource units used (e.g., the number of counseling sessions).

Resource use in the treatment system came from three separate sources. The Anasazi data system provided information on use and cost of services from CHCS.[3] Medication information came from CHCS and the public system of hospitals, UHS, and a private pharmacy with an arrangement to provide medications to CHCS clients. UHS also provided all hospital-related claims, both for inpatient stays and services at outpatient clinics. Because these treatment providers bill for services, the data systems provide rich detail on utilization and on the price per unit.

[3] CHCS is the main access point of mental health care for those diverted and is the local community mental health provider.

3.4 Key Measures

3.4.1 Cost Measures

The analyses used cost measures as dependent variables. Because these measures covered the same periods and were conceptually comparable, we were able to conduct analyses both at the aggregate level—in which all costs are combined together—and at the more detailed level for specific types of cost (e.g., UHS treatment costs). For analytic purposes, these costs were summed over 6-month blocks of time around the potential point of diversion. For the pre-booking comparison sample, the potential point of diversion is the arrest that would have qualified the person for diversion, had diversion existed at the time. For the post-booking comparison sample, the potential point of diversion is the time at which diversion was offered. The data thus contain information on the cost for each person for the periods from 6 months before to the actual potential point of diversion, from the actual potential point of diversion to 6 months after the potential point of diversion, and so on. In total, there were five periods of 6 months each in the analysis.

For each of those periods and for each person, we created the following measures of costs at a broader aggregate level:

- all costs for all agencies combined, including treatment and criminal justice agencies
- treatment costs
- criminal justice costs

Within treatment costs, the main measures are for

- CHCS costs,
- medication costs, and
- UHS costs.

Within criminal justice costs, the main measures are for

- arrest costs,
- court costs,
- jail costs, and
- criminal justice costs specifically associated with diversion.

All costs were expressed in real terms (2007 dollars) by appropriately inflating cost estimates with the Consumer Price Index (Bureau of Labor Statistics). Costs expressed in real terms allow for reliable comparisons across time.

Finally, in addition to measures of the cost within each 6-month period, we also created binary indicators for whether any specific cost had been incurred in the period. For example, we created an indicator for whether any arrest costs had been incurred in a particular period.

3.4.2 Other Measures

Other measures used for the analysis controlled for potential confounding individual characteristics (i.e., gender, age, race/ethnicity, and education). We also created a variable that measured time at risk, which was the approximate time a person was not incarcerated in the county jail during a period. This variable helped account for the fact that being detained makes a large difference in treatment access and in the probability of being arrested.

3.4.3 Assumptions Made in Creating an Analytic Data Set

Several key assumptions and specifications were made to create an analytic data set. The main assumptions were made in three cost areas: medications, incarcerations, and arrests.

3.4.3.1 Assumptions about Medication Costs

The medication data included many negative costs, with some records having a matching positive cost. The positive values that matched exactly to negative values were coded as missing to reflect an inability to decipher whether a client actually received a medication. Large positive values that had smaller matching negative values were adjusted downward by the negative value. Remaining negative values were also coded as missing.

3.4.3.2 Assumptions about Incarceration Costs

It costs $44 a day to house an inmate in a normal unit at the Bexar County Adult Detention Facility. However, this specific population is more likely to be located in a mental health unit inside the jail, which costs $200 per inmate per day. Bexar County estimates that 14% of jail inmates have severe mental illness and, with a daily population of 3,500 inmates, we assumed that 490 inmates have mental illness. For the mental health unit, the officer ratio is 1:18, meaning that 36 mental health beds are available. We then computed a weighted cost based on the chance that someone from our sample would have access to a mental health bed at any point in time: ($200 x [36/490]) + ($44 x [454/490]) = $55.47 a day.

3.4.3.3 Assumptions about Arrest Costs

The cost of an arrest episode, $2,868.75, was provided by Bexar County and adjusted to 2007 real dollars. We assumed that this cost covers the period the initial peace officer interaction through booking. For arrests in which the client did not have a diversion event, an adjudication cost was also included. Using anecdotal evidence from Bexar County, we conservatively assumed one adjudication hearing per arrest. We considered resource use to be similar to the court hearing of the mental health docket. We assumed that 59% of the

total resources used in the mental health docket are directed to a court hearing (Cowell et al., 2007). Therefore, using the medium range ($204.76), the cost of adjudication amounted to $121.81.

3.4.3.4 Assumptions about Subsequent Diversion Costs

Criminal justice costs include the costs of diversion from an earlier report (Cowell et al., 2007); the main estimates are shown in Appendix B.[4] Criminal justice costs for pre-booking diversion include peace officer interaction, and costs for post-booking diversion include activities conducted by PTS and the court.

To avoid double-counting criminal justice costs, the diversion costs exclude certain components. Both the pre-booking and post-booking samples excluded all CHCS and UHS costs from the diversion cost, and, for the post-booking sample, the cost of any arrest that led to a post-booking diversion event excluded an adjudication cost.

3.5 Analytic Approach

3.5.1 Overview

To examine cost-shifting, we examined the impact of diversion on the costs of the treatment system and on the criminal justice system, as well as on both systems combined. Following an examination of descriptive statistics, the analyses used multivariate regression techniques to examine how costs change over time for each sample; the change in costs for each diverted sample was compared with the change in costs for the appropriate comparison sample.

The analytic approach used here provides at least three advantages over the alternatives. First, comparing unadjusted mean costs between groups or over time periods may omit some key confounders, which may then greatly limit the interpretation of the results. Thus, simple means comparisons are less reliable for policy guidance.

Second, using a comparison sample provides for a stronger design than simply examining the changes in costs for a diversion sample. Diversion, by its nature, typically catches persons at particularly vulnerable moments in their lives. The associated costs of criminal justice and treatment are likely to peak around the potential point of diversion and to fall away afterward. This peak in resource use may well have happened even in the absence of diversion. Using a comparison sample allows us to control for this possibility.

A third advantage is that the groups being compared may have some group-level differences that may not be readily observed in the data; for example, the diverted may be typically more motivated to receive treatment at any given point in time. The approach used

[4] Cowell et al. (2007) presents three cost estimates: high, medium, and low. In this report, we use the medium estimate.

here controls for unobserved group-level differences that remain fixed over the time of the study.

3.5.2 Technical Specification

In this subsection, we provide details on the statistical approach used for the main analysis. We used a two-part model of costs (Jones, 2000) to test specific hypotheses, a method common in health economics. The first part of the two-part model is to examine whether any cost is incurred at all in order to explicitly account for the significant number of zero values in the data (e.g., many people in any given period do not have any medication costs). The challenge is that zero values make it difficult to find a tractable statistical distribution for costs. Modeling the zeroes separately from actual costs presents a straightforward and scientifically acceptable way to meet this challenge. The second part of the model examines costs conditional on any cost being incurred.

Separate models were estimated for three broad domains: all system costs combined, criminal justice system costs, and treatment system costs. Only those costs borne by Bexar County and the city of San Antonio were included (thus, Medicaid costs, which are borne by the state and the federal governments, were excluded). Also, for ease of interpretation, separate models were estimated for pre-booking and post-booking diversion, respectively.

Using the estimate of pre-booking treatment costs for person *i* in time *t* as an example, the first part of the model was specified as follows:

$$\begin{aligned} P(\text{Any treatment cost})_{it} = {} & \beta_1 + \beta_2.\text{prebooking}_i \times \text{time\_0to6}_{it} + \beta_3.\text{prebooking}_i \times \text{time\_6to12}_{it} \\ & + \beta_4.\text{prebooking}_i \times \text{time\_12to18}_{it} + \beta_5.\text{prebooking}_i \times \text{time\_18to24}_{it} + \beta_6.\text{prebooking}_i + \\ & \beta_7.\text{time\_0to6}_{it} + \beta_8.\text{time\_6to12}_{it} + \beta_9.\text{time\_12to18}_{it} + \beta_{10}.\text{time\_18to24}_{it} + \\ & \beta_{11}.\text{misdemnr\_hist}_i + \beta_{12}.\text{felny\_hist}_i + \boldsymbol{\Gamma}.\mathbf{X}_{it} \ , \end{aligned} \tag{3.1}$$

where

- the β terms are coefficients to be estimated;
- prebooking is a binary indicatory for a person being in the pre-booking group (taking the value zero for those in the comparison);
- time_0to6 is an indicator for the 6-month period following the potential point of diversion, and so on for the other time indicators;
- prebooking x time_ are interaction terms between the pre-booking and time_ indicators;
- misdemnr_hist and felny_hist are measures of the number of misdemeanor and felony arrests in the 12 months before the study began, respectively;
- **Γ** is a vector of coefficients; and

- **X** is a vector of demographic covariates, including gender, age, race/ethnicity, and education.

The omitted reference categories were the comparison group and the 6-month period immediately before the potential point of diversion. Time at risk was also included in models of criminal justice resource use. The estimates from the regression were expressed as odds ratios.

In Equation (3.1), the interaction terms between the pre-booking indicators and the time period indicators are the effect of diversion on costs at each time period, relative to the 6 months before the potential point of diversion. (Recall that the study contains five equal length 6-month periods from 6 months before to 24 months after the potential point of diversion.) Thus, if the log odds of $\beta_2 < 1$ (if the coefficient estimates behind the log odds indicated that $\beta_2 < 0$), then in the 6 months following the potential point of diversion, diversion would be associated with lower odds of receiving treatment.

The preferred estimation approach for the first part of the model was logistic regression, with the appropriate adjustments made for repeated observations across persons. This was implemented in Stata using a cross-sectional, time-series, generalized estimating equations approach, with an unstructured correlation matrix. In a few cases where the model estimates did not converge, simpler specifications were implemented (e.g., logistic regression controlling for clustering around the person).

The second part of the two-part model examines costs, conditional on any cost being incurred at all. The dependent variable for this second part of the model was the natural logarithm of costs. The model specification paralleled that of the first part of the two-part model, continuing the example of treatment cost for person *i* in time *t*:

$$\begin{aligned}(\text{Treatment cost}_{it} | \text{any treatment received}) = {} & \delta_1 + \delta_2.\text{prebooking}_i \times \text{time\_0to6}_{it} + \\ & \delta_3.\text{prebooking}_i \times \text{time\_6to12}_{it} + \delta_4.\text{prebooking}_i \times \text{time\_12to18}_{it} + \delta_5.\text{prebooking}_i \times \\ & \text{time\_18to24}_{it} + \delta_6.\text{prebooking}_i + \delta_7.\text{time\_0to6}_{it} + \delta_8.\text{time\_6to12}_{it} + \delta_9.\text{time\_12to18}_{it} + \\ & \delta_{10}.\text{time\_18to24}_{it} + \delta_{11}.\text{misdemnr\_hist}_i + \delta_{12}.\text{felny\_hist}_i + \boldsymbol{\Theta}.\mathbf{Z}_{it} \ , \end{aligned} \quad (3.2)$$

where

- the δ terms are coefficients to be estimated;
- prebooking is a binary indicatory for a person being in the pre-booking group (taking the value zero for those in the comparison);
- time_0to6 is an indicator for the 6 months following the potential point of diversion, and so on for the other indicators prefixed time_;
- prebooking x time_ are interaction terms between the pre-booking and time_ indicators;

- misdemnr_hist and felny_hist are measures of the number of misdemeanor and felony arrests in the 12 months before the study began, respectively;
- **Θ** is a vector of coefficients; and
- **Z** is a vector of demographic covariates, including gender, age, race/ethnicity, and education.

As in the first part of the model, the omitted reference categories are the comparison group and the 6-month period immediately before the potential point of diversion. Time at risk was also included in models of criminal justice resource use.

Cost data such as those examined in this study present a number of challenges to researchers seeking to obtain accurate predictions. The data have many people with relatively low costs but a sizeable number of people with very high costs; these features present skew in the statistical distribution, and a skewed distribution can lead to biased predictions from the model. The preferred estimation approach for the second part of the model was implemented in Stata using a cross-sectional, time–series, generalized estimating equations approach, with an unstructured correlation matrix. Following Manning et al. (2005), error terms were assumed to have a generalized gamma distribution. As with the first part of the model, whenever the model estimates did not converge, simpler specifications were implemented (e.g., panel data regression).

Once point estimates were obtained from the two-part model, the estimates from the two parts were combined to provide an estimate of the overall impact on costs. Equation (3.3) specifies mathematically how this overall impact was obtained:

$$\overline{\hat{c}_t} = \frac{1}{n}.\sum_i (\hat{p}_t \mid_{diversion=1}).(\hat{y}_t \mid_{diversion=1}) - (\hat{p}_t \mid_{diversion=0}).(\hat{y}_t \mid_{diversion=0}) \qquad (3.3)$$

As Equation (3.3) indicates, for each study period *t* and for each person *i*, we obtained the predicted conditional cost, $\hat{y}$, and the predicted probability, $\hat{p}$, under two scenarios: one scenario was with all in the sample receiving diversion (subscripted "*diversion*=1"), and the second scenario was with all in the sample not receiving diversion (subscripted "*diversion*=0"). For each person, we then took the product of the $\hat{y}$ and the $\hat{p}$ for both scenarios. Finally, we calculated mean unconditional cost, $\overline{\hat{c}_t}$, by taking the difference between those two products and taking the mean over the sample (with *n* observations).

For each of the three cost domains—all costs, criminal justice costs, and treatment costs—during each of the four study periods following the point of diversion, the results present $\overline{\hat{c}_t}$. Confidence intervals on $\overline{\hat{c}_t}$ were obtained using the empirical distribution from 1,000 bootstrap replications. For the 95% confidence interval, we took the standard deviation of the ordered bootstrap estimates as an estimate of the standard error and multiplied by 1.96. The estimate (i.e., ±[1.96 × standard error]) was used to form the upper and lower bounds of the confidence interval.

There are several ways to derive the point estimate and its confidence interval (which we used to infer statistical significance). For this report, we used the most conservative method in that the confidence intervals are typically large compared with those obtained from other approaches, and so we were less likely to find statistical significance. To determine whether the estimates were robust to using alternative estimation approaches, we also calculated the estimate and confidence intervals using the median and the 2.5 and 97.5 percentiles of the distribution. This alternative method gave very similar point estimates and slightly smaller but similarly scaled confidence intervals. In most cases, the two methods agreed on whether a point estimate was statistically significant. Those instances where the two methods differed are noted and discussed in Section 4.

4. RESULTS

4.1 Descriptive Statistics

4.1.1 Demographic Characteristics

Table 4-1 describes the demographic characteristics and the recent criminal history of the study sample by diversion status. No hypotheses tests were conducted on these data because they are intended to be descriptive and provide perspective for the results of the main analyses.

Both pre-booking samples (i.e., the diverted group and its comparison) had many similar demographic characteristics at the point of potential diversion. For both groups, the majority of the samples were men (about 60%), identified as Hispanic (about 45%) or non-Hispanic white (about 30% to 40%), had a high school education and no higher (about 35%) or less than high school education (about 45%), and were living independently or with family (about 50%).

However, there were some clear differences between the pre-booking groups. The proportion of the pre-booking group that was never married at the point of diversion (70%) was notably higher than the proportion of the comparison group (about 55%); also, the mean age of the pre-booking group (39.7 years) was higher than the mean age (33.0 years) of the comparison group. Potentially important differences were also found for the proportion unemployed and the mean number of recent arrests. The proportion unemployed at the potential point of diversion was 94% for those in the pre-booking group and 79% for those in the comparison group. The mean number of misdemeanor arrests in the previous 12 months was 0.26 for the pre-booking group and 0.65 for the comparison; the mean number of felony arrests in the previous 12 months was 0.03 for the pre-booking group and 0.13 for the comparison. These descriptive results suggest that, at the least, there is a need to control for key demographics and recent criminal history when examining the relationship between pre-booking diversion and costs.

The descriptive statistics for the post-booking groups (diverted and comparison) indicate that both groups had similar profiles for gender (roughly equal proportions of male, female, and missing), marital status (the greatest group being those never married at the point of diversion—between 30% and 40%), education (between 30% and 40% had a high school education or less), and housing status (the largest proportion was those who were living independently or with family, at about 35%). The estimates also suggested some possible differences between the post-booking groups with regard to race/ethnicity, unemployment, age, and recent (past-12-month) criminal history. The post-booking group had a mean age of 34.8 years, whereas the comparison group had a mean age of 37.0 years. Both post-booking groups had a relatively large proportion of missing data for a number of variables. Between 30% and 40% of the sample had missing data for all the major categorical

Table 4-1. Demographic and Other Individual Characteristics

	Pre-Booking	Pre-Booking Comparison	Post-Booking	Post-Booking Comparison
	Number of Observations			
Measure[a]	**121**	**347**	**381**	**105**
Male	57% (0.50)	61% (0.49)	36% (0.48)	40% (0.49)
Female	42% (0.50)	39% (0.49)	28% (0.45)	30% (0.46)
Missing gender information	1% (0.09)	0% (0.00)	36% (0.48)	30% (0.45)
White, non-Hispanic	31% (0.47)	39% (0.49)	17% (0.38)	26% (0.44)
Hispanic	44% (0.50)	46% (0.50)	34% (0.47)	24% (0.43)
Other race/ethnicity	24% (0.43)	15% (0.35)	12% (0.32)	21% (0.41)
Missing race/ethnicity	1% (0.09)	0% (0.00)	37% (0.48)	30% (0.46)
Married at potential point of diversion	7% (0.26)	13% 0.34	6% (0.24)	6% (0.23)
Divorced at potential point of diversion	24% (0.43)	32% (0.47)	20% (0.40)	20% (0.40)
Never married at potential point of diversion	68% (0.47)	54% (0.50)	33% (0.47)	42% (0.50)
Marital status missing at point of diversion	1% (0.09)	0% (0.00)	41% (0.49)	32% (0.47)
Greater than high school education	17% (0.37)	20% (0.40)	9% (0.29)	11% (0.32)
High school education only	37% (0.49)	35% (0.48)	23% (0.42)	27% (0.44)
Less than high school education	45% (0.50)	44% (0.50)	24% (0.43)	29% (0.45)
Education missing	1% (0.09)	0% (0.00)	45% (0.50)	33% (0.47)
Age at entry into diversion (continuous measure)	39.69 (12.33)	33.94 (10.89)	34.78 (10.17)	37.02 (9.63)
Unemployed at potential point of diversion[b]	94% (0.23)	79% (0.41)	44% (0.47)	60% (0.49)
Employed, student, or retired at point of diversion	5% (0.22)	21% (0.41)	11% (0.32)	7% (0.25)

(continued)

Table 4-1. Demographic and Other Individual Characteristics (continued)

Measure[a]	Pre-Booking	Pre-Booking Comparison	Post-Booking	Post-Booking Comparison
	Number of Observations			
	121	347	381	105
Employment status missing at point of diversion	1% (0.09)	0% (0.00)	45% (0.50)	33% (0.47)
Independent or lives with family at potential point of diversion[b]	59% (0.49)	50% (0.50)	34% (0.48)	38% (0.49)
Homeless at potential point of diversion[b]	7% (0.26)	9% (0.29)	5% (0.22)	12% (0.33)
Other living circumstance at potential point of diversion[b]	33% (0.47)	41% (0.49)	15% (0.36)	16% (0.37)
Living circumstance missing at point of diversion	1% (0.09)	0% (0.00)	45% (0.50)	33% (0.47)
Number of misdemeanors in the previous 12 months[c]	0.26 (0.87)	0.65 (1.77)	0.50 (1.23)	0.90 (2.00)
Number of felony arrests in the previous 12 months[d]	0.03 (0.22)	0.13 (0.41)	0.12 (0.42)	0.18 (0.57)

Note: Standard deviations are given in parentheses beneath each estimate.

[a] Proportions are reported, unless otherwise stated.

[b] Category was omitted from the multivariate analyses because of multicollinearity.

[c] Misdemeanor criminal history is calculated as the number of misdemeanor crimes committed in the year before the diversion event.

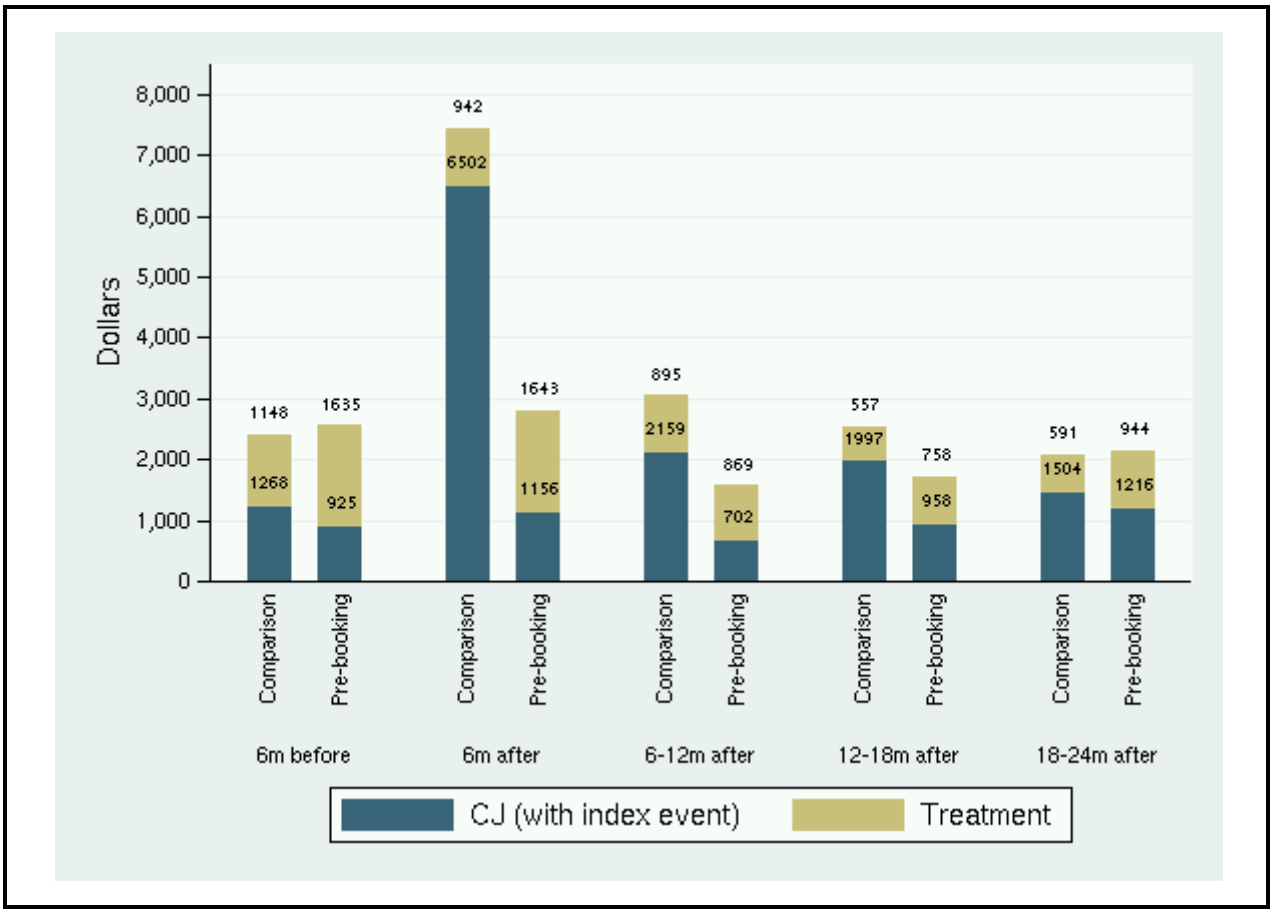
[d] Felony criminal history is calculated as the number of felonies committed in the year before the diversion event.

variables, including gender, race/ethnicity, marital status, education, employment, and living status. Rather than drop missing observations, the statistical models included indicators for missing observations.

4.1.2 Mean Costs in the Major Domains

Before presenting the model estimates, it is first instructive to view the cost data without any hypothesis testing. We start with the major cost domains: all county/city system costs combined, total criminal justice costs, and total treatment costs. Figure 4-1 displays the criminal justice and treatment costs for the pre-booking group and its comparison for each of the five study periods. Additionally, treatment costs are stacked on top of criminal justice costs to give all costs combined; thus, the total height of each bar in the figure represents costs across all agencies.

Figure 4-1. Mean Costs for the Pre-Booking Group and Its Comparison, by Study Period



Sources: Bexar County Information Services, University Health System cost data, and Center for Health Care Services Anasazi cost data.

Note: m = months. Treatment costs are stacked on top of criminal justice (CJ) costs. Numbers indicate costs within the CJ and treatment domains.

The criminal justice costs in this figure include the index event, or the potential point of diversion. For the pre-booking group, the index event is the diversion itself; the criminal justice costs from that event include a relatively small amount of peace officer time picking up and transporting the client to the CCC. For the comparison group, the index event is the arrest identified as being the event for which the client would have been diverted had a diversion program existed. Appendix A contains more detailed summary statistics.

The estimates indicated three general features of the data. First, for both groups (pre-booking and its comparison), combined costs decreased over the study period after the potential point of diversion. Second, in every period, the comparison group had higher combined costs. Third, in every period and for both groups, mean criminal justice costs were higher than treatment costs.

Because everyone in the comparison group was arrested instead of being diverted at the potential point of diversion, criminal justice costs spiked for that group in the first 6 months after that key event. Mean criminal justice costs for the 0- to 6-month period were about $6,500. Across all other periods, criminal justice costs for that group fluctuated between about $1,200 and $2,200. The pre-booking diverted group had far less fluctuation in its mean criminal justice costs over time, varying from a low of $700 in the 6- to 12-month period after the point of diversion to a high of $1,216 in the final study period.

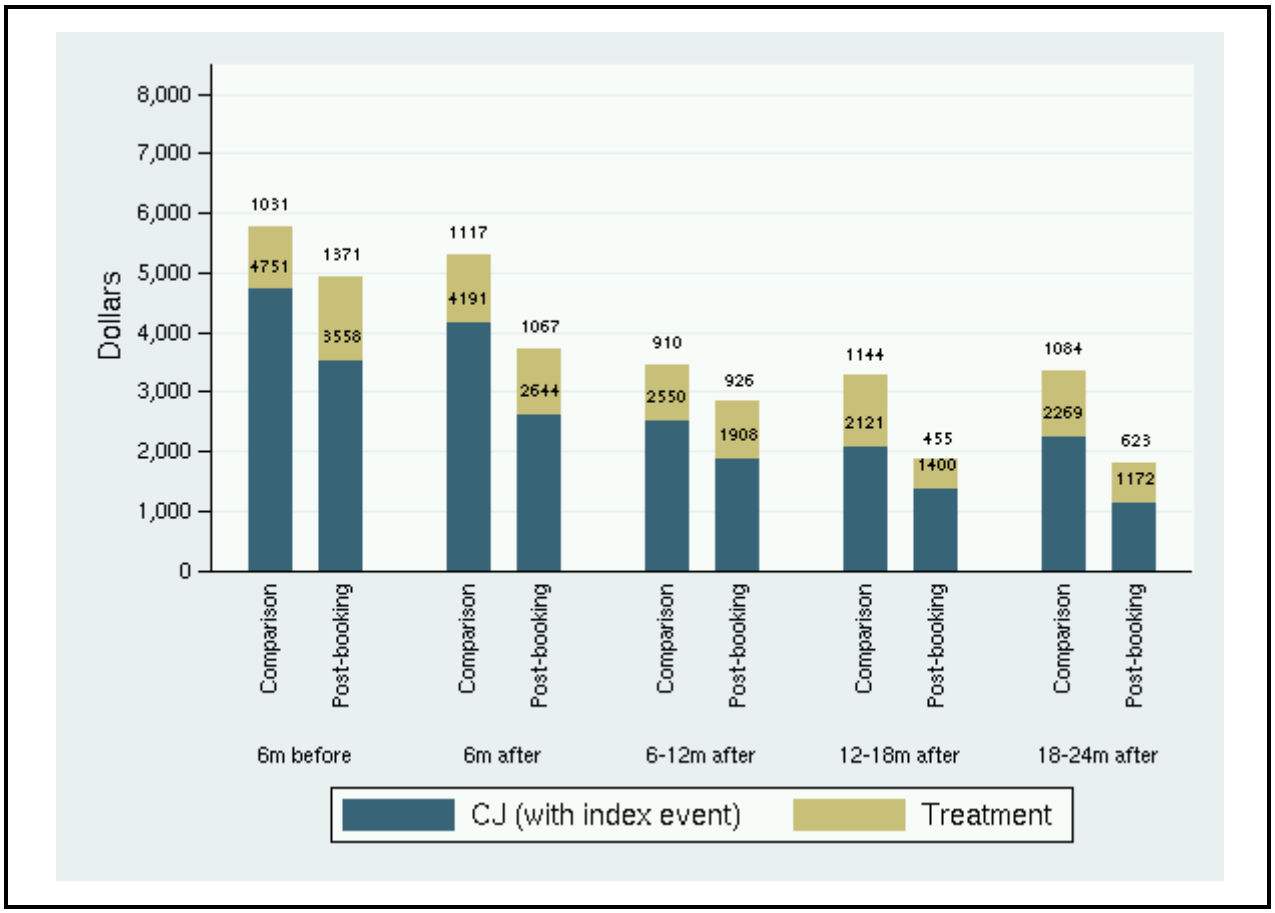
The mean treatment cost for the comparison group declined steadily over the study period, from a high of $1,148 in the period before the potential point of diversion to between $550 and $600 in the last two study periods. The mean treatment costs for the pre-booking group were highest in the two periods immediately around the point of diversion, at about $1,640, and then decreased, fluctuating between $760 and $950 in the last three study periods.

Figure 4-2 describes mean costs for the post-booking data. The estimates indicate three general features. First, for both groups (i.e., post-booking and its comparison), combined costs fell throughout the study period. This feature was different from that found for the pre-booking means; there, costs spiked in the period immediately following diversion. The two remaining features of the post-booking data, nevertheless, parallel those of the pre-booking data: in every period, the comparison group had higher combined costs and, for both groups, mean criminal justice costs were always higher than treatment costs.

Mean criminal justice costs for the post-booking comparison group fell from the two study periods surrounding the potential point of diversion ($4,750 before that point and $4,190 immediately after that point) to the later study periods. In the three final study periods, criminal justice costs for that group leveled out to fluctuate between about $2,100 and $2,550. For the post-booking group, however, mean criminal justice costs fell consistently over time, from about $3,550 before the point of diversion to $1,200 in the last study period.

Mean treatment costs of the comparison group were between about $900 and $1,150 across time. Mean treatment costs of the post-booking group, however, decreased over time. For the post-booking group, mean treatment costs fell from the 6-month period before diversion, from about $1,400 to about $450 in the 12- to 18-month period and to about $600 in the 18- to 24-month study period.

Figure 4-2. Mean Costs for the Post-Booking Group and Its Comparison, by Study Period



Sources: Bexar County Information Services, University Health System cost data, and Center for Health Care Services Anasazi cost data.

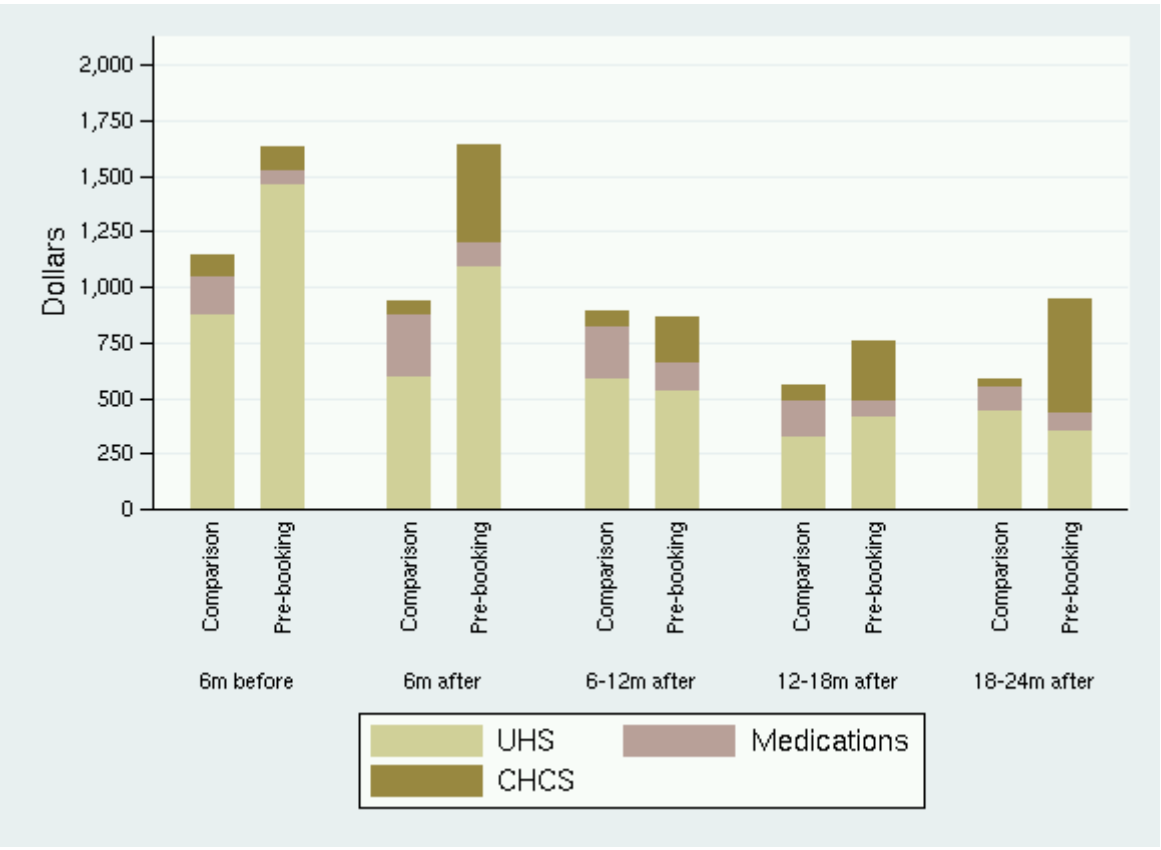
Note: m = months. Treatment costs are stacked on top of criminal justice (CJ) costs. Numbers indicate costs within the CJ and treatment domains.

4.1.3 Treatment Cost Means

Of concern to CHCS, the county treatment agency, is the degree to which diversion helps direct people into targeted and appropriate treatment services provided by CHCS. Figure 4-3 shows how the mean treatment costs for the pre-booking group (and its comparison) break down by three modalities: CHCS, medication, and UHS. The dollar estimates are suppressed in the figure for ease of interpretation; Table 4-2 provides the estimates in the figure. The figure indicates that, for the comparison group, the relative proportion of treatment costs accounted for by CHCS is small in all periods. For the pre-booking group, however, CHCS costs are low in the period immediately before diversion—the point at which people would be connected to county services—but increase in the period immediately after diversion and remain high, relative to both the comparison and the before-diversion period.

The patterns in the means thus suggest that pre-booking diversion successfully connects people to treatment funded through CHCS.

Figure 4-3. Mean Treatment Costs for the Pre-Booking Group and Its Comparison



Sources: Bexar County Information Services, University Health System cost data, and Center for Health Care Services Anasazi cost data.

Note: CHCS = Bexar County's Center for Health Care Services; m = months; UHS = University Health System. Dollar amounts are suppressed in the figure for ease of reading and are presented in Table 4-2. Costs are stacked in the following order: CHCS, medications, and UHS.

Two other general features of the data are also apparent in Figure 4-3. First, for both groups and in all periods, UHS costs were larger than CHCS costs. This finding may be expected because UHS provides a full array of medical services to the population in the area. A second feature is that there was no discernible pattern to changes in mean medication costs for either group over time. A third feature is that, in every period, of the three types of cost presented, mean medication costs were the second largest category for the comparison group and the third largest category for the pre-booking group. This likely reflects the relative prominence of CHCS services for the pre-booking group once diversion has occurred and reflects that the data do not contain the numerous private pharmacies dispensing medication, and thus do not capture medication costs outside the public system.

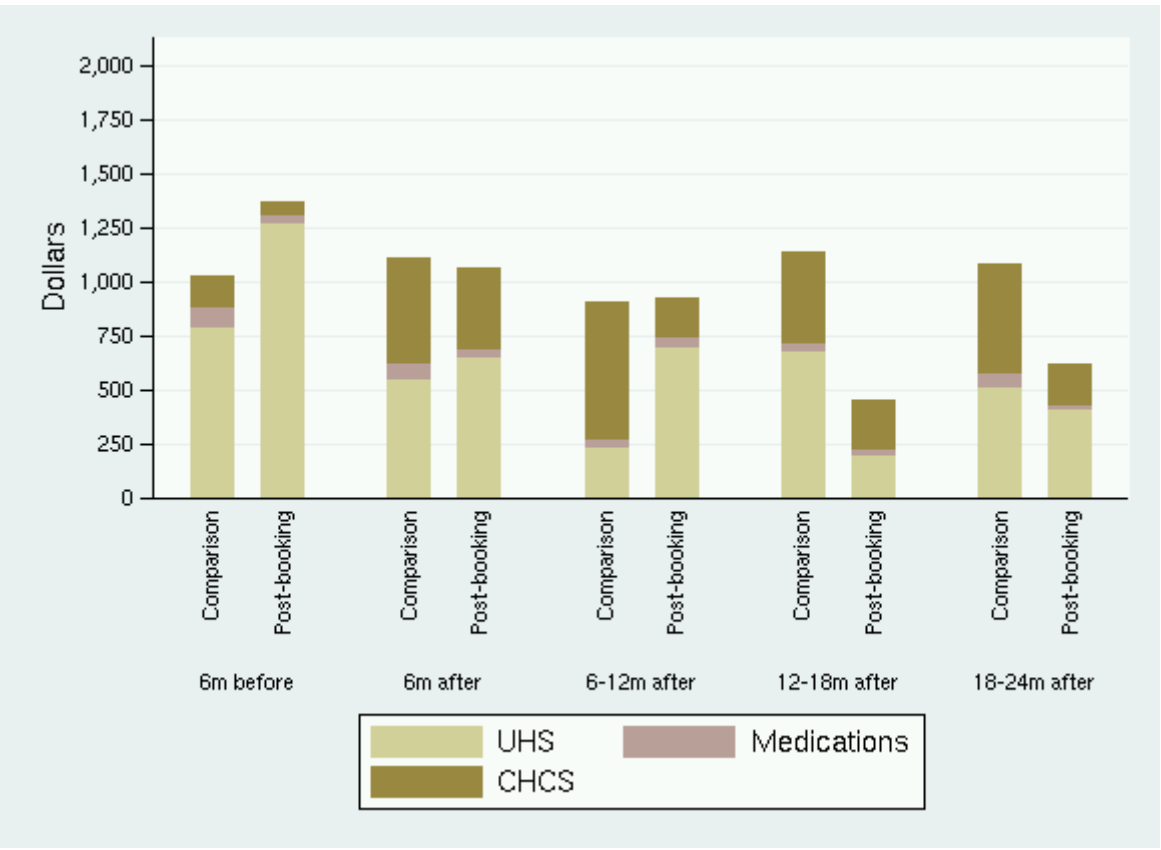
Table 4-2. Mean Treatment Costs for the Pre-Booking Group and Its Comparison

Treatment Cost	Group	Months Before/After the Potential Point of Diversion				
		6 Months Before	6 Months After	6–12 Months After	12–18 Months After	18–24 Months After
Total treatment	Pre-booking	1,635 (4,962.38)	1,643 (5,173.79)	869 (2,136.18)	758 (2,407.26)	944 (3,078.59)
	Comparison	1,148 (3,507.87)	942 (2,649.64)	895 (3,223.12)	557 (1,968.41)	591 (2,698.10)
CHCS	Pre-booking	97 (399.95)	433 (1,490.24)	202 (908.13)	265 (1,695.97)	498 (2,592.47)
	Comparison	95 (634.04)	55 (330.19)	62 (454.07)	58 (344.80)	35 (239.90)
Medication	Pre-booking	69 (271.40)	107 (267.73)	127 (492.71)	70 (320.22)	83 (299.71)
	Comparison	173 (447.89)	278 (560.84)	238 (566.74)	164 (467.53)	109 (397.12)
UHS	Pre-booking	1,469 (4,964.97)	1,104 (4,651.28)	540 (1,924.97)	423 (1,712.40)	363 (1,573.05)
	Comparison	880 (3,368.95)	609 (2,515.58)	595 (3,050.80)	335 (1,812.75)	447 (2,624.59)

Note: CHCS = Bexar County's Center for Health Care Services; UHS = University Health System.

Figure 4-4 shows how the treatment costs for the post-booking group and its comparison break down by the three main categories over time. Table 4-3 provides the estimates for the figure. Perhaps surprisingly, in every period, mean CHCS costs were higher for the comparison group than for the post-booking group. Also, for the first three periods of the study, UHS costs were higher for the post-booking group than for its comparison, whereas the costs were lower in the last two periods. As with all these figures and tables that examine unadjusted means, further analysis is needed to provide reliable estimates. No policy guidance should be taken from these means; rather, their use should be limited to providing context for the main analysis. The next subsections provide the results of that analysis.

Figure 4-4. Mean Treatment Costs for the Post-Booking Group and Its Comparison



Sources: Bexar County Information Services, University Health System cost data, and Center for Health Care Services Anasazi cost data.

Note: CHCS = Bexar County's Center for Health Care Services; m = months; UHS = University Health System. Dollar amounts are suppressed in the figure for ease of reading and are presented in Table 4-3. Costs are stacked in the following order: CHCS, medications, and UHS.

Table 4-3. Mean Treatment Costs for the Post-Booking Group and Its Comparison

Treatment Cost	Group	6 Months Before	6 Months After	6–12 Months After	12–18 Months After	18–24 Months After
Total treatment	Post-booking	1,371 (9,643.84)	1,067 (3,449.41)	926 (4,960.89)	455 (2,501.84)	623 (2,818.42)
	Comparison	1,031 (3,594.66)	1,117 (2,671.94)	910 (3,074.33)	1,144 (3,680.51)	1,084 (3,079.35)
CHCS	Post-booking	57 (336.50)	371 (1,374.27)	175 (867.52)	223 (2,038.90)	185 (1,383.84)
	Comparison	139 (524.04)	487 (1,305.51)	631 (2,667.30)	418 (1,635.95)	502 (2,174.31)
Medication	Post-booking	32 (179.43)	38 (178.90)	44 (201.50)	25 (154.31)	19 (142.26)
	Comparison	93 (594.82)	74 (281.99)	31 (209.85)	38 (149.48)	57 (264.84)
UHS	Post-booking	1,282 (9,635.45)	657 (2,936.47)	707 (4,847.48)	207 (1,454.10)	419 (2,208.41)
	Comparison	799 (3,500.91)	555 (2,293.60)	247 (1,249.67)	688 (3,365.93)	525 (2,153.86)

Note: CHCS = Bexar County's Center for Health Care Services; UHS = University Health System.

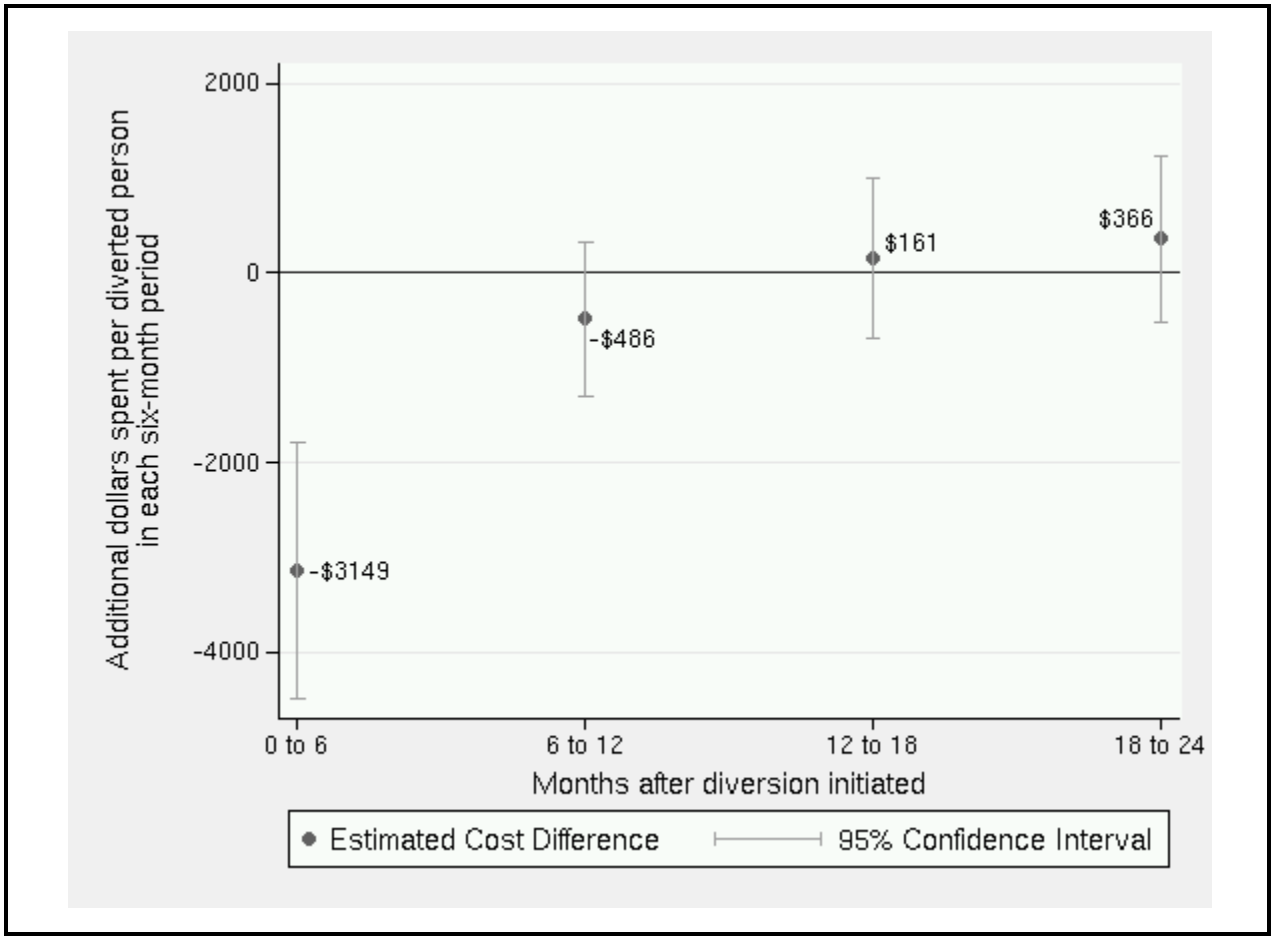
4.2 Cost-Shifting: Main Results

4.2.1 Pre-Booking Diversion: Criminal Justice and Treatment System Costs Combined

Figure 4-5 displays the main results of the study for pre-booking diversion. The figure shows, per 6-month study period, the estimated additional county and city costs incurred per person that can be attributed to diversion. The figure also shows the estimated 95% confidence interval around each point estimate. This confidence interval helps indicate whether the estimate is statistically significant. If the estimate overlaps the horizontal axis (where cost is $0), then the estimate is not statistically significant and we cannot be reasonably certain that the finding could be replicated again. More detailed model estimates are presented in Appendices C and D.

Figure 4-5. The Additional Costs of Pre-Booking Diversion per Person: Criminal Justice and Treatment Systems Combined

Pre-booking diversion was associated with lower costs in the 6 months following diversion.



Sources: Bexar County Information Services, University Health System cost data, and Center for Health Care Services Anasazi cost data; key stakeholder interviews; and county expense reports.

Figure 4-5 indicates that, compared with the comparison group, a typical person in pre-booking diversion cost the county and city $3,149 less during the 6 months following diversion. The figure also shows that that cost difference is far lower in the 6 to 12 months after diversion and is not statistically significant. Finally, for the last two study periods, there is a relatively small and not statistically significant difference. The estimates clearly suggest that pre-booking diversion is associated with reductions in short-term costs.

To translate the lower per person short-term costs into the implied cross-system impact of diversion, we multiplied the estimated difference in the average per person cost by the number of unduplicated people in the study database who had been diverted via pre-

booking during the November 2000 through March 2007 period, which is 384.[5] This straightforward calculation suggests that had these people not been diverted, the county/city costs in the 6 months after the potential point of diversion would have been $1.2 million higher.

4.2.2 Pre-Booking Diversion: Criminal Justice Costs

Figure 4-6 shows the impact of pre-booking diversion on criminal justice costs. The estimates clearly indicate that cost reductions in the criminal justice system drove the overall differences in costs shown in Figure 4-5. Criminal justice costs were $3,551 lower, on average, for the pre-booking diverted over the first 6 months following the point of diversion; this estimate was statistically significant at the 95% level. In the 6- to 12-month period, mean criminal justice costs were $590 lower, and were again statistically significant. Mean criminal justice costs were close for the two groups in the second study year.

To translate the lower per person short-term criminal justice costs into the implied system-wide impact of diversion, we followed the approach for the cross-system costs above and multiplied the average per person cost by 384 unduplicated people who were diverted via pre-booking diversion. In the absence of pre-booking diversion, county/city criminal justice costs in the 6 months after the potential point of diversion would have been about $1.4 million higher. In months 6 to 12 after the potential point of diversion, the costs would have been about $230,000 higher. These system-wide estimates are important for local taxpayers because many of the criminal justice resources examined here are underwritten by local taxpayer funds.

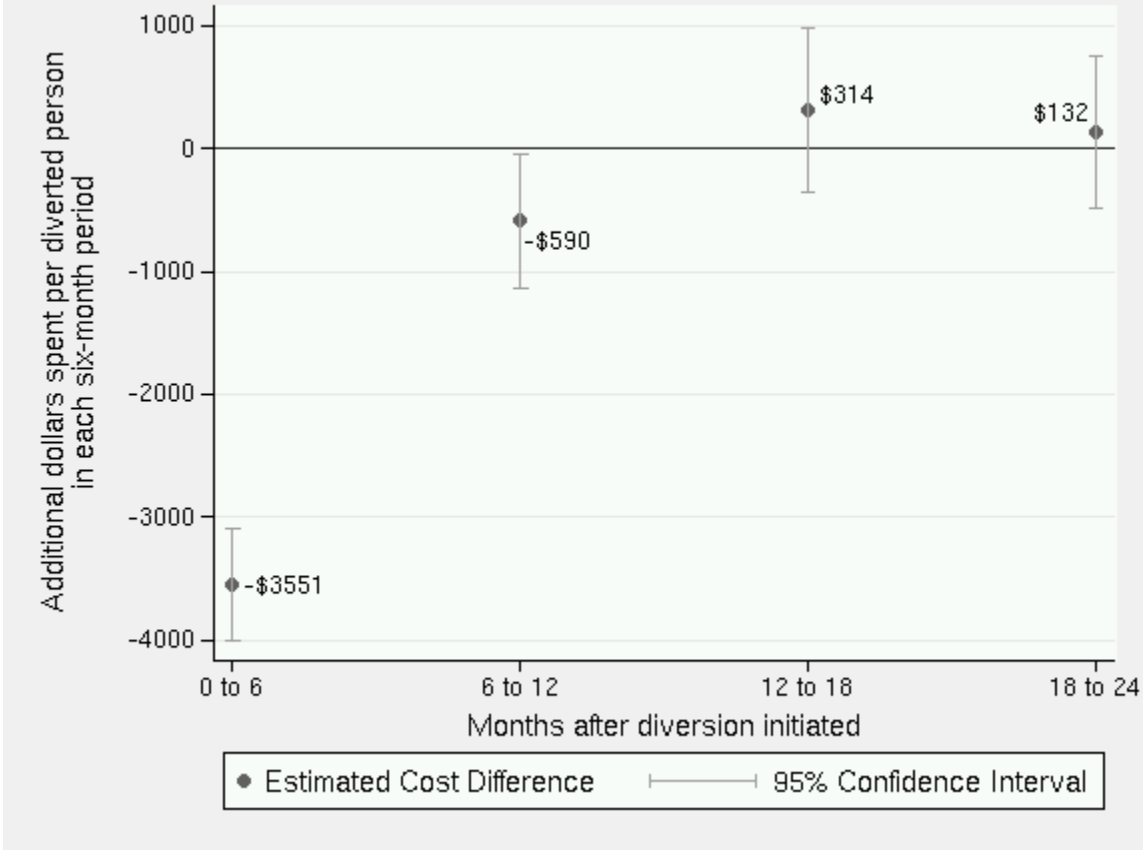
4.2.3 Pre-Booking Diversion: Treatment Costs

Figure 4-7 shows the impact of pre-booking diversion on treatment costs. The confidence intervals around the estimates indicate that none of the estimated differences for the four study periods were statistically significant. Although the pre-booking diversion group had higher mean costs, the estimates were too imprecise to be of great benefit to decision making. For all intents and purposes, the treatment cost difference between the two groups may be zero. It should be noted that the greatest of the four estimates shown, in the first study period, is large, at $794, but also has a relatively large confidence interval (it stretches between −$231 and $1,820). The large confidence interval likely reflects considerable variation in the cost data that comes from a number of treatment events with very high costs. Because none of the estimates were statistically significant, the system-wide impact of pre-booking diversion cannot be derived precisely.

[5] This number is greater than the number of observations in the pre-booking diverted group that was used in the above analyses (which was 121) because the above analyses necessarily excluded people who did not have sufficient follow-up time in the data to be tracked after the potential point of diversion.

Figure 4-6. The Additional Costs of Pre-Booking Diversion per Person: Criminal Justice

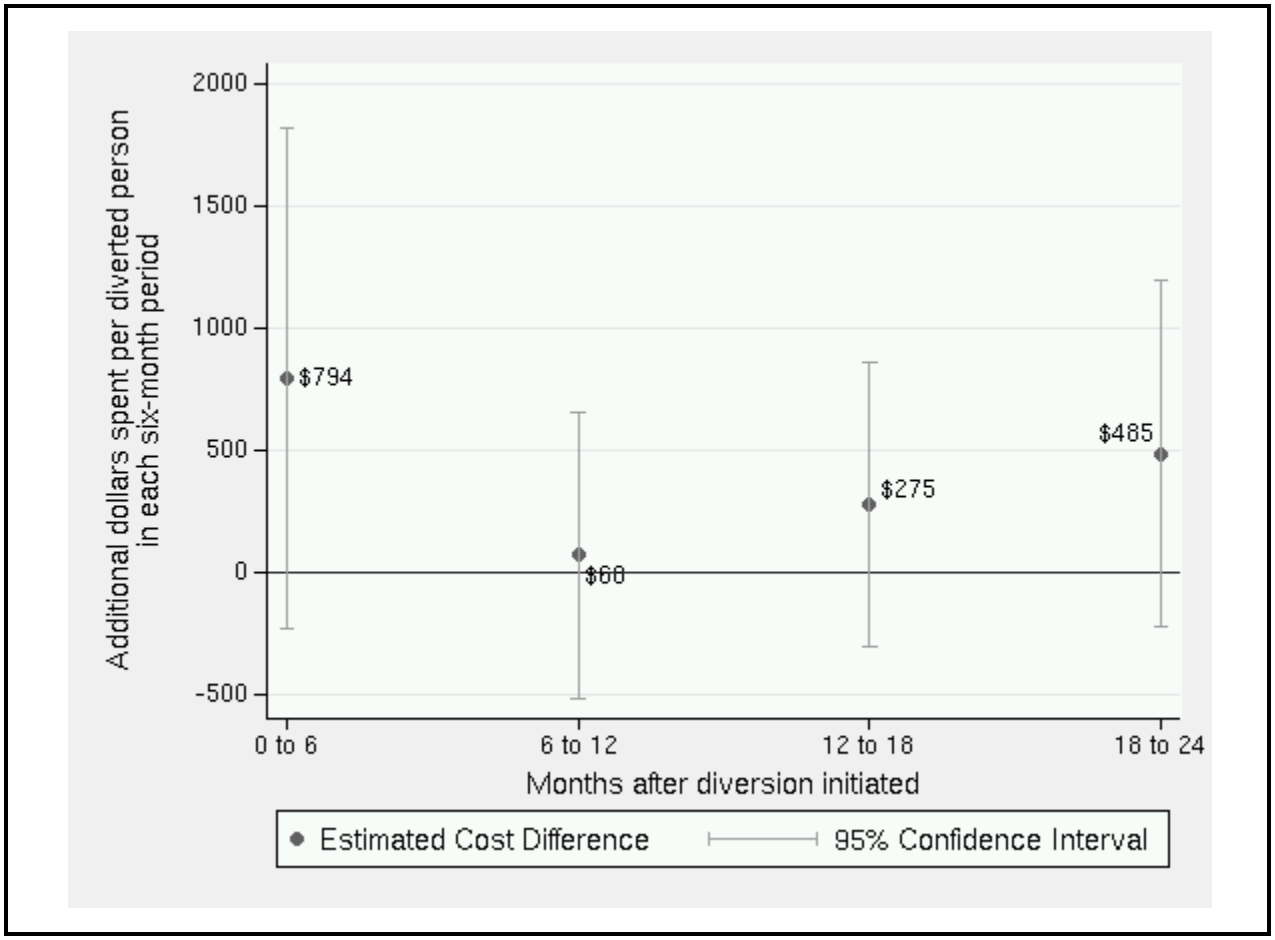
Shifting resources from the criminal justice system through pre-booking diversion likely drive the short-term reductions in overall costs



Sources: Bexar County Information Services, University Health System cost data, and Center for Health Care Services Anasazi cost data; key stakeholder interviews; and county expense reports.

Because decision makers and treatment providers intend for diversion to provide a gateway into treatment, further analyses of the null treatment findings were warranted. Table 4-4 presents the results from both parts of the two-part model for all treatment costs and for the three component domains: CHCS, medication, and UHS. Recall that the first part of the two-part model describes whether the association between diversion and whether people receive any care. The second part describes the degree to which costs increase with diversion, conditional on receiving any care.

Figure 4-7. The Additional Costs of Pre-Booking Diversion Per Person: Treatment
No statistically significant differences were found for treatment costs.



Sources: Bexar County Information Services, University Health System cost data, and Center for Health Care Services Anasazi cost data; key stakeholder interviews; and county expense reports.

Table 4-4 presents each relevant coefficient estimate, together with its standard error and p-value. The coefficient estimate is not as readily interpretable as the graphical depictions; however, its sign and magnitude can be broadly described. The standard error and p-value are measures of the precision of the estimate. The standard error is always a positive number. A small standard error relative to the coefficient estimate indicates greater estimating precision. The p-value is a probability value between 0 and 1. A small p-value indicates greater estimating precision. In these analyses, a p-value less than 0.05 indicates that the coefficient estimate is statistically significant at the 5% level, the generally accepted level of significance. More detailed estimates are provided in Appendix Table C-2.

The table confirms that, in general, both parts of each model were imprecisely estimated, because p-values and standard errors are high across the board. However, there are some exceptions to this rule, which indicate that pre-booking diversion helped provide access to treatment. The findings indicate that, in the 12- to 18-month and 18- to 24-month periods,

Table 4-4. Results from Regression Models of Pre-Booking Treatment Systems

Treatment System	Regression Model	0–6 Months After	6–12 Months After	12–18 Months After	18–24 Months After
All treatment combined	Odds[a]	1.436897 (0.37) p = 0.16	0.9506163 (0.25) p = 0.85	1.767739** (0.47) p = 0.031	2.388224*** (0.64) p = 0.001
	Coefficient estimate[b]	−0.012938 (0.41) p = 0.975	−0.2692821 (0.44) p = 0.544	−0.3153559 (0.45) p = 0.483	−0.2917745 (0.50) p = 0.556
CHCS	Odds[c]	1.073425 (0.36) p = 0.832	0.5550283 (0.21) p = 0.122	0.5789144 (0.23) p = 0.168	0.7693505 (0.34) p = 0.549
	Coefficient estimate[d]	1.20749** (0.60) p = 0.047	1.944376*** (0.67) p = 0.004	0.7664593 (0.70) p = 0.275	1.2785188 (0.74) p = 0.089
Medication	Odds[c]	1.517661 (0.54) p = .0.237	1.393742 (0.57) p = 0.418	1.644632 (0.72) p = 0.253	2.944056** (1.26) p = 0.012
	Coefficient estimate[e]	−293.6634* (174.76) p = 0.094	3.21234 (307.88) p = 0.992	−293.6757 (268.04) p = 0.274	−269.2611 (230.04) p = 0.243
UHS	Odds[c]	0.929401 (0.18) p = 0.707	0.6030389 (0.19) p = 0.112	1.217589 (0.30) p = 0.423	1.039002 (0.29) p = 0.892
	Coefficient estimate[b]	0.149822 (0.49) p = 0.761	−0.0844008 (0.55) p = 0.878	−0.1739094 (0.48) p = 0.718	−0.4115091 (0.59) p = 0.484

Note: CHCS = Bexar County's Center for Health Care Services; UHS = University Health System. Standard error in parentheses.

[a] Results from a panel data logistic regression model.

[b] Results from a panel data gamma regression model with unstructured error matrix.

[c] Results from a panel data model with unstructured error matrix.

[d] Results from a regression on the natural logarithm of cost, correcting for clustering at the individual level.

[e] Results from a regression on costs > 0, correcting for clustering at the individual level.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

diversion was associated with higher odds of receiving any treatment at all. The first row of estimates shows that, for all treatment combined, diversion was associated with 76% higher odds in the 12- to 18-month period (odds ratio [OR] = 1.77, p = 0.03) and with 138% higher odds (OR = 2.39, p = 0.001) in the 18- to 24-month period.

When treatment was broken out into its components, it was unclear what was driving these higher odds of receiving treatment, because the coefficient estimates were imprecisely estimated (i.e., the p-values in general are high). In the face of this general pattern, diversion was found to be significantly associated with higher odds of receiving any medication in the 18- to 24-month period. The odds of receiving medication were 194% higher (OR = 2.94, p = 0.01). Thus, there was some evidence suggesting that pre-booking diversion eventually helps provide access to treatment in general and to medication in particular. The multivariate analyses results did not detect any significant association with connection to CHCS services. This latter finding was perhaps surprising given the patterns shown in the means above.

4.2.4 Post-Booking Diversion: Criminal Justice and Treatment System Costs Combined

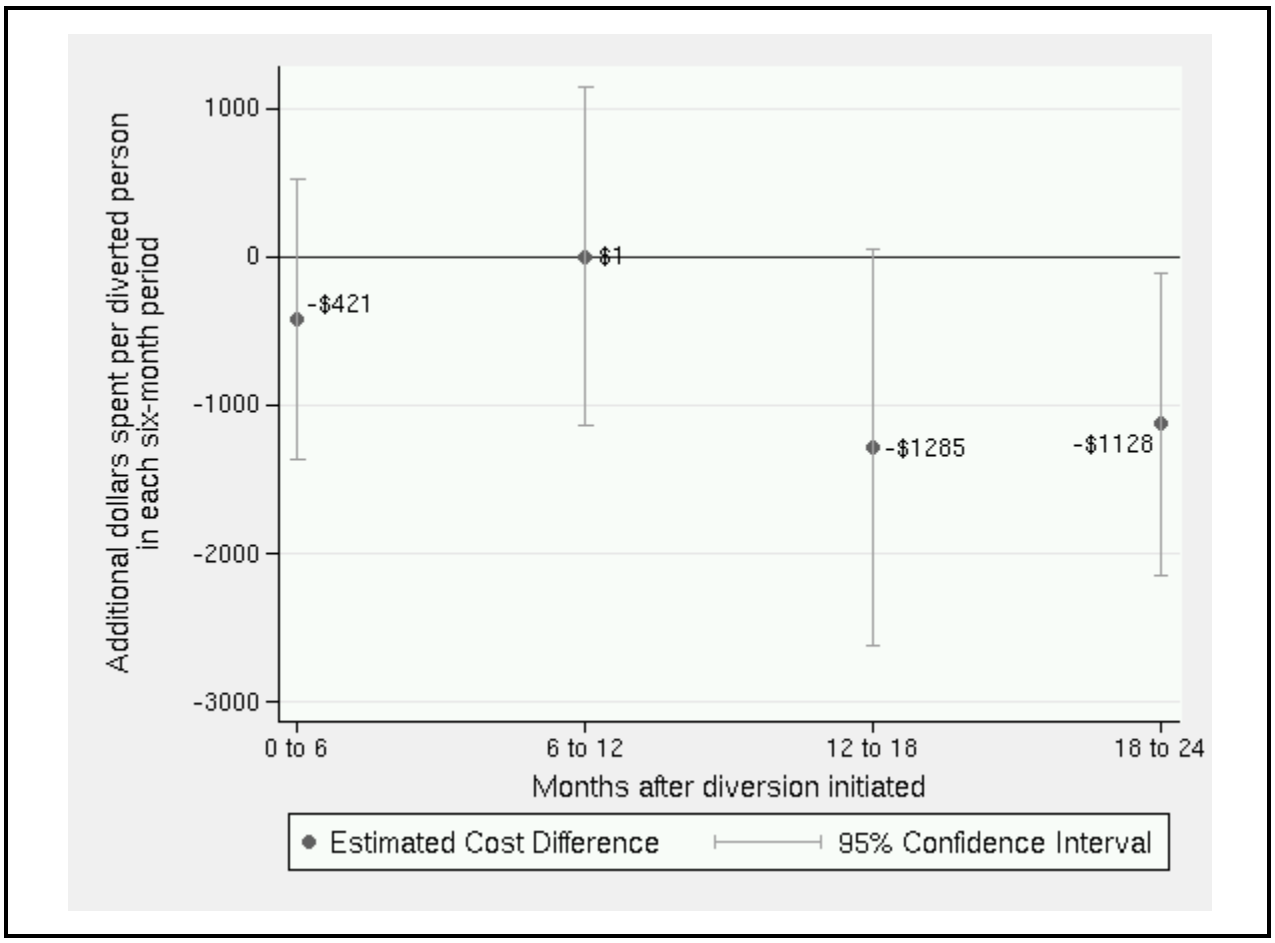
Figure 4-8 shows the impact of post-booking diversion on all county and city criminal justice and treatment costs. The estimates indicate that statistically significant lower costs of about $1,100 for the post-booking diversion group were achieved 18 to 24 months after initial entry into diversion. Study database records contain 628 unduplicated people (504 bond, 124 docket) who were diverted via post-booking between November 2000 and March 2007. If those people had not been diverted, estimates indicate that the cross-system costs would have been about $700,000 higher during the last study period.

Lower costs were also found for the 12- to 18-month period after initial entry into diversion. However, a large confidence interval made the estimate of -$1,285 only marginally significant in that it was almost statistically significant at standard levels. In this case, it was instructive to examine the estimates from alternative estimation approaches. The methods section above notes that there is more than one way of deriving point estimates and that confidence intervals and the estimates presented in this report are less likely to be statistically significant than alternative methods. The alternative method of estimation found a point estimate of similar magnitude (−$1,241) that was statistically significant. Its 95% confidence interval was between −$184 and −$2,806 and, thus, did not overlap zero. For decision making, we recommend using the more conservative estimate because it is consistent with the way in which all other results were derived for this report.

Finally, the estimates also indicated that costs were, on average, $421 lower during the first 6 months and just greater than zero during the 6- to 12-month period after the point of diversion. Neither estimate achieved statistical significance using either the preferred or alternative methods of estimation.

Figure 4-8. The Additional Costs of Post-Booking Diversion per Person: Criminal Justice and Treatment Systems Combined

Post-booking diversion was associated with lower costs in the 18 to 24 months following initial entry into diversion.



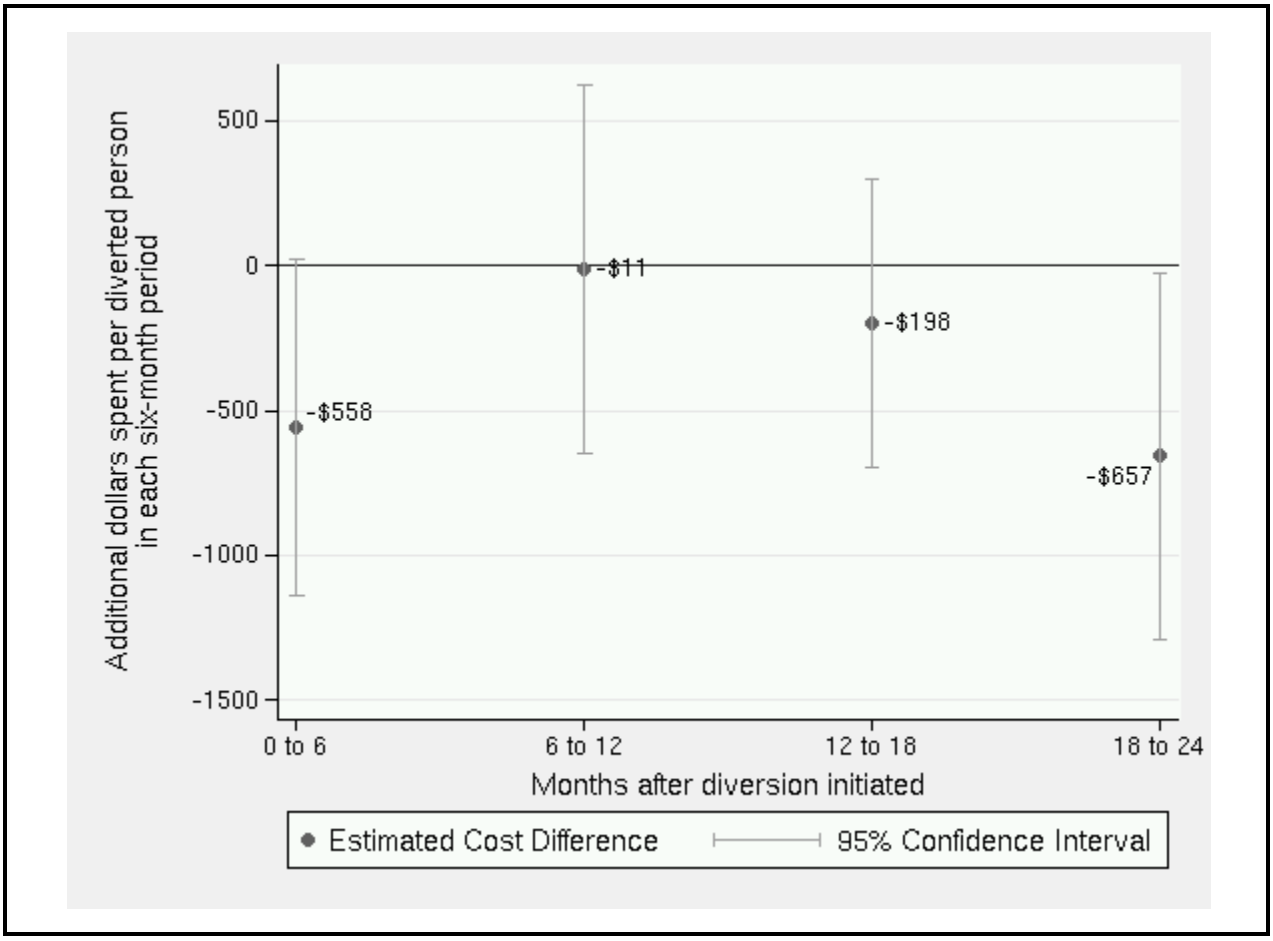
Sources: Bexar County Information Services, University Health System cost data, and Center for Health Care Services Anasazi cost data; key stakeholder interviews; and county expense reports.

4.2.5 Post-Booking Diversion: Criminal Justice Costs

Figure 4-9 shows the estimates of the impact of post-booking diversion on criminal justice costs. The estimates suggest, that in every study period after the potential point of diversion, the post-booking group had lower mean criminal justice costs than its comparison. Statistical significance was achieved in the last of these periods, the 18- to 24-month period. In the last 6-month period (18 to 24 months after diversion), mean costs were $657 lower. These findings suggest that post-booking diversion likely shifts costs out of the criminal justice system in the long-term. We also extrapolated this estimate out from the 381 people in the analytic sample to all 628 people who were diverted via post-booking between November 2000 and March 2007. Criminal justice resources—which are largely supported by local taxpayer funds, were just slightly more than $400,000 lower in the 18 to 24 months after diversion.

Figure 4-9. The Additional Costs of Post-Booking Diversion per Person: Criminal Justice

Post-booking diversion is associated with lower criminal justice costs in both the short- and long-terms.



Sources: Bexar County Information Services, University Health System cost data, and Center for Health Care Services Anasazi cost data; key stakeholder interviews; and county expense reports.

It should be noted that, in the 6-month period immediately after diversion, mean criminal justice costs for the post-booking group were $558 lower than the comparison and that this estimate was almost, but not quite, statistically significant at conventional levels. Its confidence interval spanned from −$1,192 to $26, suggesting that the mean criminal justice costs would have achieved significance at slightly above the 5% level.

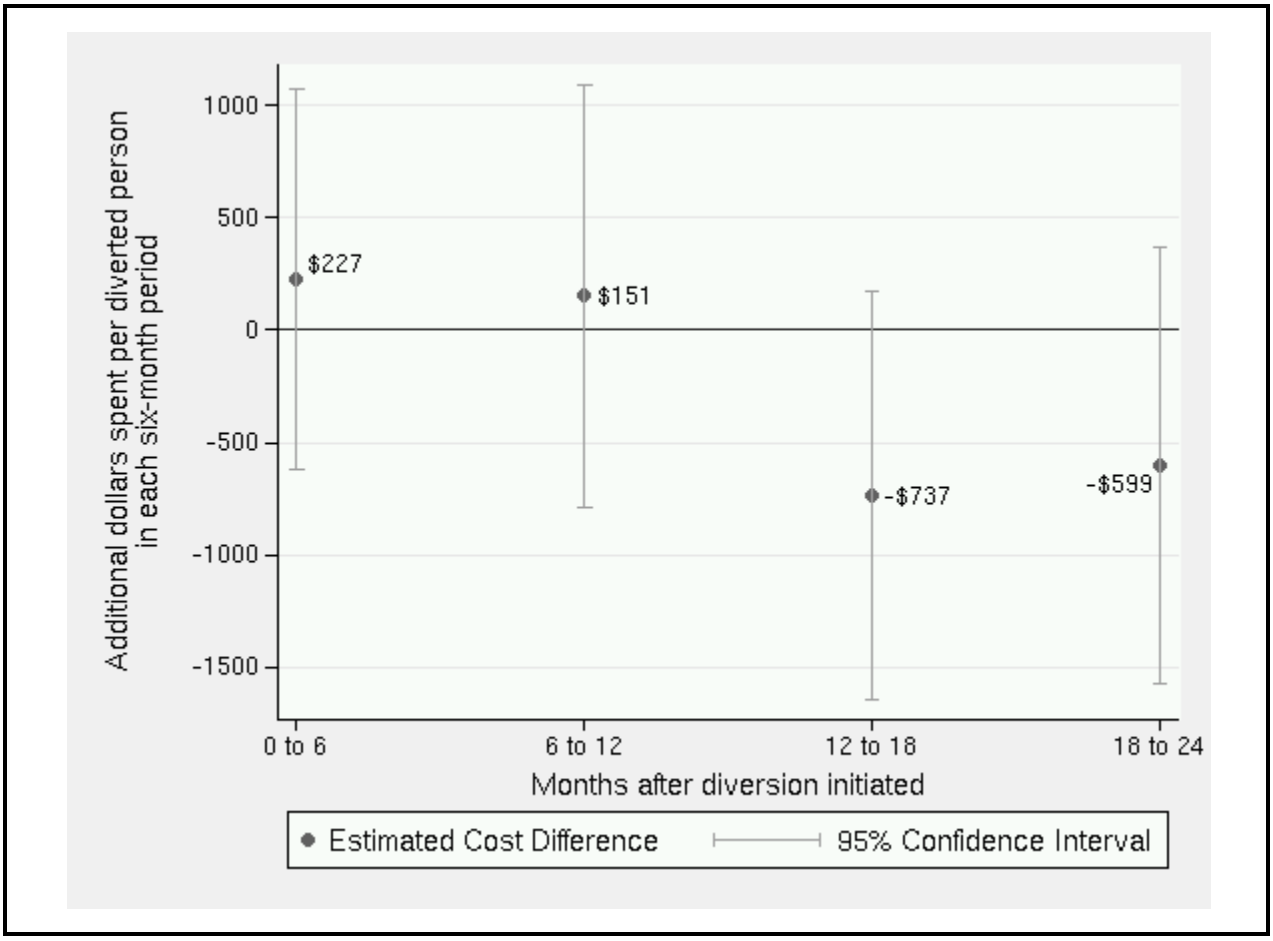
Using the alternative method of estimation gave a similar point estimate (indicating costs were $545 lower) but indicated that it was statistically significant at the 95% level. The 95% confidence interval was between −$1,158 and −$19 and thus did not overlap zero. As noted above, for the sake of making treatment provision decisions and policy, we recommend using the more conservative estimate as it is consistent with the way in which all results were derived for this report.

4.2.6 Post-Booking Diversion: Treatment Costs

Figure 4-10 describes the additional costs incurred in treatment associated with post-booking diversion. The confidence intervals suggest that none of the point estimates were precisely estimated. The mean differences 12 to 24 months after diversion were relatively large—between about $400 and $700 per 6-month period. Because none of the point estimates were statistically significant, we were unable to calculate with sufficient precision the impact of diversion on the treatment system.

Using an alternative method gave a similar point estimate (indicating costs were $674 lower) but indicated that it was statistically significant at the 95% level. The 95% confidence interval was between −$1,905 and −$35 and thus did not overlap zero. As noted in two similar instances above in which one method achieves significance while the other does not, we recommend using the more conservative estimate because it is consistent with the way in which all results were derived for this report.

Figure 4-10. The Additional Costs of Post-Booking Diversion per Person: Treatment
No statistically significant differences were found for treatment costs.



Sources: Bexar County Information Services, University Health System cost data, and Center for Health Care Services Anasazi cost data; key stakeholder interviews; and county expense reports.

In a similar vein to pre-booking diversion, further analyses of the null treatment findings for post-booking diversion were warranted. A key motivation for post-booking diversion is to improve access to health care. Table 4-5 presents the results from both parts of the two-part model for all treatment costs and for the three component domains: CHCS, medication, and UHS. The table presents each relevant coefficient estimate together with its standard error and p-value.

The table shows the imprecision of all estimates in the models. There are two notable exceptions to this general conclusion. First, for all treatment costs combined, the costs conditional on receiving treatment—that is those from the second part of the two part model—were significantly lower in the 12- to 18-month period (coef. = –1.07, p = 0.04). Because the coefficient estimate from the model is difficult to interpret directly, predicted values from the model (not reported here) were used to help interpretation. The findings indicated that post-booking diversion was associated with more than $1,500 in lower treatment costs per person in that period. Examining the breakdown by CHCS, medication, and UHS costs did not provide definitive evidence as to which of these three sources could be driving the difference because none of the estimates were statistically significant. However, the coefficient on UHS costs was large, even though it did not achieve statistical significance. This estimate was derived from a model where the coefficient estimate could be interpreted directly. The coefficient estimate indicated that post-booking diversion was associated with $3,968 in lower costs in the 12- to 18-month period. Even though that value should be highly qualified because of its statistical imprecision, the absence of alternative explanations suggests that lower UHS costs were the likely reason for the reduction in treatment costs combined.

The second significant finding was that the odds of receiving CHCS treatment in the 6- to 12-month period were significantly higher for post-booking diversion. The estimates indicated that post-booking diversion was associated with 74% higher odds (OR = 1.74, p = 0.01) of receiving treatment through CHCS. Thus, even though the imprecision in estimates means that it is difficult to draw conclusive policy guidance from these results, the more detailed estimates presented above suggest that diversion was associated with some improved access to CHCS services in the 6- to 12-month period and provide limited evidence that treatment costs overall were actually lower in the 12- to 18-month period.

Table 4-5. Results from Regression Models of Post-Booking Treatment Systems

Treatment System	Regression Model	0–Months After	6–12 Months After	12–18 Months After	18–24 Months After
All treatment combined	Odds[a]	1.1541150 (0.13) p=0.214	1.4519110** (0.23) p = 0.016	0.9263755 (0.15) p = 0.646	0.8246174 (0.14) p = 0.261
	Coefficient estimate[b]	−0.2794133 (0.43) p = 0.516	−0.4999688 (0.48) p = 0.301	−1.0665810** (0.52) p = 0.040	−0.6090604 (0.51) p = 0.23
CHCS	Odds[a]	1.1714120 (0.23) p = 0.42	1.7367590** (0.39) p = 0.014	1.2736840 (0.31) p = 0.327	1.0198480 (0.29) p = 0.945
	Coefficient estimate[b]	0.5796185 (0.58) p = 0.315	−0.2762056 (0.63) p = 0.659	0.3830155 (0.65) p = 0.558	0.0100024 (0.72) p = 0.989
Medication	Odds[a]	1.158924 (0.32) p = 0.594	1.8262540 (0.76) p = 0.148	0.7283357 (0.28) p = 0.403	0.6782352 (0.31) p = 0.401
	Coefficient estimate[b]	−0.0532050 (0.51) p = 0.917	0.4932748 (0.50) p = 0.323	0.5179992 (0.55) p = 0.349	−0.1200065 (0.57) p = 0.834
UHS	Odds[a]	0.9820254 (0.15) p = 0.908	1.1258880 (0.25) p = 0.599	0.8578509 (0.24) p = 0.582	0.6166514* (0.16) p = 0.066
	Coefficient estimate[b]	−3,450.729 (4208.14) p = 0.412	840.8286 (4752.18) p = 0.860	−3,968.715 (5023.25) p = 0.429	−3,255.506 (4343.99) p = 0.454

Note: CHCS = Bexar County's Center for Health Care Services; UHS = University Health System.

[a] Results from a panel data model with unstructured error matrix.

[b] Results from a panel data gamma regression model with unstructured error matrix.

* Significant at the 10% level.

** Significant at the 5% level.

4.3 Summary

Our main study findings indicate that pre-booking diversion was associated with significantly lower costs in the first 6 months after the point of potential diversion and that post-booking diversion was associated with significantly lower costs 12 to 18 months after the potential point of diversion. Pre-booking diversion was associated with $3,150 in lower costs per person during the first 6 months after diversion. Post-booking diversion was associated with about $1,200 in lower costs per person during the 18 to 24 months after entry into

diversion. Neither type of diversion was associated with a statistically significant increase in cost in any of the four study periods following entry into diversion.

Additional analyses were conducted to assess the degree to which these findings represented cost-shifting out of the criminal justice system and into the treatment system. The analyses suggested that much of the impact of diversion on overall costs was driven by reductions in criminal justice system costs.

Differences in treatment system costs were harder to detect. The reason for the lack of significant differences in treatment costs was often an artifact of the idiosyncrasies of the cost data, which indicated many events with high dollar costs. Treatment costs for the pre-booking group were markedly higher during three of the four post-diversion periods, and were almost the same for the one remaining period; however, none of the differences were statistically significant and thus their precision was unreliable. Treatment costs for the post-booking group were similar in the first year after entry into diversion and markedly lower in the second year; again, none of the estimates were statistically significant. If the larger differences found in the second year had approached significance, they would have been counter to the expected difference. Some limited evidence suggested that UHS costs were lower. However, the data were insufficient to support further exploration on these speculative points.

The finding that the economic gain to pre-booking diversion is immediate and short-lived fits with the way that this type of diversion operates in Bexar County. Within the span of a day, a person is directed away from the possibility of being booked into jail, and then adjudicated, and instead is referred to community treatment.

The post-booking diversion findings may also reflect the characteristics of that program. For the first 12 to 18 months after entry into diversion, many people of those in the program are under court conditions to attend treatment and many are under criminal justice community supervision. Once a person had graduated from the program (typically 12 to 18 months after entry), differences in criminal justice costs were apparent.

5. DISCUSSION AND POLICY IMPLICATIONS

This document is the second in a series of reports on the results of the Bexar County jail diversion program cost study. We presented findings on how diversion is associated with changes in criminal justice costs and treatment costs. Such information is critical to demonstrating the fiscal impact of diversion in Bexar County. This information can also be used to highlight the promise of diversion to other jurisdictions that are looking to implement a program similar to the one in Bexar County.

This study combined a strong research design with detailed data on criminal justice and treatment resources that were underwritten either in part or in full by Bexar County and the city of San Antonio. After combining criminal justice and treatment costs, the results suggested that pre-booking diversion was associated with $3,150 in lower costs per person during the first 6 months after diversion. Post-booking diversion was associated with about $1,200 in lower costs per person during the 18- to 24-month period after entry into diversion.

The findings align with the characteristics of the pre- and post-booking programs. In pre-booking diversion, a person is very quickly directed away from the possibility of being booked into jail and then adjudicated, and instead is referred to community treatment. Thus, it makes sense that short-term criminal justice and overall costs are reduced. Although one might reasonably expect treatment costs to increase in step with the reductions in criminal justice costs, no reliable differences were found. It is also noteworthy that there was no evidence of any overall cost differences beyond 6 months. This indicates that pre-booking diversion may not cost the taxpayer any additional long-run resources.

In post-booking diversion, the act of diversion itself may take some considerable time, because most clients must be screened, assessed, and then required to attend treatment, often as part of the terms of supervision. Thus, for the first 12 to 18 months after entry into diversion, many of those in the program are under court conditions to attend treatment and many are under criminal justice community supervision. The results suggest that reduced criminal justice costs were apparent after the typical 12- to 18-month period of time it takes to graduate from the program.

For both pre-booking and post-booking diversion, the findings are equivocal with regard to the impact on treatment costs and do not provide clear policy guidance. For pre-booking diversion, the degree to which costs were shifted into treatment is unclear. However, limited evidence indicates some improved access to CHCS services in the 6- to 12-month period and indicates that treatment costs overall were actually lower in the 12- to 18-month period. For post-booking diversion, the findings suggest that, in the 12- to 18-month and 18- to 24-month periods, diversion was associated with improved access to treatment. Thus, although the results cannot provide reliable estimates of the implied impact on

treatment costs, they do provide some encouragement that post-booking diversion is successful at directing people into treatment.

The findings in this study face some potential limitations. First, the means presented suggest that the comparison groups may not provide a sufficient match to the diverted groups on certain characteristics. Of particular concern is the fact that, in the 6 months before the potential point of diversion, mean criminal justice costs were higher for the comparison group than for the pre-booking group. This feature of the pre-booking comparison group was apparent despite the fact that all observations in that group fit the diagnostic criteria (i.e., meeting at least one of the serious mental illness diagnoses) and the criminal justice eligibility for being diverted (i.e., being charged with a misdemeanor class B or C and not a class A misdemeanor or a felony).

This concern was in part mitigated by the fact that all models controlled for the number of misdemeanor arrests and the number of felony arrests in the 12 months preceding the study period. Controlling for differential criminal history is a common and important way of helping ensure that the estimates pick up the influence of diversion.

We also explored alternatives to the comparison group used in the study. Possible alternative comparison groups to those used in the analyses here include people in Bexar County who were arrested and not diverted via pre-booking and a comparison group from another jurisdiction. Neither alternative was feasible. We could not systematically and reliably identify an alternative, contemporaneous comparison group in Bexar County. Since 2001, most of those who have not been diverted via pre-booking have not been diverted because the diagnostic criteria were not met or because it was deemed inappropriate in the interests of public safety (because of the severity of the criminal charge and/or criminal history). Thus, those who have been arrested and not pre-booking diverted would have been a poor comparison group. Seeking a comparison group from another jurisdiction would have been problematic because many other large jurisdictions are also building diversion programs. Moreover, any alternative statistical approach that relies on a comparison group, such as propensity score matching, faces the same limitations. Finally, a before/after comparison without reference to similar trends for a comparison group would likely provide misleading results because a diverted person is often at a crisis point at the time of diversion.

A second potential limitation is that although the data used were unusually comprehensive and detailed for this kind of cost study, they were limited both in the scope of agencies considered and in the richness of information contained. With regard to the comprehensiveness of the agencies included, the data omit costs such as those incurred through local housing agencies. However, the agencies omitted are likely to be secondary to the main treatment and criminal justice entities directly addressing the needs of people who are eligible for diversion. With regard to the richness of the data, inevitably there were

measures unavailable in the data set that required us to make some informed assumptions for the sake of the analysis. The data did not reliably track court appearances and the resources used in each court appearance, so our analyses include assumptions about the number of court appearances for each arrest and the resources used for each court appearance. Furthermore, the criminal justice data did not track peace officer interactions that did not result in client booking. Finally, the data did not track probation events. This limitation is potentially important because the post-booking groups could both be under conditions of probation.

These potential limitations qualify but do not negate the strength of the findings for policy makers. The estimates in this report suggest that both forms of diversion promise considerable fiscal benefit to taxpayers. In the absence of pre-booking diversion, the estimates suggest that cross-system (i.e., criminal justice and treatment) costs would have been about $1.2 million higher during the 6 months immediately after diversion. Perhaps more importantly, a large proportion of local-area criminal justice funding is financed through local funds. Criminal justice costs may have been $1.4 million higher had pre-booking diversion not been in place.

Post-booking diversion was associated with a similarly high impact across systems and with criminal justice costs, in particular. Across systems, the estimates indicate that, had post-booking diversion not been in place, costs may have been $700,000 higher throughout the 18- to 24-month period following entry into diversion. Although no such system-wide estimates could be obtained for treatment, the system-wide estimates for criminal justice costs indicate that the impact of post-booking diversion lowered costs by $350,000 in the first 6 months after entry into diversion and by more than $410,000 in the 18 to 24 months after diversion.

As Bexar County continues to expand its public safety net, it now has strong evidence that one of its cornerstone programs can be justified on fiscal grounds. Its jail diversion program encompasses the two major types of diversion—pre-booking and post-booking diversion—and is designed to help people with mental health problems and in need of treatment along the spectrum of criminal justice interactions. Both pre-booking and post-booking jail diversion were associated with lower taxpayer costs, particularly criminal justice costs. The program provides hope to participants to help obtain the treatment they need and integrate safely into the community. This study has demonstrated that the program also helps contain public costs and is a careful use of precious community resources.

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APPENDIX A: MEAN COSTS IN THE MAIN DOMAINS

Table A-1. Pre-Booking Means

Cost Domain	Group	6 Months Before	6 Months After	6–12 Months After	12–18 Months After	18–24 Months After
All costs	Pre-booking	2,560 (5,406.46)	2,799 (5,845.33)	1,571 (2,989.92)	1,716 (3,627.46)	2,160 (4,588.40)
	Comparison	2,416 (4,507.59)	7,444 (5,025.69)	3,053 (5,334.07)	2,554 (1,425.93)	2,095 (4,179.81)
Total treatment costs	Pre-booking	1,635 (4,962.38)	1,643 (5,173.79)	869 (2,136.18)	758 (2,407.26)	944 (3,078.59)
	Comparison	1,148 (3,507.87)	942 (2,649.64)	895 (3,223.12)	557 (1,968.41)	591 (2,698.10)
Total criminal justice costs	Pre-booking	925 (2,521.57)	1,156 (2,642.67)	702 (2,056.01)	958 (2,540.98)	1,216 (3,109.84)
	Comparison	1,268 (2,720.93)	6,502 (4,315.81)	2,159 (3,653.26)	1,997 (3,570.51)	1,504 (2,997.05)

Note: Standard deviations are given in parentheses beneath each estimate.

Table A-2. Post-Booking Means

Cost Domain	Group	6 Months Before	6 Months After	6–12 Months After	12–18 Months After	18–24 Months After
All costs	Post-booking	4,930 (10,200.22)	3,711 (5,401.80)	2,834 (6,313.00)	1,855 (4,029.34)	1,794 (4,245.19)
	Comparison	5,782 (5,786.60)	5,307 (5,871.67)	3,460 (5,278.28)	3,265 (5,772.53)	3,353 (5,430.65)
Total treatment costs	Post-booking	1,371 (9,643.84)	1,067 (3,449.41)	926 (4,960.89)	455 (2,501.84)	623 (2,818.42)
	Comparison	1,031 (3,594.66)	1,117 (2,671.94)	910 (3,074.33)	1,144 (3,680.51)	1,084 (3,079.35)
Total criminal justice costs	Post-booking	3,558 (3,318.34)	2,644 (3,629.94)	1,908 (3,574.61)	1,400 (2,991.55)	1,172 (2,814.33)
	Comparison	4,751 (4,364.90)	4,191 (5,022.65)	2,550 (4,260.88)	2,121 (4,045.69)	2,269 (3,916.59)

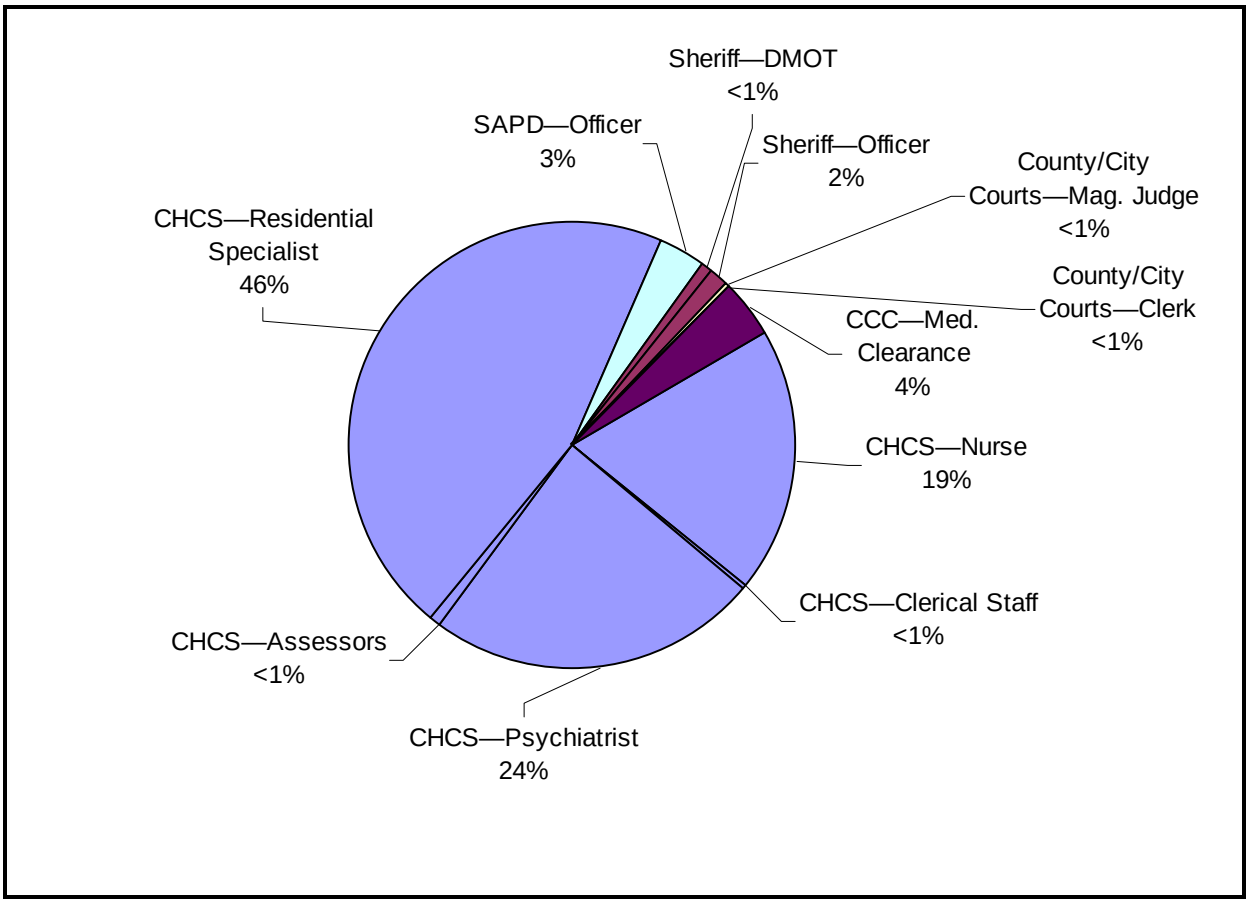
Note: Standard deviations are given in parentheses beneath each estimate.

APPENDIX B: DIVERSION COST ESTIMATES

Table B-1. Estimates of the per Person Cost of Diversion

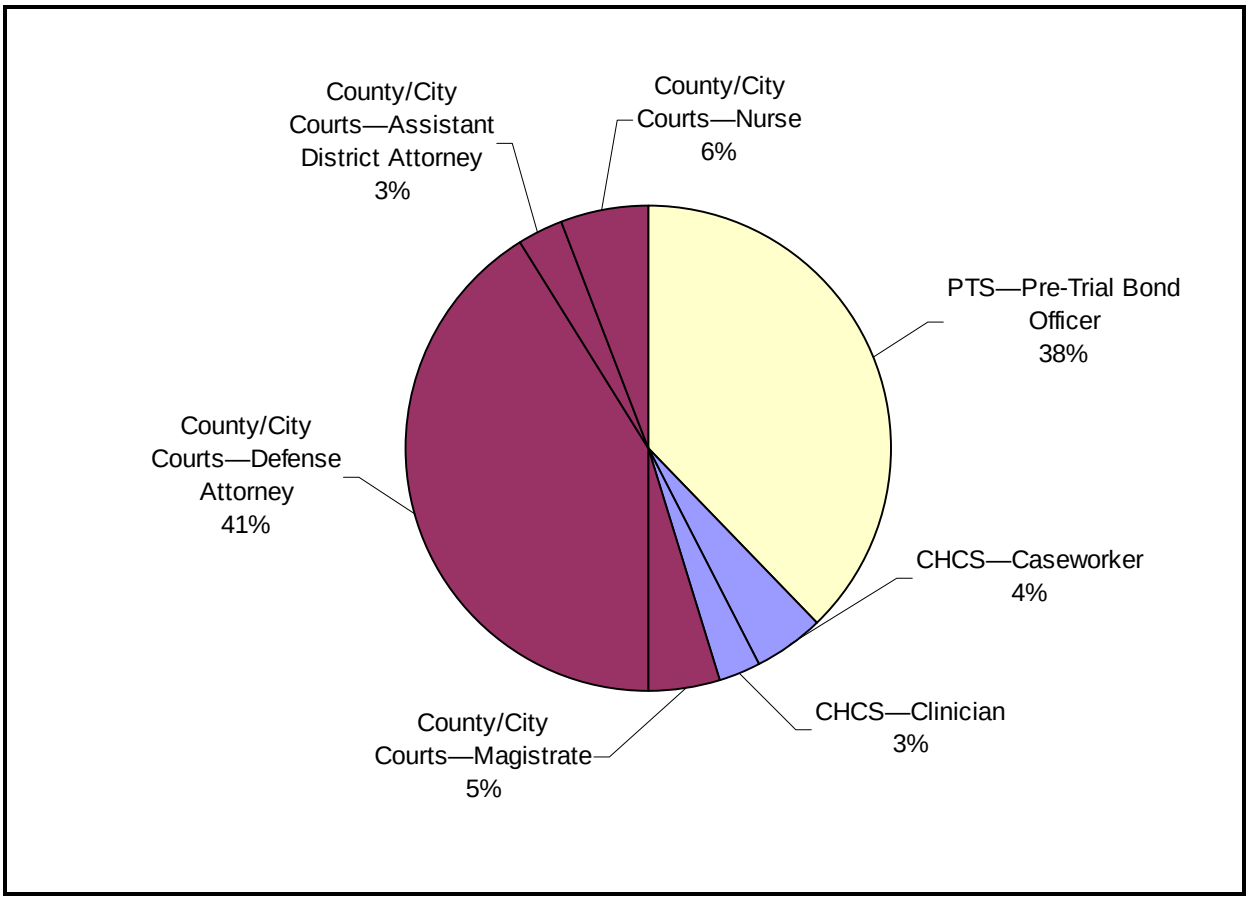
Type of Diversion	Estimate of per Person Cost of Diversion ($)			Sensitivity Analysis Notes
	Low	Medium	High	
Pre-booking	$323.22	$369.98	$416.74	For the sensitivity analysis, estimates of the time taken by staff and/or the proportion of clients served per activity were varied in seven activities: record lookup by clerical staff, assessments by nurses and psychiatrists, initial case management, pick up and paperwork by peace officers and Deputy Mobile Outreach Team officers, any reassessment by a psychiatrist, pre-discharge case management by a nurse, and minor medical clearance.
Post-booking bond	$229.75	$237.93	$246.11	For the sensitivity analysis, estimates of the time taken by staff and/or the proportion of clients served per activity were varied for two types of screening activities: initial screening and follow-up face-to-face screening for those whose records were not found in the initial screening.
Post-booking docket	$201.10	$204.76	$208.43	For the sensitivity analysis, estimates of the time taken by staff and/or the proportion of clients served per activity were varied for three activities: initial screening; follow-up face-to-face screening for those whose records were not found in the initial screening, and the data transfer to form the docket.

Figure B-1. The Share of Pre-Booking Diversion Costs, by Agency and Individual Job Function



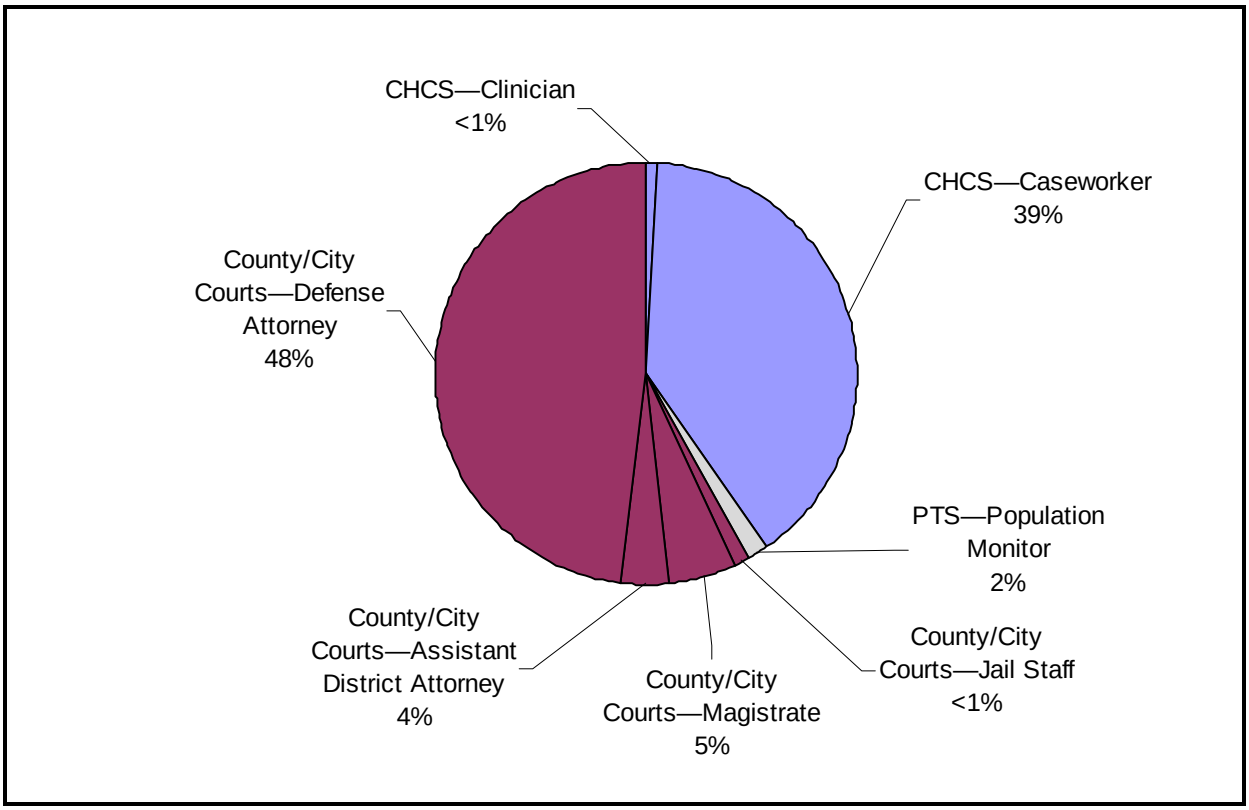
Note: CCC = crisis care center; CHCS = Bexar County's Center for Health Care Services; DMOT = Deputy Mobile Outreach Team; Mag. = magistrate; Med. = medical; SAPD = San Antonio Police Department.

Figure B-2. The Share of Post-Booking Bond Diversion Costs, by Agency and Individual Job Function



Note: CHCS = Bexar County's Center for Health Care Services; PTS = Pre-Trial Services.

Figure B-3. The Share of Post-Booking Docket Costs, by Agency and Individual Job Function



Note: CHCS = Bexar County's Center for Health Care Services; PTS = Pre-Trial Services.

APPENDIX C: RAW REGRESSION ESTIMATES FOR MODELS PRESENTED IN THE RESULTS

Table C-1. Major Cost Domains

	Pre-Booking						Post-Booking					
Cost Domain	Odds Ratio: Any CJ or TX Cost	Coefficient Estimate: CJ and TX Costs	Odds Ratio: Any CJ Cost	Coefficient Estimate: CJ Costs	Odds Ratio: Any TX Cost	Coefficient Estimate: TX Costs	Odds Ratio: Any CJ or TX Cost	Coefficient Estimate: CJ and TX Costs	Odds Ratio: Any CJ Cost	Coefficient Estimate: CJ Costs	Odds Ratio: Any TX Cost	Coefficient Estimate: TX Costs
Interaction of Period 2 and diversion group indicator	—	−1.15 (0.20)**	—	−2.03 (0.21)**	0.20 (0.13)	−0.01 (0.41)	—	−0.05 (0.19)	—	−0.02 (0.14)	0.14 (0.12)	−0.28 (0.43)
Interaction of Period 3 and diversion group indicator	−0.48 (0.12)**	−0.32 (0.26)	−1.11 (0.23)**	−0.35 (0.30)	−0.08 (0.19)	−0.27 (0.44)	−0.18 (0.10)	0.11 (0.22)	−0.18 (0.12)	0.21 (0.17)	0.37 (0.16)*	−0.50 (0.48)
Interaction of Period 4 and diversion group indicator	−0.18 (0.11)	−0.32 (0.24)	−0.65 (0.18)**	−0.13 (0.28)	0.33 (0.18)	−0.32 (0.45)	−0.36 (0.11)**	−0.25 (0.24)	−0.46 (0.14)**	0.34 (0.17)*	−0.08 (0.17)	−1.07 (0.52)*
Interaction of Period 5 and diversion group indicator	−0.08 (0.13)	−0.29 (0.26)	−0.72 (0.22)**	−0.19 (0.28)	0.55 (0.19)**	−0.29 (0.50)	−0.46 (0.12)**	−0.07 (0.24)	−0.61 (0.15)**	0.17 (0.18)	−0.19 (0.17)	−0.61 (0.51)
Diversion group indicator	0.14 (0.06)*	0.43 (0.17)*	0.62 (0.07)**	0.26 (0.20)	−0.27 (0.13)*	0.66 (0.33)*	0.11 (0.05)*	−0.05 (0.14)	0.13 (0.05)**	−0.17 (0.09)	−0.26 (0.11)*	0.57 (0.35)
Indicator for 0 to 6 months	—	0.45 (0.10)**	—	0.45 (0.09)**	0.17 (0.06)**	−0.39 (0.19)*	—	−0.49 (0.17)**	—	−0.60 (0.12)**	0.19 (0.09)*	0.00 (0.37)
Indicator for 6 to 12 months	−0.15 (0.05)**	0.01 (0.11)	0.00 (0.09)	0.21 (0.11)*	−0.19 (0.07)**	−0.07 (0.20)	−0.48 (0.08)**	−0.31 (0.20)	−0.84 (0.11)**	−0.20 (0.16)	−0.34 (0.13)*	0.23 (0.42)

(continued)

Table C-1. Major Cost Domains (continued)

	Pre-Booking						Post-Booking					
Cost Domain	Odds Ratio: Any CJ or TX Cost	Coefficient Estimate: CJ and TX Costs	Odds Ratio: Any CJ Cost	Coefficient Estimate: CJ Costs	Odds Ratio: Any TX Cost	Coefficient Estimate: TX Costs	Odds Ratio: Any CJ or TX Cost	Coefficient Estimate: CJ and TX Costs	Odds Ratio: Any CJ Cost	Coefficient Estimate: CJ Costs	Odds Ratio: Any TX Cost	Coefficient Estimate: TX Costs
Indicator for 12 to 18 months	−0.27 (0.06)**	0.01 (0.11)	−0.13 (0.09)	0.24 (0.11)*	−0.42 (0.09)**	−0.31 (0.22)	−0.54 (0.09)**	−0.22 (0.21)	−0.85 (0.11)**	−0.44 (0.15)**	−0.22 (0.13)	0.31 (0.43)
Indicator for 18 to 24 months	−0.49 (0.07)**	0.08 (0.12)	−0.30 (0.11)**	0.20 (0.12)	−0.69 (0.10)**	−0.04 (0.26)	−0.60 (0.09)**	−0.22 (0.20)	−0.88 (0.12)**	−0.23 (0.16)	−0.21 (0.13)	0.35 (0.42)
Sex indicator (male=1)	0.08 (0.05)	0.00 (0.07)	0.12 (0.03)**	0.04 (0.06)	0.10 (0.07)	−0.09 (0.14)	0.05 (0.03)	−0.08 (0.09)	0.06 (0.03)	0.10 (0.05)	0.10 (0.07)	−0.31 (0.19)
Race indicator (Hispanic=1)	−0.12 (0.05)*	−0.03 (0.08)	−0.05 (0.03)	0.01 (0.07)	−0.25 (0.07)**	0.09 (0.16)	0.01 (0.04)	−0.21 (0.11)	0.03 (0.04)	−0.01 (0.07)	−0.12 (0.08)	−0.37 (0.22)
Race indicator (non-Hispanic, non-white, unknown=1)	−0.14 (0.06)*	−0.11 (0.10)	0.00 (0.04)	−0.01 (0.08)	−0.16 (0.09)	−0.28 (0.20)	0.02 (0.05)	−0.45 (0.13)**	0.03 (0.05)	−0.11 (0.08)	−0.02 (0.09)	−0.90 (0.25)**
Missing race indicator	0.24 (0.25)	−0.2 (0.63)	0.55 (0.10)**	0.48 (0.44)	—	—	−0.13 (0.08)	−0.09 (0.22)	−0.07 (0.08)	0.13 (0.13)	−1.18 (0.57)*	1.25 (0.63)*
Mean-adjusted age	0.00 0.00	0.00 0.00	−0.01 (0.00)**	−0.01 (0.00)**	0.00 0.00	0.00 (0.01)	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	−0.01 (0.01)

(continued)

Table C-1. Major Cost Domains (continued)

	Pre-Booking						Post-Booking					
Cost Domain	Odds Ratio: Any CJ or TX Cost	Coefficient Estimate: CJ and TX Costs	Odds Ratio: Any CJ Cost	Coefficient Estimate: CJ Costs	Odds Ratio: Any TX Cost	Coefficient Estimate: TX Costs	Odds Ratio: Any CJ or TX Cost	Coefficient Estimate: CJ and TX Costs	Odds Ratio: Any CJ Cost	Coefficient Estimate: CJ Costs	Odds Ratio: Any TX Cost	Coefficient Estimate: TX Costs
Marital status indicator (never married, unknown=1)	0.00 (0.05)	−0.07 (0.08)	0.00 (0.03)	0.04 (0.07)	0.07 (0.07)	−0.28 (0.16)	−0.01 (0.04)	0.13 (0.11)	0.03 (0.04)	0.02 (0.06)	0.02. (0.08)	−0.05 (0.21)
Missing marital status indicator	—	—	—	—	—	—	−0.02 (0.10)	−0.10 (0.29)	0.02 (0.10)	0.02 (0.17)	−0.45 (0.48)	−1.66 (0.75)*
Living status indicator (independent, family=1)	0.02 (0.04)	−0.13 (0.07)	−0.09 (0.03)**	−0.02 (0.06)	0.06 (0.07)	−0.15 (0.14)	−0.01 (0.04)	0.09 (0.10)	−0.04 (0.04)	0.00 (0.06)	0.17 (0.07)*	0.15 (0.20)
Missing living status indicator	—	—	—	—	—	—	−0.04 (0.08)	−0.26 (0.23)	−0.05 (0.08)	−0.11 (0.13)	−0.50 (0.28)	−0.04 (0.54)
Education indicator (some college=1)	−0.04 (0.06)	−0.06 (0.10)	−0.02 (0.04)	−0.05 (0.08)	0.05 (0.09)	0.08 (0.19)	−0.05 (0.05)	−0.16 (0.14)	−0.02 (0.05)	−0.03 (0.08)	−0.11 (0.10)	−0.43 (0.27)
Education indicator (no high school diploma=1)	−0.05 (0.05)	0.08 (0.08)	0.04 (0.03)	0.00 (0.06)	0.00 (0.08)	0.14 (0.16)	−0.01 (0.04)	0.06 (0.10)	−0.01 (0.04)	0.04 (0.06)	0.02 (0.07)	0.08 (0.21)
Number of misdemeanors in year before sample period	0.02 (0.01)	0.01 (0.02)	0.08 (0.01)**	−0.01 (0.00)**	0.01 (0.02)	−0.03 (0.05)	0.02 (0.01)	0.06 (0.03)*	0.02 (0.01)*	0.06 (0.01)**	0.02 (0.02)	0.05 (0.05)

(continued)

Table C-1. Major Cost Domains (continued)

	Pre-Booking						Post-Booking					
Cost Domain	Odds Ratio: Any CJ or TX Cost	Coefficient Estimate: CJ and TX Costs	Odds Ratio: Any CJ Cost	Coefficient Estimate: CJ Costs	Odds Ratio: Any TX Cost	Coefficient Estimate: TX Costs	Odds Ratio: Any CJ or TX Cost	Coefficient Estimate: CJ and TX Costs	Odds Ratio: Any CJ Cost	Coefficient Estimate: CJ Costs	Odds Ratio: Any TX Cost	Coefficient Estimate: TX Costs
Number of felonies in year before sample period	0.13 (0.05)*	−0.01 (0.09)	0.07 (0.05)	0.02 (0.02)	0.15 (0.07)*	−0.24 (0.17)	0.01 (0.03)	0.01 (0.08)	0.02 (0.03)	0.03 (0.05)	−0.04 (0.07)	−0.05 (0.19)
Time at risk	—	−0.01 (0.00)**	—	0.03 (0.07)	—	—	—	−0.01 (0.00)**	—	−0.01 (0.00)**	—	—
Constant	−0.39 (0.07)**	10.25 (0.20)**	−1.16 (0.08)**	9.96 (0.16)**	−0.75 (0.10)**	7.99 (0.24)**	−0.14 (0.07)*	10.94 (0.23)**	−0.21 (0.07)**	10.68 (0.15)**	−0.78 (0.13)**	8.29 (0.40)**
Number of observations	1,993	1,421	1,93	992	2,340	932	2,325	1,465	2,325	1,268	2,430	645
Number of persons	468	468	468	468	468	370	486	479	486	476	486	271

Note: CJ = criminal justice; TX = treatment. Period 2 = initial point of diversion to 6 months after, Period 3 = 6 to 12 months after, Period 4 = 12 to 18 months after, and Period 5 = 18 to 24 months after. Standard errors are given in parentheses beneath each estimate.

* Significant at the 5% level.

** Significant at the 1% level.

Table C-2. Treatment Costs

	Pre-Booking						Post-Booking					
Cost Domain	Odds Ratio: Any CHCS Costs	Coefficient Estimate: CHCS Costs	Odds Ratio: Any Medication Cost	Coefficient Estimate: Medication Costs	Odds Ratio: Any UHS Cost	Coefficient Estimate: UHS Costs	Odds Ratio: Any CHCS Cost	Coefficient Estimate: CHCS Costs	Odds Ratio: Any Medication Cost	Coefficient Estimate: Medication Costs	Odds Ratio: Any UHS Cost	Coefficient Estimate: UHS Costs
Interaction of Period 2 and diversion group indicator	0.17 (0.30)	1.75 (0.61)**	0.41 (0.35)	−0.48 (0.32)	−0.1 (0.19)	0.17 (0.48)	0.15 (0.18)	0.59 (0.50)	0.25 (0.32)	0.10 (0.47)	0.06 (0.16)	−0.05 (0.61)
Interaction of Period 3 and diversion group indicator	−0.44 (0.35)	1.73 (0.74)*	0.31 (0.41)	0.02 (0.36)	−0.51 (0.30)	−0.15 (0.53)	0.50 (0.20)*	−0.50 (0.60)	0.30 (0.40)	0.69 (0.50)	0.22 (0.24)	0.44 (0.65)
Interaction of Period 4 and diversion group indicator	−0.39 (0.37)	2.08 (0.73)**	0.49 (0.44)	−0.58 (0.36)	0.20 (0.24)	−0.44 (0.48)	0.32 (0.22)	0.37 (0.59)	−0.32 (0.40)	0.68 (0.50)	0.05 (0.30)	−1.93 (0.67)**
Interaction of Period 5 and diversion group indicator	−0.08 (0.42)	3.06 (0.71)**	1.09 (0.43)*	−0.42 (0.37)	0.00 (0.28)	−0.61 (0.58)	0.01 (0.24)	0.24 (0.61)	−0.49 (0.45)	0.04 (0.55)	−0.52 (0.25)*	−0.32 (0.64)
Diversion group indicator	1.99 (0.29)**	−1.44 (0.57)*	−1.12 (0.35)**	0.28 (0.31)	−0.01 (0.15)	0.53 (0.34)	−0.43 (0.17)*	−0.18 (0.45)	0.11 (0.33)	−0.52 (0.38)	0.06 (0.16)	0.37 (0.43)
Indicator for 0 to 6 months	0.49 (0.29)	−0.99 (0.42)*	0.33 (0.07)**	0.13 (0.11)	−0.21 (0.10)*	−0.21 (0.25)	0.68 (0.13)**	0.23 (0.40)	−0.02 (0.30)	−0.18 (0.41)	−0.14 (0.14)	−0.18 (0.55)
Indicator for 6 to 12 months	0.11 (0.34)	−0.85 (0.47)	−0.11 (0.09)	0.33 (0.12)**	−0.38 (0.11)**	−0.06 (0.26)	0.14 (0.16)	1.01 (0.48)*	−0.10 (0.37)	−0.55 (0.43)	−0.52 (0.22)*	−0.67 (0.58)
Indicator for 12 to 18 months	0.06 (0.35)	−1.04 (0.47)*	−0.39 (0.11)**	0.23 (0.14)	−0.59 (0.14)**	−0.38 (0.26)	0.02 (0.17)	0.50 (0.46)	0.18 (0.35)	−0.65 (0.42)	−0.64 (0.26)*	0.81 (0.58)

(continued)

Table C-2. Treatment Costs (continued)

Cost Domain	Pre-Booking: Odds Ratio: Any CHCS Cost	Pre-Booking: Coefficient Estimate: CHCS Costs	Pre-Booking: Odds Ratio: Any Medication Cost	Pre-Booking: Coefficient Estimate: Medication Costs	Pre-Booking: Odds Ratio: Any UHS Cost	Pre-Booking: Coefficient Estimate: UHS Costs	Post-Booking: Odds Ratio: Any CHCS Cost	Post-Booking: Coefficient Estimate: CHCS Costs	Post-Booking: Odds Ratio: Any Medication Cost	Post-Booking: Coefficient Estimate: Medication Costs	Post-Booking: Odds Ratio: Any UHS Cost	Post-Booking: Coefficient Estimate: UHS Costs
Indicator for 18 to 24 months	−0.21 (0.41)	−1.28 (0.50)*	−0.89 (0.16)**	0.15 (0.15)	−0.66 (0.15)**	−0.11 (0.30)	−0.04 (0.18)	0.84 (0.47)	0.15 (0.39)	0.11 (0.46)	−0.23 (0.19)	0.20 (0.54)
Sex indicator (male=1)	0.02 (0.07)	−0.52 (0.30)	0.11 (0.08)	−0.04 (0.14)	0.07 (0.12)	0.09 (0.16)	0.15 (0.08)	−0.23 (0.20)	0.11 (0.16)	0.00 (0.21)	0.13 (0.12)	−0.08 (0.25)
Race indicator (Hispanic=1)	−0.12 (0.08)	0.11 (0.35)	−0.16 (0.09)	−0.01 (0.16)	−0.27 (0.13)*	0.21 (0.18)	−0.13 (0.09)	−0.03 (0.23)	0.43 (0.22)*	−0.27 (0.26)	−0.05 (0.14)	−0.29 (0.26)
Race indicator (non-Hispanic, non-white, unknown=1)	0.11 (0.09)	0.10 (0.40)	−0.14 (0.12)	−0.17 (0.20)	−0.43 (0.19)*	0.12 (0.26)	−0.15 (0.10)	−0.63 (0.26)*	0.01 (0.31)	−0.22 (0.28)	−0.06 (0.16)	−0.62 (0.32)
Missing race indicator	—	—	—	—	—	—	−4.17 (6.37)	—	—	—	−0.32 (0.77)	—
Mean-adjusted age	0.00 0.00	0.01 (0.01)	0.01 0.00	0.00 (0.01)	0.01 (0.01)	−0.01 (0.01)	0.00 0.00	0.00 (0.01)	0.00 (0.01)	0.01 (0.01)	0.01 0.00	0.00 (0.01)
Marital status indicator (never married, unknown=1)	−0.04 (0.07)	0.19 (0.33)	0.22 (0.09)*	0.02 (0.16)	0.09 (0.13)	−0.57 (0.19)**	0.07 (0.09)	−0.40 (0.22)	−0.48 (0.20)*	0.23 (0.25)	−0.03 (0.13)	0.19 (0.26)
Missing marital status indicator	—	—	—	—	—	—	0.75 (0.73)	1.10 (0.97)	—	—	−0.58 (0.81)	—

(continued)

Table C-2. Treatment Costs (continued)

	Pre-Booking						Post-Booking					
Cost Domain	Odds Ratio: Any CHCS Cost	Coefficient Estimate: CHCS Costs	Odds Ratio: Any Medication Cost	Coefficient Estimate: Medication Costs	Odds Ratio: Any UHS Cost	Coefficient Estimate: UHS Costs	Odds Ratio: Any CHCS Cost	Coefficient Estimate: CHCS Costs	Odds Ratio: Any Medication Cost	Coefficient Estimate: Medication Costs	Odds Ratio: Any UHS Cost	Coefficient Estimate: UHS Costs
Living status indicator (independent, family=1)	0.12 (0.07)	−0.10 (0.31)	0.07 (0.08)	0.05 (0.14)	0.12 (0.12)	−0.18 (0.17)	0.16 (0.08)*	−0.04 (0.20)	1.72 (0.40)**	0.14 (0.23)	0.10 (0.12)	0.35 (0.24)
Missing living status indicator	—	—	—	—	—	—	−1.30 (0.66)	−2.97 (0.82)**	—	—	−0.61 (0.43)	—
Education indicator (some college=1)	0.07 (0.09)	0.08 (0.44)	0.30 (0.10)**	0.05 (0.18)	−0.22 (0.16)	0.08 (0.24)	−0.02 (0.11)	0.00 (0.29)	0.13 (0.23)	0.17 (0.27)	−0.17 (0.17)	−0.40 (0.35)
Education indicator (no high school diploma=1)	−0.05 (0.07)	0.45 (0.33)	−0.11 (0.10)	0.01 (0.16)	−0.04 (0.13)	0.09 (0.19)	0.10 (0.08)	−0.06 (0.21)	0.22 (0.17)	0.02 (0.23)	−0.18 (0.13)	0.44 (0.26)
Number of misdemeanors in year before sample period	0.09 (0.02)**	—	0.04 (0.02)	—	−0.14 (0.08)	−0.01 (0.08)	0.02 (0.02)	0.07 (0.05)	0.03 (0.04)	−0.08 (0.06)	−0.01 (0.04)	—
Number of felonies in year before sample period	0.00 (0.12)	—	0.19 (0.08)*	—	0.16 (0.15)	−0.41 (0.23)	−0.03 (0.07)	0.10 (0.18)	−0.36 (0.25)	0.36 (0.29)	0.03 (0.11)	—
Constant	−2.96 (0.30)**	7.48 (0.53)**	−1.33 (0.13)**	6.22 (0.22)**	−1.20 (0.17)**	8.45 (0.28)**	−1.33 (0.17)**	7.34 (0.45)**	−3.93 (0.49)**	6.56 (0.45)**	−1.18 (0.21)**	8.06 (0.43)**
Number of observations	2,340	221	2,340	577	2,340	397	2,430	333	2,430	167	2,430	343
Number of persons	468	127	468	266	468	204	486	180	486	86	486	173

Note: CHCS = Bexar County's Center for Health Care Services; UHS = University Health System. Period 2 = initial point of diversion to 6 months after, Period 3 = 6 to 12 months after, Period 4 = 12 to 18 months after, and Period 5 = 18 to 24 months after. Standard errors are given in parentheses beneath each estimate.

* Significant at the 5% level.

** Significant at the 1% level.

APPENDIX D: RAW REGRESSION ESTIMATES FOR ADDITIONAL MODELS NOT PRESENTED IN THE RESULTS

Table D-1. Criminal Justice

	Pre-Booking				Post-Booking			
Cost Domain	Odds Ratio: Any Arrest	Coefficient Estimate: Arrest Costs	Odds Ratio: Any Jail Night	Coefficient Estimate: Jail Costs	Odds Ratio: Any Arrest	Coefficient Estimate: Arrest Costs	Odds Ratio: Any Jail Night	Coefficient Estimate: Jail Costs
Interaction of Period 2 and diversion group indicator	—	−0.38 (0.15)*	—	−0.14 (0.22)	—	0.09 (0.10)	—	0.20 (0.13)
Interaction of Period 3 and diversion group indicator	−0.96 (0.38)*	−0.28 (0.21)	−0.40 (0.28)	−0.08 (0.28)	0.27 (0.19)	0.11 (0.12)	0.07 (0.14)	0.42 (0.18)*
Interaction of Period 4 and diversion group indicator	−0.22 (0.25)	0.03 (0.17)	−0.06 (0.25)	−0.31 (0.27)	−0.09 (0.19)	0.33 (0.12)**	−0.20 (0.16)	0.45 (0.18)*
Interaction of Period 5 and diversion group indicator	−0.02 (0.27)	−0.05 (0.18)	0.15 (0.26)	−0.35 (0.24)	−0.10 (0.19)	−0.01 (0.11)	−0.24 (0.17)	0.47 (0.20)*
Constant	−1.66 (0.17)**	8.62 (0.12)**	−1.14 (0.13)**	10.79 (0.16)**	−0.36 (0.09)**	8.75 (0.12)**	−0.27 (0.09)**	11.39 (0.16)**
Number of observations	1,993	786	1,993	895	2,325	875	2,325	1,065
Number of persons	468	395	468	396	486	434	486	440

Note: Standard errors are given in parentheses beneath each estimate. Period 2 = initial point of diversion to 6 months after, Period 3 = 6 to 12 months after, Period 4 = 12 to 18 months after, and Period 5 = 18 to 24 months after.

* Significant at the 5% level.

** Significant at the 1% level.