

# **HUGO WALL SCHOOL** *of* **PUBLIC AFFAIRS**

## **Sedgwick County COMCARE and The Substance Abuse Center of Kansas**

One Year Post Implementation Cost Avoidance Study

September 2016

*Prepared by*

Wichita State University Hugo Wall School of Public Affairs  
Public Policy and Management Center

Lisa Dodson  
*Senior Project Manager*  
*Public Policy and Management Center*

Misty Bruckner  
*Director, Public Policy and Management Center*

James Covell  
*Graduate Assistant*

**Executive Summary**

This study used two approaches to estimate the cost avoidance impact of the Community Crisis Center. The first approach analyzed the annual cost avoidance to community services and the second approach estimated the cost avoidance of Center services if they were provided through in-patient hospital services.

The Community Crisis Center provided an estimated annual cost avoidance of approximately \$6.2 million based on the analysis of annual data from community services including hospitals, Emergency Medical Services, the Wichita Police Department and the Sedgwick County jail. A second approach to estimate cost avoidance examined the Community Crisis Center services and the estimated cost if these services had to be provided through in-patient hospital treatment. **Using a conservative estimate that between 20-30% of Crisis Center admissions would have to receive in-patient hospital treatment, the cost avoidance is estimated to average \$8.1 million.** The following table presents low, high and average cost avoidance estimates.

<b>Estimated Cost Avoidance Attributed to Community Crisis Center Services</b>			
	Low	High	Average
Community Crisis Center Services	\$3,561,163	\$5,341,745	\$4,451,454
Sobering/Detox Services	\$2,370,054	\$4,933,886	\$3,651,970
<b>Total</b>	<b>\$5,931,217</b>	<b>\$10,275,631</b>	<b>\$8,103,425</b>

This study examines only the most likely range of cost avoidance of the major stakeholders in the current mental health service delivery system. Estimates do not take into consideration all of the tangible and intangible benefits to system clients or their families.

It is important to emphasize that many of the avoided costs are not direct dollar savings to local government programs, but rather provide reallocation of staff time to alternative activities and slows the growth in the need for more resources.

The long-term savings will depend upon the growth capacity of the Community Crisis Center and its ability to respond to changing community trends. Cost savings from diversion of individuals from other community services will be realized only if there are sufficient beds and programs to serve those who are referred to the Center.



## Introduction

The Community Crisis Center (CCC), operated by COMCARE, was created in 2015 to provide rapid stabilization to avoid Emergency Department admissions, local hospitalizations, state hospitalizations and jail bookings. The CCC provides access to integrated mental health and substance use disorder crisis services at a single location. In 2015, the CCC project expanded existing crisis services to promote rapid stabilization and avoid Emergency Department admissions, local hospitalizations, state hospitalizations and jail bookings.

The geographic area served includes Sedgwick, Butler and Sumner Counties. The target population includes children, adolescents and adults who are at risk of a higher level of care, including voluntary or involuntary local and state hospitalization due to a mental health crisis and/or a crisis related to a co-occurring substance use disorder.

Crisis services expanded through the Community Crisis Center include:

- 24-hour crisis observation
- Expanded children's crisis residential stabilization
- Sobering Services
- Detox Services
- Peer Crisis Services
- Additional local transportation.

This study examines the cost-avoidance to the community as a result of the establishment of the Community Crisis Center (CCC).

## Hospital Costs

In SY15, the year the Community Crisis Center (CCC) became fully operational, Via Christi Hospital reported a 4.6% (355 cases), decline in behavioral health cases compared to SFY14, when they experienced a growth of 2.8% (159 cases).

To estimate the hospital treatment cost savings, we can estimate how many of these 355 cases would have been treated as inpatients or outpatients, and the costs associated with treatment. In SFY15, Via Christi treated 43.5% of cases as inpatients at an average cost of \$15,290 per case and 56.5% of cases as outpatients with the average cost of \$2,851. Using this data, we can estimate the treatment cost savings for 355 fewer cases to be \$2.9 million.

While there is no way to directly attribute the SFY16 decline in hospital cases to the creation of the Community Crisis Center (CCC), it is reasonable to assume this is an important contributing factor. It is estimated between 20% to 30% of the \$2.9 million cost savings is due to the diversion of cases to the Community Crisis Center (CCC). Consequently, the establishment of the CCC has saved between \$585,539 and \$878,309 in hospital treatment costs.

Treatment of uninsured patients is another loss avoidance for the hospital. In SFY15, the uninsured percentage of inpatients was 23% while 35% of outpatients were uninsured. Given the reduction of 355 cases in SFY15, the loss avoidance to the hospital due to uninsured patients totals \$742,139. Assuming between 20% and 30% of the loss avoidance is due to the establishment of the CCC, we can estimate between \$148,427 and \$222,642 savings in uninsured cost avoidance.

Total Hospital savings due to treatment cost savings and uninsured patient savings is estimated to be between \$733,967 and \$1.1 million.

A 2010-2011 survey found that 371,000 Kansans (21.6%) reported experiencing some kind of mental illness. Only about half of Kansans with mental illnesses received treatment, which is higher than the national average of 41%. According to this study, people with insurance coverage utilize mental health services more frequently. With the Affordable Care Act coming into full force it is reasonable to assume that there will be an increase in demand for mental health services in Kansas.<sup>1</sup>

Assuming the demand for mental health services will grow, the decline in reports of behavioral health cases at Via Christi, would seem to validate the assertion that the Community Crisis Center is diverting cases from the higher cost hospital treatments to the lower cost services offered by the Community Crisis Center.

### Impact on Osawatomie State Hospital Admissions

#### Admissions

State hospital admissions utilized by Sedgwick County have fallen 46.5% and Bed Days declined 32.6% between 2014 and 2015. Assuming a cost of \$825 per bed day, this reduction of 6,084 bed days results in an average annualized savings of \$5.0 million for the Kansas Department for Aging and Disability Services (KDADS).

Table 1.1: State Hospital

	2014*	2015 *	Percentage Change
State Hospital Admissions	1057	1127	-46.4%
Bed Days	18,648	12,564	-32.6%
Total Costs	\$15.2 million	\$10.1 million	-33.0%

\* Estimates based on March - October averages and annualized.

It can be assumed 95% of this reduction in admissions is due to the establishment of the Community Crisis Center, since no other system changes have occurred to account for this reduction. Consequently, the CCC has saved \$4.8 million in state hospital costs.

State Hospital Transports

The Sedgwick County Sheriff’s Office provides involuntary transports to Osawatomie State hospital via contract with Apple Bus. Transports declined almost 50% for May through October 2015, the period the CCC began operating, compared to May through October 2014. At a cost of \$375 per trip, the annualized estimated savings to Sedgwick County is \$133,500 (356 transports x \$375). If we assume 95% of the cost savings is due to the CCC, the saving is \$126,825.

Table 2.1: State Hospital Transports

	<b>2014*</b>	<b>2015 *</b>	<b>Percentage Change</b>
Transports	720	364	-49.4
Total Costs	\$270,000	\$136,500	-49.4

\* Estimates based on March - October averages and annualized.

In summary, the Community Crisis Center is estimated to save \$4.9 million in state hospital and transport costs.

**Emergency Medical Transports**

Sedgwick County Emergency Medical Service (EMS) responds to COMCARE Crisis Services for medical and psychiatric emergencies. In 2015, EMS transported 178 individuals from the Crisis Center to area hospitals and it is estimated that in 2016 they will transport 65 individuals. The average loss per transport in 2015 was \$235.96. Assuming the 113 fewer transports are due to the existence of the Community Crisis Center, the cost savings is \$26,663.

Table 3.1: EMS Transports

	<b>2015</b>	<b>2016*</b>	<b>Percentage Change</b>
COMCARE Crisis Center Responses	178	65	-63.4%

\* Estimates based on January - September averages and annualized.



## **Wichita Police Department**

According to the Wichita Police Department, officers responded to approximately 2100 mental health and suicide attempt calls in the 12-month prior to the establishment of the Community Crisis Center (CCC). After the CCC opened, police report responding to 1801 mental health calls, a reduction of 299 calls (-14%). This decline may be due to earlier intervention services and the ability of families and individuals to self-refer to the Community Crisis Center, avoiding interactions with law enforcement.

Based on WPD estimates of time, number of personnel involved and average wages, total costs of the mental health calls for the 12-months prior the establishment of the CCC was \$270,686 falling to \$234,800 after the establishment of the Crisis Center. This \$35,886 reduction cannot be specifically attributed to the creation of the Community Crisis Center, but it is reasonable to assume that the establishment of the Center is an influencing factor.

The WPD reports transporting 1318 patients to the hospital in the year prior to opening the Center and 1171 patients after the opening of the Center, a reduction of 147 cases. Approximately 25% of the WPD mental health calls are transported to COMCARE. Using this percentage, it is reasonable to attribute at least \$8,972 of these savings to the establishment of the CCC.

In addition, wait times for WPD officers transporting patients to area hospitals are estimated to average three hours while the wait time for the CCC is estimated at 15 minutes. Using an average hourly rate for a police officer of approximately \$45 (salary + benefits), the wait time at hospitals is estimated to be \$135 compared to approximately \$11.25 for a drop-off at the CCC, a savings of \$123.75 of officer time. For the 424 cases taken to the CCC between May 1, 2015 to April 30, 2016, this is a savings of \$52,470 in officer time.

In summary, the estimated cost savings to law enforcement is \$97,328. These numbers may be conservative because officers have discretion in categorizing cases formally labeled as mental health-related. In addition, officers may not record the location of transportation.

## **Sedgwick County Jail Diversion**

About 20% of prison inmates have a serious mental illness, 30% to 60% have substance abuse problems and, when including broad-based mental illnesses, the percentages increase significantly. For example, 50% of males and 75% of female inmates in state prisons, and 75% of females and 63% of male inmates in jails, will experience a mental health problem requiring mental health services in any given year. Individuals with severe mental illness are three times more likely to be in a jail or prison than in a mental health facility and 40% of individuals with a severe mental illness will have spent some time in their lives in either jail, prison, or community corrections.<sup>2</sup>

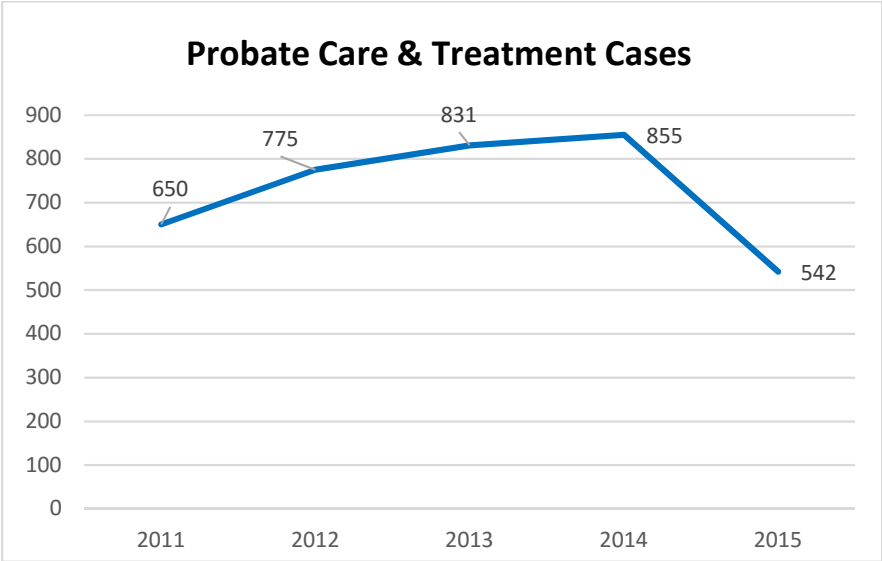
According to the Sedgwick County Sheriff’s office, in 2015 approximately 144 individuals, for a total of 1,342 jail days are related to mental illness and could be diverted to the Community Crisis Center. The 2015 estimated cost of a day in jail is \$67.72 resulting in \$90,880 annual cost. In addition, the monthly cost for psychotropic drugs is estimated at \$6,836 for an annual cost of \$97,746. If 95% of these costs can be reallocated to the CCC, the savings is \$92,830.

Research demonstrates that treating offenders with drug abuse and addiction increases public health and safety by improving medical outcomes, reducing criminal behavior and decreasing rates of re-incarceration. <sup>3</sup> These findings indicate referring these individuals to the Community Crisis Center would provide individual and public health and safety benefits exceeding the anticipated treatment costs.

**Probate Court**

Involuntary Commitment Care & Treatment cases in Sedgwick County have consistently increased from 2011 through 2014. However, in 2015 the case count decreased 36%, reducing the case workload for the District Attorney’s Office, court personnel and defense attorneys, allowing them to allocate staff time to processing criminal cases. This also results in decreased County expenses for patient attorney representation.

Graph 1.1: Probate Cases



Source: *Community Crisis Center Report and Funding Request for Region 2 Detoxification Services (2015)*.



**ESTIMATED COST AVOIDANCE TO EXISTING COMMUNITY SERVICES**

This study indicates the Community Crisis Center provides a significant cost avoidance of \$6.2 million to community sectors. Table 4.1 summarizes sector estimates.

**Table 4.1: Estimated Cost Avoidance to Existing Community Services**

Hospital Care Cost Savings	\$1,100,950
State Hospital Admissions & Transports	\$4,895,160
Emergency Medical Transports	\$26,663
Wichita Police Department	\$97,328
Sedgwick County Jail	\$92,830
<b>Total</b>	<b>\$6,212,931</b>

**COMCARE COMMUNITY CRISIS CENTER IMPACT**

The Community Crisis Center is able to provide integrated mental health and substance use disorder crisis services at a lower-cost than area hospitals. Another approach to assess cost avoidance is to compare costs of services provided by the Crisis Center to costs if these services were delivered in a hospital.

**Community Crisis Center - Crisis Units**

The CCC Crisis Observation Unit served 1,127 cases in 2016, a growth of 6.7% and the Children’s Crisis Unit served 109 cases, growing 20% from the 2015 levels.

Table 5.1: Crisis Observation Services.

	<b>2015</b>	<b>2016 *</b>	<b>Percentage Change</b>
Crisis Observation Unit	1057	1127	6.7%
Children’s Crisis Unit	91	109	20.0%
<b>Total</b>	<b>1148</b>	<b>1236</b>	<b>7.7%</b>

Estimates based on January – March 2016 averages and annualized.

The average cost per admission for the Crisis Center is \$884, which provides one-on-one staffing for patients. Treatment of these individuals as in-patients in the hospital averages \$15,290. By treating these patients at the Crisis Center, the cost savings is \$14,406 per admission. In 2016, the estimated cost savings would be \$17.8 million (1236 x \$14,406).





It is not realistic to assume all the Crisis Center patients would receive in-patient hospital care. Some patients would not receive services at all, while some would go to area hospitals. If we conservatively assume that between 20% to 30% of the individuals treated at the Crisis Center would have to be hospitalized if the Center did not exist, the hospital care cost avoidance would be between \$3.5 million and \$5.3 million.

### Sobering and Detox

The Substance Abuse Center of Kansas (SACK) provides Sobering and Detox Units that are co-located with COMCARE's mental health Community Crisis Center (CCC). Beginning in 2015, SACK provided sobering services, which were restricted to alcohol. Later in the year, SACK expanded services to include detox beds, which allow for more admissions of both alcohol and drug patients. Detox Drug cases are projected to grow by 24.9% and Detox Alcohol is expected to grow by 8.6% in 2016. The expansion of Detox services allowed patients in the sobering unit to be admitted to Detox, consequently the Sobering unit admissions were stable. However, total Sobering and Detox services are expected to increase by 11.0% (109 cases). Data for 2015 and 2016 is presented in Table 6.1.

Table 6.1: SACK Services

SACK Case Service	2015*	2016 **	Percentage Change
Detox Drugs*	405	506	24.9%
Detox Alcohol**	210	228	8.6%
Sobering***	378	368	-2.6
Total Cases	993	1102	11.0%

\* Estimates based on June – December 2015 averages and annualized.

\*\*Estimates are based on January – June 2016 and annualized.

\*\*\*Sobering 2015 services estimated on March – December 2015 and Sobering 2016 estimates January – June 2016 and annualized.

Assuming that at least 30% of the SACK 2016 patients (331 patients) would have to be treated as inpatients in the hospital if the SACK services were not available, the estimated cost of in-patient hospital treatment would be \$5.1 million (331 patients x \$15,290 hospital average cost). According to SACK, the average stay in the Detox Unit is 48 hours at a cost of \$384 per client. The comparable cost for SACK to treat these patients is \$127,104 (331 patients x \$384) for a cost savings of \$4.9 million compared to inpatient hospital treatment.

Another approach to estimating cost savings is to examine the actual number of cases referred to Detox and Sobering from area hospitals. This approach considers only actual referrals by hospitals, and does not take into account other agency, family or self-referrals that might have

gone to the hospital if the CCC did not exist. Consequently, this approach may underestimate the number of cases and the cost avoidance.

Table 7.1: Hospital Referrals

	2015*	2016 **	Percentage Change
Detox Drugs*	63	54	-17.0%
Detox Alcohol**	30	24	-25.0%
Sobering***	87	60	-45.0%
<b>Total Cases</b>	<b>180</b>	<b>138</b>	<b>-30.0%</b>

\* Estimates based on June – December 2015 averages and annualized.

\*\*Estimates are based on January – June 2016 and annualized.

\*\*\*Sobering 2015 services estimated on March – December 2015 and Sobering 2016 estimates January – June 2016 and annualized.

Estimates of 2015 and 2016 hospital referrals are in Table 7.1. Hospital referrals have declined in 2016, which support the conclusion that citizens are directly utilizing the services of the Community Crisis Center before seeking help at hospitals.

Using an average of 2015-2016 of 159 hospital referrals, the cost of treating these patients at the hospital is \$2.4 million for inpatient care (159 x \$15,290) compared to \$61,056 (159 x \$384) for treatment at SACK. In summary, the Sobering and Detox services provided by SACK produces an estimated savings in hospital costs of \$2.4 million to \$4.9 million.

### Cost Avoidance Attributed to Crisis Center

Table 8.1 presents the high, low and average estimated cost savings due to the establishment of the Community Crisis Center services.

**Table 8.1: Estimated Cost Avoidance Attributed to Community Crisis Center Services**

	Low	High	Average
Community Crisis Center	\$3,561,163	\$5,341,745	\$4,451,454
Sobering/Detox	\$2,370,054	\$4,933,886	\$3,651,970
<b>Total</b>	<b>\$5,931,217</b>	<b>\$10,275,631</b>	<b>\$8,103,425</b>

## **SUMMARY OF COST AVOIDANCE**

This study used two approaches to estimate the cost avoidance impact of the Community Crisis Center. The first approach analyzed the annual cost avoidance to community services and the second approach estimated the cost avoidance of Center services if they were provided through in-patient hospital services.

The approach using the analysis of annual data from community services indicates the establishment of the Community Crisis Center has provided an estimated annual cost avoidance of approximately \$6.2 million.

The second approach to estimate cost avoidance examined the Community Crisis Center services and the estimated cost if these services had to be provided as in-patient hospital treatment. Using a conservative estimate that between 20-30% of Crisis Center admissions would have to receive in-patient hospital treatment, the cost avoidance is estimated to average \$8.1 million.

This study examines only the most likely range of cost avoidance of the major stakeholders in the current mental health service delivery system. Estimates do not take into consideration all of the tangible and intangible benefits to system clients or their families.

It is important to emphasize that many of the avoided costs are not direct dollar savings to local government programs, but rather provide reallocation of staff time to alternative activities and slow the growth in the need for more resources. In addition, full long-term savings will depend upon the growth capacity of the Community Crisis Center and its ability to respond to changing community trends. Cost savings from diversion of individuals from the jail and emergency department will be realized only if there are sufficient beds and programs to serve those who are referred to the Center.

## **ADDITIONAL FINDINGS**

This study identified additional findings that are important considerations for decision-makers.

### **Expansion of Sobering Services**

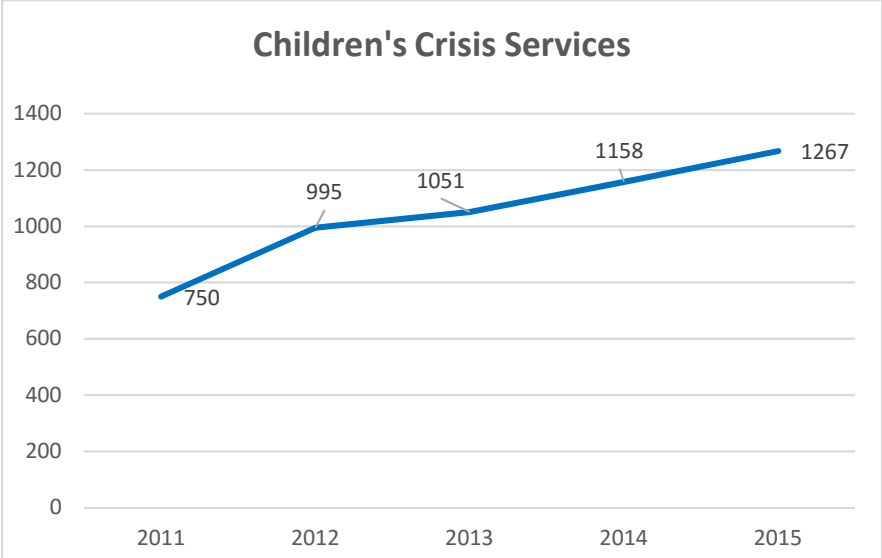
In order to qualify for the Sobering Unit a client must register on the Breathalyzer machine above a .04 and under a .30 Blood Alcohol Content (BAC). Clients that are over the .30 BAC must be sent to the hospital for treatment. If SACK could provide medical care consisting of a 0.25 FTE physician, 1.0 FTE Registered Nurse and 3.5 FTE Licensed Practical Nurses sobering clients registering over .30 Blood Alcohol Content could be accepted for treatment by SACK. The estimated cost of providing this medical care is \$300,000.

SACK is projected to have 368 Sobering cases in 2016. If 25% more cases (92 cases) could be accepted, which now must be sent to the hospital for treatment, the cost for SACK to treat these additional patients is estimated at \$335,420 (\$300,000 medical staff costs + \$385 avg. cost x 92 cases). If these 92 cases were treated in the hospital as in-patients, the costs would be \$1.4 million (92 x \$15,290 avg. cost). Assuming patients with a BAC of .30 or higher are treated as in-patients, providing the medical staff at SACK/CCC provides a substantial cost savings of \$1.1 million.

**Expansion of Children’s Crisis Services**

Over the past five years, the number of children needing services from the Crisis Center has grown 41%, as shown in Graph 2.1. Currently, the Center has a partnership with the Wichita Children’s Home, to assist in providing children’s residential services at a separate location from adult services. In addition, the Community Crisis Center has identified times when it is most appropriate for youth and their families to be served in separate areas of the building, so they are not impacted by behaviors of adults.

Graph 2.1: Children’s Crisis Services



Other large urban communities, such as The Restoration Center in San Antonio, Texas, have a separate children’s crisis program. As the overall volume of services is projected to continue growing, the Crisis Center should consider establishing a separate facility for children and their families.

**Data Needs**

As the Community Crisis Center (CCC) and the Substance Abuse Center of Kansas (SACK) continue to expand, the need for refined data collection methods is increasingly important. For example, it would be beneficial if the CCC and SACK could collect data on the number of

individuals they must turn away, or refer to a different treatment center, because of lack of space or due to limitations of care, such as the Blood Alcohol Content being out of the range for services. It is also important to quantify data by a common time frame, such as monthly or by a designated fiscal or annual year.

## CONCLUSION

The Community Crisis Center provides an estimated \$6.2 million to \$8.1 million in annual cost avoidance. The public would be well-served if further investments were made to expand sobering services through hiring of additional medical staff. In addition, a separate children's crisis services program would more effectively benefit families in crisis. As the Crisis Center grows, it will be important to identify metrics and consistent data collection methods for the Center and its supporting agencies. This would benefit the Center's ability to conduct comparative analysis of existing and new services offered.

---

<sup>1</sup> *The Kansas Mental Health System: Health Reform Likely to Increase Demand*. (2014). Topeka, KS: Kansas Health Institute.

<sup>2</sup> Aufderheide, D. (2014, April 1). Mental Illness in America's Jails and Prisons: Toward A Public Safety/Public Health Model. Retrieved July 08, 2016, from <http://healthaffairs.org/blog/2014/04/01/mental-illness-in-americas-jails-and-prisons-toward-a-public-safetypublic-health-model/>

<sup>3</sup> Chandler, R. K., Fletcher, B. W., & Volkow, N. D. (2009). Treating drug abuse and addiction in the criminal justice system: improving public health and safety. *Journal American Medical Association*, 301(2), 183-190.