

Juvenile Hall Admission and Impacts to Primary Care: Santa Clara County

Abstract

Youth in juvenile detention facilities have poorer health outcomes than their non-incarcerated peers. Regular primary care is an essential tool in preventing and treating medical problems, and this at-risk population experiences additional barriers preventing access to primary care. Utilizing data from the County of Santa Clara Health System, a random sample of individuals (n=264) was selected to have primary care visit and juvenile hall admission data extracted. Descriptive data was collected to compare rates of primary care access before and after detention. Of the individuals included in the analysis (n=172), there was a 66% decrease in individuals seeing primary care after an initial juvenile hall admission, and a 54% decrease in unique visits completed. Regression analyses were conducted to determine the effects of primary care access prior to admission on post-release primary care access, and to determine the effect of post-release primary care access on readmission to the detention facility. Results indicated youth seeing a primary care provider before detention were more likely to see a primary care provider after release (p=0.000). The relationship between post-release primary care access and readmission could not be determined. Based on the change in rates of primary care access, the results indicate that youth do see a primary care provider less frequently after detention. Additionally, seeing a primary care provider regularly is important to prevent disruption to primary care should a period of detention occur. Acknowledging this, primary care providers should strategize to attempt to see the youth within their care regularly. Juvenile Hall medical providers should develop plans to connect justice-involved youth to primary care providers after release, and primary care providers serving justice-involved youth should be trained and equipped to serve the unique needs of their population. Future research should continue to investigate the relationship between primary care access and detention, incorporating additional medical data from local primary care offices and criminal justice data from police or sheriff departments.

Table of Contents

Introduction	3
Program Overview/Problem Statement	4
Relationship Between Healthcare and Criminal Justice Involvement	4
Research Questions	6
Quantitative Methodology	6
Key Findings - Primary Care Access	7
Changes in Primary Care Access	7
Predicting Post-Discharge Care	9
Key Findings - Primary Care and Readmission	10
Primary Care and Readmission	10
Limitations	12
Recommendations	13
Recommendations for the County of Santa Clara Health System	13
Recommendations for Policy	14
Recommendations for Future Research	14
Conclusion	15
Appendices	16
Appendix A. Variable List - Extracted Data	16
Appendix B. Variable List - Variables for Data Interpretation	16
References	18

Introduction

The U.S. Department of Health and Human Services (HHS) recommends that youth see a pediatrician on an annual basis. For those with complex health or social issues, more frequent visits may be necessary. Justice-involved youth may face significant challenges in accessing routine primary medical care, and at the same time might benefit the most from it. The rigid, one-size-fits-all structures developed for routine medical care may not be an approach that today is satisfactorily promoting primary care among all youth, but it's an approach that's existed for decades. Medical providers and healthcare organizations must develop creative, thoughtful, and flexible preventative care treatment to service all youth and their unique needs.

While primary medical care and routine health services are largely thought of as a way to promote and encourage healthy behaviors, as well as a way to mitigate development of severe acute and chronic illnesses, it's largely not considered a way to prevent involvement in the criminal justice system. However, primary care providers are respectable adult figures that, if seen consistently, persist throughout a youth's life, and importantly throughout their adolescent years. Additionally, they are not the youth's guardians, nor are they law enforcement, which can create a positive, trusting environment for the youth to express themselves. Primary care providers have a vested interest in the healthy development of the youth, and are responsible for their ongoing care, regardless if the youth actively visits the provider. Thus, the provider has the potential to play a significant role in the youth's healthy development as well as their social development cannot be negated.

Acknowledging that the primary care provider has significant potential to have a positive influence on a youth's medical and social trajectory, this research analysis seeks to:

- Understand how frequently justice-involved youth are accessing primary care, both before and after admission to juvenile custody¹.
- Analyze what, if any, influences primary care access has on readmission to juvenile custody².
- Recommend improvements to both policy and program based on these findings to create better health outcomes for justice-involved youth.

This paper will give a brief overview of the roles of the various Santa Clara County departments that affect primary care access for justice-involved youth. It will discuss available research to

¹ "Admission to juvenile custody" refers to a situation in which the youth is brought to Juvenile Hall for detainment. This can result in a detainment of a few hours to over a year.

² "Readmission to juvenile custody" refers to a situation in which a youth is released for a period of time, but is brought back to Juvenile Hall for a subsequent detainment.

date that gives a summary of the importance of the issue, and known barriers to accessing primary care. Following the available literature, the quantitative methodology will be presented as to how this investigation plans to collect and analyze data within Santa Clara County as it pertains to primary care access and criminal justice involvement. The findings will be organized by how a period of detention affects primary care access, and then how primary care access affects readmission. Lastly, recommendations for future research and program operations will be shared.

Program Overview/Problem Statement

The Santa Clara County Health System is a publicly funded healthcare services system that offers quality medical care at low- or no-cost, for both insured and non-insured Santa Clara County (“County”) residents. The healthcare services are offered through multiple agencies, including the Santa Clara Valley Medical Center (which includes both a hospital and several clinics) and Custody Health Services (which provides care to incarcerated persons in 2 adult and 2 juvenile facilities).

The County has an obligation to its residents to ensure not only the safety of the public, but also the health of its most vulnerable residents. While the Office of the Sheriff detains youth involved in the criminal justice system, Custody Health Services must provide adequate healthcare services to detained youth. Because the County of Santa Clara Valley Health System also operates hospitals and clinics throughout the County, they are in a unique position to coordinate care before, during, and after the youth’s detainment. **However, even with a unique position to offer healthcare services for children, the County acknowledges that justice-involved youth do not access care on a routine basis when returning to the community, putting them at a greater risk for poorer health and worsening criminal justice outcomes (Santa Clara County Public Health Department, 2017).**

Relationship Between Healthcare and Criminal Justice Involvement

Incarceration and healthcare are two distinct government-influenced constructs that often operate independently; however they are inextricably linked. Many of the social determinants that give rise to poor health outcomes can also be considered predictors of criminal justice involvement. Poverty, unemployment, housing conditions, etc. are cited by the Centers for Disease Control (CDC) as social determinants of health (2018). These same social predictors of health outcomes are acknowledged by the U.S. Department of Justice as predictors of youth violence (Hawkins, Herrenkohl, Farrington, Brewer, Catalano, Harachi & Cothorn, 2000). While research focuses on the idea that incarceration leads to less healthcare access, the potential cyclical nature of this reduced healthcare access must be evaluated to understand if reduced healthcare access actually leads to additional incarceration.

Incarceration has significant links to poor health outcomes. The act itself of being incarcerated is a major life stressor. Significant and sustained stress introduced by incarceration during childhood and adolescence can contribute to negative stress-related health outcomes (Massoglia & Pridemore, 2015). This stress, coupled with some of the community stressors such as poverty, violence, or neglect that are experienced by justice involved youth, suggest that the aggregate stressors experienced by youth will lead to poor outcomes. Among the adult population, mortality rates among recently released prisoners can be 3.5x higher than non-incarcerated people, and within the first 2 weeks of release could reach as much as 13x higher (Massoglia, Pare, Schnittker & Gagnon, 2014). Based on this study, readers might argue that when evaluating this comparison the social conditions (such as income, employment, etc.) surrounding the incarceration impacted the mortality rates, rather than the incarceration itself. However, in another study, amongst individuals with similar social conditions, the incarcerated population was still significantly more likely to have worse health outcomes than the non-incarcerated population (Schnittker & John, 2007). The body of evidence suggesting incarceration is related to poor health outcomes continues to grow.

Compounding the poor health outcomes experienced by incarcerated youth are the challenges in accessing a primary care provider (PCP) after release. The American Academy of Pediatrics (AAP) recommends that healthy adolescents receive well-child visits annually with their primary care provider (2020). The reality for incarcerated juveniles is that they face significant challenges when seeking care. Of these barriers, active enrollment in a health insurance plan presents the biggest challenge to accessing care (DeVoe, Baez, Angier, Krois, Edlund & Carney, 2007). Uninsured youth are 3x more likely than insured youth to not have seen a pediatrician in the past year (Hoffman & Paradise, 2008). With insurance playing such a big role in accessing healthcare, it should come as no surprise this challenge greatly affects incarcerated youth. Under Medi-Cal (Medicaid administered by the state of California), insurance is either suspended or terminated when a juvenile is admitted into a detention facility. Upon release, they must seek to reactivate their suspended insurance or apply anew if the insurance was terminated. This re-enrollment process after release can lead to gaps in healthcare access (Barnert, Perry & Morris, 2015).

Beyond the insurance challenges that prevent active engagement in primary care are additional logistical challenges. Simply not knowing where to go for care, not having transportation, or lack of parental accompaniment are additional barriers that a juvenile must overcome in order to see a PCP (Barnert, Lopez, Pettway, Keshav, Abrams, Zima & Chung, 2019). Juveniles may not even have an established PCP at time of detention (Patterson-Rose & Braverman, 2013), exacerbating the difficulty identifying where to see a PCP after release.

The less obvious consequence of reduced healthcare access is the impact it may have on criminal justice involvement. The AAP defines primary health care as “accessible and affordable, first contact, continuous and comprehensive, and coordinated to meet the health needs of the individual and the family being served” (American Academy of Pediatrics, 2011). Because the primary care provider serves as the patient’s “medical home”, they are responsible for managing the patient’s condition(s). The PCP plays a preventative role within the criminal justice system by identifying risk factors as they present that could lead to incarceration (Barnert, Perry & Morris, 2015). Although not necessarily a specialist in any one category, the PCP can recognize increasingly risky behaviors and refer the patient to the appropriate services when any indication of violent behavior begins (Committee on Injury, Violence, and Poison Prevention, 2009). A healthy relationship with the PCP promotes continued follow-up care, improved health maintenance, and ultimately reduced recidivism (Simonian & John, 2018).

Available literature indicates that youth admitted to a detention facility are more likely to experience declines in health. However, the reasons for those declines in health are suspected to be attributed to a multitude of factors. Since primary care is an important preventative care measure, the role detention plays in limiting access to primary care remains unanswered. Additionally, while primary care can connect to needed services to prevent criminal justice involvement, the role it plays for those already involved in the criminal justice system is unknown. This investigation sets out to answer these unknowns.

Research Questions

1. Primary Care Access: How does a period of admission to juvenile custody affect the frequency of primary care access for incarcerated youth?
2. Primary Care and Readmission: Does access to pediatric primary care reduce readmission to juvenile custody?

Quantitative Methodology

Santa Clara Valley Medical Center uses HealthLink (Epic software³) as its clinical documentation tool for hospitals, clinics, and custody health services. Each arrest and subsequent detention results in an admission being created for the juvenile facility where the youth is held. Discharge date corresponds with the youth’s release date. Additionally, other Epic customers in the Bay Area send encounter⁴ data via Care Everywhere, a feature of the Electronic Medical Record (EMR). Thus, a composition of clinical encounters from Santa Clara

³ Epic is a vendor for clinical documentation software for hospitals and clinics across the world. In addition to clinical documentation, it is used for tracking clinic visits, hospital admissions, and billing purposes.

⁴ “Encounter” can refer to a youth’s office visit, hospital admission, or juvenile hall admission. It is a unique period of interaction between the healthcare provider and patient.

Valley Medical Center, Sutter Health, Kaiser Permanente, and Stanford Health exist in the patient’s record, though smaller, independent physician offices without the Epic EMR will likely be excluded from the analysis.

The study population consisted of 850 unique patients⁵ that had at least 1 admission to a Santa Clara juvenile hall facility between 11/1/2017 and 10/31/2018. Of the 850 unique patients, 264 were randomly selected to be included as the sample population. For these 264 patients, a retrospective chart review extracted encounter data from 11/1/2016 to 10/31/2019. This time period was selected as Santa Clara juvenile facilities went live on HealthLink in October 2016, meaning encounter data from Juvenile Hall admissions would exist in the EMR. Events that resulted in admission to any of the four custody/detention facilities were considered as a detention for the participant. All clinic visits were extracted, but only those that occurred in a department with a specialty of either “Pediatrics” or “General Medicine” were considered primary care.

Several variables were created in order to be able to perform linear regressions that evaluated the impact of prior to admission primary care (*PriorPCPVisit*) on after discharge primary care (*PostPCPVisit*), a minimum length of stay of 4 days (*LOS_Min_4_Days*) on after discharge primary care (*PostPCPVisit*), and after discharge primary care (*PostPCPVisit*) on readmission to Juvenile Hall (*Readmission*). Prior to admission primary care occurs when a youth had any PCP visit that occurred within 360 days prior to admission to Juvenile Hall. After discharge primary care occurs when a youth has any PCP visit that occurred within 360 days after discharge from Juvenile and as long as it occurred before any possible subsequent admission. A length of stay is calculated by the number of days between the admission to detention, and discharge from the facility. Any admissions that result in at least 4 days are considered to have a length of stay of at least 4 days. Lastly, a readmission event occurs when a patient is discharged from Juvenile Hall, but has at least one additional admission within 360 days after the initial discharge event. Figure 1 illustrates a timeline of the order of events. An explanation of all variables extracted from the youth record are listed in Appendix A, and further descriptions of variables used for analysis are listed in Appendix B.

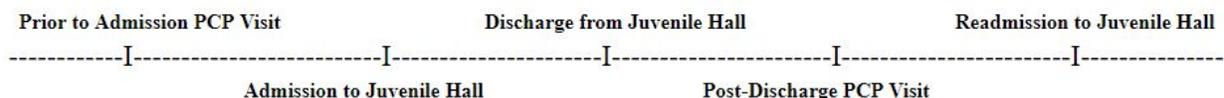


Figure 1: Depiction of a timeline of events for youth in the study.

⁵ “Patient” is the generally utilized terminology by medical staff in County custody facilities to refer to a detained or incarcerated individual.

Key Findings - Primary Care Access

Because patients can have varying lengths of stay, admission dates, and discharge dates, the exact dates of which a patient could have accessed care outside of a juvenile detention facility are unique to the individual. To accommodate for this variation, admission/discharge dates of the first encounter were taken into consideration for analysis to ensure equal opportunity to access care, and preclude any data discrepancy due to patient incapacitation or non-detention time falling outside of the study period. Of patients included in the study, 172 patients' first admission began on or after 11/1/2017, and were ended by 10/31/2018.

Changes in Primary Care Access

Youth access to primary care declined after the first admission to a juvenile facility. The AAP recommends all youth see a primary care provider (PCP) on an annual basis (AAP, 2011); however, only 33 of the 172 (19%) patients had at least 1 PCP visit in the 360 days prior to admission, and 19 of the 172 (11%) patients had 1 PCP visit in the 360 days after discharge. This patient population, already accessing primary care less than recommended, saw even further declines in primary care access after experiencing an admission to a juvenile facility. This decrease of 8% points in the amount of patients accessing primary care, or an overall reduction of 42%, indicates this vulnerable population becomes even further removed from medical care after admission. Of the 33 patients that had 1 PCP visit in the 360 days prior to admission, only 11 had a visit within 360 days of discharge, representing a 66% decrease in care access by patients who were already seeking primary care before being placed in a detention facility. This decrease in primary care access in the 360 days after discharge among those following AAP annual PCP visit guidelines is an indication that placement in a detention facility interrupts their annual primary care access.

Occurrences of primary care among youth declined after the first admission. Although some patients may not see a primary care provider as often as they should, other patients could have multiple visits in the 360 days before admission or after discharge. Thus, the quantity of visits completed was also observed. The total number of PCP visits completed by patients numbered 54 in the 360 days prior to the first admission. In the 360 days after discharge, the total number of completed PCP visits fell to 28, representing a 48% decrease in visits by patients. The reduction in the quantity of visits is roughly consistent with the reduction in overall patients seeking care at all. So, in addition to the decreased patient volume, youth access in general is diminished, indicating that placement in a detention facility may not only limit who seeks care but also how often.

The rates of primary care access differ more the further from the juvenile detention admission and discharge. In order to identify any specific time period that might have had a

more precipitous drop in primary care visits, the 360 days surrounding a juvenile's admission to juvenile detention were separated into 90 day increments, as displayed in Figure 2. The time period between 181 and 270 days and between 271 and 360 days from the initial encounter experienced the most precipitous drops in primary care access. The period between 91 and 180 days from the initial encounter experienced the smallest drop in primary care access.

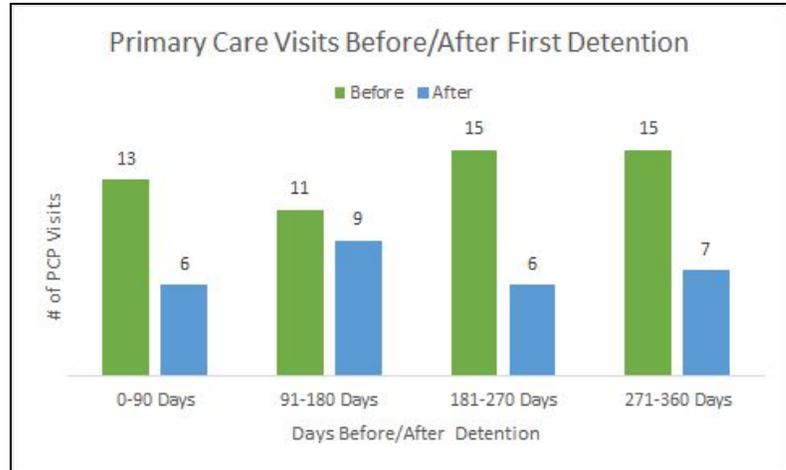


Figure 2: Occurrences of PCP visits before and after first admission, by timeframe.

Predicting Post-Discharge Care

Accessing primary care prior to admission to the juvenile facility positively influences primary care after discharge. As discussed previously, there are multiple barriers that could prevent a patient from accessing care. In order to understand how admission to a juvenile facility itself impacts accessing care, a linear regression was run by regressing post-discharge PCP visits on pre-admission PCP visits. This yielded a statistically significant result indicating that accessing care prior to admission increased the likelihood of accessing care after discharge. The R^2 value of 0.12 indicates that only 12% of the variation in primary care after discharge is explained by primary care prior to admission. Since this is relatively low, this indicates there are a variety of other factors also influencing an individual's primary care access after discharge.

The closer the pre-admission primary care visit is to the date of admission, the more likely the patient is to seek primary care after discharge. Primary care can be accessed by the patient at any time they are not actively admitted. This consideration led to further evaluation of 4 distinct time periods (0-90 days, 91-180 days, 181-270 days, and 271-360 days) prior to admission for assessment of impact on primary care access after discharge. Those accessing primary care within 180 days of the original admission date were significantly more likely to access primary care after discharge, as well as those seeking care between 271 and 360 days prior to admission. The sample sizes contributing to these time-period analyses are small, thus making drawing specific conclusions difficult. However, this reflects the importance of consistent care to minimize disruption caused admission to a juvenile facility.

The length of stay in a juvenile facility does not affect post-discharge access to care. A patient's length of stay in a juvenile facility can be determined by multiple factors, such as the severity of the crime, ability to prosecute, and preparedness for release. From a medical operations standpoint, youth that are admitted for any reason are assessed by nursing staff

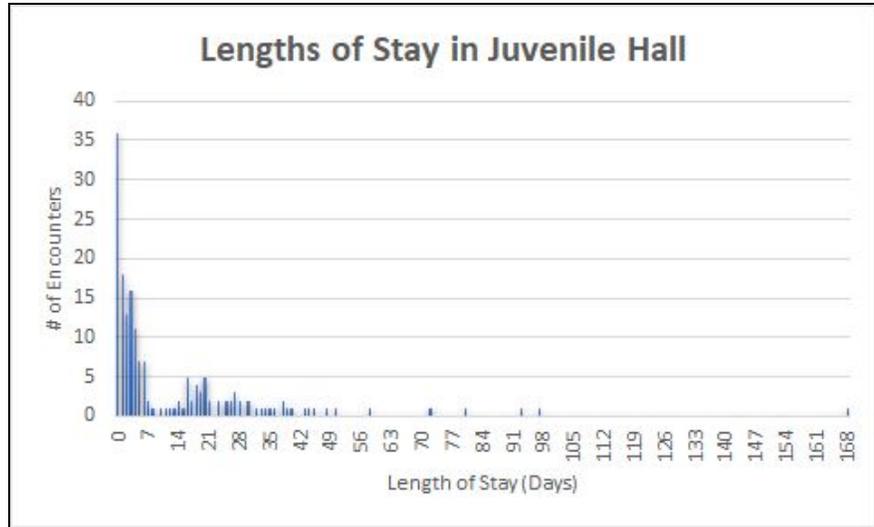


Figure 3: Lengths of stay of juvenile hall admissions, by occurrence.

immediately, and are typically seen by a provider within 4 days. Lengths of stay during this study varied from 0 days (indicating the youth was discharged within 24 hours) to 168 days (see Figure 3). An additional regression was completed to identify if interacting with a provider during the admission had any impact on primary care visits after release. Of the 172 patients included in the analysis, 94 (55%) were discharged in 4 days or less of arrival. The variable *LOS_Min_4_Days* represents patients who had an admission length of stay of at least 4 days. This was regressed on *PostPCPVisit*, revealing that the length of stay of the patient did not impact post-discharge primary care visits.

Table 1: Linear regressions predicting PCP visit after release from detention.

Independent Variable	N	R Square	Beta	95% Confidence Interval	
				Lower Bound	Upper Bound
PriorPCPVisit	172	0.120	0.346***	0.163	0.389
PriorPCPVisit_0to90Days	172	0.082	0.285***	0.156	0.478
PriorPCPVisit_91to180Days	172	0.082	0.285***	0.156	0.478
PriorPCPVisit_181to270Days	172	0.004	0.059	-0.117	0.270
PriorPCPVisit_271to360Days	172	0.032	0.180*	0.037	0.390
LOS_Min_4_Days	172	0.001	-0.031	-0.114	0.076

*p<0.05, **p<0.01, ***p<0.001

Note: A detailed description of variables can be found in Appendix B.

Key Findings - Primary Care and Readmission

Among the entire study population of 264 patients, 183 (69%) experienced at least one readmission to a detention facility. The median days between release from the first admission to the second admission was 84 days, meaning 50% of patients were readmitted within 84 days of the initial discharge. Of patients included in the study 258 were discharged by 10/31/2018, meaning they each had at least 1 year after discharge included in the study period for evaluation.

Primary Care and Readmission

Readmissions occur more frequently than primary care appointments. 180 patients (69.8%) had at least 1 readmission within the study period. Only 28 (10.1%) patients accessed primary care within a year after discharge from their first admission, again reflecting the low volume of primary care appointments by this patient population. Figure 4 shows occurrences of each type of event over specific time periods. 92 (35.7%) patients were readmitted within 90 days, and 129 (50%) within 180 days of discharge. 14 (5.4%) of patients saw a PCP within 90 days of release, and 22 within 180 (8.5%) days of release. Readmissions consistently outweigh primary care visits over time, with the most noticeable difference occurring within 180 days of discharge.

Available data suggests seeing a PCP after discharge may lower readmissions, but the relationship is not statistically significant. Juvenile Hall providers recommend patients see a primary care provider within 30 days after discharge so as to continue the continuity of care as the patient transitions to the community. This

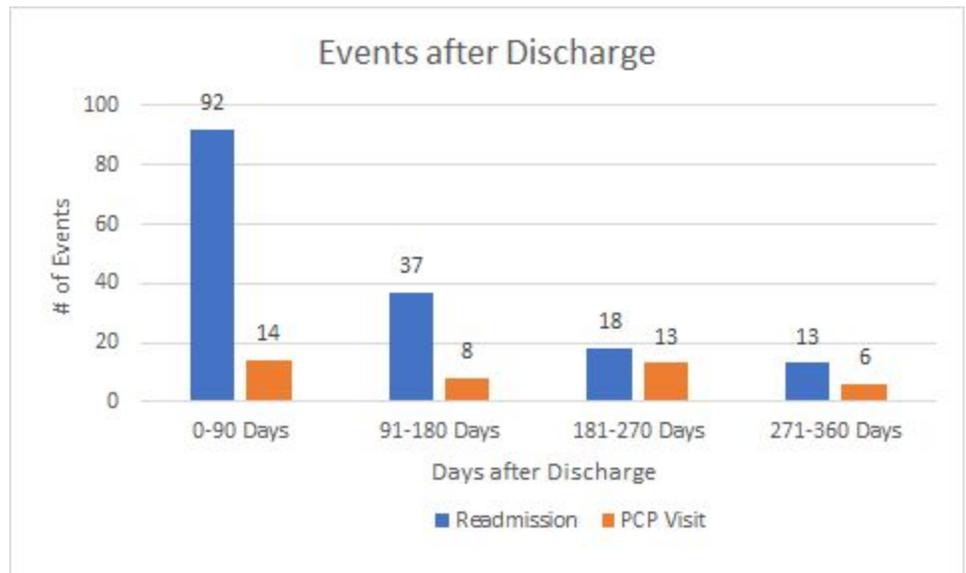


Figure 4: Events by type after discharge.

primary care provider can serve as an access point to resources (both medical and social) that the patient might need to successfully remain in the community. To evaluate if any relationship exists between seeing a PCP after release and readmission, a linear regression was run by regressing *Readmission* (reflecting a readmission to a juvenile facility) on *PostPCPVisit* (an indicator if the patient saw a primary care provider after discharge). If a patient has both a PCP visit and second detention occurring within 360 days of release, the PCP visit will always occur

prior to the second detention event. Although the regression suggests that seeing a PCP after discharge could reduce readmissions based on the negative Beta value and the negative lower bound of the confidence interval, this relationship is not statistically significant. Additional data needs to be collected to assess this relationship.

Table 2: Linear regressions predicting a second Juvenile Hall admission.

Independent Variable	N	R Square	Beta	95% Confidence Interval	
				Lower Bound	Upper Bound
PostPCPVisit	180	0.005	-0.069	-0.283	0.080
PostPCPVisit_0to90Days	180	0.000	0.009	-0.232	0.267
PostPCPVisit_91to180Days	180	0.000	0.020	-0.272	0.380
PostPCPVisit_181to270Days	180	0.014	-0.118	-0.505	0.008
PostPCPVisit_271to360Days	180	0.055	-0.234***	-1.709	-0.350

*p<0.05, **p<0.01, ***p<0.001

Note: A detailed description of variables can be found in Appendix B.

Limitations

The analysis does not include data regarding primary diagnosis and external factors contributing to the completed primary care visits. There are many reasons why a patient might access primary care, whether by choice or by necessity. The study does not address factors such as medical conditions or parent/guardian influence that might impact a patient’s decision to access primary care. Patients with chronic conditions, or patients that fall ill might access care more frequently than one that typically only accesses care for a typical, annual well-child visit. Additionally, patients whose primary guardian takes an active role in seeking care could manage the patient’s appointments and ensure attendance rather than relying on the patient to self-manage appointment scheduling/access.

Not all independent physician offices are included in the primary care visit analysis. While many healthcare encounters are included in the study, encounters from Indian Health Center⁶ are not, as they are not a facility utilizing Epic for clinical documentation. Anecdotally, it is known that some patients that come to juvenile hall facilities will access care here. Thus, the full extent of primary care access is not known. In addition to the Indian Health Center, there are several other private, individual primary care offices throughout Santa Clara County and the adjacent counties that will likely not utilize a sophisticated software tool like Epic. These facilities could also potentially have primary care visits not included in the study.

⁶ Indian Health Center operates several pediatric clinics throughout Santa Clara County.

Out of County facilities and police incidents not resulting in arrest are not included. A patient's potential exposure to law enforcement encounters is not strictly based on their county of residence. This study does not account for patients who move out of the county or are arrested and detained in another county. Thus, if a patient is readmitted to a juvenile facility elsewhere, even in a neighboring county, the information will not be collected as a part of this study. Also, all law enforcement encounters do not result in the patient being brought to the juvenile detention facility. Encounters resulting from minor infractions will not be addressed.

There is no control group. This study did not include a comparison group of medically and socially similar patients to have as a control. Using a control group would be important to understand how the justice-involved group differentiates in accessing care to better determine if other social/medical conditions of the patient influence care more than the justice involvement aspect of the patient.

Recommendations

Recommendations for the County of Santa Clara Health System

Understand the patient's primary care history, barriers, and create a unique discharge plan. Custody Health Services, and the larger Santa Clara Valley Health System, have a unique opportunity to significantly intervene in the patient's medical course. As each patient is brought to the juvenile facility, history of PCP access should be reviewed through EMR data as well as through the patient interview that occurs with the Juvenile Hall provider. This presents an opportunity to understand past medical access, and create a unique plan for each patient to either improve or continue primary care access. Creating a post-discharge plan is not new in the medical world. Hospitals, understanding the value of outpatient care, hire discharge coordinators that work with the patient to create discharge plans to promote the patient's well being and prevent readmissions. A similar concept could apply to patients in juvenile facilities. Medical staff can work with juveniles to identify what the specific barriers to accessing care are, then review tailored plans that overcome or mitigate these barriers and document them in a discharge plan.

Conduct a handoff with the post-discharge PCP. One of the advantages the Santa Clara Valley Health System has is that it oversees the medical staff assigned to Juvenile Hall as well as primary clinics throughout the County. For patients who do not have an identified PCP, Juvenile Hall could connect them with an off-site provider, creating a relationship with the PCP prior to discharge. The Agency for Healthcare Research and Quality recommends warm handoffs occur between the healthcare providers and the patient or family present to improve clinical outcomes for the patient (2017). Facilitating this handoff could be completed within the County provider network, and could be made easier by incorporating features of telehealth and video visits.

Improve resources for PCPs serving justice-involved youth. Getting the patient to a PCP is half the battle in effectively managing the patient's health and social care. County providers are uniquely equipped with understanding the patient's justice-involvement because they operate on the same EMR as the juvenile facility. This insight could prompt the PCP to utilize a different approach when seeing the patient to make sure they are addressing some of the underlying social conditions that impact the patient. Additionally, this can help ensure they employ risk screening tools to identify patients that are potentially becoming newly involved in criminal activity, and help the patient access appropriate resources to discourage criminal behavior.

Recommendations for Policy

Eliminate insurance suspension requirements within California custody facilities. Current policy requires all patients entering California custody facilities (both juvenile and adult) to have their Medi-Cal either suspended or terminated, depending on the length of stay. As discussed previously, lack of insurance is a barrier to patients accessing care. As seen in this study, patients accessing primary care prior to admission see significantly lower rates of primary care access after discharge. The deactivated insurance could potentially influence this lower access rate. Instead of deactivating Medi-Cal upon admission, California would provide better continuity of care to the patient by ensuring Medi-Cal is not billed for services not covered during incarceration, and allowing insurance to remain active. This would eliminate at least one barrier that is possibly contributing to decreased care access.

Recommendations for Future Research

Investigate the health insurance status during each Juvenile Hall admission and utilize it in primary care analysis. Because health insurance is a significant requirement in order to access primary care, understanding the initiation and maintenance of health insurance would help to explain how each Juvenile Hall encounter affects primary care access. Collecting health insurance data could help to explain if insurance is ever reactivated after release, and if this is a factor influencing primary care access. This data, combined with primary care analysis, could help to explain how current insurance deactivation policies restrict primary care access.

Expand data collection on primary care visits to incorporate facilities not utilizing Epic software. The current study is limited to facilities that utilize Epic software for documentation. Encounter data from non-Epic facilities would ensure all primary care visits are being documented, and could provide stronger results on how primary care influences readmission.

Seek a partnership with neighboring Counties and collect other criminal-justice related data. Data on subsequent criminal justice involvement in the current study is limited to readmissions to detention facilities within the County. Knowing that not all criminal justice

involvement results in detention, including other data on crime-related interactions (such as arrests, citations, etc.) with youth would provide another opportunity to investigate a relationship between primary care and criminal justice involvement. Additionally, youth who commit crimes out of county might not have an encounter in County juvenile facilities, thus not fully examining all readmissions to juvenile facilities. Partnering with regional counties could help provide a clearer understanding of continued criminal justice involvement.

Create a control group of non justice-involved patients with similar medical/social backgrounds. To evaluate how primary care access among justice-involved youth differs from youth that do not interact with the criminal justice system, a control group should be created that has similar medical and social backgrounds. Factors to be considered include health insurance status, health insurance provider (private vs. Medicaid), and chronic disease diagnoses. These variables are influential in primary care participation, and should be considered when trying to isolate criminal-justice involvement as a determinant factor in primary care access.

Conclusion

This analysis confirms that for youth, attaining routine primary care is important to ensuring continued primary care access throughout criminal justice involvement, and that criminal justice involvement can negatively interrupt routine care. Ignoring the unique challenges criminal justice involvement has in routine care only results in reduced care access among this population. Santa Clara County has the opportunity to intervene positively in a youth's medical trajectory, and can help to initiate or promote routine medical services during an admission to a juvenile facility. The County will need to implement creative measures that connect youth to primary care services that overcome both cognitive barriers (like unfamiliarity with primary care providers) as well as institutional barriers (like inactive health insurance).

While there is not enough data in this analysis to demonstrate the relationship between primary care access and readmission to a juvenile facility, this is an important relationship to research moving forward. A deeper understanding of this interaction could help with program design, resource allocation, and policymaking that would affect not only healthcare outcomes, but criminal justice outcomes as well. The potentially far-reaching impacts of primary care on this underserved population have yet to be uncovered.

Appendices

Appendix A. Variable List - Extracted Data

Variable	Source	Type	Definition
Name	Epic	Demographic	The name of the participant
MRN	Epic	Demographic	The Medical Record Number (MRN) of the participant
DOB	Epic	Demographic	The participant's date of birth
Sex	Epic	Demographic	The recorded sex of the participant
Admit Date	Epic	Encounter	The date of the admission to a Juvenile Hall facility
Discharge Date	Epic	Encounter	The date of discharge from a Juvenile Hall facility
Unit	Epic	Encounter	The specific Juvenile Hall department from which the patient was discharged
Appt. Date	Epic / CE	Encounter	The date of the appointment at either a SCVMC or other Epic facility
Appt. Unit	Epic / CE	Encounter	The location of the appointment at either a SCVMC or other Epic facility

Appendix B. Variable List - Variables for Data Interpretation

Variable	Description
PriorPCPVisit	Indicates if the youth had a PCP visit within 360 days prior to admission to juvenile detention.
PriorPCPVisit_0to90Days	Indicates if the youth had a PCP visit between 0 and 90 days prior to admission to juvenile detention.
PriorPCPVisit_91to180Days	Indicates if the youth had a PCP visit between 91 and 180 days prior to admission to juvenile detention.
PriorPCPVisit_181to270Days	Indicates if the youth had a PCP visit between 181 and 270

	days prior to admission to juvenile detention.
PriorPCPVisit_271to360Days	Indicates if the youth had a PCP visit between 271 and 360 days prior to admission to juvenile detention.
LOS_Min_4_Days	Indicates if the youth had a minimum length of stays of 4 days during the admission to juvenile detention.
PostPCPVisit	Indicates if the youth had a PCP visit within 360 days of discharge from juvenile detention, and the visit occurred before any subsequent juvenile detention encounter.
PostPCPVisit_0to90Days	Indicates if the youth had a PCP visit between 0 and 90 days of discharge from juvenile detention, and the visit occurred before any subsequent juvenile detention encounter.
PostPCPVisit_91to180Days	Indicates if the youth had a PCP visit between 91 and 180 days of discharge from juvenile detention, and the visit occurred before any subsequent juvenile detention encounter.
PostPCPVisit_181to270Days	Indicates if the youth had a PCP visit between 181 and 270 days of discharge from juvenile detention, and the visit occurred before any subsequent juvenile detention encounter.
PostPCPVisit_271to360Days	Indicates if the youth had a PCP visit between 271 and 360 days of discharge from juvenile detention, and the visit occurred before any subsequent juvenile detention encounter.

References

Agency for Healthcare Research and Quality. Warm Handoff: Intervention. (2017). Retrieved from <https://www.ahrq.gov/patient-safety/reports/engage/interventions/warmhandoff.html>.

American Academy of Pediatrics. (2011). Reaffirmed Policy Statement—Pediatric Primary Health Care. *Pediatrics*, *127*(2), 397.

American Academy of Pediatrics. Periodicity Schedule. (2020). Retrieved from <https://www.aap.org/en-us/professional-resources/practice-transformation/managing-patients/Pages/Periodicity-Schedule.aspx>.

Barnert, E., Lopez, N., Pettway, B., Keshav, N., Abrams, L., Zima, B. & Chung, P. (2019). The Role of Parent Engagement in Overcoming Barriers to Care for Youth Returning Home After Incarceration. *Journal of Community Health*, *45*(2020), 329-337.

Barnert, E., Perry, R. & Morris, R. (2015). Juvenile Incarceration and Health. *Academic Pediatrics*, *16*(2016), 99-109.

Centers for Disease Control and Prevention. Social Determinants of Health: Know What Affects Health. (2018). Retrieved from <https://www.cdc.gov/socialdeterminants/index.htm>.

DeVoe, J., Baez, A., Angier, H., Krois, L., Edlund, C. & Carney, P. (2007). Insurance + Access ≠ Health Care: Typology of Barriers to Health Care Access for Low-Income Families. *Annals of Family Medicine*, *5*(6), 511-518.

Hawkins, J.D., Herrenkohl, T.I., Farrington, D.P., Brewer, D., Catalano, R.F., Harachi, T.W. & Cothorn, L. (2000). Predictors of Youth Violence. *Juvenile Justice Bulletin*, (April 2000).

Hoffman, C. & Paradise, J. (2008). Health Insurance and Access to Health Care in the United States. *Annals of New York Academy of Sciences*, *1136*(2008), 149-160.

Massoglia, M., Pare, P., Schnittker, J. & Gagnon, A. (2014). The relationship between incarceration and premature adult mortality: Gender specific evidence. *Social Science Research*, *46*(July 2014), 142-154.

Massoglia, M. & Pridemore, W. A. (2015). Incarceration and Health. *Annual Review of Sociology*, 41(2015), 291-310.

Patterson-Rose, S. & Braverman, P. (2013). Identification of Physical and Mental Health Barriers to Accessing Primary Care Providers Among Youth Detained at a County Juvenile Detention Center. *Poster Abstracts*, 52(2013), S100.

Santa Clara County Public Health Department. (2017). Status of Children's Health. Report prepared for Santa Clara County Board of Supervisors.

Schnittker, J. & John, A. (2007). Enduring Stigma: The Long-Term Effects of Incarceration on Health. *Journal of Health and Social Behavior*, 48(June), 115-130.

Committee on Injury, Violence, and Poison Prevention (2009). Policy Statement—Role of the Pediatrician in Youth Violence Prevention. *Pediatrics*, 124(1), 393-402.

Simonian, M. & John, R. (2018). The Primary Care Management for Youth Experiencing Incarceration. *The Journal for Nurse Practitioners*, 14(9), 650-657.