



# CALIFORNIA CORRECTIONAL HEALTH CARE SERVICES

## NASCIO 2023 State IT Recognition Awards Nomination

**Title:** Consolidated Scheduling Tools

**Category:** Business Process Innovations

**State:** California

**Agency:** California Correctional Health Care Services

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**Project initiation and completion dates:**

- Project start date: September 23, 2021
- Consolidated Patient/Provider Calendar (CPPC) rollout: July 12, 2022
- Mental Health Group Scheduling Utility (MHGSU) rollout: October 10, 2022
- Dental Scheduling Utility (DSU) rollout: February 22, 2023



## EXECUTIVE SUMMARY

### Consolidated Scheduling Tools Minimize Health-care Appointment Conflicts in California's Prisons

The State of California strives to deliver health care services that meet the needs of its incarcerated population. Since 2008, California Correctional Health Care Services (CCHCS) has worked to improve the quality of medical, mental health, and dental care provided to patients at 33 adult correctional institutions, located across the state.

In 2019, California Correctional Health Care Services and the California Department of Corrections and Rehabilitation (CDCR) together launched the Integrated Substance Use Disorder Treatment (ISUDT) program. ISUDT is a comprehensive approach to treating Substance Use Disorder (SUD) in California prisons by providing timely and effective evidence-based treatment and transitions to incarcerated individuals with SUD. The long-term goals of ISUDT are to reduce SUD-related morbidity, mortality, and recidivism.

A major initiative developed out of the ISUDT program to address scheduling conflicts between the many events attended by patients. Using Lean Six Sigma principles and subprojects, the scheduling initiative workgroup identified a critical need to improve comprehensive schedule visibility within CCHCS's systems. Health care schedulers did not have a practical way to avoid the many non-health-care events that patients attend when they scheduled health care appointments. This development provided practical tools that enable health care schedulers to avoid non-health-care events whenever possible.

The Consolidated Scheduling Tools overall project was divided into three separate subprojects, given the complexity of each area, architectural differences, separate development resources, and schedule timelines. The three subprojects were the Consolidated Patient and Provider Calendar (CPPC), the Mental Health Group Scheduling Utility (MHGSU), and the Dental Scheduling Utility (DSU).

With the implementation of the Consolidated Scheduling Tools, health care schedulers are able to:

- See a patient's complete calendar in an easy-to-view format.
- Review multiple patients' calendars at the same time, to enhance the provider's schedule.
- View a listing of Mental Health group sessions available for scheduling a patient.



## SCHEDULING INITIATIVE TOOLS

**Consolidated Patient and Provider Calendar** - Provides CCHCS Scheduling resources with a calendar view of both the patient and provider schedule availability and provides Electronic Health Record System (EHRS) Schedulers with recommended appointment times.

**Mental Health Group Scheduling Utility** – A report that will analyze a single patient's schedule availability relative to existing Mental Health Groups at an institution/yard to identify the "percent available" of each existing Mental Health group available to that patient.

**Dental Scheduling Utility** – Tool to enter multiple patients to fill up a provider's day with the best time slot for each patient. This is particularly useful for Dental scheduling where users input several patients to find the best appointment times for each that will also fill a provider's workday. Similar logic to making a recommended appointment time for an individual, but for a set of patients, orders, and a selected provider.

### IDEA

#### Increasing the Health Care Treatment of Patients by Scheduling around the Patient's Schedule

Currently, there are more than 100 different programs and types of appointments that are scheduled in California's adult correctional institutions. At least 18 distinct positions regularly schedule appointments, and there are six different scheduling systems with multiple variations within CDCR's Strategic Offender Management Systems (SOMS) and CCHCS's Electronic Health Records System (EHRS). When the Integrated Substance Use Disorder Treatment (ISUDT) program further increased the number of scheduled appointments, a scheduling initiative was developed to address conflicts between the many events attended by patients. Health care schedulers did not have a practical way to avoid the many non-health-care events when they scheduled appointments. For example, within the EHRS SchApptBook, schedulers were able to see only health care appointments and Priority 1 custody appointments.

Using Lean Six Sigma principles and subprojects, the scheduling initiative identified a critical need to improve *comprehensive* schedule visibility within CCHCS's systems. The requested development provided health care schedulers with practical tools to avoid these non-health-care event conflicts whenever possible.



**The Consolidated Patient and Provider Calendar (CPPC)** allows schedulers to view the patient's entire calendar. CPPC allows the scheduler to also see the patient's work assignments and non-Priority 1 custody appointments. This visibility aids the scheduler in scheduling health care appointments when the patient has the highest likelihood of attending by scheduling around the patient's other time commitments.

*The benefits of the greater schedule visibility provided by the CPPC include improving the timeliness of health care treatment for patients; increasing the productivity of medical, dental, and mental health care providers; and reducing the workload for schedulers having to reschedule appointments where the patient did not attend.*

To help make life easier for schedulers, the CPPC application can be accessed from within the EHRS and opens with the patient in context. From within the application, the scheduler can choose the medical or mental health order they need to schedule for a provider and the application will recommend when the appointment can be scheduled by looking at the patient's and provider's calendars. With the recommendation, the scheduler can book the appointment within EHRS with confidence. Booking the appointment when the patient and provider are free will reduce the number of appointments where the patient does not attend and thus the number of appointments that the scheduler must reschedule. In addition, specific for nursing schedulers, the CPPC application allows access for all necessary EHRS users to look up a patient's full schedule, which was not previously available via access to the Strategic Offender Management System.

**The Dental Scheduling Utility (DSU)** allows dental schedulers to create schedules for their providers that reduce the number of appointments where the patient does not attend due to a conflicting appointment and reduce gaps in the provider's day where they are not seeing patients. Previously, within the Dentrix Enterprise (DXE) Appointment Book, schedulers were able to see only health care appointments and Priority 1 appointments from custody. DSU allows the scheduler to also see the patient's job assignments and non-Priority 1 custody appointments. This expanded view aids the scheduler in scheduling when the patient has the highest likelihood of attending their dental appointment by scheduling around the patient's schedule.

The DSU application has become the primary tool used by dental schedulers to create a provider's schedule, replacing the Microsoft Excel-based Dental Scheduling Analyzer that was used previously. The DSU application helps schedulers ensure that patients are available with no-to-minimal conflicting appointments in the proposed schedule. Additionally, the tool supports the dental scheduling concepts of quadrant dentistry and overlapping appointments, while providing feedback to staff on the strength of the schedule.

Scheduling applications help expand and improve care for patients so they can be best scheduled for their health care appointments.



The **Mental Health Group Scheduling Utility (MHGSU)** application allows schedulers to create schedules for their group providers that reduce the number of appointments where the patient does not attend due to a conflicting appointment. The CPPC provides a view of the patient’s schedule, but only based on the scheduling of one appointment or group session. The MHGSU will look at that same patient’s availability across all the available group shells and for each of the remaining individual sessions that the patient could attend. This aids the scheduler in scheduling when the patient has the highest likelihood of attending their group appointment by scheduling around the patient’s schedule. This scheduling efficiency increases the timeliness of Mental Health treatment for patients, increases the productivity of our providers, and reduces the workload for schedulers having to reschedule appointments where the patient did not attend.

The MHGSU application helps the scheduler ensure the patients are available without conflicting appointments in the proposed schedule and increases attendance rates. This means fewer missed appointments, which reduces the number of appointments that have to be rescheduled.

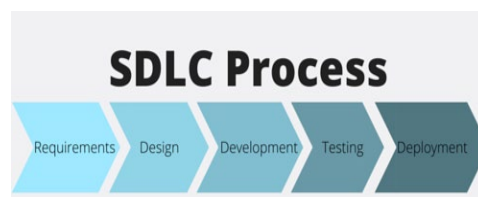
## IMPLEMENTATION

### Integrating Business Needs and Developing the Consolidated Scheduling Tools

CCHCS medical, mental health, and dental care business partners and business analysts, information technology project management, team leads, the application development team and the scrum master began meeting to discuss the scheduling project during last quarter of 2021. A Stage 2 Alternative Analysis (S2AA) was created and recommended the final solution of developing consolidated scheduling tools. The Application Innovation Services (AIS) Scheduling Initiative Tools Team recommended presenting external applications as the final solution for this project:

- Due to the existing accessibility of both required data sources within the CCHCS internal network of SOMS for patient availability and EHRs for provider availability;
- Because the development build and support would be within existing AIS resources and infrastructure, thus post-development support could be addressed without external resources and possible delays;
- This solution offers the best architectural options to launch the application multiple ways via external to EHRs and an internal EHRs MPage to best meet user requests;
- This is the best option to meet the maximum number of user requirements;
- And all applications will work with the Microsoft Edge web browser.

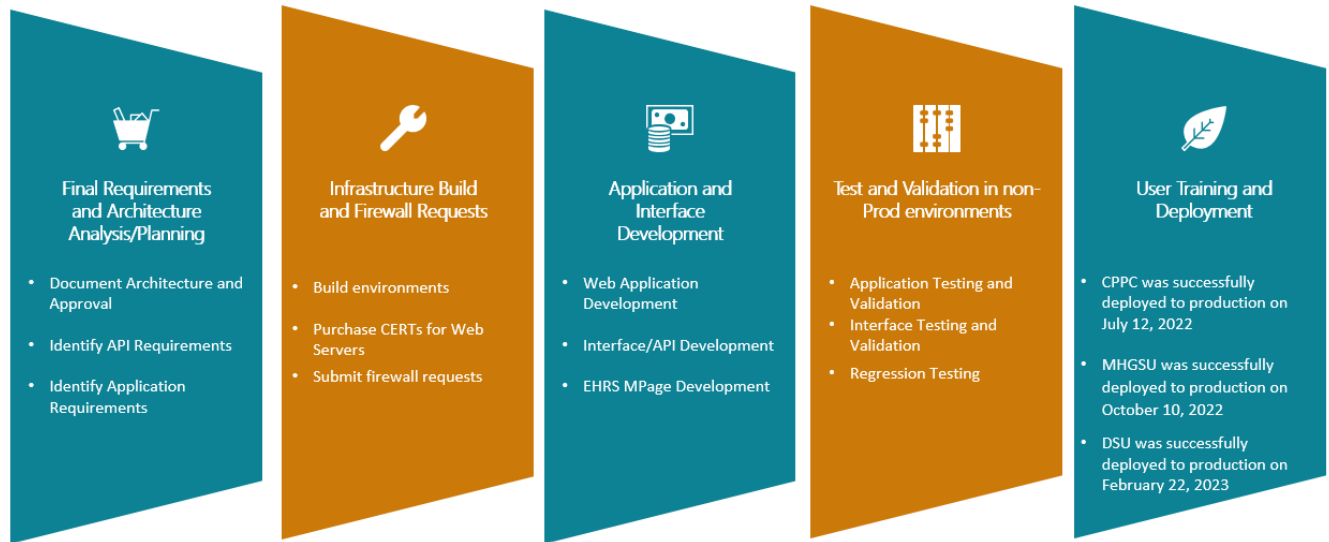
For this project, the team followed the Agile methodology utilizing the Software Development Life Cycle (SDLC) process:





Implementation of the external applications was accomplished by the AIS Scheduling Initiative Tools Team with the oversight of an AIS manager and project manager. The project manager was responsible for the day-to-day activities of the AIS team and for ensuring the overall goals and timeframes were met within the identified project budget.

To implement the three separate subprojects, strategic goals and project management documents were approved by all parties involved that included:



## IMPACT

### Benefits of Transforming the Scheduling of Correctional Health Care Appointments

Patients in California’s adult correctional institutions juggle job assignments, education classes, custody appointments, and medical, dental, and mental health appointments—including individual therapy appointments and group sessions. Previously, health care schedulers did not have a practical way to avoid non-health-care events when they scheduled appointments, so scheduling conflicts were common, leading to missed appointments, delays, and inefficiencies for staff needing to reschedule both the patient and provider.

CCHCS IT staff used Lean Six Sigma principles to identify this critical need and developed three new scheduling applications: the Consolidated Patient/Provider Calendar (CPPC), the Dental Scheduling Utility (DSU), and the Mental Health Group Scheduling Utility (MHGSU). Together, these scheduling tools enable comprehensive schedule visibility within CCHCS’s EHRS and CDCR’s SOMS scheduling systems.



Key benefits of the new Consolidated Scheduling Tools include:

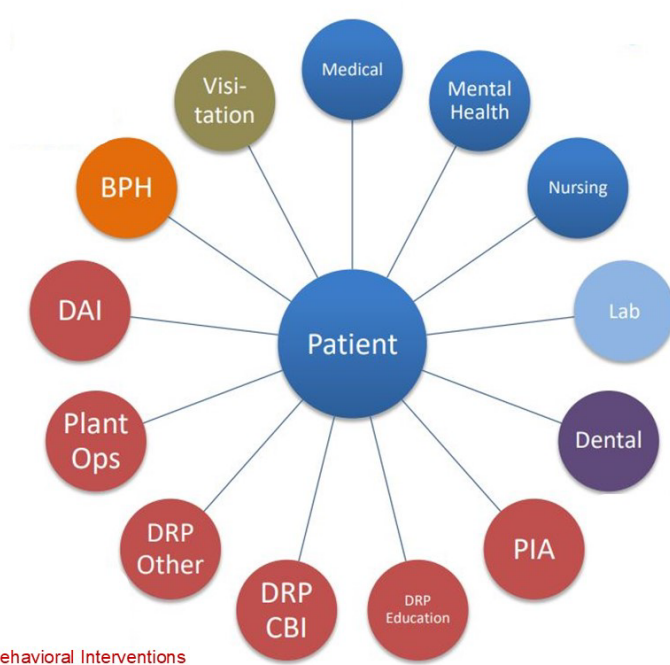
- Reduction of health-care event conflicts from 30% to 10%
- Facilitating the Division of Rehabilitative Programs’ Cognitive Behavioral Interventions (CBI), including those related to Substance Use Disorder Treatment (SUDT)
- Reduction in unsuccessful health care appointments
- Reduction in re-scheduling workload on scheduler

By scheduling appointments when the patient has the highest likelihood of attending and optimizing the providers’ schedules, CCHCS’s new Consolidated Scheduling Tools demonstrate a commitment to enhancing patient care, creating continuous and timely improvements, and building an effective digital government that delivers clear and dependable services for patients.

### Minimizing Appointment Conflicts for Patients

More than 100 types of appointments and programs are scheduled in California’s adult correctional institutions currently:

- 11 major functions
- At least 18 different roles that regularly do scheduling
- At least 6 scheduling systems with multiple variations within the Strategic Offender Management Systems (SOMS) and the Electronic Health Records System (EHRS)



BPH – Board of Parole Hearings  
 DAI – Division of Adult Institutions  
 DRP – Division of Rehabilitative Programs  
 DRP CBI – Division of Rehabilitative Programs’ Cognitive Behavioral Interventions  
 PIA – Prison Industry Authority work assignments