21st Century Medical Scheduling America COMPETES Contest

TCMS – Step 1 Test Cases

Contents

USE CASE 1: ESTABLISH, ORGANIZE, AND MANAGE THE SCHEDULING COMPONENT

This use case covers various aspects of system configuration at a higher level of management, medical treatment facilities, and sections where schedules are created. Appointment scheduling policies and directives are issued from Veterans Health Administration (VHA) management to the management staff of the health care system to the Scheduling System Component Administrator (SCSA).
The management level for this use case is the California, Alabama, and Georgia Veterans Affairs (VA) Health Care Systems, which serve the veterans of these states.

The following configuration must be done in a given VistA instance, for each one of the three states to allow the processing of information across the three states. Hereafter, California is used as a detailed example to illustrate what configuration must be done for all the three states.

The Headquarters for the California VA Health Care System is located in Sacramento, California and is co-located with its largest medical treatment facility (MTF), the California VA Regional Medical Center.

The California VA Health Care System is composed of two medical facilities, the aforementioned California VA Regional Medical Center and the California VA Outpatient Clinic. Each of these facilities contains one section, users, and standard appointment types.

Data from the attached tables can be used to configure the structure, files, and tables that will be needed to accomplish this use case and setup the California VA Health Care System Scheduling Component.

The SCSA will be responsible for creating the initial organization structure in the computer system once the directives are passed down.

Objectives:	Configure and update scheduling component structure, file, and tables. Create standard services, appointment types, and holidays for the region that are passed down to lower level facilities. Provide scheduling component access to users.
Prerequisites:	Utilized the information from the tables to create the VA management level, medical treatment facilities, and file and table entries.
Evaluator	System Component System Administrator
Step 1	Create/update a top-level management entity, table 1.
Step 2	Create/update two medical facilities under the management entity, tables 2 and 3.
Step 3	Create/update standard services, table 4.

Step 4	Create/update standard appointment type categories for the overall health care system, table 5.
Step 5	Create a standard national holiday and one VA specific holiday, table 6.
Step 6	Create a section (clinic/section) within each MTF, tables 7and 8.
Step 7	Create/update one pre-appointment communication template for the overall health care system that can be modified and utilized at the facility section level.
Step 8	Create a pre-appointment letter for a section based on the pre-appointment communication template created in step 7.
Step 9	Create a schedule for a provider in the Primary Care Section of the Regional Medical Center.
Step 10	Perform Step 1-9 for the other two VMs using locations in Georgia and Alabama
Checkpoint 1	Verify each VM is configured accordingly
Checkpoint 2	For items that specify update, after performing a modification to the item, verify each VM is updated accordingly once the initial save has occurred
Step 11	Deactivate a section and schedules
Checkpoint 3	Verify on the corresponding VM that a section and schedules have been deactivated
Step 12	Re-activate a section and schedules
Checkpoint 4	Verify on the corresponding VM that a section and schedules have been re-activated

Table 1: Top Level Management Entity

California VA Health Care System Profile Information

Name	California VA Health Care System
Street Address 1	Headquarters California Health Care System
Street Address 2	Sacramento, California 94203
Phone	(916) 555-1212

Table 2: Facility 1

California VA Regional Medical Center Profile Information

Name	California VA Regional Medical Center
Hours	0800-1600
Abbreviation	CVARMC
Street Address 1	California VA Regional Medical Center
Street Address 2	23 Bradford Avenue
Street Address 3	Sacramento, California 94203
Phone	(916) 555-XXXX
Management Entity	California Health Care System

Table 3: Facility 2

California VA Outpatient Clinic Profile Information

Name	California VA Outpatient Clinic
Hours	0800-1600
Abbreviation	CVAOPC
Street Address 1	California VA Outpatient Clinic
Street Address 2	23 Eckerd Avenue
Street Address 3	Sacramento, California 94203
Phone	(916) 555-XXXX
Management Entity	California Health Care System

FILE AND TABLE INFORMATION

Table 4: Service File

Name
Medicine Service
Surgical Service
Psychiatric Service
Ancillary Service

Table 5: Appointment Type Categories

Name
Regular
Compensation & Pension
Employee

Table 6: Holidays

Name	Dates
National VA Organization Day	20 July 2012, 22 July 2013, 21 July 2014,
Valentines' Day	13 February 2012, 14 February 2013, 14 February 2014

Table 7: Primary Care Section Profile (California VA Medical Center)

Section Name	Primary Care
Section Code (DSS)	323
Section Service	Medicine
Abbreviation	PC
Facility	California VA Regional Medical Center
Hours	0800-1600
Location	West Wing Room 1

Table 8: Primary Care Section Profile (California VA Outpatient Clinic)

Section Name	Primary Care
Section Code	323
Section Service	Medicine
Abbreviation	PC
Facility	California VA Outpatient Clinic
Hours	0800-1500
Location	East Wing Rooms 10 and 11

USE CASE 2: ESTABLISH AND MANAGE SECTION SCHEDULES

This use case covers the creation of schedules for a section/provider. It also covers the ability to hold, release, modify, and block schedules as well as cancelling previously scheduled appointments that existed when a schedule is blocked or made unavailable.

The Schedule Administrator will be responsible for creating schedules based on input from section personnel.

Objective	Configure resources for a section (i.e., providers, rooms, equipment). Create schedules for resources in a section. Hold a schedule that was created then release it manually and automatically. Block a date/time range of schedules. Block a date/time range of schedule with existing appointments.
Prerequisites	Medical treatment facilities, sections, providers, users, and appointment types should already be configured.
Evaluator	Schedule Administrator
Step 1	Create section appointment types that map to existing appointment type categories and appointment type duration. Use the data in tables 1 and 2.
Checkpoint 1	Verify appointment types as defined by Table 1&2 exist in all VMs.
Step 2	Configure resources for a section (i.e., providers, rooms, equipment).
Step 3	Create schedules for multiple resources that are assigned to one section.
Step 4	Create a schedule for a provider from 4 December 2013 to 15 January 2014.
Checkpoint 2	Verify schedule for a provider from 4 December 2013 to 15 January 2014.
Step 5	Hold the 4 January 2014 date and set it to automatic release for scheduling on 3 January 2014.
Checkpoint 3	1. Verify hold on the 4 January 2014. 2. Verify release of the hold on 3 January 2014.
Step 6	Hold the 5 January 2014 date and manually release it for scheduling.
Checkpoint 4	1. Verify hold on the 5 January 2014. 2. Verify release of the hold on 5 January 2014.

Step 7	Block 9 a.m.-12 noon on 5 December 2013 for a meeting.
Checkpoint 5	Verify block for 9 a.m.-12 noon on 5 December 2013.
Step 8	Block a portion of a schedule or a schedule that has existing scheduled patient appointments.
Checkpoint 6	Verify block for a portion of a schedule that has existing scheduled patient appointment.
Step 9	Demonstrate the cancellation process for the appointments that were scheduled when the schedule was blocked to include reason for cancellation.
Checkpoint 7	Verify cancellation of scheduled appointment (include reason for cancellation).
Step 10	Create a group appointment slot on a schedule.
Checkpoint 8	Verify a group appointment slot on a schedule.
Step 11	Associate pre-appointment patient instructions with appointment types that can be displayed to the scheduler and given to the patient when the appointment is scheduled.
Checkpoint 9	Verify associated pre-appointment patient instructions with appointment type in the scheduling interface.
Step 12	Setup multiple appointment types with designated time ranges on the same day. Example, a morning schedule may consist of only medication refill appointment types and the afternoon schedule may consist of only new patient appointment types.
Checkpoint 10	Verify multiple appointment types on the same day.
Step 13	Block or make unavailable multiple days of a schedule and include the reason for blocking.
Checkpoint 11	Verify block of multiple days of a schedule and include the reason for blocking.
Step 14	Block or make unavailable a reoccurring period of time and include the reason for blocking.
Checkpoint 12	Verify block of a reoccurring period of time and include the reason for blocking.
Step 15	Track and manage the patients that were cancelled due to the schedules being blocked.
Checkpoint 13	Verify patient appointments were cancelled due to the schedules being blocked.
Step 16	Change, modify, and update appointment types that are already on a

	schedule, on the fly.
Checkpoint 14	Verify corresponding changes to the appointment types that are already on a schedule.
Step 17	Add, modify, and delete appointment types from a section.
Checkpoint 15	Verify corresponding changes to the appointment types from a section.
Step 18	Configure schedules for overbooking and assignment of overbooking privileges to users.
Checkpoint 16	Verify overbooking of a schedule.
Step 19	Assign a provider to multiple sections.
Checkpoint 17	Verify the assignment of a provider to multiple sections.

Table 1: Primary Care Section Profile (VA Medical Center)

Section Name	Primary Care
Appointment Type 1 Name	Initial
Appointment Type 1 Duration	30 minutes
Appointment Type 1 Category	Regular
DSS Primary Stop Code	323
Appointment Type 2 Name	Follow-up
Appointment Type 2 Duration	15 minutes
Appointment Type 2 Category	Regular
DSS Primary Stop Code	323

Table 2: Primary Care Section Profile (VA Outpatient Clinic)

Section Name	Primary Care
Appointment Type 1 Name	C&P
Appointment Type 1 Duration	30 minutes

Appointment Type 1 Category	Compensation & Pension
DSS Primary Stop Code	323
DSS Credit Stop Code	450
Appointment Type 2 Name	Regular
Appointment Type 2 Duration	15 minutes
Appointment Type 2 Category	Regular
DSS Primary Stop Code	323
DSS Credit Stop Code	450

USE CASE 3: CREATE A PATIENT APPOINTMENT

This use case covers the creation of a patient appointment. Pre-set appointment data will be required to accomplish this use case. During this use case the patient will need to be entered into the system or registered. Once the patient is registered, the scheduler selects the patient and enters information regarding that patient's preferences and special needs that must be considered when making appointments. The scheduler then reviews the patient's information to verify that an appointment can be made and demonstrates the system's capability to search for appointments.

Once the appointment has been scheduled, the scheduler provides the scheduled appointment information to the patient. Additional actions to be demonstrated are detailed in the use case steps. Written appointment notifications need to be provided to the patient either through the mail or by using e-mail and the method that was used to notify the patient of their appointment is captured in the scheduling component.

Objective	Create an appointment.
Prerequisites	Pre-set data can be used to accomplish this use case.
Evaluator	Scheduler
Step 1	Receive appointment request (also demonstrate request through telephone, e-mail, and internet/form if available).
Step 2	Enter the desired future appointment date/time.
Step 3	Enter, register, and select the patient to schedule.
Step 4	Verify Patient Information a. Display/verify demographics. b. Verify insurance information. c. Display primary care provider information. d. Create/display/verify patient preferences and special needs. e. Create/display patient priority (50% or greater SC; SC for the condition) for rescheduling indicator (SC=Service Connected).
Step 5	Make appointment using data from Table 1, below, and guidance from Back Story Scenario Table 2.
Step 5c	Select the appointment slot.
Step 5d	Assign the patient to the selected appointment, record desired date and

	reserve resources.
Checkpoint 1	Verify appointment made for the specific patient on a specific date.
Step 9	Schedule another appointment for the same patient and demonstrate the linking of the two appointments.
Checkpoint 2	Verify the second appointment is made for the same patient.
Step 10	Create/schedule/initiate patient pre-appointment notification.
Checkpoint 3	Verify the existence of the pre-appointment notification letter for the patient.
Step 11	Schedule a group of patients in a multiple appointment time slot (e.g., group therapy).
Checkpoint 4	Verify group appointment is made for a group of patients in a multiple appointment time slot.
Step 12	Schedule telehealth appointment where the patient location is in one VistA instance (Georgia VM) and the provider location is in a different VistA instance (Alabama VM)
Checkpoint 5	Verify the appointment is made for a patient located in Georgia for a telehealth provider in Alabama

Table 1: Appointment Data

Desired Date (DD)	8 July 2013
Agreed Upon Date (AUD)	22 July 2013
Create Date (CD)	

Table 2: Create Patient Appointment

Established patient request for an early appointment	Schedule Established Patient request for an earlier appointment. Desired Date is July 8, 2013. Clinic has no capacity until July 17th.
Provider negotiates an appointment timeframe with veteran at end of visit: 7/22/13	Schedule patient's follow-up appointment using the Agreed Upon Date (AUD) negotiated at the end of the visit.
New patient consult using the create date	Schedule a new patient consult requesting a first available appointment using the create date. 1st opening is two weeks in the future.

USE CASE 4: MANAGE A PATIENT APPOINTMENT

This use case covers appointment management of appointment information. Pre-set appointment data will be required to accomplish this use case. During this use case the patient has two scheduled associated appointments. An example of this would be a patient that has an appointment scheduled for a laboratory (section one) blood draw at 8:30 a.m. and an appointment (section two) with a provider at 10 a.m. The appointments are associated because the results of the first appointment are required for the second appointment. This use case demonstrates the flow of the patient through the medical continuum from one section to another and the appointment management steps necessary to check in and check out the patient from the medical appointments.

The use case begins with a patient arriving at the section one's front desk. The user searches the scheduling component for the patient's registration and appointment data. Once the user locates the patient and related patient appointment information, the patient is checked-in, appointment information displayed, and reviewed for any information that was recorded for the appointment such as laboratory test identification data.

Another user from section two utilizes the scheduling component to determine and view the patient's status in section one. When the patient is finished with the first appointment, the user checks out the patient from the appointment, utilizing the scheduling component. The patient proceeds to section two for the provider's appointment.

Objective	Check in a patient for an appointment. Disposition a patient from an appointment. Track and view the status of a patient that has been checked-in.
Prerequisites	Pre-set data can be used to accomplish this use case. Data should include registered patients that already have two scheduled associated appointments.
Evaluator	Front Desk Technician
Step 1	Enter patient information and select the patient to check-in.
Step 2	Display/verify demographics.
Step 3	Check-in the patient to section one.
Step 4	Display and view patient check-in status.

Checkpoint 1	Verify patient check-in status.
Step 5	Display and view patient check-in status (at section one) by section two.
Checkpoint 2	Verify patient check-in status by section two.
Step 6	Disposition (check-out) the appointment (i.e., kept, no-show, or left without being seen).
Step 7	Display other scheduled appointments and convey them to the patient.
Checkpoint 3	Verify patient appointment status on VistA after check-out for: a. appointment kept. b. no-show. c. left without being seen.
Step 8	Repeat step 1-7 for a patient in a group appointments.
Checkpoint 4	Verify patient appointment status on VistA after check-out for appointment kept.

USE CASE 5: MANAGE A WALK-IN PATIENT

This use case covers the management of a patient that walks in and is given an unscheduled appointment. Pre-set appointment data will be required to accomplish this use case.

The use case begins when a patient arrives at the front desk and requests medical treatment. Following medical triage, it is determined that the patient will be treated as a walk-in patient. A user utilizes the patient's information to search the scheduling component for the patient's registration. Once the patient's information is located, the unscheduled visit check-in process is accomplished. An unscheduled visit check-in may involve the scheduling component recording the date/time of the appointment and the check-in time simultaneously.

When the patient is finished with the appointment, the user checks out the patient from the appointment, utilizing the scheduling component.

Objective	Manage a patient that requires an unscheduled appointment (walk-in).
Prerequisites	Pre-set data can be used to accomplish this use case. Data should include a pre-registered patient and a previously created provider's schedule.
Evaluator	Front Desk
Step 1	Enter patient information and select the patient to check in.
Step 2	Display/verify demographics.
Step 3	Process an unscheduled patient for a walk-in.
Step 4	Display and view provider schedule and provider roster of patients (used to confirm that the patient has been added to a provider's schedule).
Checkpoint 1	Verify patient has been added to a provider's schedule.
Step 5	Display and view patient check-in status (performed by the provider).
Checkpoint 2	Verify patient check-in status on CPRS.
Step 6	Checkout patient appointment.
Step 7	Display other scheduled appointments and convey them to the patient.

USE CASE 6: CANCEL INDIVIDUAL APPOINTMENT

This is a use case in which an individual patient's appointment is cancelled. This use case is used whenever a patient needs to cancel an appointment and is not able to reschedule the appointment at that time.

The use case begins when a scheduler receives a request to cancel an individual appointment. Either a patient or a provider initiates the request. The scheduler receives patient identification information from the requestor, and uses it to search the scheduling system for the patient's demographic and appointment information. Once the patient's appointment information is located, the scheduler selects and cancels the appointment, utilizing the scheduling system. Once the appointment is cancelled the scheduler captures the reason for the appointment cancellation in the scheduling system (e.g., patient requested cancellation, provider requested).

The cancellation of an individual appointment may require other appointments to be cancelled. If associated appointments are also scheduled, the scheduler reviews them with the requestor to determine if they also require cancellation. An associated appointment is an appointment that was scheduled as part of an appointment set. If the associated appointments require cancellation, the scheduler utilizes the scheduling system to cancel them. Appointments that are scheduled for the same day may also be displayed, based on section business rules.

The scheduler receives a high priority reschedule notification from the scheduling system, if the cancelled appointment was previously flagged as a high priority reschedule or if the appointment is being cancelled by the provider within a short time frame of when the initial appointment was to occur. The high priority flag may be used for patients who may not remember on their own to reschedule their appointments (e.g., patients with severe mental or emotional conditions, some geriatric patients). If a high priority notification is received, the scheduler places the patient on the high priority reschedule list in the scheduling system.

After the appointment has been cancelled the scheduler notifies the patient of the cancellation and the need to reschedule the appointment.

Objective	To cancel a scheduled appointment.
Prerequisites	The patient must already have a scheduled appointment.
Evaluator	Scheduler
Step 2	Select the appointment to cancel.
Step 3	Cancel the individual appointment.

Step 4	Document the reason for the cancellation.
Checkpoint 1	Verify selected appointment has been cancelled and the existence of the reason for cancellation
Step 5	Review the associated appointments.
Step 6	Cancel the associated appointments, if appropriate.
Checkpoint 2	Verify cancellation of associated appointments.
Step 7	View the Reschedule Notification for high-risk patients, if necessary.
Step 8	Add the patient to the Reschedule List, if necessary.
Step 9	Send the Cancellation/Reschedule notification to the patient.
Checkpoint 3	Verify existence of the cancellation/reschedule patient notification.
Step 10	Cancel individual group member appointment for group appointments.
Checkpoint 4	Verify selected individual appointments have been cancelled.
Step 11	Cancel group appointments.
Checkpoint 5	Verify selected group appointments have been cancelled.

USE CASE 7: RESCHEDULE INDIVIDUAL APPOINTMENT

This is a use case in which an individual patient's appointment is rescheduled. This use case is used whenever a patient with a scheduled appointment requires it to be rescheduled.

The use case begins when a scheduler receives a request from a patient, who already has a scheduled appointment, to reschedule. The scheduler receives patient identification information, from the patient, and uses it to search the scheduling system for the patient's appointment information. The scheduler identifies the appointment that is being rescheduled and reviews any associated appointments that may exist. An associated appointment is an appointment that was scheduled as part of an appointment set. The scheduler performs a search for a new appointment based on the criteria of the appointment that is being rescheduled. If the clinic cancels the appointment, scheduler selects "cancelled by clinic" option and the rescheduled appointment uses the original desired date. If the patient cancels the appointment, the scheduler selects "cancelled by patient" and desired date for the rescheduled appointment will be the new date requested by the patient. Once the appointment search is completed, the scheduler displays the patient's pending appointments and a list of the patient's appointment history focusing on any no-show (unkept) appointment trends. The scheduler selects the appointment slot and reassigns the patient to the new appointment slot. When the patient is reassigned to the new appointment slot, the original appointment is cancelled and the new appointment is made. If any associated appointments exist that require rescheduling, they are also rescheduled at this time.

The patient receives written and or verbal notification from the scheduler. The method that was used to notify the patient is captured in the scheduling system and may be used for statistical reporting.

Objective	To reschedule a scheduled appointment, as a consequence of a patient cancellation.
Prerequisites	The patient must already have a scheduled appointment with associated appointments.
Evaluator	Scheduler
Step 1	Search for an existing individual appointment.
Step 2	Identify the appointment to reschedule.
Step 3	Review the associated appointments.
Step 4	Search for available appointment slot.
Step 5	Display the patient's pending appointments.

Checkpoint 1	Verify Patient's pending appointments
Step 6	Display the patient’s no-show (unkept) appointment history.
Step 7	Select the appointment slot.
Step 8	Reassign the patient’s appointment to the newly selected appointment and reserve the resources for the appointment.
Checkpoint 2	Verify patient's reassigned appointment.
Step 9	Reschedule the associated appointments.
Step 10	Send the appointment notification to the patient.
Checkpoint 3	Verify the existence of a new patient appointment notification letter

USE CASE 8: ADD APPOINTMENT REQUEST TO WAITING LIST AND SCHEDULE PATIENT FROM WAITING LIST

There are two components to the Electronic Waiting List (EWL). There is a EWL for clinics/stop codes with no capacity to see new patients. Within the EWL, there is also a function for the creation of Transfer Clinics.

Electronic Wait List (EWL): The EWL was developed for the sole purpose of keeping track of **new** patient referrals to a clinic where there is not enough capacity available to handle the demand.

Transfer Clinics: are for **established** patients enrolled at a facility awaiting a transfer to another location. *An example would be: Patient enrolled in Primary Care at parent facility but would like to be assigned and seen for routine follow-ups at the CBOC.* The established patient will continue to receive his/her care at the parent facility, until capacity for reassignment is available.

For the EWL: The use case begins when a new patient requests an appointment that is too far in the future (> 90 days) to be scheduled. The scheduler places the appointment request on the electronic waiting list. Periodically, the scheduler displays the list of requested appointments on the waiting list and searches the appointment grids for availability.

When an opening in the clinic is available, the scheduler picks a specific patient from the electronic waiting list and displays the demographics to determine how to contact the patient. If the scheduler is able to contact the patient, the scheduler coordinates with the patient to make the appointment.

Once an appointment has been made and the patient is notified of the appointment, the patient's name is removed from the waiting list either by the scheduler or automatically by the scheduling component. The method that was used to notify the patient is captured in the scheduling component and may be used for statistical reporting.

Objective	To add an appointment request to the waiting list. To make an appointment for a patient who is currently on the waiting list.
Prerequisites	A waiting list must exist for the clinic referral along with the correct stop code.
Evaluator	Scheduler
Step 1	Add new patient request to Electronic Waiting List.
Step 2	Send a waiting list notification to the patient.

Checkpoint 1	Verify the existence of waiting list notification letter for the patient
Step 3	On a daily basis, schedulers must review the clinic grids for open capacity.
Checkpoint 2	Verify that the Electronic Waiting List (EWL) contains the added patient.
Step 4	Select a patient from the waiting list. 50 – 100% Service Connected Veterans or those Veterans < 50% but connected for the injury.
Step 5	Display/verify the patient's demographics. Contact the patient with the date of the opening.
Step 6	Make the appointment.
Step 7	Remove the patient from the EWL.
Checkpoint 3	Verify that the patient has been removed from the Electronic Waiting List (EWL).
Step 8	As a reminder, send the appointment notification to the patient if time allows. For example: If the opening is the next day, there would be enough time for the letter to go out.
Checkpoint 4	Verify the existence of the appointment notification letter for the patient.

Objective	To add an appointment request to the transfer list. To make an appointment for a patient who is currently on the transfer list.
Prerequisites	A transfer list must exist for the clinic referral along with the correct stop code.
Evaluator	Scheduler
Step 1	Add patient request to the transfer list.
Step 2	Notify patient that he/she will continue to receive care until the new location is available.
Step 3	If referral for Primary Care, scheduler or supervisor to check on progress for the new location.

Step 4	Once capacity is available and the clinic is built, transfer of patients to the new location is the next step: • Involve Primary Care Coordinator and/or Administrative Officer
Step 5	Patient is contacted negotiate an appointment date at the new location.
Step 6	Patient will continue to be assigned to the parent facility panel size until their first completed appointment. • Patient is unassigned to provider and location. • Patient is re-assigned to provider at new location following the rule listed above.