Special Study of
Custody Health Services Staffing

Prepared by the Management Audit Division
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Subject: **Custody Health Services Staffing Study**

Introduction

This *Staffing Study of the Custody Health Services Department* was added to the Management Audit Division's Fiscal Year (FY) 2019-20 work plan by the Board of Supervisors, pursuant to the Board's power of inquiry specified in Article III, Section 302(c) of the County of Santa Clara Charter.

Work on this study began with an entrance conference on October 7, 2019 and a draft report was issued to the Custody Health Services Department on March 26, 2021.

An exit conference was held with the Custody Health Services Department on April 13, 2021. A revised report incorporating feedback from the exit conference was issued to the Custody Health Services Department on May 27, 2021. The Department's response is attached.

The Custody Health Services Department (CHS) provides medical and mental health services to four facilities—the Main Jail, the Elmwood Correctional Facility (Elmwood), Juvenile Hall and James Ranch. This study focuses on nurse staffing, but we provide a brief summary of nurse, medical physician and psychiatrist staffing below. In addition, this study reviews actual staffing levels over the three-year period between FY 2017-18 and FY 2019-20, the last few months of which occurred during the COVID-19 pandemic. Since the start of the COVID-19 pandemic and related public health orders, the average adult daily population has fallen 39 percent across the Main Jail and Elmwood facilities, from January to September 2020, to reduce exposure in congregate settings. However, staffing levels were not reduced during the final months of FY 2019-20. While the population declined, workload may not have declined due to additional duties and health protocols associated with response to the pandemic. We also note that our findings were not substantially impacted by the COVID-19 pandemic. We identified similar trends in

staffing levels and use of overtime and Extra Help in all three years of our review period, including FY 2019-20.

Further, due to two consent decrees managed by the federal courts, the County and Board of Supervisors may not have the legal authorization to implement our recommendations, as some may require approval by Class Counsel and or review by federal courts. As such, we recommend that the Board of Supervisors forward all recommendations it votes to implement to County Counsel for review. County Counsel will determine if the recommendation requires the approval of Class Counsel or federal court or not and respond to the Board of Supervisors with an update.

CHS Medical and Mental Health Staffing

A 2005 Memorandum of Understanding between the Department of Correction and the Custody Health Services Department requires CHS to provide inmate healthcare to the County's correctional facilities. CHS provides nursing staff coverage 24-hours per day, seven days per week, at all CHS facilities.

Two contractors provide medical physician and psychiatric services to CHS facilities. South Bay Emergency Physicians Medical Group provides physician services under a County agreement with the Santa Clara Valley Health and Hospital System (SCVHHS). Under a contract amendment signed in October 2019, the contractor is responsible for providing 24-hour physician coverage to County custody facilities, 365 days per year.

In addition, Traditions Psychology Group provides psychiatric services to the Main Jail and the Elmwood Correctional Facility under a County agreement with the Santa Clara Valley Medical Center. According to CHS assignment descriptions, psychiatrist shifts are staffed 8:00 am to 6:00 pm Monday through Friday.

In March 2021, the Board of Supervisors approved the addition of 33 positions in various classifications for FY 2020-21, including 13.0 FTE new Medical Assistants (H93) and 6.0 FTE Medical Unit Clerks (D02) as part of a wider restructuring plan. The FY 2021-22 recommended budget adds 13.0 FTE additional positions, as part of phase two of the restructuring plan.

1. Need for Workload Based Staffing Model and Enhanced Performance Monitoring

CHS does not conduct formal workload analyses when determining staffing levels, and our ability to assess the adequacy of staffing levels was limited due to the lack of available workload data. CHS did not provide comprehensive workload data or prior workload analyses conducted to determine existing staffing levels. As part of our staffing analysis, we met with CHS staff to discuss staffing information available and requested information on staffing decisions, including staffing schedules, workload measures, and staffing plans. CHS staff provided staffing levels and descriptions for staff assignments but did not provide a formal staffing plan. CHS also did not provide

routine workload metrics used in healthcare settings to estimate and monitor staffing and productivity levels such as productive hours of care (productive nursing hours per patient day) or hours required to staff workload units (i.e. time per appointment or encounter, time per patient bed day, etc.).[1] Further, a 2021 audit found that Custody Health medical staffing was not always aligned with workload.[2] A lack of staffing or workload analysis can impair an organization's effectiveness and result in inefficient resource allocation.

According to CHS management staff, nursing leadership determine daily staff assignments based on historical experience and reviews of assignment workload, such as pill call and patient admission at intake booking. CHS management staff also reported that they must adjust staffing levels based on unexpected situational demands, such as variability of releases and transports. However, CHS did not provide any documentation demonstrating how staffing levels reflect these factors and assignment workload.

We also requested performance measures from CHS to assess quality of care, which could also indicate adequacy of staffing, but CHS did not provide comprehensive performance measures. Measures of quality could include timely access to care and identification or treatment of mental illness or communicable diseases. The 2021 audit also found that inmates reported waiting longer than 10 days to receive medical care and that a claim related to inmate medical care is filed against the County approximately every seven weeks on average.[3] CHS management staff reported that the launch of a new Electronic Health Record System (HealthLink) in 2017 impacted their ability to retrieve reliable data for this study.

Correctional Healthcare Regulations and Professional Standards

According to Title 15 State regulations for correctional healthcare, CHS is required to have sufficient health care staff to provide inmates with adequate and timely evaluation and treatment. In addition, CHS is required to have sufficient clinical staff to comply with one of its remedial plans.[4]

Neither regulations nor professional standards specify health care staff-to-inmate ratios. The National Commission on Correctional Health Care (NCCHC) Standards for Health Services state that the number and types of health care staff required depends on the types and scope of health services provided, the size of the facility, the needs of the inmate population, and the organizational structure. Therefore, developing

[1] Susan J. Penner (2016), *Economics and Financial Management for Nurses and Nurse Leaders.* 3rd edition.
[2] Board of Supervisors Management Audit Division. (2021). *Management Audit of the County of Santa Clara Sheriff's Custody Operations*. Available: https://www.sccgov.org/sites/bos/Management%20Audit/Documents/mngmnt-aud-shrffs-cust-oper-bureau-2-22-21.pdf
[3] Board of Supervisors Management Audit Division. (2021). *Management Audit of the County of Santa Clara Sheriff's Custody Operations*.
[4] *Chavez v. County of Santa Clara* 2019 Remedial Plan.

staffing patterns for correctional health care requires detailed analyses that considers these various factors.

The NCCHC outlined the steps required to develop such staffing models in its 2001 *Correctional Health Care Guidelines for the Management of an Adequate Delivery System*.[5] These steps require that correctional health care agencies identify all services provided at each facility, develop a profile of each facility and their populations, estimate how much time is required to complete specific tasks for each service, and calculate a coverage factor to account for regular time off. Figure 1 below summarizes these steps.

Figure 1: NICIC Steps to Develop Staffing Model

Step 1	*Determine the health mission of each facility* and identify all services provided onsite.
Step 2	*Develop a profile of each facility and their* populations. Compile statistics, such as average daily population, and summarize the inmate population based on length of stay, custody class, housing status, gender, and age, and other attributes that impact health care needs and service provision.
Step 3	*Breakdown each service into specific tasks*, determine what level of health care staff is needed to complete each task, and create time estimates.
Step 4	*Calculate workload hours* by type of health care staff per shift. Group tasks by the level of health care staff required and determine which tasks should be assigned to which shift. Add up time estimates for all tasks to determine workload hours by staff type per shift.
Step 5	*Calculate a coverage (or relief) factor* to account for regular time off and ensure continuous coverage.
Step 6	*Determine the number of each type of health care staff required for each shift,* including the coverage factor, at each facility.

Source: NCCHC, Correctional Health Care Guidelines for the Management of an Adequate Delivery System, 2001 Edition.

2. CHS Consistently Exceeds Overtime Estimates

Between FY 2015-16 and FY 2019-20, CHS exceeded its overtime estimates by at least $3.8 million in all five fiscal years and exceeded its budget for temporary employees in three out of the five fiscal years. CHS remained within its budget for total salaries and benefits overall, in part due to spending below estimates on permanent employees, as shown in Figure 2 below.

[5] Commissioned by the National Institute of Corrections, U.S. Department of Justice.

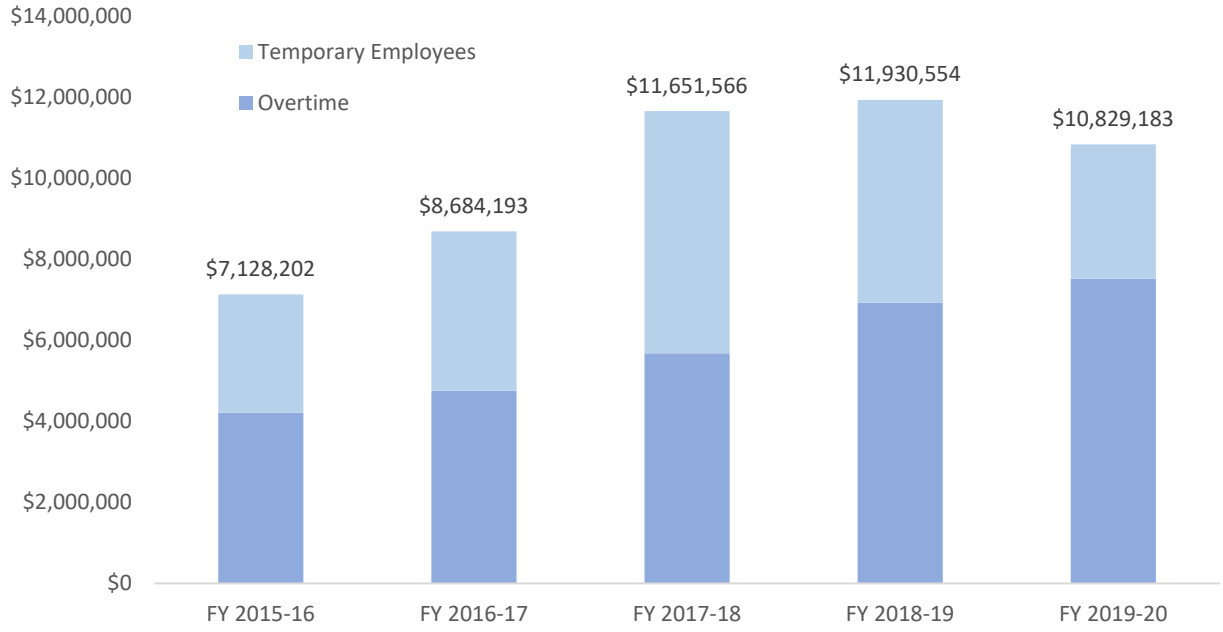
Figure 2: Actual Overtime Expenditures Exceeded Estimates, FY 2015-16 – FY 2019-20

Budget	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
Total Salaries and Benefits	$44,235,859	$50,817,416	$57,336,998	$61,274,139	$64,667,664
Permanent Employees	25,369,249	29,080,121	30,477,098	33,785,327	36,382,315
Overtime	383,261	463,079	463,079	1,063,079	3,063,079
Temporary Employees	3,298,536	3,361,919	3,361,919	4,666,169	3,443,446
Actuals					
Total Salaries and Benefits	43,843,402	50,757,159	57,278,359	58,697,717	63,439,785
Permanent Employees	22,044,717	25,430,248	27,833,311	28,998,496	32,026,660
Overtime	4,207,777	4,750,655	5,678,020	6,926,066	7,518,283
Temporary Employees	2,920,426	3,933,538	5,973,546	5,004,489	3,310,900
Budget Variance					
Total Salaries and Benefits	392,458	60,257	58,639	2,576,422	1,227,879
Permanent Employees	3,324,532	3,649,873	2,643,787	4,786,831	4,355,655
Overtime	(3,824,516)	(4,287,576)	(5,214,941)	(5,862,987)	(4,455,204)
Temporary Employees	378,110	(571,619)	(2,611,627)	(338,320)	132,547

Source: SAP Budget vs Actual by Budget Unit Report, Budget Unit 414

Actual spending on overtime and temporary staff increased from $7.1 million in FY 2015-16 to $11.9 million in FY 2018-19 and declined slightly to $10.8 million in FY 2019-20 due to declines in spending on temporary employees. Actual overtime expenditures increased by 79 percent over the five-year period from $4.2 million in FY 2015-16 to $7.5 million in FY 2019-20. Figure 3 below shows actual expenditures on overtime and temporary staff.

Figure 3: Actual Expenditures on Overtime and Temporary Staff, FY 2015-16 – FY 2019-20



Source: SAP Budget vs Actual by Budget Unit Report, Budget Unit 414

3. Nurse Coverage Factors Are Needed to Ensure Continuous Coverage

As mentioned above, coverage or relief factors are needed when making staffing decisions for post- or shift-based assignments[6] to accurately account for "non-productive" time. If staffing plans do not take non-productive time, such as vacation, sick leave, and training, into consideration for assignments that require continuous coverage, inadequate staffing will be available. This can lead to the use of overtime or extra help staff or gaps in coverage. All of these outcomes can negatively impact the quality of care directly or indirectly. For example, continued reliance on overtime can lead to staff burnout or increase the risk of errors due to exhaustion.

According to CHS management, CHS had not developed or used coverage factors to determine current staffing levels. However, CHS management reported that they were in the process of establishing coverage factors as of December 2020.

[6] We use the terms "post assignment" and "shift assignment" interchangeably throughout this report to differentiate from "positions." In line with NICIC guidance, a "post" is "a job 'defined by its location, time, and duties, but which may be filled interchangeably by a number of [people],' whereas a position 'refers to a job which is held by a specific person.'" NCCHC, Correctional Health Care Guidelines for the Management of an Adequate Delivery System, 2001 Edition.

For this study, we analyzed payroll data for the three most common nurse classifications at CHS, which include:

1) **Clinical Nurses** (Job Codes S75, S76, S7A/B/C): State Board-registered[7] nurses generally responsible for providing "professional" routine nursing patient care, including assessing patient symptoms and needs, planning and implementing nursing care interventions, and evaluating patient response to care. Senior nurses in this class serve as charge or supervisory nurses.

2) **Licensed Vocational Nurses** (Job Code S85): Licensed nurses provide routine "semi-professional" nursing care. Licensed Nurses are not required to have the same level of qualifications or experience as Clinical Nurses and generally perform lower-level medical care services, such as administering medications, taking vital signs, and assisting other medical staff.

3) **Psychiatric Nurses** (Job Code S57): State Board-registered nurses who specialize in providing psychiatric care as well as regular nursing care. Generally, nurses in this classification have experience in acute psychiatric nursing facilities and provide mental health interventions (i.e. group therapy, counseling, etc.).

Based on an analysis of productive hours (i.e. excluding leave time, training, etc.) worked by each nurse classification, we estimate that CHS would need to assign 1.28 FTE nurses to ensure staffing of 1.0 FTE for an 8-hour regular (five-day) shift and 5.40 FTE nurses to ensure staffing of 1.0 FTE for a 24-hour, seven-day shift.[8] Figure 4 below presents three-year average estimated coverage factors for CHS permanent nursing staff classifications with 10 or more Full Time Equivalent (FTE) staff in FY 2019-20.[9]

[7] Registration is with the California Board of Registered Nursing.
[8] These are calculated based on the actual number of productive hours worked for each classification relative to the total number of work hours in the year for FY 2017-18 to 2019-20 (i.e. the number of productive hours divided by the sum of productive and non-productive hours, which should equal 2,080 hours on average for full-time staff who worked for the full fiscal year). In addition, estimates do not include overtime hours, which are discussed separately.
[9] We have included data from FY 2019-20 as we did not find any significant impact on the full year average productive hours estimates, and therefore coverage factors, from the start of the COVID-19 pandemic, i.e. from March to June 2020.

Figure 4: Coverage Factors for Most Common Permanent Custody Health Services Nurse Classifications*, FY 2017-18 to 2019-20, Excluding Overtime

		3-year Average (FY 2017-18 - 2019-20)				
		Productive Hours		***Coverage Factors[1]***		
Job Classification (Job Code)	**Budgeted FTEs (FY 2019-20)**	**% of Paid Hours**	**Average Hours**	**Regular Shifts**	**7-day Shifts**	**24/7 Shifts**
Clinical Nurse III (S75)	75.7	77.6%	1,614	1.29	1.80	5.41
Clinical Nurse III - Step A/ B/ C (S7)[2]	15.4	71.9%	1,495	1.39	1.95	5.84
Licensed Vocational Nurse (S85)	14.5	80.9%	1,684	1.24	1.73	5.19
Clinical Nurse II (S76)	13.9	81.6%	1,697	1.23	1.72	5.15
Psychiatric Nurse II (S57)	10.8	76.0%	1,581	1.32	1.84	5.52
Total	**130.3**	**77.4%**	**1,610**	**1.28**	**1.80**	**5.40**
Countywide Average (implied)[3]	***NA***	***80.1%***	***1,666***	***1.25***	***1.75***	***5.24***

Source: Employee Services Agency (ESA), Payroll Reports; SAP PEP Positions Reports
*Notes: * Based on actual payroll data on productive and non-productive time. See Attachment 1 for details on the methodology used. Includes nurse classifications across all CHS facilities (i.e. Main Jail, Elmwood, and Juvenile facilities).*
[1] Number of FTEs needed per 1FTE Shift. For example, to ensure continuous coverage (taking into account leave and training) for one person staffing a 5-day a week 8-hour shift, 1.29 FTE Clinical Nurse III would be needed. FTE = Full Time Equivalent position, based on 2,080 total paid hours per year. Regular Shifts = 8 hour shifts 5 days per week; 7-day Shifts = 8 hour shifts 7 days a week.
[2] Clinical Nurse III positions on Step A, B, and C (more senior Clinical Nurses) are separated out from regular Clinical Nurse III positions due to differences in estimated productive hours percentage. However, CHS staff indicated they are unable to assign work based on position pay step.
[3] Based on Santa Clara "Countywide Annual Average Productive Hours for County Employees" for FY 2019-20 published by the Controller-Treasurer's Office, which estimated employees worked an average of 1,666 productive hours out of 2,080 total paid hours per year in FY 2018-19.

On average, nurses in the classifications listed were at work 1,610 regular hours, excluding overtime, per year out of 2,080 available hours, or 77.4 percent. The remaining time was used for various paid training and leave. This is 2.7 percentage points lower than the Santa Clara Countywide average of 80.1 percent or 1,666 productive hours, equal to around 48 fewer productive hours per year.

The share of productive time, and therefore coverage factors needed, varied from 71.9 percent for Clinical Nurse III (Steps A, B, and C) positions to 81.6 percent for Clinical Nurse II positions. While this variation may be due to legitimate reasons such as differing training requirements or leave entitlements, understanding this variation and maximizing the share of productive time can be a crucial tool for improving efficiency with minimal costs. One reason for this variation appears to be sick leave, which was highest among Clinical Nurse III positions (both regular and Step A, B, and C classifications) compared to other nursing classifications. As an illustration, increasing the number of productive hours among CHS nurse positions to the countywide

average could result in an additional 6,988 hours, or 3.36 FTEs, among Clinical Nurse III and Psychiatric Nurse II positions, an efficiency gain of $770,030 using FY 2019-20 staff costs.

In addition to helping identify ways to monitor and improve productivity, coverage factors should be regularly reviewed and updated as part of staffing discussions and used to establish CHS nurse staffing plans.

4. Comparing Actual Nurse Staffing Levels to CHS' Planned Staffing Levels

Due to the lack of workload metrics and the high-level nature of the shift assignment descriptions, we were unable to conduct a shift-by-shift workload analysis as recommended by best practices. Instead, we aggregated the shift assignment staffing levels provided for specific nursing classifications and compared this to actual staffing used based on payroll reports for these classifications.[10] This provides an indication of whether (and how) CHS was able to meet their shift assignment staffing levels overall, but it does not tell us if the shift assignment staffing levels are adequate or inadequate. According to our analysis, CHS relies significantly on overtime and Extra Help staff to meet planned staffing levels, as discussed below.

The staffing information provided also failed to address common elements required for effective staffing recommended by best practice guidance, including:

- **Coverage factors:** it was unclear if coverage or relief factors had been used to estimate staffing levels, and several assignments seem to either under or over-estimate the coverage needed. For example, a Licensed Vocational Nurse assignment at the Main Jail with 24/7 coverage only specified a staffing level of 4.0 FTEs, however, a minimum of 4.20 FTEs would be needed to cover a 24/7 assignment, assuming staff never missed work due to illness, vacation, or other reasons.[11] Using the coverage factor data presented in the previous section for CHS Licensed Vocational Nurses, a minimum of 5.19 FTE would be needed to cover a 24/7 shift.

- **Overlapping assignments:** several assignments specified that staffing levels were included in other assignments but did not specify the specific staffing levels needed for each assignment. For example, 33.5 FTE permanent nurses were designated to a general "Registered Nurse/ Clinical Nurse/ Charge Nurse" assignment in the Elmwood Facility, as well as to several specific unit and program

[10] Nurse classifications analyzed included Clinical Nurses, Psychiatric Nurses, Licensed Vocational Nurses, Administrative Nurses, Nurse Managers, and Assistant Nurse Managers. CHS indicated that additional assignment workload information is recorded and used for operational purposes, but we were unable to review this information.

[11] In order to staff a 24/7 post continuously, a minimum of 168 hours of coverage are required (i.e. 24 hours times 7 days per week), this equates to 4.2 FTEs of staff needed (i.e. 168 hours divided by 40 hours (standard number of FTE hours worked in a week.)

assignments within the facility. However, no FTE estimates were provided for these specific assignments.

- **Staffing Mix:** the exact staffing mix and staffing level by position classification was missing from many of the assignments provided, making it difficult to reconcile staffing levels with budget and payroll data. CHS staff indicated that such information is recorded separately in assignment logs used in day-to-day operations.

- **Methodology or staffing metrics:** the staffing plans also did not specify how staffing levels had been estimated, whether coverage factors were included, and/or specific workload metrics used to monitor staffing levels. According to CHS staff, assignment workload is reviewed by nursing leadership and line staff and is based on various factors including staff expertise, statutory regulations, and union agreements.

Further, CHS's FY 2019-20 adopted budget for permanent staff (i.e. excluding Extra Help) is not sufficient to cover the shifts that CHS needs to staff, as defined by CHS management, as shown in Figure 5 below. Needed nurse shift-assignment staff exceeded budgeted FTEs by 12.2 FTEs in FY 2019-20, driven by a 9.8 FTE gap for Psychiatric Nurses. This gap could explain CHS's reliance on overtime and Extra Help staff during this period, as discussed below.

Figure 5: Comparison of CHS Budgeted Staffing to Required CHS Shift Assignments for Selected Nurse Classifications, FY 2019-20

Job Classification	Budgeted FTEs	Required Shift Assignments	*Difference (Shift – Budget)*	
			FTEs	***%***
Permanent Staff				
Clinical Nurse I/II/III	105.0	109.4	*4.4*	*4.2%*
Psychiatric Nurse II	10.8	20.6	*9.8*	*90.7%*
Licensed Vocational Nurse	14.5	14.5	*0.0*	*0.0%*
Admin Nurse II	8.0	6.0	*-2.0*	*-25.0%*
Assistant Nurse Manager	3.0	3.0	*0.0*	*0.0%*
Total (Permanent)	**141.3**	**153.5**	***12.2***	***8.6%***

Source: Employee Services Agency (ESA), Payroll Reports; Custody Health Services; Santa Clara County FY 2019-20 Adopted Budget.
Notes: Staffing levels cover all CHS facilities, i.e. Main Jail, Elmwood, Juvenile Hall, and James Ranch.

CHS Nurse Shift Assignment Requirements are Met with the Use of Overtime, Extra Help, and Contract Staffing

CHS appears to rely on overtime and extra help[12] to staff the shifts identified by CHS management for frontline and mid-level management nursing positions in the Main Jail, Elmwood, and Juvenile facilities. For FY 2019-20, staffing needs specified in shift-assignment descriptions exceeded actual regular hours worked by permanent staff by 24.3 FTEs across the primary nursing classifications, as shown in Figure 6. This gap in required staffing was covered by overtime from permanent nursing staff. Use of Extra Help then enabled the department to exceed the staffing needed to fill all shifts by 6.4 FTEs (4 percent), as shown in Figure 6 below.

In addition to permanent staff overtime and Extra Help staff, CHS also used contracted temporary nursing staff, or "travel nurses," under an existing agreement between County Health Services and a staffing agency. CHS spent a total of $1.86 million on 16,772 contract nurse hours in FY 2019-20, the equivalent of an additional 8.1 FTEs. Thus, actual staffing levels exceeded planned (required) staffing levels by 14.5 FTEs (9 percent) across permanent, Extra Help, and contract staff, as discussed below.

The biggest gap in staffing levels, prior to overtime, were among Clinical Nurse positions which had a gap of 19.9 FTEs below CHS shift assignment levels (89.5 FTEs actual vs 109.4 FTEs planned). This gap was reduced to 16.6 FTEs below planned levels after taking Extra Help staff into account, and actual staffing exceeded planned levels by 1.0 FTE once permanent staff overtime was included. Psychiatric Nurses had the second highest staffing gap, 4.9 FTEs, which also exceeded CHS planned staffing levels by 1.2 FTE once staff overtime and Extra Help were included. Figure 6 below summarizes the number of FTEs for Clinical, Psychiatric, License Vocational, and Administrative Nurses, as well as Assistant Nurse Managers identified by CHS as necessary to staff CHS facilities (as of October 2020)[13] and the FTE equivalents of actual hours worked (including regular hours, "non-productive" time as described in the previous section, and overtime).

[12] Extra Help staff are temporary staff which County Departments can use to meet peak-load or other unusual work situations, per Ordinance Code Sec. A25-188. For non-SEIU represented classifications, such as nurse classifications, the number of Extra Help hours per fiscal year is set by the County's Chief Executive Officer (BOS Policy 4.18). In FY 2018-19, a total of 950,000 Extra Help hours were allocated across County Departments, of which 45,000 were allocated to Custody Health, according to the ESA's Office of Labor Relations.

[13] CHS staff indicated that schedules and staffing levels provided had not changed since FY 2018-19 and were similar to FY 2019-20 levels.

Figure 6: Comparison of CHS Shift Assignment Staffing Levels and Actual Staffing Levels for Selected Nurse Classifications (FTEs), FY 2019-20

Job Classification	CHS Shift Assignment FTEs[1]	*ESA Payroll Actual FTEs (FY 2019-20)*			*Difference between Shift Assignments and:*	
		Regular Positions[2]	Overtime	Total (Reg & OT)	Regular Positions[2]	Total Hours
Permanent Staff						
Clinical Nurse I/II/III	**109.4**	89.5	16.6	**106.1**	-19.9	-3.3
Psychiatric Nurse II	**20.6**	15.7	3.6	**19.3**	-4.9	-1.3
Licensed Vocational Nurse	**14.5**	16.7	3.0	**19.6**	2.2	5.1
Admin Nurse II	**6.0**	5.5	0.0	**5.5**	-0.5	-0.5
Assistant Nurse Manager	**3.0**	1.8	1.1	**2.9**	-1.2	-0.1
Sub-Total (Regular)	**153.5**	**129.2**	**24.3**	**153.5**	**-24.3**	**0.0**
Extra Help						
Clinical Nurse I/II/III	**11.0**	0.7	0.0	**0.7**	-10.3	-10.3
Per Diem Clinical Nurse	**0.0**	13.6	1.0	**14.6**	13.6	14.6
Per Diem Psychiatric Nurse	**0.0**	2.2	0.3	**2.5**	2.2	2.5
Licensed Vocational Nurse	**1.0**	0.7	0.0	**0.7**	-0.3	-0.3
Sub-Total (Extra Help)	**12.0**	**17.1**	**1.3**	**18.4**	**5.1**	**6.4**
Grand Total	**165.5**	**146.3**	**25.6**	**171.9**	**-19.2**	**6.4**
Sub-Totals by Nurse Type (Regular & Extra Help)						
Clinical Nurses	*120.4*	*103.8*	*17.6*	*121.4*	*-16.6*	*1.0*
Psychiatric Nurses	*20.6*	*17.8*	*4.0*	*21.8*	*-2.8*	*1.2*
Licensed Vocational Nurses	*15.5*	*17.3*	*3.0*	*20.3*	*1.8*	*4.8*
Other Nurses	*9.0*	*7.4*	*1.1*	*8.4*	*-1.6*	*-0.6*
Grand Total	***165.5***	***146.3***	***25.6***	***171.9***	***-19.2***	***6.4***

Source: Employee Services Agency (ESA), Payroll Reports; Custody Health Services
Notes: Staffing levels cover all CHS facilities, i.e. Main Jail, Elmwood, Juvenile Hall, and James Ranch.
[1]Based on our interpretation of CHS-provided shift assignment data, assumes shift assignment FTE numbers reflect budgeted FTEs (i.e. productive and non-productive time or 2,080 hours per FTE). Actual staffing required may vary as CHS shift data did not clearly indicate whether coverage factors were included.
[2] Includes total paid hours, i.e. productive and non-productive time, such as vacation and sick leave, divided by 2,080 hours (i.e. budget or position FTE).

We also reviewed actual staffing levels of permanent and Extra Help staff in FY 2017-18 and FY 2018-19 and found similar trends to those shown above. Hours worked by permanent staff were below shift staffing needs in both years, and the gap was

eliminated through the use of overtime and Extra Help staff. Actual staffing levels of permanent and extra help staff exceeded shift assignment staffing requirements by more in FY 2017-18 and FY 2018-19 compared to FY 2019-20 largely due to reductions in the use of Extra Help staff in FY 2019-20, shown in Figure 8 below. In addition, we did not identify substantial impacts in the use of overtime or Extra Help staff in FY 2019-20 due to COVID-19.

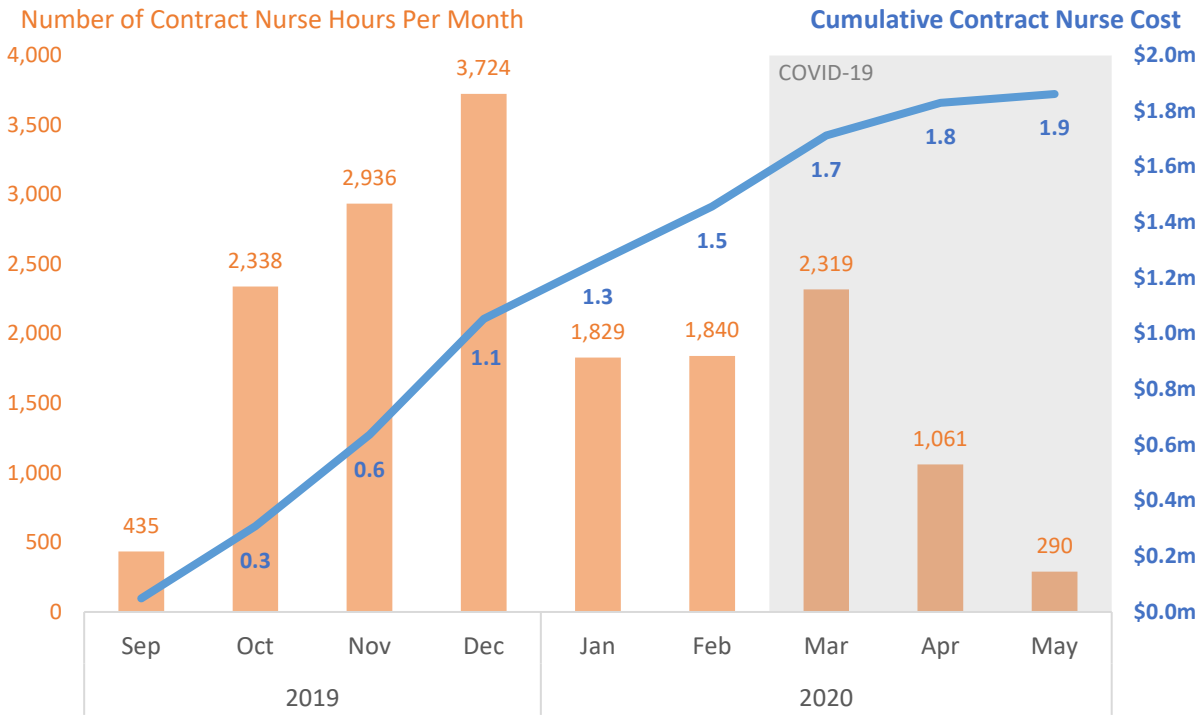
Temporary Agency Nurses Used to Further Supplement Staffing

Custody Health Services also used contracted "travel nurses" to meet staffing needs under a County agreement between the Santa Clara Valley Health and Hospital System (SCVHHS) and ACES Staffing, LLC.[14] Adding these contract travel nurses to total hours worked by permanent and extra help staff shown above would lead to actual staffing levels of 180 nurse FTEs in FY 2019-20, which exceed planned staffing levels by 14.5 FTEs. While CHS staff were unable to provide any data on the use or monitoring of nurses paid under this contract, we obtained PDF copies of contract invoices from SCVHHS staff and extracted CHS travel nurse usage for FY 2019-20.

As Figure 7 shows, CHS spent a total of $1.86 million on 16,772 contract nurse hours in FY 2019-20, the equivalent of an additional 8.1 FTEs. Over three quarters of these hours (78 percent) were used before the start of the COVID-19 Shelter in Place order, from September 2019 to February 2020. Over this period, CHS had an average of 13.8 contract nurses per week in its facilities working an average of 38 hours per week, this fell to 6.3 nurses working 34 hours per week from March to May 2020.

[14] Under this contract, SCVHHS can request registered nurses for temporary nursing services which are billed on an hourly rate, ranging from $110 for 8-hour routine care shifts to $145 for 12-hour special care shift. Additional rates apply for overtime, holiday, and "rapid response" or short duration staff. Contract nurses can be used to fill any Registered Nurse classification (i.e. Clinical or Psychiatric Nurse positions).

Figure 7: CHS Contract Nurses Hours and Cost per Month, FY 2019-20



Source: SCVHHS Invoices
Notes: Actual hours used may differ slightly from invoiced amounts due to adjustments for errors in hours billed in each invoice. On net, the total adjustment was equivalent to one hour of contract nurse time ($121).

Since FY 2017-18 Overtime has Increased for Permanent Nurses

Between FY 2017-18 and FY 2019-20, permanent staff overtime for all nurse classifications increased by 5.4 FTEs (28 percent), from 18.90 FTEs to 24.30 FTEs, while Extra Help usage decreased by 22.5 FTEs (55 percent), from 40.88 FTEs to 18.43 FTEs for all nurse classifications. On net, the number of actual FTE-equivalent hours worked has declined by 14.5 FTEs (8 percent). The use of overtime and Extra Help staff is concentrated in CHS' adult facilities with 85 percent of hours worked for each of these categories coming from nurses at Main Jail and Elmwood.[15] Figure 8 below shows actual permanent and Extra Help staffing levels for the three-year period based on payroll data.

While the total actual FTE-equivalent hours worked declined over the period, the increase in overtime on existing permanent staff was significant. For example, Clinical Nurse III and Psychiatric Nurse II staff at CHS worked an average of 8.27 hours and 9.31 hours in overtime *per week* in FY 2019-20, respectively.[16] In total, CHS spent

[15] This includes the "Adult Mental Health Services" cost center.
[16] Estimates were calculated by estimating the percent of overtime worked relative to the sum of regular hours worked, leave, and training by nurse classification and then multiplying this percentage by an average 40-hour work week.

$6.82 million on overtime for permanent nurse classifications in FY 2019-20, around 89 percent of total overtime pay despite these staff only making up 67 percent of total pay. This does not appear to be driven by COVID-19 as, on average, overtime hours worked per pay period were lower after the start of the COVID-19 Shelter in Place order than before.

Figure 8: Actual Staffing Levels for CHS Nurse Classifications for Permanent and Extra Help Staff by Type of Hours Worked, FY 2017-18 to 2019-20*

Staff Type / Type of Hours Worked	Actual FTEs (ESA Payroll Data)			*% Change from FY 2017-18 to 2019-20*	
	2017-18	**2018-19**	**2019-20**	*#*	*%*
Permanent Staff					
Productive Time (Regular Hours)	100.2	108.7	103.3	*3.1*	*3.1%*
Productive Time (Overtime)	18.9	23.8	24.3	*5.4*	*28.5%*
Non-Productive Time (Leave, Training)	29.9	30.6	29.4	*-0.5*	*-1.7%*
Permanent Staff Total	**149.0**	**163.1**	**157.0**	***8.0***	***5.3%***
Extra Help					
Productive Time (Regular Hours)	36.1	30.9	16.0	*-20.0*	*-55.6%*
Productive Time (Overtime)	2.3	2.5	1.3	*-0.9*	*-41.5%*
Non-Productive Time (Leave, Training)	2.6	1.6	1.1	*-1.5*	*-57.5%*
Extra Help Total	**40.9**	**35.0**	**18.4**	***-22.5***	***-54.9%***
Grand Total	**189.9**	**198.2**	**175.4**	***-14.5***	***-7.6%***

Source: Employee Services Agency (ESA), Payroll Reports
Notes: Staffing levels cover all CHS facilities, i.e. Main Jail, Elmwood, Juvenile Hall, and James Ranch. Nurse classifications include Clinical Nurses, Psychiatric Nurses, Licensed Vocational Nurses, Nurse Managers, Admin Nurses, and Assistant Nurse Managers.
** Includes Nurse Manager Children's Shelter & Custody Health (S31) positions which were not included in Figure 6 above. These represent 4,0, 3.6, and 3.5 FTE in FY 2017-18, 2018-19, and 2019-20, respectively.*

5. Analyzing Trends in Demand for CHS Health Care Services

From 2017 to the beginning of 2020, Santa Clara County's adult jail population remained relatively stable, decreasing only by about six percent from January 2017 to January 2020. However, the distribution of incarcerated individuals shifted from the Main Jail to the Elmwood Men's Facility, which held 70 percent of the total jail population in January and February 2020. Since the start of the COVID-19 pandemic and related public health orders, the average daily population has fallen 39 percent, from January to September 2020, to reduce exposure in congregate settings. Despite minimal pre-COVID-19 changes in the daily jail population, the use of certain medical services has decreased significantly, while mental health services use has increased. All of these trends have impacts for custody health staffing levels which must be integrated into staffing decisions. However, CHS management staff did not provide

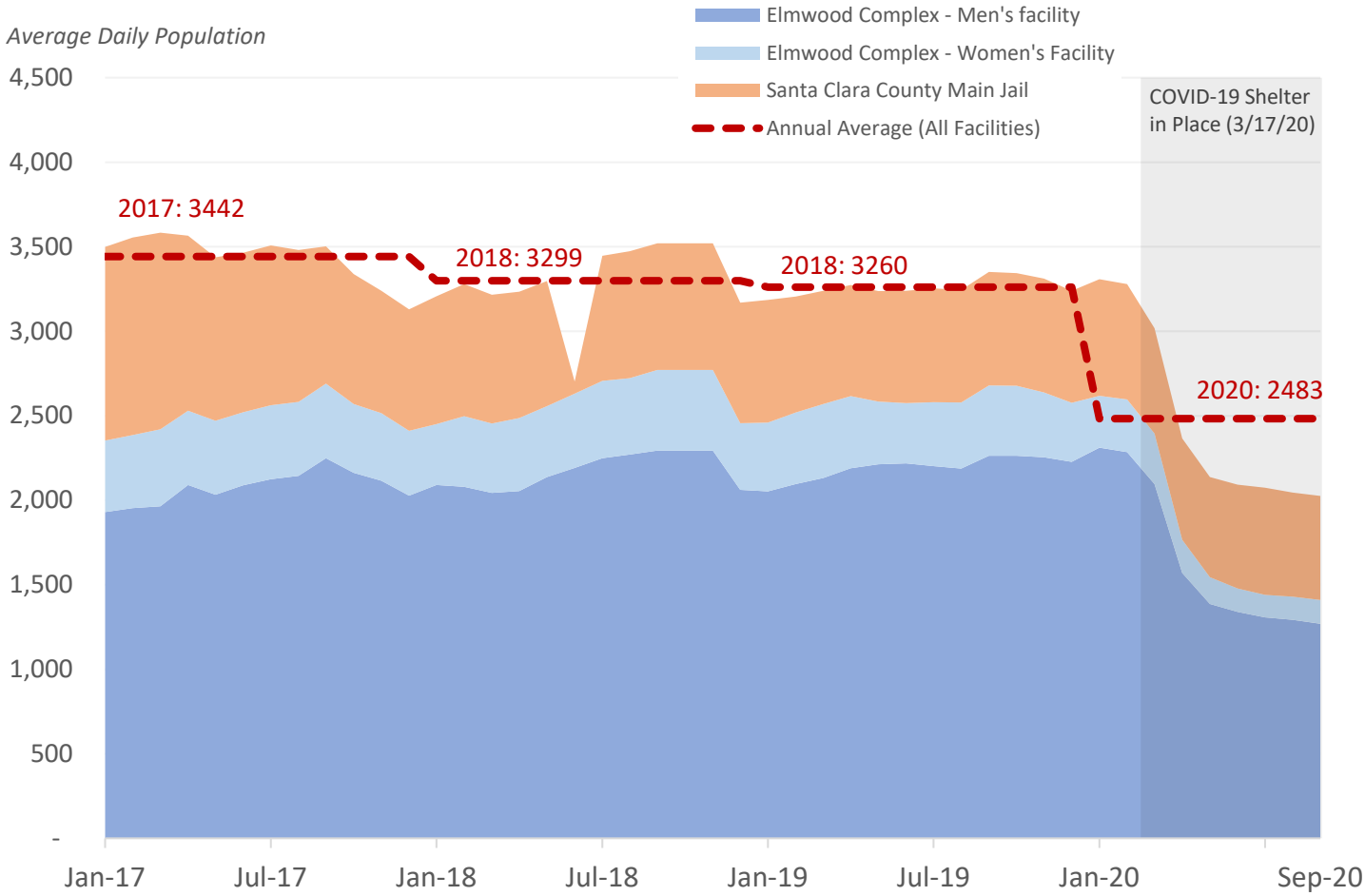
any data on common health care utilization or productivity metrics which are recommended for monitoring and adapting health care staffing levels to demand.

Santa Clara Jail Population Trends

Santa Clara County's average daily adult jail population declined slightly over the three-year period between January 2017 and January 2020 and then fell sharply over the nine-month period between January 2020 and September 2020 largely in response to public health efforts to contain the spread of COVID-19. The average daily population at the County's three adult jail facilities, Elmwood (Men's), Elmwood (Women's), and Main Jail, decreased by six percent from January 2017 to January 2020, from 3,499 to 3,308 incarcerated individuals, due to declines in the average daily population at the Main Jail and Elmwood Complex Women's Facility. However, the County's adult jail population fell by 39 percent from January to September 2020, from 3,308 to 2,026 incarcerated individuals, due to sharp declines at the Elmwood Complex Men's and Women's facilities, as shown in Figure 9 on the following page.[17]

[17] Monthly average daily population (ADP) is measured as the total number of individuals incarcerated in the facility on each day in a given month, divided by the numbers of days in the month.

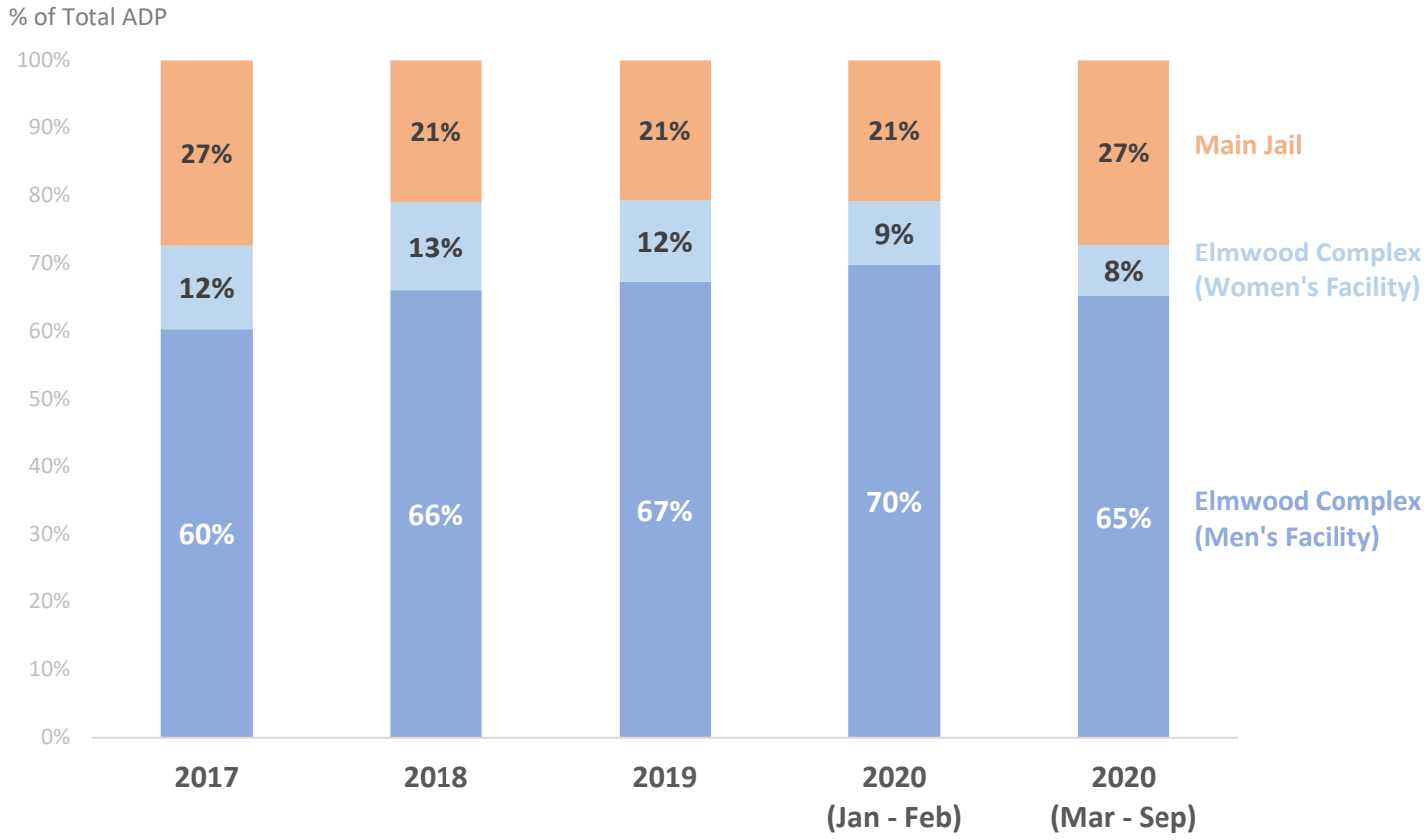
Figure 9: Santa Clara County Jail Monthly Average Daily Population by Facility, January 2017 to September 2020



Source: California Board of State and Community Corrections, Jail Profile Survey
Note: Data for October and November 2018 was imputed using September 2018 ADP due to missing data.

While the overall average daily jail population was relatively constant pre COVID-19, there was a shift in the distribution of the population across the three facilities. The share of the average daily population in the Elmwood Complex Men's Facility relative to the total County jail population increased from 60 percent in 2017 to 70 percent in January and February 2020 due to an increase in the Elmwood Complex Men's Facility population and a reduction in the Main Jail population, as shown in Figure 10 below. Between March 2020 and September 2020, the share of the average daily population in the Elmwood Complex Men's Facility declined to 65 percent as the average daily population fell sharply in the Elmwood Complex Men's Facility due to COVID-19 response. These changes have implications for the distribution of CHS medical and behavioral staff across the facilities, in particular as the Elmwood facility is operated as a longer-term facility and includes residential psychiatry services.

Figure 10: Distribution of Santa Clara County Jail Annual Average Daily Population by Facility, January 2017 to September 2020



Source: California Board of State and Community Corrections, Jail Profile Survey
Note: Data for October and November 2018 was imputed using September 2018 ADP due to missing data.

Santa Clara Jail Health Care Services Utilization Trends

Regular, accurate, and consistent data on the type and use of healthcare services is a key component for determining and adjusting clinical staffing levels. While CHS provided some data related to healthcare utilization, CHS did not provide any data or reports that showed how utilization data informed staffing levels or specific performance measures being monitored. For example, CHS did not provide productivity or other health service metrics that were clearly related to its staffing levels, such as nursing hours per unit of service (HPUOS) or nursing hours per patient day (HPPD). The use of such measures is commonly recognized as best practice in general healthcare and correctional healthcare staffing.[18]

[18] See for example, U.S. Department of Justice, National Institute of Correction (2001), "Correctional Health Care: Guidelines for the Management of an Adequate Delivery System," Chapter VI; Susan J. Penner (2016), *Economics and Financial Management for Nurses and Nurse Leaders.* 3rd edition.

In the absence of this data, we relied on mandatory compliance data submitted by the Santa Clara County Sheriff to the Board of State and Community Corrections (BSCC) as part of the monthly Jail Profile Survey. This survey includes indicators of health service utilization which provide an overview of recent trends in health care service utilization in County jail facilities.

According to Jail Profile Survey data, the use of some health services, such as physician occurrences and inmates assigned to medical beds, declined from 2018 to 2020 (January and February), while the use of other services, such as psychotropic medication and inmates seen at sick call, increased. Increases in the number of incarcerated individuals seen at sick call (up 34 percent) and receiving psychotropic medications (up 19 percent) from 2018 to the beginning of 2020 likely have implications for staffing but may be offset by reductions in the use of other services. Both mental and medical health services utilization declined after the start of the COVID-19 Shelter in Place Order alongside declines in the average daily population, though this data does not capture the provision of new services to combat the spread of COVID-19 in County jail facilities.

Figure 11: Medical and Mental Health Service Utilization Metrics for Santa Clara County Jail Facilities, January 2018 to September 2020

Health Care Utilization Metric	*Annual Average*				*Change from 2018 to:*		
	2018	2019	2020 (Jan - Feb)	2020 (Mar - Sep)	2019	2020 (Jan - Feb)	2020 (Mar - Sep)
Medical Health Services							
Inmates that were seen at inmate sick call (monthly average - total)	3,115	3,479	4,189	2,805	12%	34%	-10%
Physician/practitioner occurrences (monthly average - total)	2,542	2,355	2,377	1,586	-7%	-6%	-38%
Inmates assigned to medical beds (monthly average - total)	48	29	23	21	-40%	-52%	-56%
Mental Health Services							
Mental health cases open (monthly average - snapshot)	2,865	2,127	NA	1,563	-26%		-45%
% of ADP with Mental Health Case Open (monthly average - snapshot)	86%	65%	NA	70%	-24%		-18%
Inmates receiving psychotropic medication (monthly average - snapshot)	1,435	1,538	1,704	1,139	7%	19%	-21%
% of ADP receiving Psychotropic Medication (monthly average - snapshot)	70%	72%	77%	65%	4%	11%	-7%

Source: California Board of State and Community Corrections, Jail Profile Survey
Note: NA indicates data was not submitted to BSCC; "Total" indicates a cumulative total number per month, i.e. total number of inmates assigned to medical beds in each month, averaged over the given year; "Snapshot" indicates the relevant metric was captured on a specific day in each month, i.e. mental cases open on the last day of the month, number of inmates receiving psychotropic medication on the last day of the month. "ADP" is the Average Daily Population in Santa Clary County jails for the specified time period.

Data provided by CHS also generally supported these trends, with the number of medications administered and patient requests for medical services ("white cards") increasing from 2018 to early 2020. These increases may be related to the two federal court consent decrees and associated remedial plans agreed in 2018 and 2019 involving Santa Clara County jail provision of medical, mental, dental, and mental health services.[19]

[19] The two cases are: *Chavez v. County of Santa Clara, et. al* (consent decree approved March 2019) and *Cole v. County of Santa Clara*, et. al (consent decree approved March 2019).

Conclusion

CHS does not conduct formal workload analyses when determining nurse staffing levels, and CHS did not provide comprehensive workload or performance measures to demonstrate that staffing levels are adequate to meet inmate healthcare needs. In addition, CHS did not develop coverage factors to determine current staffing levels (as of October 2020), which help ensure continuous coverage when staff are on vacation or miss work for other reasons. CHS relies significantly on overtime and extra help staff to meet planned staffing levels, and continued reliance on overtime, in particular, can lead to staff burnout or increase the risk of errors due to exhaustion. Given the limited information in how CHS developed its staffing plans and manages staff to meet patient care demands, a bottom-up review, such as a time study or other quantitative staffing study, is necessary to determine the actual staffing hours needed for each CHS assignment and the staffing mix to provide this care.

Recommendations

Custody Health Services should:

1. Develop staffing plans for all CHS assignments based on best practice correctional staffing methods and actual staffing and service needs data. CHS should also develop workload and other staffing/ productivity measures for management and executive leadership to review regularly to ensure staffing approaches are sufficient and cost-effective to meet needs.

2. Develop and monitor healthcare utilization and staff productivity measures for County jail facilities. These metrics should be based on best practices, be regularly reported (or made publicly available through public dashboards), and clearly link health care utilization to relevant staffing levels (i.e. through the use of industry-standard productivity measures). These measures should be developed as part of the staffing plans recommended above and used to monitor actual staffing against planned levels.

COUNTY OF SANTA CLARA
Health System

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DATE: June 21, 2021

TO: Cheryl Solov, Management Audit Manager

FROM: Dr. Eureka Daye, Director of Custody Health and Custody Behavioral Health Services

DocuSigned by:
Eureka Daye
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RE: Custody Health Services' Executive Response on the *Confidential Draft: Special Study on Custody Health Services Staffing* date March 26, 2021

Custody Health Services (CHS) has reviewed the Management Audit Division's draft ***Staffing Study of the Custody Health Services Department*** report and appreciates the time and effort dedicated in completing this comprehensive study. Custody Health Services (CHS), in its administration of integrated healthcare services to incarcerated patients in the Santa Clara County Jails, recognizes the intent of the staffing audit and takes seriously its obligation to effectively manage all aspects of its staffing and budgetary operational needs. CHS will continue to examine the study's findings and will take under advisement, with the County Executive and County Counsel, feasible next steps, up to and including providing staffing updates to the Board of Supervisors and adopting current industry standards for its services.

Study Recommendations # 1:

Develop staffing plans for all CHS posts based on best practice correctional staffing methods and actual staffing and service needs data. CHS should also develop workload and other staffing/ productivity measures for management and executive leadership to review regularly to ensure staffing approaches are sufficient and cost-effective to meet needs.

Custody Health Services: Agrees

CHS recognizes that staff workload is a factor that affects job satisfaction and work experience. Over the past several years, CHS has accrued nursing overtime indicative of the need to examine resourced position authority for nursing and for other coded classifications.

Custody Health Services Purports to:

- Develop an implicit definition of productivity for the operations that communicates the reciprocal expectations for staff's tasks and the productivity measurements and activities from direct staff's performance behavior.

- Assess workloads due to either increasing demands, limited resources, and/or determine if insufficient staffing levels are contributory to the high use of overtime.

- Complete a productivity analysis, including relief factor, and examine trends, identify problems, and permit adjustments through corrective action.

- Monitor performance, provide feedback, and check progress toward identified objectives.

- Use productivity measures to inform costs, time, output rate, and resource usage and to allow decision making with respect to scheduling.

Study Recommendations # 2:

Develop and monitor healthcare utilization and staff productivity measures for County jail facilities. These metrics should be based on best practices, be regularly reported (or made publicly through public dashboards), and clearly link health care utilization to relevant staffing levels (i.e., using industry-standard productivity measures). These measures should be developed as part of the staffing plans recommended above and used to monitor actual staffing against planned levels.

Custody Health Services: Agrees

CHS agrees that an internally consistent and comprehensive productivity measurement system should be developed that accounts for the productivity of individual staff and disciplines across the organization. This structure will assist CHS to manage its resources effectively and direct staffing resources towards organizational goals. A consistent productivity measurement system will enable leadership to speak a common language and solve problems associated with resource distribution and productivity improvements.

Custody Health Services Purports to:

- Implement leading industry practices in workload standards and apply to specific job classes, to include calculations of staffing needs in each program area.

- Assure that workload standards for custody health staff support assignments, are adequate and generally consistent with accepted operational practices in comparable correctional systems

- Develop workload metrics using reliable data to analyze staffing needs as documented in the electronic medical record.

In summary, Custody Health Systems aims to become a high reliability system of care that operates with evolving industry standards focused on patient safety, quality of care, and constant system improvement, rooted in a culture that promotes self-examination and continuous learning. CHS plans to seek consultation with an experienced vendor in integrated correctional healthcare and with perspective on the unique challenges and resource demands often found in correctional healthcare settings to help formulate the basis for a future-state staffing model in a post COVID-19 environment.