2018 Cost Avoidance Study

Sedgwick County Community Crisis Center: COMCARE and the Substance Abuse Center of Kansas

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Executive Summary

This study examines the cost avoidance impact of the Community Crisis Center (CCC), which includes services provided by COMCARE and the Substance Abuse Center of Kansas (SACK). The first approach estimated the cost avoidance of Center services provided through in-patient or outpatient hospital facilities. Using a conservative estimate, it is hypothesized between 20-30% of Crisis Center admissions would have to receive hospital treatment. The cost avoidance is estimated to average \$15.5 million in 2018, compared to estimated \$12.1 million in 2017. The following table presents low, high and average cost avoidance estimates for 2018.

Estimated Cost Avoidance 2018				
	Low Estimate	High Estimate	Average	
Community Crisis Center	\$5,434,792	\$8,152,188	\$6,793,490	
Sobering/Detox Services	\$6,944,638	\$10,416,957	\$8,680,798	
Total	\$12,379,430	\$18,569,145	\$15,474,288	

The second approach to cost avoidance analyzed the annual cost avoidance to hospitals, EMS, and law enforcement agencies due to the decline in the number of cases processed during 2018. The cost avoidance to other community agencies, due to the creation of the CCC, is approximately \$2.8 million in 2018.

The CCC continues to be a cost-effective model to serve the behavioral health needs of Sedgwick County. In 2018, the cost avoidance savings were fueled by a 26% growth in hospital costs, compared to modest growth in costs at the CCC.

The growing demand for behavioral health services is straining the jail and other community agencies. Most notable is the 133% increase in the number of behavioral health jail inmates with minor offenses, who could have been admitted to alternative lower cost facilities (for example the CCC), if beds were available.

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 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 cost savings will depend upon the capacity of the Community Crisis Center and the creation of additional care options in the community. Continued collaboration of service providers to share information and data is strongly encouraged. In addition, more information is needed about the impact of community prevention efforts to address substance abuse and trauma and the resulting cost benefits of these services. Community discussions and additional investment is needed to identify gaps in service areas and foster development of community-wide strategies for prevention, reducing costs and managing behavioral health services.

Introduction

The Community Crisis Center (CCC) operated by COMCARE and the Substance Abuse Center of Kansas (SACK) partnered in 2015 to provide rapid stabilization to 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 for 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 due to the establishment and operation of the Community Crisis Center (CCC). The Community Crisis Center became operational in 2015. It examines cost avoidance of community services in 2018.

Two approaches are used to assess cost avoidance. The first approach examines costs avoided by treating clients in the CCC rather than sending them to area hospitals.

The second approach examines the reduction in costs of behavioral mental health cases served by other community agencies. It is assumed that this reduction is due, in part, to the creation of the Community Crisis Center.

Impact of COMCARE and SACK Community Services on Cost Avoidance

The Community Crisis Center (CCC), is operated through a partnership with COMCARE and the Substance Abuse Center of Kansas (SACK) and provides integrated mental health and substance use disorder crisis services at a lower cost than area hospitals. One 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 930 cases in 2018, a decline of 4.7%, and the Children's Crisis Unit served 39 cases, falling 26.5% from the 2017 level. The Crisis Stabilization Unit number of cases dropped by 52.3%.

	2017	2018	Percentage Change
Crisis Observation Unit	976	930	-4.7%
Children's Crisis Unit	49	36	-26.5%
Crisis Stabilization Unit	507	242	-52.3%
Total Cases	1532	1208	-21.1%

Table 1.1: COMCARE CASES

Analysis of these findings indicates the reduction in the number of cases does not reflect a decline in the demand for services. Cases are the number of individuals treated, but individuals are now requiring longer stays for treatment. The increase in acuity necessitates longer stays, so the number of admissions is reduced but not the number of services delivered. This limits the number of cases that can be accepted due to bed availability. The addition of Morris Place was designed to assist clients stabilizing for a longer period. In the future, COMCARE will be able to capture bed days in the new electronic health record, which should give a more accurate picture.

In addition, there is a growing number of clients that require repeat petitions with the court to approve their treatment stays. In 2018, 167 clients required repeat petitions

to approve longer stays. This approval process impacts care and treatment numbers, as well as administrative time for processing.

Staff also report growth in acute onsite and hospital calls, requiring prioritization of cases. Consequently, staff have less ability to respond to cases that are not acute. Additional counselors have been hired to target mobile crisis and after-hours leadership for the Center in order to meet the growing demand for services. The Children's Crisis unit has been underutilized, due to parent's preference to send children to inpatient units, rather than the children's crisis beds.

The average cost per admission in SFY17 for the Crisis Center is challenging to calculate, due to the variety of services provided. It can range from \$884 used in this report in 2017 to an estimated \$480 in SFY18. Data has been adjusted to reflect an average of these rates at \$682. Treatment of individuals as in-patients in the hospital averages \$18,459 in 2017 and \$23,177 in 2018. By treating patients at the CCC, the cost savings per patient are \$17,777 (\$18,459 - \$682) in 2017 and \$22,495 (\$23,177 - \$682) in 2018. In 2017 and 2018 the estimated total cost savings, in the event all clients were treated as in-patient at a hospital, would be approximately \$27.2 million annually.

It is not realistic to assume all the Crisis Center patients would receive in-patient hospital care. Some patients would not receive service at all, while some would go to area hospitals. If we conservatively assume that between 20% to 30% of patients treated at the Crisis Center would have to be hospitalized if the Center did not exist, the hospital care cost avoidance would be between \$5.4 million and \$8.2 million in 2018.

	2017*		2018*	
	Low Estimate (20%)	High Estimate (30%)	Low Estimate (20%)	High Estimate (30%)
Crisis Center Cost Avoidance	\$5,446,873	\$8,170,309	\$5,434,792	\$8,152,188

Table 1.2:	Crisis	Center	Cost Avoidance
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*Revised from January 2018 report based on average cost of admission of \$682.

Substance Abuse Center of Kansas Sobering and Detox Services

SACK provides sobering and detox units that are co-located with COMCARE's mental health Community Crisis Center. Beginning in 2015, SACK provided sobering services, which were restricted to alcohol and later in the year, SACK expanded

services to include detox beds. Detox cases have been stable, but sobering has declined by 26.9%. This decline is attributed to better screening by staff to ensure patients with higher blood alcohol levels are sent to hospitals.

Cases	2017	2018	Percentage Change
Detox Drugs & Alcohol	1,163	1,178	1.2%
Sobering	472	345	-26.9%
Total Cases	1,635	1,523	-6.9%

Table 2.1: Cases Served by SACK Services

SACK Costs

Detox costs per client increased from \$473 in 2017 to \$487 in 2018, a 3.0% increase. The average stay for detox patients declined from 72 hours in 2017 to 60 hours in 2018. This reduced average stay, coupled with the modest increase in treatment costs, resulted in a slight increase in average detox cost per patient in 2018.

Sobering costs per client increased about 24% from \$53 in 2017 to \$65 in 2018. Despite this increase for sobering, SACK has been effective in holding total costs relatively stable, with a modest 3.5% increase between 2017 and 2018.

Table 2.2: SACK Average Cost per Case and Total Costs

Costs	2017	2018	Percentage Change
Detox Drugs & Alcohol Average Cost	\$473	\$487	3.0%
Sobering Average Cost	\$53	\$65	23.6%
Total Costs	\$574,959	\$594,889	3.5%

This study assumes a conservative estimate that between 20% and 30% of the SACK patients would be treated as inpatients in the hospital if the SACK services were not available. The estimated average cost of in-patient hospital treatment in 2018 is \$23,177, a 26% increase over the 2017 average cost of \$18,459.

Table 2.3: SACK Cost Avoidance

	2017		20	18
	Low Estimate (20%)	High Estimate (30%)	Low Estimate (20%)	High Estimate (30%)
SACK Cost Avoidance	\$5,916,608	\$8,874,912	\$6,944,638	\$10,416,957

Growing Demand for SACK Services

SACK reports 575 clients were declined services due to several reasons. Approximately 39% (222) clients were turned away because no beds were available, 8% (47) were too intoxicated to be served on-site, about 15% (86) were too medically or mentally unstable to received services provided by SACK and 25% (141) of patients had miscellaneous reasons they could not be served. Patients declined are referred to the hospital or other community services.

TOTAL COST AVOIDANCE ESTIMATE OF CCC

Examining the combined impact of the CCC, total cost avoidance is estimated to be between \$12.4 and \$18.6 million in 2018.

Table 3.1: Estimated Cost Avoidance Attributed to Community Crisis Center and
Substance Abuse Center of Kansas Services

	2017		20)18
	Low Estimate (20%)	High Estimate (30%)	Low Estimate (20%)	High Estimate (30%)
COMCARE Cost Avoidance	\$5,446,873	\$8,170,309	\$5,434,792	\$8,152,188
SACK Cost Avoidance	\$5,916,608	\$8,874,912	\$6,944,638	\$10,416,957
Total Cost Avoidance	\$11,363,481	\$17,045,221	\$12,379,430	\$18,569,145

COST AVOIDANCE IMPACT ON COMMUNITY SERVICES

The second approach examines cost avoidance to community service providers who benefit from the establishment of the Community Crisis Center.

Hospital Costs

Growing Demand for Hospital Services

The CCC became operational in SFY15, with the ability to serve patients that might have otherwise used hospital or emergency department services. Ascension Via Christi Hospital (AVC) serves most behavioral mental health patients, so AVC data was used to measure cost avoidance in the hospital sector.

In 2018, patients increased slightly by 4.8 % (354 patients), but patient admissions are still below the high of 7787 in 2014, before the CCC was implemented.

Table 4.1: Hospital Cases: Behavioral Mental Health

	2016	2017	2018
Total Behavioral Mental Health Patients for AVC	7281	7009	7366

Previous cost avoidance studies (January 2018, September 2016) have shown a steady annual decline in the number of behavioral health patients served by AVC, due in part to the creation of the CCC. However, in 2018, growth in community demand is pushing hospital capacity towards levels experienced in 2014, before the CCC was established.

ACV reports that in FY19 they are projecting a growth of 750+ discharges from Behavioral Health units, which would bring the number of patients to approximately 8111, well above the 2014 level of 7787 (prior to establishing the CCC). AVC attributes this growth in patients to growing demand for services coupled with the completion of the Project Renewal capital project to increase the hospital's number of in-patient, private rooms. Despite this \$50 million investment, AVC reports the unit is filled and there continues to be a waiting list.

Many factors influence the growing crisis in behavioral mental health. It is not unreasonable to assume community environmental and structural factors, outside the influence of the creation of the CCC, are now contributing to growth in the population of behavioral health patients who cannot be diverted to the CCC for treatment and require hospitalization. However, the community continues to benefit from the establishment of the CCC and the expansion of in-patient beds at AVC in 2019. Projections indicate demand is outpacing the community's capacity to care for behavioral health patients.

Cost Avoidance

One approach to estimate the impact of the CCC and SACK on hospital cost avoidance, is to compare patient levels before and after the implementation of the CCC. In 2014, prior to the establishment of the CCC, hospital patient levels peaked at 7787 cases, which is 424 more patients than in 2018. Using this decline in cases, we can estimate the cost savings based on the average cost of inpatient care in SFY18 of \$23,177 and \$3,856 for outpatient cases. The total cost savings is \$4.9 million.

Assuming a cautiously low estimate of 20% to 30% of the decline in hospital cases is due to diversion to the CCC and SACK, cost savings estimates range from \$1.6 to \$2.4 million, as presented in Table. 4.2.

	2018*		
	Low Estimate (20%)	High Estimate (30%)	
Hospital Treatment Cost Avoidance	\$969,819	\$1,454,728	
Uninsured Patients Cost Avoidance	\$635,278	\$952,917	
Total Hospital Cost Avoidance	\$1,605,097	\$2,407,645	

Table 4.2: Total Hospital Cost Avoidance

*Benchmarked to 2014 level.

Osawatomie State Hospital Admissions

Admissions

In 2014, Osawatomie State Hospital capacity issues reached their worst levels when 2,684 patients were unable to be admitted to a facility with 206 licensed beds. Overcapacity issues, as well as facility maintenance, resulted in the hospital suspending admissions, reducing bed capacity, and providing wait lists in order to increase the quality of services provided (Kansas Health Institute, 2017). The decline in state hospital admissions severely reduced the number of Sedgwick County admissions to a new low of 294 in 2018. In SFY18, bed days increased about 6.7% over the prior year. The 47.1% decline in admissions in SFY18, coupled with the 6.7% increase in bed days, indicates the average stay per patient has grown from 18.2 days in SFY17 to 36.8 days in SFY18.

 Table 5.1: State Hospital Admissions and Bed Days

	2017	2018*
State Hospital Admissions	556	294
Bed Days	10,144	10,820
Total Costs	\$6.7 million	\$8.3 million

*Estimated cost for state hospital is \$662/day in 2014-17; \$764 in 2018. Benchmarked to 2014.

To calculate the cost savings, bed days for SFY18 is benchmarked against SFY14, prior to the opening of the CCC. The cost per day for Osawatomie State Hospital is \$764 and the cost per day for COMCARE is averaged for SFY17-18 at \$682 per patient. If we assume 95% of these patients were served by COMCARE, the cost avoidance is \$609,801 for SFY18.

	2017	2018
Cost Avoidance	\$519,471	\$609,801

State Hospital Transports

The Sedgwick County Sheriff's Office provides involuntary transports to Osawatomie State Hospital via contract with Apple Bus. Data for SFY14, prior to the creation of the CCC was not available, so this study benchmarked against the SFY15 level of 364 trips. Using an average cost of \$414 per trip in SFY18 the total cost avoidance is \$42,228 in 2018.

Table 5.3: State Hospital Transports

	2017*	2018*
Transports	279	262
Total Cost Avoidance	\$37,125	\$42,228

*Cost per transport in SF17 = \$375 and SF18 = \$414.

Emergency Medical Transports

Sedgwick County Emergency Medical Service (EMS) responds to COMCARE Crisis Services for medical and psychiatric emergencies. Transports have been declining since the establishment of the CCC in 2014. Table 6.1 presents the number of transports over the past two years. The average loss per transport in 2018 was \$222. Benchmarking the 2018 transports against the peak level of transports (236) in 2014, prior to establishment of the CCC, the cost avoidance is \$18,017.

Table 6.1: EMS Transports

	2017*	2018
Transports	202	155
Cost Avoidance	\$9,997	\$18,017

*Estimates based on January – June averages and annualized.

Wichita Police Department

The Wichita Police Department (WPD) reports an estimated 1306 mental health and suicide attempt incidents in the 12-month between April 2017 and March 2018 compared to 2045 incidents in 2017, a 36% decline. According to the WPD, officers responded to 2100 mental health and suicide attempt calls in 2014, prior to the establishment of the CCC. Call levels now exceed levels experienced in 2014. Data in 2017 and 2018 reflect the growing demands on law enforcement.

Based on WPD estimates of time, number of personnel involved and average wages, total costs in officer time for the mental health calls for the 12-month period are estimated to be \$146,684 compared to \$266,749 in 2017. This represents a decrease of 45%. Costs for the WPD fell between 2017 and 2018, in part, due to reduced officer times spent on each call.

The WPD drew a one-month sample for mental health and suicide calls in 2017 and 2018. In 2017, the average time of a mental health call was 87.4 minutes compared to 42 minutes in 2018. These time efficiencies coupled with fewer calls contributed to lower 2018 estimated cost avoidance.

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 \$46 (salary + benefits), the wait time at hospitals is estimated to be \$138 compared to approximately \$11.25 for a drop-off at the CCC, a savings of \$126.75 of officer time per call. In 2018, 252 cases were taken to the CCC. This is a savings of \$31,814.

Table 7.1: WPD Cost Avoidance	

	2017*	2018
Number of Calls to CCC	495	252
Total Cost Avoidance	\$62,741	\$31,941

*Revised from January 2018 report

The total cost avoidance attributed to the WPD is \$31,941 in 2018. 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 for all cases.

Sedgwick County Jail Diversion

Samples of cases from the Sedgwick County Sheriff's office identified an approximate number of individuals incarcerated each year for crimes connected to mental illness. In 2017, approximately 837 individuals had low level charges and could have been diverted to another facility if beds were available. In 2018, a 90-day sample found 486 inmates could have been diverted from jail. Assuming this sample is a representative of one quarter of the year, then in 2018, approximately 1944 individuals might have been eligible for diversion if space was available. This represents a growth of 133% over the previous year.

The data points to a growing behavioral health crisis in our community which is taxing community resources, including the jail. The cost per day for incarnation in the jail

is lower than for treatment at the CCC or AVC, but it sustains the cycle of rotating inand-out of jail, because the individual's behavioral health issues are not fully addressed.

In 2018, the jail sample indicated the 1944 individuals spent an average of approximately 12 days in jail at a cost of \$72 per day. This totals \$1.7 million. The average cost for a behavioral health inmate in the jail for 12 days is \$863 compared to the average cost for treatment at the CCC of \$682. Housing behavioral health inmates in the jail costs approximately \$181 more per inmate. If beds were available at the CCC, the community would have saved \$352,408. However, this savings was not realized due to lack of facilities other than the jail.

The Sheriff's office transported 40 inmates to the state hospitals at Larned and Osawatomie for a total of 31 trips. The average transport cost for Larned is \$287.38 and Osawatomie is \$384.23 per trip. The total transport cost is estimated to be \$9,296. It would cost the Sheriff's office an estimated \$34,531 to house these inmates, less the cost of transportation to the state hospital for a net cost reduction of \$25,235.

Table 8.1 shows 2018 cost avoidance is a negative \$327,173. The increasing jail costs to the community are due to the large growth rate of behavioral health inmates who could have been treated more effectively in a less expensive facility had space been available.

	2017	2018
Jail Cost Avoidance	\$718,648	(\$352,408)
State Hospital Cost Avoidance	n.a.	\$25,235
Total Cost Avoidance	\$785,139	(\$327,173)

Table 8.1: Total Jail Cost Avoidance

*Revised from January 2018 report.

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.

Graph 1.1 show cases increased approximately 10% annually in 2016 and 2017. Cases for 2018 increased a modest 3%. However, cases are still significantly lower than the peak level of 855 cases in 2014, prior to creation of the CCC.

The estimated cost to COMCARE is \$210 per case for client's attorney fees for hearings. Benchmarking against the peak level of 855 cases prior to the establishment of COMCARE, savings due to the reduction in cases is \$35,280 in 2018.





ESTIMATED COST AVOIDANCE TO EXISTING COMMUNITY SERVICES

This study indicates the Community Crisis Center and SACK services provide a significant cost avoidance of about \$2.8 million to community sectors in 2018. Table 9.1 summaries sector estimates.

In a similar the study conducted by the Public Policy and Management Center at Wichita State University (September 2016), the cost avoidance to community services in the first year following implementation of the Community Crisis Center in SFY15, was estimated as \$6.2 million. This was due to the large redirection of cases from higher cost services in the community to the lower cost services provided through the Community Crisis Center. In 2017, the cost avoidance is estimated to be \$2.9 million.

The current study indicates the community continues to reap significant annual cost avoidance benefits from the establishment of the Community Crisis Center. The

2018 cost avoidance to community sectors is estimated at \$2.3 million, driven by the growth in hospital costs and the increased number of mental health inmates held in the Sedgwick County jail, rather than treating that could be diverted to behavioral health treatment options if space was available.

	2017	2018
Hospital Care Cost Savings	\$1,440,634	\$2,407,645
State Hospital Admissions & Transports	\$519,471	\$652,029
Emergency Medical Transports	\$9,997*	\$18,017
Wichita Police Department	\$62,741	\$31,941
Sedgwick County Jail	\$785,139*	(\$327,173)
Probate Court	\$37,925	\$35,280
Total Cost Avoidance	\$2,855,907	\$2,817,739

 Table 9.1: Estimated Cost Avoidance to Exiting Community Services

*Revised from January 2018 report.

CONCLUSION

In the first approach used to analyze cost avoidance, the Community Crisis Center provides an estimated annual cost savings between \$12.4 and \$18.6 million in 2018. These estimates assume that if the Community Crisis Center did not exist, between 20% and 30% of patients served would need treatment in area hospitals, at a significantly higher cost per patient.

Analyzing the impact to community services for 2018 determined approximately \$2.8 million in cost savings due, in part, to deferral of cases from area hospitals, EMS, police, jail and probate court to the Community Crisis Center.

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 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 26% growth in hospital costs, coupled with a growing community demand for behavioral health services, makes lower cost care options increasingly important. The long-term cost avoidance will depend upon the growth capacity of the Community Crisis Center and the creation of additional care options. The growth in the behavioral health jail population, with minor offenses, signals the need for additional, lower-cost treatment options, rather than incarceration. To benefit from all the potential cost savings, due to diversion of individuals from higher cost community services, will continue only if there are enough lower cost community options with beds and programs.

Cost avoidance from prevention efforts are not addressed in this study. However, a better understanding of the benefits derived from community efforts to prevent substance abuse and trauma would help determine new options for serving the community's behavioral health needs.

Continued collaboration of service providers to share information and data is strongly encouraged. Data sharing among community agencies will help identify gaps in service areas and foster development of community-wide strategies and new models for reducing and managing needed community services.

Declaimer: This study was conducted by the Public Policy and Management Center (PPMC) at Wichita State University (WSU). The PPMC is an independent research body and this report was prepared by the research team. It represents the findings, views, opinions and conclusions of the research team alone. The report does not express the official or unofficial policy of WSU. Information for this report was supplied by The Substance Abuse Center of Kansas (SACK), COMCARE, Via Christi Hospital, and Sedgwick County. The accuracy of findings for the report is dependent upon the information provided.