TECHNOLOGY SERVICES AND SOLUTIONS: Have Lessons Been Learned?

2021 Civil Grand Jury
of Santa Clara County

December 16, 2021

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GLOSSARY AND ABBREVIATIONS

42 CFR Part 2	A section of the Code of Federal Regulations that requires substance use disorder treatment providers to observe privacy and confidentiality restrictions with respect to patient records.
Behavioral Health	Behavioral Health Services, often referred to as Behavioral Health, is the department within the County of Santa Clara Health System that works with clients experiencing mental health and behavioral issues.
CalEQRO	California External Quality Review Organization performs an annual evaluation of every county's behavioral health services department.
Contract Provider	An organization that contracts with the County to provide behavioral health services
CSI	Client and Service Information is a system that generates reports required by the State of California for measuring timeliness of mental health care.
EHR	Electronic Health Record is a digital version of a patient's paper medical record.
Governance Gates Checklist	A Technology Services and Solutions project management form that divides a project into distinct stages
Health System	The County of Santa Clara Health System includes the Behavioral Health Services Department, Public Health Department, Santa Clara Valley Medical Center hospital and clinics, O'Connor Hospital, St. Louise Regional Hospital, Emergency Medical Services Agency, Custody Health Services Department, and Valley Health Plan.
HealthLink	An electronic health record system, developed by Epic Systems Corporation and used by the County of Santa Clara Health System

HL7	A network protocol used to electronically transmit medical information
Hospital Finance	A department within the Health System that manages patient billing and other financial responsibilities
HSR	A Health Service Representative is a clerical staff member who registers clients and schedules appointments.
Medi-Cal	Medi-Cal is California's Medicaid program, which pays for a variety of medical services for children and adults with limited income and resources.
MHSA	The Mental Health Services Act was passed by California voters in 2004 to expand services to county mental health systems.
Netsmart	Netsmart Technologies, Inc. develops electronic health record systems for behavioral health organizations.
Procurement	The County department responsible for purchasing goods and related services
Project Management Center of Excellence	A Technology Services and Solutions office that administers the Governance Gates Checklist
ProviderConnect	A Netsmart module that allows contract providers to securely transmit medical data to the County through a web interface
ProviderConnect Enterprise	A Netsmart module that allows contract providers to securely transmit medical records to the County through a programmatic interface
RFP	A Request for Proposals is a document that solicits bids from vendors for County services.

Short-Doyle Act	The Short-Doyle Act established a county-based, rather than state-based, behavioral health system. It includes requirements that must be followed when submitting claims to Medi-Cal.
SUTS	Substance Use Treatment Services is the division of the Behavioral Health Services Department that provides alcohol and drug treatment services.
TSS	Technology Services and Solutions is the County of Santa Clara information technology (IT) department.
Uni/Care	The software system used by Behavioral Health Services prior to 2018

INTRODUCTION

Complex software projects are notorious for encountering delays and cost overruns. However, sophisticated development teams can overcome these challenges by using software engineering best practices, following established project management frameworks, and continually learning lessons from past projects. The 2021 Civil Grand Jury of Santa Clara County (Civil Grand Jury) investigated one troubled project to understand what went wrong.

This report looks at one particular example as a case study. In 2018, the County launched a customized electronic health record (EHR) system for clinics in the Behavioral Health Services Department (Behavioral Health). Development of this system was overseen by Technology Services and Solutions (TSS), the County's information technology department, which is responsible for managing the County's computer hardware, software, and network infrastructure. The EHR system was intended to modernize clinical record-keeping, patient billing, and reporting for State and County oversight.

The County Health System operates the County-owned hospitals and clinics. In 2013, most of the Health System departments started using an EHR system named HealthLink (made by Epic Systems Corporation) to keep track of patient healthcare records. However, HealthLink did not fully meet the needs of one Health System department, Behavioral Health.

Behavioral Health is the department that works with clients experiencing mental health or substance use issues. Clients experiencing mild or moderate symptoms can receive support from the County's primary care clinics, but clients with severe issues are seen at clinics that specialize in behavioral health. The 14 Behavioral Health specialty clinics operated by the County serve less than 20% of the demand for services. Consequently, the County contracts with non-profit providers for additional clinics to provide more than 80% of behavioral health services.[1]

Most behavioral health services are covered by Medi-Cal, which is California's public health insurance program that provides health care coverage to low-income individuals and families. Medi-Cal contributes $100 million to $120 million in annual revenue to Behavioral Health and has specific claims requirements for behavioral health services. Because these claims requirements were not supported by HealthLink, TSS selected Netsmart, a vendor specializing in behavioral

[1] Behavioral Health Concepts (CalEQRO), "FY2020-21 Medi-Cal Specialty Mental Health External Quality Review: Santa Clara MHP Final Report," p. 46, January 14, 2021, https://www.caleqro.com/data/MH/Reports%20and%20Summaries/Prior%20Years%20Reports%20and%20Summaries/Fiscal%20Year%202020-2021%20Reports/MHP%20Reports/Santa%20Clara%20MHP%20EQRO%20Final%20FY20-21%2003.24.21.pdf.

health services, to provide the billing software. As discussed later in this report, linking HealthLink with Netsmart complicated the project.

After almost two years of planning and development, the new EHR system was launched in February 2018. However, once the system became operational, the County detected numerous errors in the pending behavioral health Medi-Cal claims. The County halted the billing component of the new system and faced the crisis of potentially losing millions in reimbursements. Medi-Cal requires claims to be submitted within one year from the date of service, and it was unclear how long it would take to fix the billing problems. Management formed a billing remediation team to correct the problems and managed to resolve most of the billing issues before the Medi-Cal deadlines expired. Nevertheless, such an intensive effort on individual claims was unsustainable, and by late 2018 the County decided to redesign the EHR system.

There are a number of important lessons to be learned from this project. After a more detailed discussion of the history of this multiyear project, several areas are identified as the root causes of the troubles encountered. These include insufficient attention to the initial analysis and feasibility of the project, a failure to follow industry best practices for project management, and the lack of testing necessary to ensure a successful deployment. In addition, miscommunication among County departments led to problems while negotiating amendments to the original Netsmart agreement. Finally, there are concerns that the current phase of the project lacks sufficient planning and project management controls. In this report, the Civil Grand Jury provides 12 recommendations the County and TSS can adopt to help prevent similar mishaps with future software projects.

METHODOLOGY

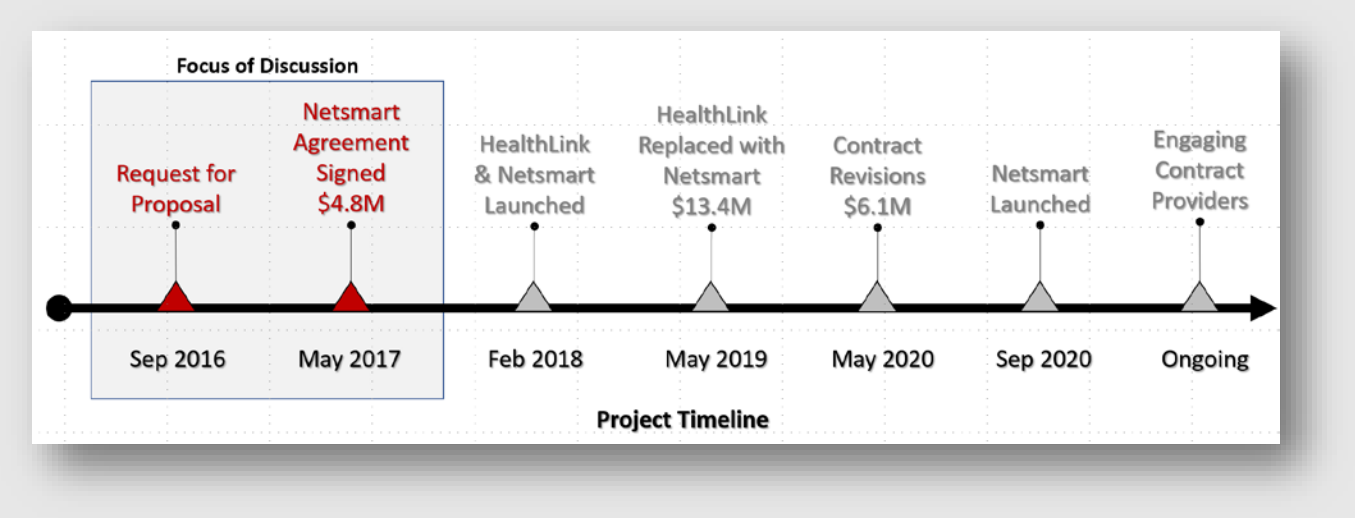
The Civil Grand Jury held more than 45 interviews with staff from TSS, Behavioral Health, Hospital Finance, Procurement, contract providers, and software vendors.

Documents from the following areas were reviewed during the investigation:

- CalEQRO reviews
- Management Audits of TSS and Behavioral Health
- Email and draft documents associated with the evaluation of software vendor proposals
- Draft Statements of Work written during negotiations with Netsmart
- Workflows describing how clinicians and clerical staff would use the new EHR system
- The Netsmart Agreement and subsequent amendments
- Videos of the Board of Supervisors' Health and Hospital Committee meetings
- Video of the Board of Supervisors meeting concerning the Netsmart project
- Internal documents describing efforts to correct the billing problems
- Detailed billing charges for 2018-2019
- Comparison of Behavioral Health revenue for 2017-2020
- TSS Reports and Project Management documents

DISCUSSION

The timeline below shows the development phases of the project. The highlighted portion in red is discussed in the following "Request for Proposal and Selection of Netsmart" section.



Request for Proposal and Selection of Netsmart

By 2016, Behavioral Health had been using Uni/Care for almost 20 years to handle billing and patient care records (see Figure 1). Uni/Care no longer provided all the capabilities needed by the County, so the County began to search for a replacement system.

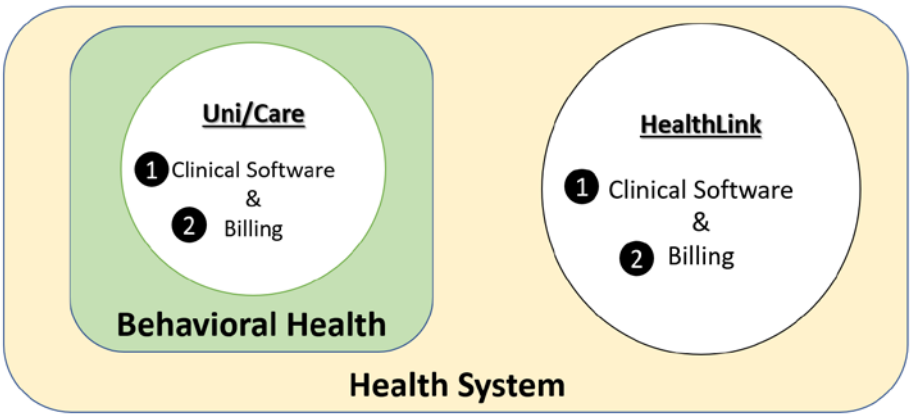


Figure 1. In 2016, Behavior Health clinics used Uni/Care while hospitals and other medical clinics used HealthLink

In particular, Behavioral Health needed several types of system functions:

- Clinical software used by clinicians, psychologists, and psychiatrists to enter client diagnoses, treatment plans, and progress notes
- Billing software used by Hospital Finance to bill Medi-Cal, Medicare, and insurance companies
- Practice Management software used by the clinics' Health Service Representatives (HSRs) to admit clients, create the health records, and enter demographic information needed for state reporting
- Managed Services Organization software used by the County to manage service authorization and claims adjudication for contract providers
- Software used by contract providers to transmit medical records to the County

The County issued its formal Request for Proposals (RFP) in September 2016, inviting interested software vendors to submit bids for all system capabilities listed above, except for the clinical software, which was to be provided by HealthLink.

The Procurement Department oversees the process used to select software vendors and manages contract negotiations. An evaluation committee made up of six directors and managers from TSS, Behavioral Health, and the Hospital Finance Division was formed to review software vendor proposals. Five additional directors and managers from these departments were subject matter experts who assisted the evaluation committee.

After receiving and evaluating five bids, the committee recommended the acceptance of the Netsmart proposal. The Netsmart Agreement was signed in May 2017 for a total anticipated cost of $4.8M.

Decision to use HealthLink for clinical software

The County did not include clinical software in the RFP because the Health System's management had already decided to use HealthLink. The decision to use HealthLink was understandable because the Health System, which includes the Behavioral Health, had been using HealthLink in County hospitals and primary care clinics since 2013. Clinicians generally liked HealthLink, and some of the Behavioral Health clinicians had become accustomed to using it while working in the County hospitals and primary care clinics.

More importantly, HealthLink gave clinicians the total view of a client's health. Treatment plans could be developed, and medication could be prescribed, while taking into consideration all aspects of the client's health.

However, there were behavioral health requirements that HealthLink could not support. For instance, California's Short-Doyle Act imposes rules on how to file Medi-Cal claims for behavioral health services. HealthLink targets medical settings, not behavioral health, and HealthLink does not support the Short-Doyle Act billing requirements. Consequently, the Behavioral Health client's diagnosis, treatment plan, billing charges, and other information contained within the HealthLink medical record must be transmitted to the Netsmart billing software, with Netsmart constructing the Medi-Cal claim.

Linking HealthLink with Netsmart

The County's initial plan was to have Netsmart import the data from HealthLink using HL7, a standardized protocol for transmission of medical data (see Figure 2). No other county in California had attempted to connect HealthLink with Netsmart, and there were warnings that this would be difficult.

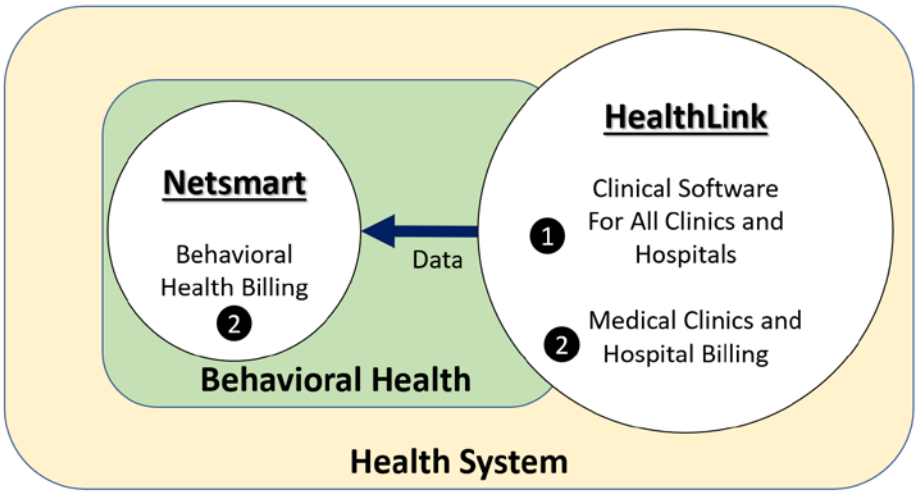


Figure 2. Initial plan in 2017: All medical and Behavioral Health clinics use HealthLink for clinical software; HealthLink sends data to Netsmart for Behavioral Health billing.

California's External Quality Review Organization (CalEQRO) is an organization that contracts with the state to perform annual audits of every county's behavioral health program. The FY2017-18 report for the County, published in January 2018, warned that the "simultaneous implementations [of HealthLink with Netsmart] are ambitious undertakings given the nominal level of available technical and project management staffing."[2] The review continued by warning

[2] Behavioral Health Concepts (CalEQRO), "FY17-18 Medi-Cal Specialty Mental Health External Quality Review: Santa Clara MHP Final Report," p. 6, January 25, 2018, https://www.caleqro.com/data/MH/Reports%20and%20Summaries/Prior%20Years%20Reports%20and%20Summaries/Fiscal%20Year%202017-2018%20Reports/MHP%20Reports/Santa%20Clara%20MHP%20EQRO%20Final%20Report%20FY17-18%20JP%20v4.pdf.

that Behavioral Health "will be dependent for its success on the reliable seamless coordinated operation of two highly complex information systems working together in a way that has little precedent in California."[3]

In addition to the CalEQRO warnings, the Civil Grand Jury learned that several people within the County believed linking HealthLink with Netsmart was not feasible. Although TSS is the department with technical experts, the concerns were raised from staff within Behavioral Health and Hospital Finance. TSS discounted their concerns. (Finding 1)

Client confidentiality

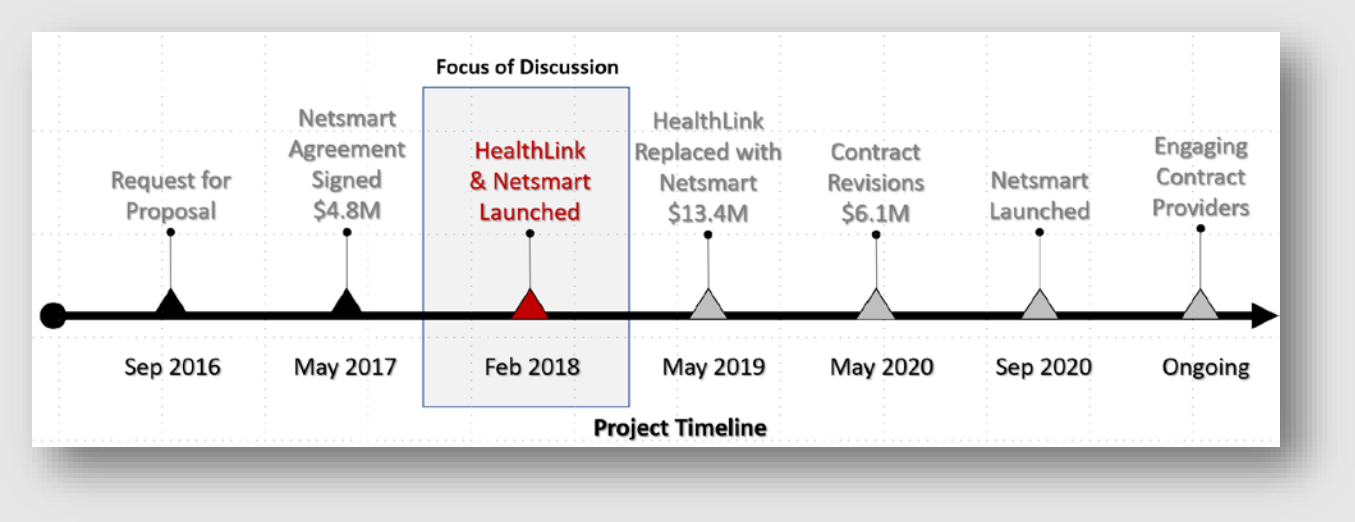
Substance Use Treatment Services (SUTS) is a division within Behavioral Health that provides alcohol and drug use services. During the development of the project, the federal government issued updated regulations (42 CFR Part 2) that impose strict confidentiality requirements on the records of SUTS clients. Specifically, a client must provide written consent for every medical provider to view their records.[4]

This confidentiality requirement conflicts with the "see everywhere" design of HealthLink. To get around this problem, it was initially decided to have clients sign a consent that would list all medical practitioners who could view their HealthLink medical record. Upon further study, it was decided this approach was not feasible as it would not be possible to remove the confidential information from the client's medical record if the client were to later withdraw consent.

To resolve this issue, it was decided that SUTS providers would not use HealthLink. Instead, they would continue to use Uni/Care until a better solution was available.

[3] Ibid., p. 56.

[4] Federal Register, "Confidentiality of Substance Use Disorder Patient Records," January 18, 2017, https://www.federalregister.gov/documents/2017/01/18/2017-00719/confidentiality-of-substance-use-disorder-patient-records; see additional explanation in U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, "Substance Abuse Confidentiality Regulations," accessed September 24, 2021, https://www.samhsa.gov/about-us/who-we-are/laws-regulations/confidentiality-regulations-faqs.



Project Development

Implementation of the HealthLink/Netsmart project began after the Netsmart Agreement was signed in May 2017. During the project development phase, work by staff in TSS, Behavioral Health, and Hospital Finance needed to be coordinated.

Role of the project manager

In a project of this scope and complexity, involving the integration of systems from two vendors, project management knowledge and skills are paramount.

The Netsmart Agreement stated that the "Project Manager will provide overall project management and leadership for the Santa Clara tasks." (See Appendix) Among the list of duties, the project manager was responsible for the following:

- Manage resource allocation and management of all Santa Clara resources
- Manage the project schedule
- Ensure tasks are completed on time

The Netsmart Agreement also stated that "while a background in project management is not necessary it can be helpful." The County's inability to recognize the value of project management experience created the potential for additional risks to the project.

For the HealthLink/Netsmart project, there were two project managers: one oversaw the Netsmart work, while the other person oversaw the HealthLink work. Both were contractors hired on a short-term basis for this one project. Contractors have a limited amount of institutional knowledge and often lack the relationships or influence to elicit cooperation from other departments. They are also less familiar with the standard procedures and documentation for project management used by the

County (discussed further below). These problems were then exacerbated when the first HealthLink project manager left before the launch, and a new HealthLink project manager was hired.

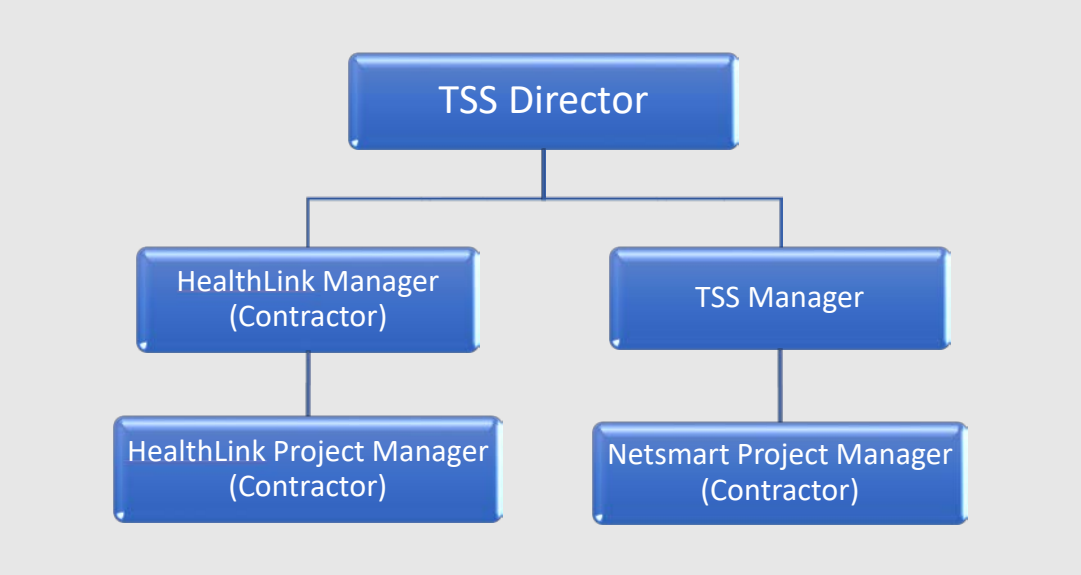


Figure 3. Project Management Hierarchy

The HealthLink project manager reported to a third contractor, who reported to a TSS director. The Netsmart project manager reported to a TSS manager, who in turn reported to the same TSS director. Figure 3 provides an illustration of the project management hierarchy for this project. In the Civil Grand Jury's assessment, the project management structure made it difficult to identify risks early, quantify and allocate resources effectively, resolve conflicts, and obtain necessary decisions. These shortcomings became apparent as implementation progressed. (Finding 2)

Testing Prior to First Launch

A project manager is responsible for ensuring proper communication between the different teams involved in the project and ensuring that the different project tasks are scheduled appropriately. One of the key tasks of any project is testing. Projects have two types of testing strategies: internal testing and user acceptance testing. Despite the critical importance of both internal and user acceptance testing, there was no mention of testing in the list of project manager responsibilities.

Internal testing

Internal testing checks the logic and flow of different components of a system, often using automated scripts and sample data. During internal testing on this project, it was discovered that

HealthLink could not transmit some key data to Netsmart in a format that Netsmart required. Epic refused to change their software to accommodate Netsmart, so it became necessary for HSRs to enter certain fields in both HealthLink and Netsmart, while other fields were to be entered in Netsmart only. This awkward workflow was both inefficient and, because of the need to enter certain fields twice, error prone.

Additionally, there were significant problems transmitting billing data from HealthLink into a format that could be used by Netsmart. As the release date approached, TSS decided to export the billing data from HealthLink into a database. It was believed that any incompatibility could be edited in the database before importing it into Netsmart. This approach was never adequately tested prior to release, and it proved to be unworkable.

User acceptance testing

In contrast to internal testing, which is performed by the development team, user acceptance testing seeks to test the complete system as closely as possible to how an end-user would use the system. This typically follows the development of a system and is used to validate that the delivered system meets its project requirements. User acceptance testing is therefore a critical part of a system release strategy. While internal testing can determine if specific logic is working as expected, it does not test whether the system functions correctly and efficiently as staff use it in their day-to-day work.

The clerical staff was to enter data into two different systems, HealthLink and Netsmart, while facing clients who were waiting for assistance and experiencing anxiety or in an emotional crisis. In theory, this design may have seemed feasible, but in practice HSRs would defer entering data into Netsmart so they could attend to the next client. Testing by staff within the work environment would have revealed the flaw in this design and shown that it was not workable.

A user group of Behavioral Health clinicians together with HSRs was never organized to use the system to uncover flaws and usability problems. The schedule in the 2018 Netsmart Agreement did not show any time allocated for user acceptance testing even though linking HealthLink with Netsmart had never been done before.

First Launch

Despite the omission of user acceptance testing, the HealthLink and Netsmart system was released to the Behavioral Health clinics in February 2018.

Rollout plan

Even without user acceptance testing prior to the launch, at least the system could have been released to a subset of the Behavioral Health clinics; one clinic could have been used as a test without disrupting the work environment in all the clinics. This was not done. Instead, the HealthLink and Netsmart system was released to almost all the clinics on the same day. Considering that two clinics continued to use Uni/Care at the time of the rollout, it clearly would have been possible to do a gradual rollout.

The Civil Grand Jury learned there was concern among Health System leadership about the impact a gradual rollout would have had on the schedule: it would have required additional time and the additional expense of Netsmart consultants. Consequently, rather than testing with a small group of users, the management team bypassed user testing, bypassed a gradual rollout, and released the system simultaneously to all but two County clinics. (Finding 3)

HealthLink and Netsmart Launch

The HealthLink clinical software and the Netsmart practice management and billing software were released to the County's Behavioral Health clinics in February 2018. The plan was to release the Netsmart system to the contract providers in June 2018.

Releasing a multitude of problems

Immediately after the February release, it was discovered that the billing process was broken. As a result, the billing process was suspended. Since approximately 93% of claims for patient services provided by the County-operated clinics are covered by Medi-Cal, tens of millions of dollars of revenue were in jeopardy.

The Civil Grand Jury learned of several key problems encountered during the February release:

- Encounters versus episodes

  The HSR entered insurance and demographic information into Netsmart, while the clinician entered clinical data into HealthLink.

  From HealthLink's perspective, every change to the client's clinical record was an "encounter." Each week the charges generated by HealthLink encounters were transmitted to Netsmart.

  From Netsmart's perspective, charges were associated with an "episode." An episode is a group of services (such as periodic injections of medication, group therapy, individual

therapy, and case management work) for the client's treatment plan. If a client has two treatment plans, the charges must be grouped accordingly. For example, if a client was being treated for schizophrenia and alcohol use, the medication for schizophrenia was grouped in the first episode while the therapy for alcohol use was grouped in the second episode. Netsmart linked each Medi-Cal claim with an episode.

HealthLink did not recognize these groupings when it sent weekly charges to Netsmart. This led to an invalid grouping of charges and the generation of invalid Medi-Cal claims.

- Duplicate charges

  Behavioral Health clinicians wrote progress notes for their clients' treatment in HealthLink. HealthLink then issued the charges. If the clinicians subsequently edited the progress notes, or if the clinicians' supervisors reviewed and approved the notes, duplicate charges were issued.

- Double entry

  HSRs had to enter data into HealthLink and then enter some of the same data into Netsmart. In the work environment, there could have been several clients waiting for evaluation or treatment. The clients might have been in crisis and experiencing severe anxiety. Rather than keeping the clients waiting, HSRs would have sometimes entered data only into HealthLink so that the client could have been seen more quickly by a clinician. The HSR would then have assisted the next waiting client, intending to enter the Netsmart data later. This process was error-prone, not only because double entry was needed, but also because delayed tasks might have gotten overlooked.

- Alphabetized diagnoses

  Many clients have multiple diagnoses. The primary diagnosis, for which the treatment plan is tailored, must be listed first when submitting claims to Medi-Cal. When the diagnoses were transmitted from HealthLink to Netsmart, however, the diagnoses were alphabetized, causing a denial of that claim.

- Client and Service Information System (CSI) reports

  The state requires Behavioral Health to file the CSI report on clients when first seen, and annually thereafter until the client has reached their treatment goals. If a county does not

submit the report, the state can withhold Mental Health Services Act (MHSA) funds.[5] In FY2019-2020, the County's share of MHSA funds totaled more than $110 million.[6]

HealthLink, however, did not support CSI reporting. As a workaround, clinicians sent screen captures to the HSRs so the HSRs could enter the data into the state's web portal. This process was labor intensive, led to data entry problems arising from transcribing the information, and was therefore not a viable solution.

Fixing the billing problems

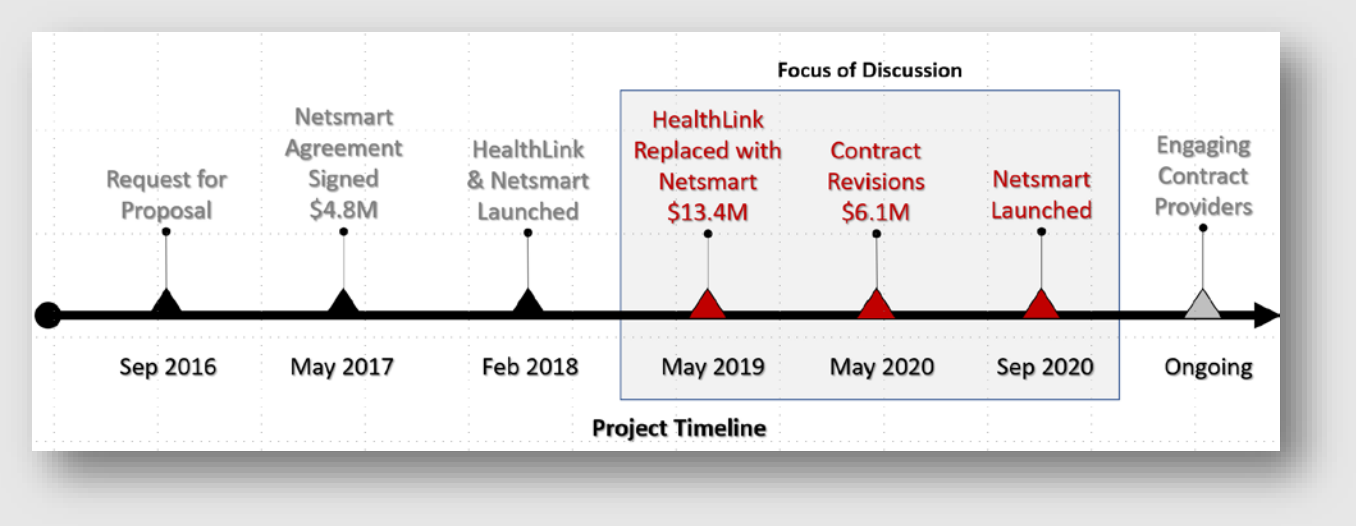
Due to extensive errors, billing to Medi-Cal halted for six months. Since the County's annual Behavioral Health revenue from Medi-Cal ranges from $100 to $120 million, immediate action was required. A group of 24 people from TSS, Behavioral Health, Hospital Finance, Health Care Compliance, and Netsmart formed a billing remediation team and met regularly to review the issues and determine how to proceed.

The Civil Grand Jury recognizes the time, talent, and the level of effort exerted by the billing remediation team. Their contribution was noteworthy. They corrected and submitted thousands of Medi-Cal claims totaling over $25 million before the claims expired.

However, despite their best efforts, many of the problems could not be fixed by the billing remediation team. If there were questions about diagnoses, for example, the appropriate clinicians would need to spend time reviewing their notes to determine the primary diagnosis. These corrections required hard work from both clinicians and HSRs and took time away from working with clients.

[5] California Code of Regulations title 9 §3530, accessed July 5, 2021, https://casetext.com/regulation/california-code-of-regulations/title-9-rehabilitative-and-developmental-services/division-1-department-of-mental-health/chapter-14-mental-health-services-act/article-5-reporting-requirements/section-3530-clientservices-reporting-requirements.

[6] California Department of Health Care Services, "Annual Mental Health Services Act (MHSA) Revenue and Expenditure Report Fiscal Year: FY2019-20," p. 3, accessed July 5, 2021, https://bhsd.sccgov.org/sites/g/files/exjcpb711/files/Documents/MHSA-FY_2020-RER-SCC.pdf.



Renegotiations and Second Launch

Because of billing problems, the confidentiality issue, and the state reporting shortcomings, in late 2018 County management decided to replace HealthLink with Netsmart's clinical module.

The County and Netsmart signed an agreement in May 2019 to replace HealthLink with Netsmart clinical software. The Behavioral Health staff would now be using an end-to-end solution provided by a single vendor specializing in behavioral health.

This phase of the project was not without problems, however. After working with TSS to define the clinical workflows for HealthLink, the Behavioral Health staff was now asked to go through the same exercise for Netsmart. Having already learned how to use HealthLink, the Behavioral Health clinicians now needed to be trained on Netsmart. Not only would the workflows and training have to be redone, but this work would also take time away from their clients.

Negotiations over the May 2019 agreement

During the negotiations for the new agreement, Netsmart requested $9.4 million for augmentation services that was to pay for work done by Netsmart consultants. The augmentation services included time for developing reports, gathering workflow data, training, testing, and continued support after the launch. It was open to negotiation, with specific deliverables and a timetable of partial payments that needed to be determined.

The County's Procurement Department oversees contract negotiations and enforces certain criteria for contracts. These criteria include definition of specific deliverables, costs, and a timetable for completion. Collaboration between Procurement and the County department buying the product is a critical requirement for negotiating an acceptable agreement.

The Civil Grand Jury learned that Procurement was not receiving the necessary information from Behavioral Health. TSS needed to work with Behavioral Health to determine how much of the workflow analysis, training, and testing could be done by County staff, and how much needed to be done by Netsmart consultants. Due to the considerable effort already expended on the project, however, Behavioral Health was not fully participating in the meetings with TSS.

In the absence of information from Behavioral Health, Procurement asked Netsmart whether the County staff could perform the tasks. Netsmart stated that this would be possible but warned that Behavioral Health staff did not have the time to do it. Rather than working with Netsmart to define and negotiate terms, Procurement eliminated most of the work and reduced the augmentation services from $9.4 million to $2.6 million based on the assumption that County staff would do the work despite no commitment from Behavioral Health. Although TSS was responsible for project management and should have escalated the coordination of project requirements, Behavioral Health was at fault for failing to communicate and Procurement was also at fault for proceeding with negotiations without necessary feedback.

Additional amendments required

Netsmart scheduled classes to familiarize Behavioral Health staff with the system. A "train the trainer" approach was put in place, with a select group of "superusers" receiving additional training from Netsmart. After the launch, superusers assisted their colleagues, answering questions and fixing problems encountered in their work environment.

The problem with a "train the trainer" approach in this situation is that it assumes the trainer can do the training while at the same time completing their normal day-to-day tasks. This was a questionable assumption, and in this case, Netsmart consultants were subsequently brought in to provide training and additional support.

In January 2020, the agreement with Netsmart was amended to add consultant time to correct billing at a cost of $185,000. In April 2020, the agreement was amended again to add more billing assistance at a cost of $257,000. Finally, in May 2020, TSS and Behavioral Health appeared before the Board of Supervisors to request an additional $5.7 million for billing support, report development, workflow optimizations, and additional training. The total additional cost to the County was $6.142 million.

The additional amendments would not have been necessary if the May 2019 agreement had been properly defined. Procurement should have demanded that the project manager gather necessary feedback from TSS and Behavioral Health so that the augmentation services would have been clearly defined before proceeding. If the project manager was not getting participation from

Behavioral Health, then the issue should have been escalated to the project's management team. (Finding 4)

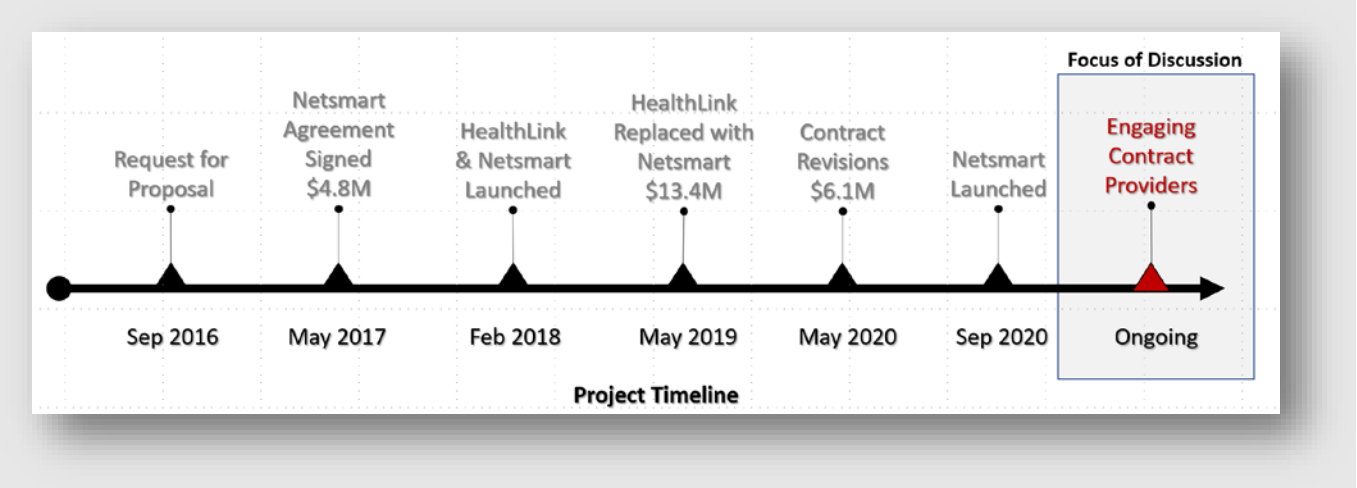
Overall Costs

The problems associated with this project initially raised concerns about a potential large loss of revenue from Medi-Cal. As a result of the billing remediation efforts, however, the County was able to recover most of the claims that were at risk. The Civil Grand Jury learned that the County lost between $100,000 and $1.6 million in revenue due to the billing problems discussed earlier. This is a small percentage of the $100 to $120 million total revenue per year.

A larger impact recognized by the Civil Grand Jury was the personnel resources needed to resolve the billing issues and clear the Medi-Cal backlog. Staff were allocated to a problem that may not have otherwise existed had adequate project management practices been used to avoid the flawed integration.

An even larger impact was the effort to redesign the system, customize the Netsmart clinical software to meet County requirements, and retrain staff to use the new system. All of this occurred under the time pressure of needing to complete the project and avoid prolonging the billing remediation.

A more direct impact came from the extra costs of replacing HealthLink and retraining staff. The original cost for Netsmart in the 2017 agreement was $4.8 million, but the total cost as of August 2021 included an additional $19.5 million, although this extra amount represented a new EHR system for Behavior Health.



Engagement with Contract Providers

Contract providers deliver the majority of services to Behavioral Health clients. Netsmart's ProviderConnect module allows contract providers to securely transmit medical data to the County through a web interface. Initially, the plan was to have the contract providers use ProviderConnect in June 2018. Due to the problems encountered after the February 2018 launch, this part of the project was delayed.

The current plan has changed. Contract providers with EHR systems will use ProviderConnect Enterprise, a new Netsmart product. Rather than entering the data by hand, ProviderConnect Enterprise programmatically packages the output from the contract provider's system to the County (see Figure 4).

Eliminating manual data entry sounds promising. However, one concern is that each contract provider must pay a specialist to implement the programmatic interface. It is not known how much this will cost and it is not clear who is to pay for this work. A second concern is that ProviderConnect Enterprise is a new module that has not been used by any other county.

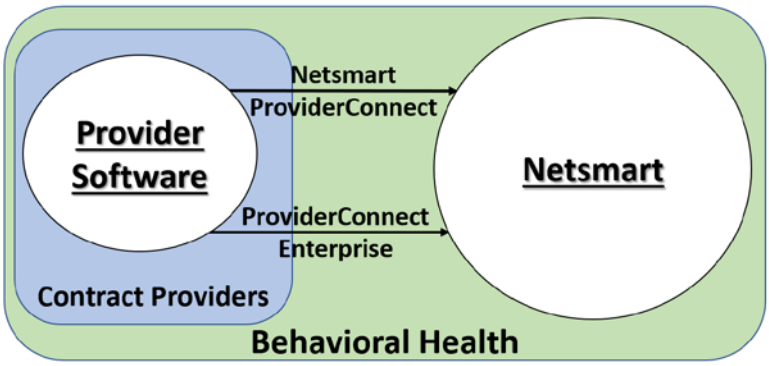


Figure 4. Contract providers send data to County using Netsmart ProviderConnect products.

The CalEQRO reports have stressed the complexity of the support for contract providers.

- Report published January 2017:

  > The [Behavioral Health department] needs additional subject matter expertise to implement interoperability (two-way exchange of data); to develop communications plan that shares technical data exchange information with contract providers or their IS [information system] vendors.[7]

- Report published January 2018:

  > At present, the contract provider's awareness of this project seems limited to the broad concepts and the target date. There does not seem to be an awareness of what transactions will be exchanged, what exactly the contract providers and their vendors need to do, in what order, and when they need to do it to make a coordinated transition to electronic data exchange with Netsmart.[8]

- Report published January 2019:

  > Once the Netsmart Agreement is signed, identify a dedicated team to work with Netsmart resources to bridge the information gap between county-operated and contracted providers until electronic interfaces to contract provider EHRs are in production use.[9]

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[7] Behavioral Health Concepts (CalEQRO), "FY16-17 Medi-Cal Specialty Mental Health External Quality Review: MHP Final Report," p. 52, January 12, 2017, https://www.caleqro.com/data/MH/Reports%20and%20Summaries/Prior%20Years%20Reports%20and%20Summaries/Fiscal%20Year%202016-2017%20Reports/MHP%20Reports/Santa_Clara_MHP_EQRO_Report_Final_FY16-17_JP_v4.pdf.

[8] Behavioral Health Concepts (CalEQRO), "FY17-18 Medi-Cal Specialty Mental Health External Quality Review," pp. 52-53, https://www.caleqro.com/data/MH/Reports%20and%20Summaries/Prior%20Years%20Reports%20and%20Summaries/Fiscal%20Year%202017-2018%20Reports/MHP%20Reports/Santa%20Clara%20MHP%20EQRO%20Final%20Report%20FY17-18%20JP%20v4.pdf.

[9] Behavioral Health Concepts (CalEQRO), "FY2018-19 Medi-Cal Specialty Mental Health External Quality Review: Santa Clara MHP Final Report," p. 63, January 17, 2019, https://bhceqro.com/data/MH/Reports%20and%20Summaries/Prior%20Years%20Reports%20and%20Summaries/Fiscal%20Year%202018-2019%20Reports/MHP%20Reports/Santa%20Clara%20MHP%20EQRO%20Final%20Report%20FY%202018-19%20DD%20v10.pdf.

- Report published January 2020:

> During the [review] session, there was discussion of beginning to go-live with integration with [contract providers] EHRs beginning in September 2020. When this was raised in the Contract Provider session, the [contract provider] representatives reported that this was the first time they had heard that date and they voiced some skepticism about it.[10]

The latest CalEQRO report, published in January 2021, recommended that the County pilot the Netsmart system with one or two contract providers.[11] The County has followed this approach and is currently working on issues encountered with the first contract provider. This is a critical part of the project because contract providers deliver the majority of services to Behavioral Health clients.

TSS has continued to use multiple project managers. For this current phase of the project, there are three project managers. Two contractors report to a TSS manager and one County employee reports to a different TSS manager. Like the earlier stage of this project, TSS continues to use multiple contractors to perform the work and oversee elements of the project, and there is no project manager with overarching authority for the entire project.

This phase of the project is complex. There are almost 30 different contract provider organizations, and they use various EHR systems. Each provider will need to employ consultants so that their existing EHR system can interface with Netsmart's ProviderConnect Enterprise. The Civil Grand Jury learned that TSS and the contract providers have different expectations about what needs to be done, how it is to be funded, and when it will be scheduled. If the project is not carefully managed, then the work done by organizations that provide most of the behavioral health services in the County will be disrupted. (Finding 5)

[10] Behavioral Health Concepts (CalEQRO), "FY2019-20 Medi-Cal Specialty Mental Health External Quality Review: Santa Clara MHP Final Report," p. 13, January 16, 2020, https://bhceqro.com/data/MH/Reports%20and%20Summaries/Prior%20Years%20Reports%20and%20Summaries/Fiscal%20Year%202019-2020%20Reports/MHP%20Reports/Santa%20Clara%20MHP%20EQRO%20Final%20FY19-20%2004-09-2020.pdf.

[11] Behavioral Health Concepts (CalEQRO), "FY2020-21 Medi-Cal Specialty Mental Health External Quality Review," p. 81, https://www.caleqro.com/data/MH/Reports%20and%20Summaries/Prior%20Years%20Reports%20and%20Summaries/Fiscal%20Year%202020-2021%20Reports/MHP%20Reports/Santa%20Clara%20MHP%20EQRO%20Final%20FY20-21%2003.24.21.pdf.

The Project Management Center of Excellence

There is well-studied literature around best practices in Project Management, with several different frameworks for organizing those practices.[12] The aim of these frameworks is generally to ensure plans are complete, sufficiently documented, and communicated to all stakeholders involved in the project. Each of the frameworks includes a needs assessment, analysis, project objectives, risk assessment and mitigation plan, test plan, resource requirements, milestones, and governance structure.

TSS created the Project Management Center of Excellence in 2020 to standardize a framework for best practices across all projects. The framework defines a Governance Gates Checklist of required documents or reviews that need to be in place before a project can transition from one phase to the next. The gates represent the transitions. The five phases are (1) Initiation, (2) Planning, (3) Execution, (4) Deployment, and (5) Close-down. For example, moving from Initiation to Planning requires confirming the formation of a project core team, writing a business case, writing a communication plan for project updates, and outlining the requirements, schedule, risks, and budget of the project. The business case is an outline of the benefits and costs of the project and may also include the schedule, an analysis of project feasibility, and the main risks to successful completion.

This framework ensures that key decisions are made early and that everyone is aligned on the basic parameters of the project. It also ensures that key steps (such as user acceptance testing) are not skipped, which reduces the likelihood of encountering unexpected problems.

The challenge for TSS is to ensure that all projects follow this process. The Governance Gates Checklist includes a "Lessons Learned" document that should be filed after a project is closed. The Civil Grand Jury requested "Lessons Learned" reports received by the Project Management Center of Excellence. Only one report was received, and this was for a project completed in 2019. Since many projects have been completed over the last two years, it is unclear whether projects are following the Governance Gates Checklist process. Completion of the "Lessons Learned" reports should not be optional.

One of the lessons in the 2019 "Lessons Learned" document received by the Civil Grand Jury was that TSS should "ensure a project manager experienced in TSS Project Management Methodology is assigned to the project from the beginning." Additional guidance and oversight by the Project Management Center of Excellence will be required if TSS continues to hire contractors who do not have the necessary project management experience.

[12] See the Project Management Institute web site at https://www.pmi.org/pmbok-guide-standards.

CONCLUSION

Managing a complex software project is difficult and mistakes are to be expected. The challenge is to identify and learn from mistakes so the same mistakes do not happen again. It is important to plan for unexpected problems and have contingencies available to mitigate the riskiest aspects of a project.

In its attempt to link HealthLink with Netsmart, TSS knew they were undertaking a task no other county had done before. Warnings were discounted and there was no detailed planning on how to mitigate the risks. The omission of user acceptance testing and the simultaneous release of the new EHR system to County clinics dramatically demonstrated that the project was not properly managed. When the project was redesigned, TSS then failed to gather the feedback to Procurement so the new agreement would be structured appropriately.

TSS must learn from these mistakes as they proceed with the release of software to the contract providers. ProviderConnect Enterprise has never been used before, and care must be taken to ensure adequate testing and support. TSS must recognize that each contract provider faces unique problems and needs support from TSS to address those problems.

The Netsmart project is not the only project experiencing challenges. TSS reported 161 ongoing projects in its Spring 2021 Project Portfolio.[13] The 161 active projects are categorized by each project's status:

- "Healthy" – 111 projects are meeting schedule and budget (69%)
- "Watch" – 33 are encountering some problems (20%)
- "At Risk" – 17 have serious problems; more funding and time may be needed (11%)

The Civil Grand Jury did not investigate the 17 projects that are at risk, and every project has unique circumstances, but it may be possible for TSS to recognize certain commonalities. TSS must take into consideration that complexity intensifies in a project that links two software systems. The attempt to link HealthLink with Netsmart is not an isolated case. There are several TSS projects that are facing the same complexity:

- Interface the Odyssey system used by the Superior Court of California, County of Santa Clara with software used by the Office of the District Attorney and Office of the Sheriff. This effort intends to replace software developed internally with software from third-party vendors.

[13] "Project Accomplishments and Portfolio Status, Spring 2021," May 20, 2021, pp. 153-194, http://sccgov.iqm2.com/Citizens/FileOpen.aspx?Type=1&ID=12045&Inline=True.

- The Property Tax Assessment System will purchase a third-party system that must interface with software purchased from other vendors.
- The Jail Management System is a multi-faceted system that involves inmate intake, booking, tracking, as well as other components. Some of the software will be from vendors, while parts of the system will be developed by TSS and the IT staff within the Office of the Sheriff.
- The Health and Hospital System plans to replace two financial systems with a single system.

In hindsight, it is easy to see mistakes. The challenge for TSS is to learn from past mistakes to avoid similar mistakes in the future.

FINDINGS AND RECOMMENDATIONS

Finding 1

TSS failed to recognize significant warning signs from staff and CalEQRO reports in its effort to link two systems from separate vendors. As a result, the system was not able to process Medi-Cal claims. Furthermore, the system did not satisfy federal privacy and state reporting requirements. This led to delays in billing, unanticipated additional work for County staff, and finally, a redesign of the system.

Recommendation 1

When undertaking a new project, the County should add a requirement for a high-level feasibility analysis during the initial planning phase. In most cases, the analysis should include a survey of how other counties and organizations, with an emphasis on counties and organizations of a similar size, solved the problem. If no organization has used the approach being considered, explicit risk mitigation steps should be added to the project plan, and schedules and budgets should be adjusted accordingly. Resources such as CalEQRO and other state or independent auditors should be fully utilized to assess these risks. The County should develop a plan to establish these practices by June 30, 2022.

Finding 2

TSS did not follow project management best practices. There was no requirement that the project managers need project management experience. TSS used multiple project managers, none of whom had responsibility for the overall project. This complicated coordination and decision making.

Recommendation 2a

The County should develop a plan to require anyone serving in a project management role to have sufficient project management experience and/or certification for the nature of the project. The County should develop this plan by June 30, 2022.

Recommendation 2b

The County should develop a plan to require that each project have a single overall project manager who has relevant project management experience or certification. The plan should be established by June 30, 2022.

Recommendation 2c

If a project requires additional project managers, then the County should require a clear organizational structure that facilitates coordination and decision-making. The County should develop a plan to establish these requirements by June 30, 2022.

Recommendation 2d

The County should verify that project managers follow the best practices defined by the County's own Project Management Center of Excellence. The County should monitor all projects and verify that all required items listed in the Governance Gates Checklist are completed by the project manager and approved by the executive responsible for the project. The County should verify the completion of required items for existing projects and should develop a plan to monitor compliance with the County's own Project Management Center for Excellence criteria for current and future projects by June 30, 2022.

Finding 3

TSS did not have a process in place to prove that the new EHR system would work prior to deployment. TSS did not adequately test the integration of the HealthLink and Netsmart system before releasing it to Behavioral Health clinics. Management placed primary emphasis on meeting the project schedule rather than supporting a gradual system rollout. This led to halting the submission of Medi-Cal claims, which threatened the loss of tens of millions of dollars.

Recommendation 3a

The County should develop a plan to require documenting user acceptance testing criteria at the start of a project. The testing should involve applicable clerical staff, with testing done in their work environment when possible. The schedule for this testing should account for staff availability. The County should develop this plan by June 30, 2022.

Recommendation 3b

The County should develop a plan for situations where the user acceptance testing cannot be done in the users' work environment. This can, for example, call for releasing the system to a subset of a department's staff before releasing it to an entire department. The County should develop this plan by June 30, 2022.

Finding 4

TSS and Behavioral Health were not sufficiently engaged in the contract negotiations with Netsmart for the May 2019 agreement. Lacking detailed input from project management on resources and scheduling for the analysis and training work, Procurement eliminated these tasks from the agreement. This elimination contributed to delays and required the subsequent negotiation of three additional agreements to address these shortcomings.

Recommendation 4a

To ensure that Procurement is prepared to negotiate with vendors, the County should develop a plan that requires an analysis of technical staff needed to complete and deploy the project. This plan should include escalation procedures to be followed when Procurement is not provided the information it needs. The County should develop this plan by June 30, 2022.

Recommendation 4b

When the County intends to have County staff train their colleagues on how to use a new system, the County should first determine if staff is available to do the training. If staffing is not available, either additional consultant support must be included in the agreement negotiated with the vendor or the project schedule should be revised. The County should develop a plan for this scenario by June 30, 2022.

Recommendation 4c

The County should investigate the feasibility of negotiating vendor contracts that include a bonus for on-time and successful completion of all parts of an IT project, even if the vendor is not responsible for them. This would incentivize outside vendors to provide TSS project management with complete information about what is needed from all parties to bring projects to successful conclusions. The County should report on its investigation of this approach by June 30, 2022.

Finding 5

TSS underestimates the amount of future work necessary to support integrating the contract providers' EHRs with the County's Netsmart system. There is a risk that if the transition team is not properly staffed, there will be further delays and the work done by contract provider clinics will be disrupted.

Recommendation 5a

The County should conduct a risk assessment to identify threats to the objectives of the ongoing project. Potential responses to those risks should be captured in a risk management plan for this project. The County should develop a plan that evaluates the future risks of this project by June 30, 2022.

Recommendation 5b

The County should develop a plan to ensure that contract providers are informed as decisions are made about what work needs to be done by the contract providers, what work will be done by the County, who will pay for the work, and when the work will be scheduled. The County should develop the plan by June 30, 2022.

REQUIRED RESPONSES

Pursuant to Penal Code sections 933 and 933.05, the Civil Grand Jury requests responses as follows from the following governing bodies:

Responding Agency	Finding	Recommendation
The County of Santa Clara	1, 2, 3, 4, 5	1, 2a, 2b, 2c, 2d, 3a, 3b, 4a, 4b, 4c, 5a, 5b

APPENDIX: Project Manager Responsibilities

The following section is from the May 2017 Netsmart Agreement.[14]

9.1.2 Project Manager

The Santa Clara Project Manager will provide overall project management and leadership for the Santa Clara tasks as associated with this project.

The Project Manager should exhibit strong leadership characteristics including the ability to organize, lead, motivate and inspire others to execute their tasks despite obstacles. Additionally, they should exhibit solid planning and communication skills. While a background in project management is not necessary it can be helpful.

They will have the following responsibilities on the project:

a) General Project Oversight
b) Communicate Project Goals, Successes, and Issues
c) Distribution of Materials and Communication to the Santa Clara Project Team
d) Resource Allocation and Management of all Santa Clara Resources
e) Coordinate and Schedule all Plexus Project Events (in collaboration with Netsmart Project Manager)
f) Manage the Project Schedule from the Santa Clara Point of View
g) Ensure All Implementation Decisions are in Best Interests of Santa Clara
h) Monitor Project Related Decisions concerning Santa Clara Resources, System Design, and Priorities
i) Serve as the Focal Point for all Internal Installation Questions and Concerns
j) Attend all Plexus Project Events
k) Contribute, Review & Signs Plexus Event Summaries
l) Ensure Santa Clara Tasks are Completed on Time
m) Direct Project Decisions
n) Approve or Denies Change Management Requests
o) Provide Risk Identification
p) Provide Risk Mitigation
q) Complete Plexus Event Satisfaction Surveys

[14] "Agreement between the County of Santa Clara and Netsmart Technologies, Inc.," May 15, 2017, pp. 114-115.

This report was **ADOPTED** by the 2021 Civil Grand Jury of Santa Clara County on this 16th day of December, 2021.

Karen F. Delaney

Ms. Karen Delaney
Foreperson