



State of California

Department of State Hospitals

Pharmacy Modernization Project #4440-127

Special Project Report

June 2024



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Project Background/Summary

The Department of State Hospitals (DSH) manages the nation's largest inpatient forensic mental health hospital system. Its mission is to provide evaluation and treatment in a safe and responsible manner, by leading innovation and excellence across a continuum of care and settings. DSH is responsible for the daily care and provision of mental health treatment of its patients. DSH oversees five state hospitals (Atascadero, Coalinga, Metropolitan, Napa, and Patton) and employs nearly 13,000 employees. In addition to state hospital treatment, DSH provides services in contracted Jail-Based Competency Treatment (JBCT), Community-Based Restoration (CBR), pre-trial felony mental health diversion programs, other community-based facilities, and the conditional release program (CONREP). DSH hospitals have an average daily census of five thousand four hundred (5,400) patients and treat an average of eight thousand two hundred (8,200) patients per year. As of October 1, 2023, there are a total number of 6,053 available beds at the five DSH hospital locations. Between the five (5) state hospitals and the headquarters location, DSH employs approximately thirteen thousand (13,000) people. As of December 1, 2023, there are 13,090 full-time equivalent positions.

The Pharmacy Modernization project was originally authorized in the 2019-20 Budget Act, to address the need to replace the current, manual processes used for inventory control, medication dispensing and security of controlled drugs with automated, integrated systems and equipment with standardized practices across the DSH system.

The pharmacies at DSH's five state hospitals require up-to-date repacking machines that can communicate with inventory control software for better accountability and efficiency. Implementing a full-size Drug Dispensing System in the medication distribution locations, serving large intermediate, acute, and skilled nursing facility patient populations allow secure, electronically tracked storage of the controlled substances. This model will allow for the most efficient use of resources by pharmacy and nursing minimizing waste and redundancies that currently exist.

Current storage handling of controlled substances risks DSH's compliance with Title 21 of the Federal Code of Regulations and which could result in costly fines or labor-related grievances. The largest fines imposed by the California Board of Pharmacy on statewide pharmacies have involved the mishandling of controlled substances, for example, in 2018 a pharmacy in California was fined \$75,000 for mishandling controlled substances, including opioids. Besides the risk of fines, the importance of proper handling of these substances is magnified in the state hospital environment where a high percentage of the population are being treated for some form of addiction. Drug Dispensing Systems within the clinics are needed to provide the proper level of security and accountability for controlled substances, as well as high-dollar medications for

which elevated accountability is necessary. To establish a comprehensive, safe, and efficient pharmacy program, we propose utilizing nurse-administered medications available in Drug Dispensing Systems within each DSH patient unit. This will greatly increase efficiency by avoiding patient-specific dispensing, and the large volume of waste associated with changes in medication orders or patient relocation.

The outcomes of this project include completion of all Pharmacy Modernization implementation tasks, project closing activities, (Post Implementation Evaluation Report) and the implementation of enterprise level business processes. Each of the following objectives will be met with the final hospital pharmacy implementation in FY 2026-27:

- **Outcome #1: Improved inventory management and drug tracking:** Replace current manual inventory management and drug tracking processes with the implementation of an automated inventory management system and workflow at each of the five hospital pharmacies.
- **Outcome #2: Improve drug repackaging time:** Replace existing drug repackaging equipment which currently requires an average twelve-hour processing time with standard repackaging machines capable of an average of eight-hour processing time.
- **Outcome #3: Increase the accuracy of reporting of drug dispensing and administration errors:** Improved statistical reports of dispensed medications to patients will be available via scheduled and ad-hoc reports. The current, manual accounting of dispensed medications will be replaced by scheduled and ad-hoc reports sourced from the Automated Drug Dispensing systems and will be used to verify reduced, monthly variance of drugs dispensed to patients.
- **Outcome #4: Improved controlled drug security on the unit and reduce risk of loss or diversion:** Controlled drug transactions will have medication accountability safeguards (locking cabinets and automated dispensing). The current manual accounting of these drugs will be replaced by scheduled and ad-hoc reports sourced from the Automated Drug Dispensing systems which will be used to verify reduced, monthly variance of controlled drugs dispensed to patients.
- **Outcome #5: Improve patient specific medication billing for Medicare Part D:** Reduce the number of refused Medicare Part D claims. This improvement will be realized by using billing data generated from Automated Drug Dispensing systems using National Drug Codes.
- **Outcome #6: Improve pharmacy data integration:** Replace the existing, independent hospital systems which are supported with disparate business processes, with a single IT solution to be leveraged by clinical staff at each of the five hospitals. The solution will utilize the department's existing Enterprise Service Bus (ESB) architecture to communicate with backend systems.

The baselined timeline of the project is from 12/01/2021 to 11/06/2024, the baselined budget is \$21,014,803, approved by CDT as part of Stage 4 in April 2022.

Project Status

Key Accomplishments:

- Project Approval Lifecycle (PAL)
 - Stage 1 Business Analysis - approved *January 2019*
 - Stage 2 Alternative Analysis - approved *January 2020*
 - RFI completed *July 2019*
 - Stage 3 Solution Development - Approved *May 2021*
 - Stage 4 Project Readiness & Approval - Approved *July 2021 – April 2022*
- Phase 1: RxWorks (Inventory Management) Project Milestones – Completed Activities:
 - Vendor Site Walk throughs – all 5 sites completed *July 2022*
 - Med cart ordering/implementation – *July 2022*
 - Note – the implementation of updated Med carts addresses Project Outcomes
 - #1: *Improved inventory management and drug tracking*
 - #2: *Improve drug repackaging time*
 - Prepare and build test and production servers – *April 2023*
 - Note – the prep and build on DSH Production Servers addresses Project Outcome #6: *Improve pharmacy data integration*
 - RxWorks Data Build – *May 2023*
 - Note – the software data build addresses Project Outcomes:
 - #1: *Improved inventory management and drug tracking*
 - #3: *Increase the accuracy of reporting of drug dispensing and administration errors*
 - #6: *Improve pharmacy data integration*
- Phase 2: MedSelect Installation and Infrastructure modifications – Completed Activities:
 - Vendor Site Walk through – all 5 sites completed *July 2022*
 - Confirm hardware configuration and place order with vendor
 - Kick off architectural drawings - *June 2023*

Current Status:

Pharmacy Modernization – RxWorks Centralized Inventory Management Software Implementation

Enterprise implementation is scheduled for completion in December 2025

Pharmacy Modernization - MedSelect Machine Update and Implementation

- Site survey/ architectural drawings complete at DSH-C, Information for Bid (IFB) for construction vendor awarded 12/26/2023 with construction in progress.

- State Fire Marshal permits issued at DSH-C, DSH-M and DSH-P.
 - Information for Bid (IFB) will be submitted for DSH-M by March 2024, and targeting FY 2024-2025 for IFB to be submitted
- Review of Architectural drawing in progress for DSH-A and DSH-N, targeting to be completed and submitted for State Fire Marshal review by FY 2024-2025.

Reason for Proposed Change

During the project planning phases, with primary focus on the technical aspects, it was assumed the physical infrastructure was suitable for the planned upgrades. However, upon closer examination, the project team discovered the current state of the physical infrastructure at each hospital site would need some modifications to support the new system effectively. Working closely with DSH Facility Planning and Construction Management (FPCM) team, in addition to the physical upgrades needed, it was determined that permits and inspection by State Fire Marshall and General Inspectors would also be required.

As each hospital site was reassessed, it was determined that some of the aging buildings/units proposed to house the MedSelect devices were not designed with modern IT infrastructure in mind. For example, some units in Atascadero, Metro, Patton, and Napa lack the appropriate space for the devices which impose structural limitations. These limitations include space for network connection, conduits for cabling, and sufficient power supply in the designated area. To comply with building codes and regulations, including fire safety, the architectural drawings for each site will give our project team the information required to carefully plan and identify additional resources needed to manage. Based on this information, an anticipated schedule and cost deviation to the project has been identified to be more than 10% of the initial project baseline cost and schedule.

Proposed Project Change

To navigate the impact of compliance with building codes and regulations, DSH's project team involved the DSH FPCM team, architects, engineers, and construction managers, who are well-versed in California and local county/city regulations. The project team will work to plan infrastructure requirements in existing structures in the DSH hospital sites such as:

- Space Optimization: to safeguard devices (i.e., Vertical racks or wall-mounted equipment) to help utilize space efficiently in the designated area
- Access and Ergonomics: to ensure the device is easily accessible for use and maintenance
- Power Supply – identifying electrical needs or upgrades to the electrical circuit or additional outlets

- Network infrastructure/connection – ensuring needs to additional wireless access points or additional network cabling is needed
- Inspections and Reviews: DSH is working with vendors to complete the required architectural plans for submission to the Office of State Fire Marshal for review, approval, and issuance of permits to complete the infrastructure changes required for Phase II.

As listed below in the Impact of Proposed Change on the Project and Implementation Plan, additional tasks, schedule, and budget provide an outline of the necessary steps to complete this change.

Impact of Proposed Change on the Project

The proposed change will not impact the initial project scope. The project anticipates the change will impact schedule and budget. With the required site modification requirements for construction, the timeline will be extended approximately 2 years and 3 months, with an updated target end date of February 2027.

The following tasks must be done in sequence and form the basis for the updated schedule.

1. Architectural Drawings (14 Weeks)
2. DSH & Authority Having Jurisdiction (AHJ) Review and Fire Marshal (12 weeks)
3. IFB Vendor Award (12 weeks)
4. Construction Work (20 weeks)
5. Implementation MedSelect (24 weeks)

The budget impact is based on DSH's rough order of magnitude (ROM) estimates for infrastructure costs, estimated through collaboration with vendors and DSH Facilities, Planning and Construction Management (FPCM) teams for a total of \$5,026,240:

- Phase II ROM Estimates per site:
 - DSH-C - \$ 302,740
 - DSH-P - \$1,100,000
 - DSH-M - \$461,000
 - DSH-A - \$1,045,000
 - DSH-N - \$1,375,000
- Additional funds - \$742,500 for on-site architect/engineer review and consultation during construction at each site, as well as independent fire marshal review prior to project close at each site.

Project Schedule, Cost, Criticality Rating

Baselined Schedule & Budget - 4/1/2022 S4 Approval Letter				
Estimated Project Schedule, Cost, Criticality Rating			Project Number 4440-127	
Project Schedule		Project Costs		Funding Source
Start Date:	12/1/2021	Planning Costs:	\$3,272,324	General Fund
End Date:	11/6/2024	One-Time Costs:	\$11,712,391	
		Future Ops, IT Staff & OE&E Costs:	\$6,030,088	
PIER:	6/30/2025	Total:	\$21,014,803	
		Annual M&O:	\$2,900,000	
Criticality Rating:	Low	Complexity Zone:	1	

Proposed Schedule & Budget - SPR				
Estimated Project Schedule, Cost, Criticality Rating			Project Number 4440-127	
Project Schedule		Project Costs		Funding Source
Start Date:	12/1/2021	Planning Costs:	\$1,922,415	General Fund
End Date:	2/16/2027	One-Time Costs:	\$20,104,745	
		Future Ops, IT Staff & OE&E Costs:	\$2,963,231	
PIER:	9/30/2027	Total:	\$24,990,390	
		Annual M&O:	\$1,984,231	
Criticality Rating:	Low	Complexity Zone:	1	

Feasible Alternatives Considered

A few approaches were considered as an alternative to this SPR. Most approaches were considered non-feasible as they did not meet the business objectives and requirements of the project.

Cloud-based solution alternative

Utilization of a cloud-based solution instead of upgrading to ARxIUM's on-premise solution. This would not require hardware upgrades and other physical changes, and could reduce infrastructure requirements, reducing the need for physical space, and a potential cost saving. DSH solicited vendor bids for suitable solutions. ARxIUM does not

provide a cloud-based solution that met state mandated security requirements and was incompatible with existing DSH technology stacks and infrastructure standards. Thus, it was rejected.

Best and Final Offer (BAFO) alternative to original contract

Approach:

- In May 2021, DSH requested a Best and Final Offer (BAFO) which included an Executive Summary, Vendor Implementation and Approach Background, Cost Worksheet, and specific revisions as discussed in each vendor Negotiation Sessions.
- June 8, 2021, each Vendor submitted their BAFO including revised costs for the project. The Evaluation team reviewed each BAFO for compliance with the required clarification requested during Negotiation sessions on day one (1) and day two (2). Once clarification compliance was evaluated, each Vendor's Implementation and Approach Background responses, and Cost were evaluated and scored.
- August 30, 2021, CareFusion Solutions, LLC contacted STP stating there were errors in their BAFO Cost Work Sheet which caused inaccurate total cost pricing. These errors resulted in a price increase from \$9,477,590.00 to \$21,705,278.00 for three (3) years plus two (2) optional years. DSH noted this new pricing was over their budgeted amount and as such DSH could no longer continue discussions with CareFusion Solutions, LLC.
- September 1, 2021, DSH opened discussions with ARxIUM, Inc. These discussions were to clarify the Security requirements, cost work sheet, and the Business Associate Agreement Health Information Portability and Accountability Act (BBA HIPPA) requirements for this contract. DSH requested ARxIUM, Inc to submit a "BAFO clean lease tab" for clarity of lease pricing. ARxIUM, Inc. submitted a BAFO "clean lease" Cost Worksheet on September 13, 2021.

Result:

- The State updated the final scores for each Vendor using CareFusion Solutions, LLC revised BAFO Cost Worksheet, dated August 30, 2021, and ARxIUM's Inc. BAFO Cost Worksheet "clean lease tab" dated September 13, 2021. ARxIUM, Inc. was the winning bid.
- The State held discussions with ARxIUM, Inc. and reached a mutual agreement to the final contract.

Risk Register

Attached in Appendix.

Financial Analysis Worksheets (FAW)

Attached in Appendix.

Implementation Plan

Implementation is planned to use a modified waterfall approach on a site-by-site basis. Attached in Appendix

Project Organization

The project organization chart is shown below.

