# Vancouver Healthcare and Life Sciences

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# Clinical Device Management

With the ServiceNow® Clinical Device Management applications, streamline the management of medical devices with playbooks and case management.

ServiceNow® Clinical Device Management requires the Healthcare and Life Sciences Service Management application.

# Healthcare CMMS

With the ServiceNow® Healthcare Computerized Maintenance Management System (Healthcare CMMS) application, manage medical device-related in-service process, alternative equipment maintenance (AEM) review process, medical device issues, and out-of-service process.

### Request apps on the Store

Visit the ServiceNow Store website to view all the available apps and for information about submitting requests to the store. For cumulative release notes information for all released apps, see the ServiceNow Store version history release notes.

Explore Learn about how healthcare organizations use Healthcare CMMS.

Configure Plan and configure your implementation.

Manage Manage medical device cases from the Workspace.

Request for medical device services Submit requests for medical device in-service, reviewing AEM requests, resolving medical device issues

Reference Get details about components including tables.

or medical device out-
of-service.

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## Exploring Healthcare CMMS

Whether you're starting or expanding your implementation of
the Healthcare Computerized Maintenance Management System
(Healthcare CMMS) application, consider learning more about the
features available to manage medical devices.

### Overview

For the clinical engineers in your healthcare organization:

- Enhance compliance management by streamlining device workflows
  with patient risk parameters for maintenance plans.

- Provide visibility and data across all devices (connected or non-
  connected) and locations or sites in a single source of truth to exceed
  compliance requirements.

- Increase team productivity via inbuilt device data model, work order
  templates, mobile experience, and compliance reports.

For the clinicians in your healthcare organization:

- Improve clinician satisfaction and reduce device downtime by
  streamlined issue reporting and response workflows.

- Improve team productivity by managing devices across multiple
  hospitals, sites, or enterprises.

The Healthcare CMMS playbook provides a guided experience to review
medical device-related cases. Using the playbooks, clinical engineers
can set a medical device in-service, review alternative equipment
maintenance (AEM) plans, and manage medical device out-of-service
requests associated with a medical device model.

The Healthcare CMMS application uses the data model provided by the
Healthcare and Life Sciences Service Management Core application.
The medical device case is submitted as a medical device in-service
case, medical device AEM case, medical device out-of-service case,
or medical device issue case and assigned to clinical engineers who

can then work on a device issue-related case or use a guided playbook within their Workspace for resolving a medical device in-service, AEM case, or medical device out-of-service.

**Key features**

- Manage the end-to-end process of medical device in-service.

- Review AEM requests for medical device models.

- Create and manage medical device issues for corrective maintenance of medical devices using a work order.

- Manage the end-to-end process of medical device out-of-service.

- Provide a guided experience for clinical engineers to complete setting medical devices in-service, review AEM requests, and setting medical devices out-of-service from Workspace by using the Healthcare CMMS playbooks.

To get started with the Healthcare CMMS application, see Configuring Healthcare CMMS.

# Healthcare Computerized Maintenance Management System - medical devices in-service scenario

Use the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application for setting medical devices in-service and associating them with maintenance plans.

Scenario: A hospital purchases a new infusion pump that needs to be set to in-service and scheduled for planned maintenance. A device organization contributor, who acts as a requester with the sn_hcls_cmms.device_service_org_contributor role, works at the hospital location and submits the medical device in-service request form from the hospital's customer service portal. In the medical device in-service request form, the contributor enters the medical device model and medical device details such as model name, model number, manufacturer, short description, serial number, organization, and cost center. When the new medical device model is set to in-service, select **Allow alternate maintenance** in the medical device in-service request form in order to be able to enter a request for the AEM. After submitting the medical device in-service request form, a medical device in-service

case is created in the ServiceNow instance associated with the customer service portal of the hospital. To resolve the case, the Healthcare CMMS workflow initiates a playbook configured for the medical device in-service cases. The case gets assigned to a clinical engineer who acts as a fulfiller with the sn_hcls_cmms.clinical_engineer role.

The following graphic shows how the Healthcare CMMS application is used for medical devices in-service scenario.

Using the Healthcare CMMS application for medical devices in-service



# Medical device in-service

**A workflow to streamline medical device in-service activities for medical devices.**

The **clinical engineer** views all the case-related details in Workspace.

Selects the Playbook tab to review medical device model.

Reviews the devices that are included in the case and evaluates the risk for each medical device.

Verifies the work orders for the initial inspection of each medical device.

After the inspection of a medical device is completed, reviews the maintenance plan for a new model/medical device and reviews the maintenance plan.

Ensures that all medical device in-service tasks are set to complete in the playbook and closes the medical device in-service case.

The following workflow steps elaborate how the clinical engineers with the sn_hcls_cmms.clinical_engineer role use the Healthcare CMMS application to enable the medical device in-service:

1. Uses the Workspace to view the medical device in-service case.

2. In Workspace, views the complete information about the medical device and its model from the **Details** tab.

3. Selects the **Playbook** tab to view all the necessary case-related information.

   The layout of a playbook enables clinical engineers to focus on the steps they are responsible for, while providing full visibility into the end-to-end process life cycle.

4. Reviews the medical device model.

5. Reviews the devices that are included in the case and assesses the risks for each medical device.

6. Reviews the work orders for the initial inspection of each medical device.

7. After the inspection of a medical device is completed, adds a maintenance plan for a new model/ medical device and reviews the maintenance plan.

8. Ensures that all medical device in-service tasks are set to complete in the playbook and closes the medical device in-service case.
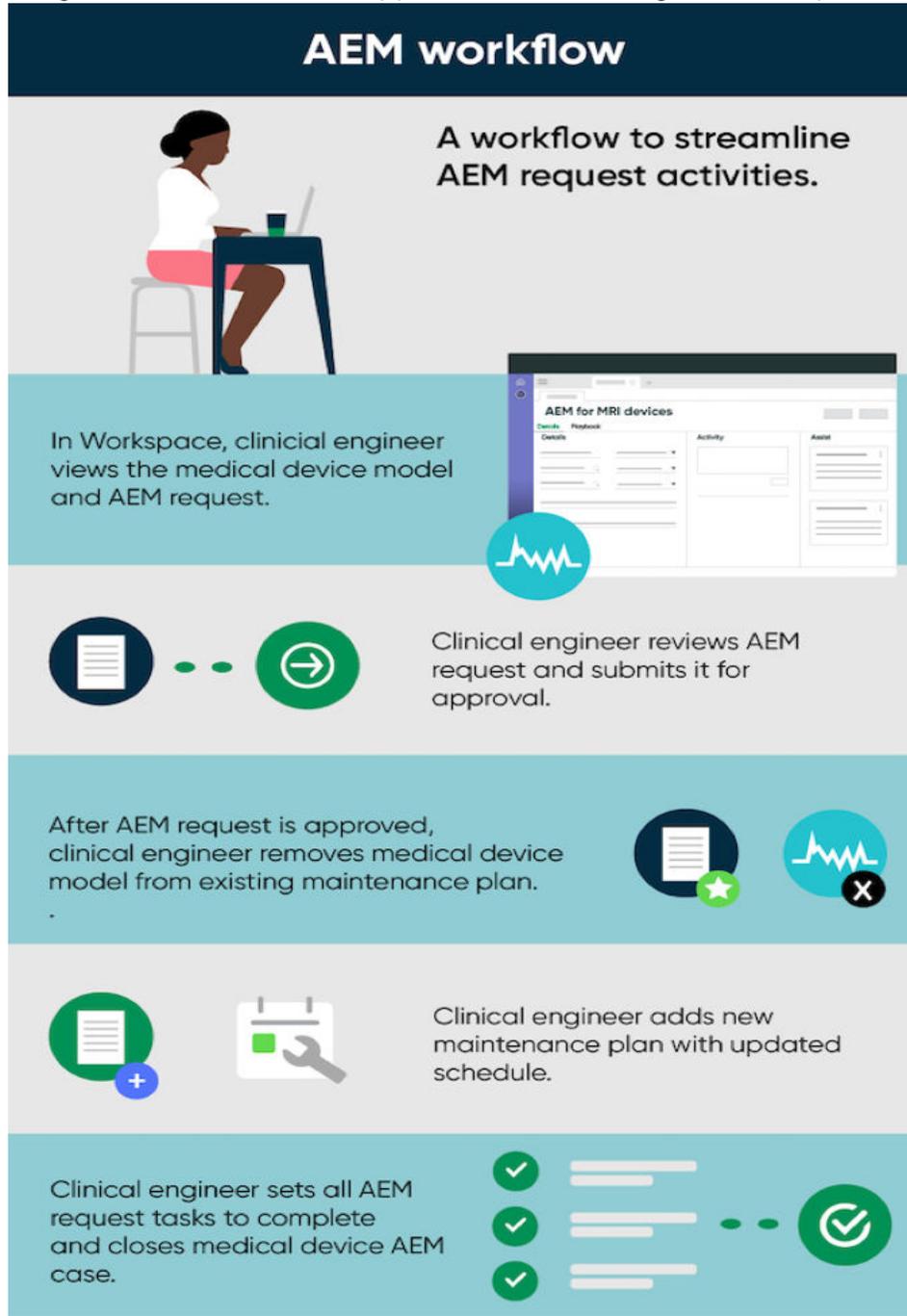
## Healthcare CMMS - Reviewing AEM request scenario

Use the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application for reviewing the existing maintenance plan related to a medical device model.

Scenario: A hospital needs to review the existing maintenance plan for all the MRI devices associated with a medical device model. A device organization contributor who works at the hospital location submits the request form for the alternative equipment maintenance (AEM) from the customer service portal of the hospital. The AEM request form shows the medical device models that have been selected to allow alternate maintenance in the form. In the AEM request form, the contributor enters

the requester organization, medical device model, and other details, and suggests making changes to the maintenance plan schedule. When a medical device AEM case is created in the ServiceNow instance, the Healthcare CMMS workflow initiates a playbook configured for the medical device AEM cases. The case gets assigned to a clinical engineer who acts as a fulfiller with the sn_hcls_cmms.clinical_engineer role.

The following graphic shows how the Healthcare CMMS application is used for AEM request review scenario.

Using the Healthcare CMMS application for reviewing an AEM request



**AEM workflow**

A workflow to streamline AEM request activities.

In Workspace, clinical engineer views the medical device model and AEM request.

Clinical engineer reviews AEM request and submits it for approval.

After AEM request is approved, clinical engineer removes medical device model from existing maintenance plan.

Clinical engineer adds new maintenance plan with updated schedule.

Clinical engineer sets all AEM request tasks to complete and closes medical device AEM case.

The following workflow steps elaborate how the clinical engineers with the sn_hcls_cmms.clinical_engineer role use the Healthcare CMMS application to review the AEM request for a medical device model:

1. Uses the Workspace to view the medical device AEM case.

2. In Workspace, views the complete information about the medical device model and AEM request detail from the **Details** tab.

# Healthcare Computerized Maintenance Management System - Medical devices out-of-service scenario

Use the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application for setting medical devices to out-of-service and creating disposal work orders for them.

Scenario: A hospital needs to discontinue or replace an old medical device with new model. Due to a fault leading it to be beyond repair, the medical device being replaced needs to be set to out-of-service. A device organization contributor who acts as requester with the sn_hcls_cmms.device_service_org_contributor role works at the hospital location submits the out-of-service request form from a customer service portal of the hospital. In the out-of-service request form, the contributor enters the medical device model and medical device details such as requested by, requested organization, device model, device, requester comments for out-of-service medical device, short description. After submitting the out-of-service request form, a medical device out-of-service case is created in the ServiceNow instance associated with the customer service portal of the hospital. To resolve the case, the Healthcare CMMS workflow initiates a playbook configured for the medical device out-of-service cases. The case gets assigned to a clinical engineer who acts as a fulfiller with the sn_hcls_cmms.clinical_engineer role.

The following workflow elaborates how the clinical engineers with the sn_hcls_cmms.clinical_engineer role use the application to out-of-service medical devices:

Using the Healthcare CMMS application for medical device out-of-service

## Out-of-service medical device

A workflow to streamline out-of-service activities for a medical device.
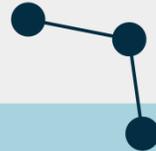
The clinical engineer views all the case-related details in Workspace.

Selects the Playbook tab to review medical device details.

Reviews and cancels all the work orders for the medical device.

Sets the medical device out-of-service.

Creates a disposal work order for the out-of-service device.

Ensures that all out-of-service tasks are set to complete in the playbook and closes the medical device out-of-service case.

1. Uses the Workspace to view the medical device out-of-service case.

2. In Workspace, views the complete information about the medical device and its model from the **Details** tab.

3. Selects the **Playbook** tab to view all the necessary case-related information.

   The layout of a playbook enables clinical engineers to focus on the steps they're responsible for, while providing full visibility into the end-to-end process life cycle.

4. Reviews the medical device details.

5. Reviews and cancel all the work orders for the related medical device.

6. Ensures that all the work orders are canceled.

7. Sets the medical device to out-of-service.

8. Creates the disposal work order for the out-of-service device.

9. Ensures that all out-of-service tasks are set to complete in the playbook and closes the medical device out-of-service case.

## Healthcare Computerized Maintenance Management System - Reporting medical device issue scenario

Use the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application for reporting medical device issues and performing corrective maintenance.

Scenario: An issue is identified with a medical device in a hospital and a corrective maintenance needs to be performed. A organization contributor for medical devices submits the medical device issue form from the customer service portal of the hospital. In the issue form, the contributor enters the requester organization, medical device, its model, and other issue details. When a medical device issue case is created in the ServiceNow instance, a clinical engineer who acts as a fulliller with the sn_hcls_cmms.clinical_engineer role can work on the case.

The following graphic shows how the Healthcare CMMS application is used for resolving the medical device issue as discussed in the scenario.
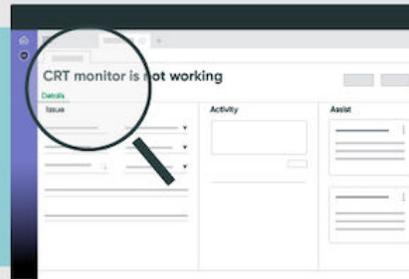
Using the Healthcare CMMS application for resolving a medical device issue

The following workflow elaborates how the clinical engineers with the sn_hcls_cmms.clinical_engineer role use the Healthcare CMMS application to resolve the medical device issue:

1. Uses the Workspace to view the medical device issue case.

2. In Workspace, views the complete information about the medical device, its model, and issue details from the **Details** tab.

3. Creates a work order to resolve the issue.

4. When the work order is set to complete, closes the medical device issue case.

# CMMS Dashboard

The CMMS Dashboard is a central place for CMMS users to monitor ongoing operations. The dashboard includes reports that query the database and display the results.

To access the CMMS Dashboard, install the Performance Analytics Content Pack for Healthcare CDM application. For more information, see Components installed with Healthcare Computerized Maintenance Management System.

To display the CMMS Dashboard, navigate to **Platform Analytics Workspace > Dashboards > CMMS Dashboard**.

Dashboards are the home pages for products on the instance. The CMMS Dashboard provides metrics of all the medical devices. It also displays the status of all medical devices. The widgets can be filtered by selecting the duration.
Dashboard
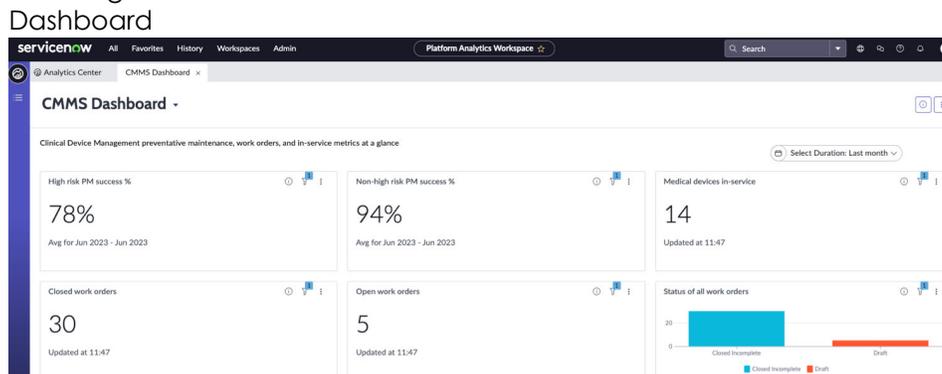
- **High risk PM% in the selected duration** shows the percentage of the planned work orders that were completed within the due date for high risk medical devices.

- **Non-high risk PM% in the selected duration** shows the percentage of the planned work orders that were completed within the due date for non-high risk medical devices.

- **Medical devices in-service in the selected duration** shows number of the medical devices in-service in the selected duration. Click the widget to view the list of all medical devices in-service. You can export the list of all medical devices in-service.

- **Closed work orders due in the selected duration** shows number of the closed work orders who's requested due date is in the selected duration. Click the widget to view the list of all closed work orders. You can export the list of all the closed work orders.

- **Open work orders due in the selected duration** shows number of the open work orders who's requested due date is in the selected duration. Click the widget to view the list of all open work orders. You can export the list of all the open work orders.

- **Status of all work orders due in the selected duration** shows the status of all work orders. Click the widget to view the list of all work orders. You can export the status list of all the work orders.

## Configuring Healthcare CMMS

Set up the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application to complete activities associated with a medical device.

> **Note:** The Healthcare CMMS application is based on the Healthcare CMMS data model that extends the Healthcare and Life Sciences data model and stores all medical device cases in the Medical device case [sn_hcls_cmms_case] table.

The following table provides an overview of the configuration tasks required for Healthcare CMMS.

## Healthcare CMMS configuration tasks

| Task | Description |
|------|-------------|
| Install Healthcare CMMS. | Install the Healthcare CMMS application to work on medical devices. |
| Assign roles for Healthcare CMMS users. | Assign roles to control access to features, capabilities, and data in the Healthcare CMMS application. |
| Use the Healthcare CMMS data model. | Use Healthcare CMMS tables to store the data related to medical devices. |
| Complete the configuration tasks for medical device in-service requests. | Configure Healthcare CMMS to set the medical devices in-service. |
| Complete the configuration tasks for the review of AEM requests. | Configure Healthcare CMMS for reviewing AEM requests for medical device models. |
| Configure the process for reporting medical device issues. | Configure Healthcare CMMS for reporting medical device issues from a service portal of your healthcare organization. |

| Task | Description |
|------|-------------|
| Configuring Healthcare CMMS to set medical devices out-of-service | Configure Healthcare CMMS to set the medical devices out-of-service. |

# Install Healthcare CMMS

You can install the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application (sn_hcls_cmms) if you have the admin role. The application includes demo data and installs related ServiceNow® Store applications and plugins if they are not already installed.

**Before you begin**

- Ensure that the application and all of its associated ServiceNow Store applications have valid ServiceNow entitlements. For more information, see Get entitlement for a ServiceNow product or application.

Role required: admin

**About this task**

The following items are installed with Healthcare CMMS:

- Roles

- Tables

- Plugins

- ServiceNow Store applications

- Business rules

For more information, see Components installed with Healthcare Computerized Maintenance Management System.

**Procedure**

1. Navigate to **All > System Applications > All Available Applications > All**.

2. Find the Healthcare Computerized Maintenance Management System application (sn_hcls_cmms) using the filter criteria and search bar.

   You can search for the application by its name or ID. If you cannot find the application, you might have to request it from the ServiceNow Store.

   Visit the ServiceNow Store website to view all the available apps and for information about submitting requests to the store. For cumulative release notes information for all released apps, see the ServiceNow Store version history release notes.

3. If you're prompted, follow the links to the ServiceNow Store to get any additional entitlements for dependencies.

4. Select **Install**.

# Assign roles for Healthcare CMMS users

Assign roles to control access to features, capabilities, and data in the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application.

**Before you begin**

Set the application scope to Healthcare Computerized Maintenance Management System using the application picker. For more information, see Application picker.

Role required: sn_hcls_cmms.clinical_engineering_admin or admin

**About this task**

Users with the roles listed in the following table can use the Healthcare CMMS application.

## Roles installed in Healthcare CMMS

| Role | Description | Contains roles |
|------|-------------|----------------|
| sn_hcls_cmms.case_creator | Grants access to create medical device cases. | sn_hcls_cmms.case_viewer |
| sn_hcls_cmms.case_viewer | Grants access to view medical device cases. | None |
| sn_hcls_cmms.clinical_engineer | Creates and updates maintenance plans for medical device models and install base items for medical devices. Works on medical device cases. | • sn_customerservice_agent<br>• sn_hcls_cmms.sm_agent |
| sn_hcls_cmms.clinical_engineering_admin | Administers who can access the Healthcare CMMS application. | • sn_hcls_cmms.clinical_engineer<br>• sn_risk_advanced.ara_admin<br>• wm_admin |
| sn_hcls_cmms.clinical_engineering_technician | Works at medical device locations and records details in the work order | • sn_hcls.device_data_viewer |

| Role | Description | Contains roles |
|---|---|---|
| | form, including parts used and incidental expenses. | <ul><li>sn_hcls.foundation_data_viewer</li><li>sn_hcls_cmms.case_viewer</li><li>wm_agent</li></ul> |
| sn_hcls_cmms.clinical_engineer_manager | Creates and updates maintenance plans for medical devices, medical device models, and install base items for medical devices. Works on medical device cases. | <ul><li>sn_customerservice_manager</li><li>sn_hels_cmms.sm_agent</li><li>wm_manager</li><li>wm_dispatcher</li><li>pa_admin</li></ul> |
| sn_hcls_cmms.device_service_org_contributor | Creates medical device cases for a organization as a clinician. | <ul><li>sn_customerservice.service_organization_contributor</li><li>sn_hcls.device_data_viewer</li><li>sn_hcls.foundation_data_viewer</li></ul> |

| Role | Description | Contains roles |
|---|---|---|
| | **Note:** To create medical device cases for a organization (business location), a user with the sn_hcls_cmms.device_service_org_contributor role must be the member of the organization and assigned the **Location Contributor** responsibility type. The mapping of a organization and its members is included in the Organization Member [sn_csm_service_organization_member] table. | • sn_hcls_cmms.case_creator |
| sn_hcls_cmms.sm_agent | Accesses and views all device data and medical device cases. | • model_manager<br><br>• sn_fsm_planned_wm.planned_work_admin<br><br>• sn_hcls.device_data_writer |

| Role | Description | Contains roles |
|---|---|---|
| | | • sn_hcls.foundation_data_writer<br>• sn_hcls_cmms.case_creator<br>• sn_risk_advanced.ara_assessor<br>• sn_risk_advanced.ara_creator |

**Procedure**

Assign roles to users and groups using the user administration feature in Now Platform.

- To assign a role to a user, see Assign a role to a user.

- To assign a role to a group, see Assign a role to a group.

# Healthcare CMMS data model

The Healthcare Computerized Maintenance Management System (Healthcare CMMS) application provides a data model for use in the Healthcare CMMS workflow.

**Overview**

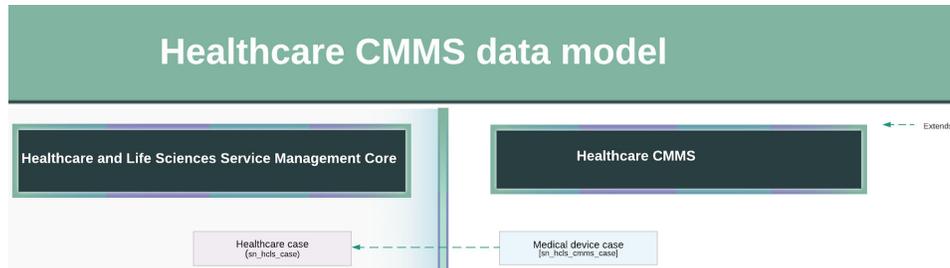The Healthcare CMMS data model extends the Healthcare and Life Sciences data model.

The Healthcare CMMS data model uses the Medical device case [sn_hcls_cmms_case] table to store medical device cases for medical device in-service, reviewing the AEM request for a medical device

model, resolving a medical device issue, or medical device out-of-service.

You can install the Healthcare CMMS application to use its data model.

The following diagram shows the tables and their relationships that comprise the Healthcare CMMS data model.

Healthcare CMMS data model



The Healthcare CMMS data model uses the following tables included within the Healthcare CMMS application to store data.

### Healthcare CMMS application tables

| Table | Description |
|---|---|
| Medical device case [sn_hcls_cmms_case] | Stores the medical device cases. |

The Healthcare CMMS data model uses the following tables included within the Healthcare and Life Sciences Service Management Core application.

**Healthcare and Life Sciences Service Management Core application tables**

| Table | Description |
| --- | --- |
| Healthcare case [sn_hcls_case] | Supports the healthcare case types. |

For more information, see Healthcare and Life Sciences data model.

# Configuring Healthcare CMMS to set medical devices in-service

You must perform the configurations tasks to enable clinical engineers to complete the medical devices in-service requests.

**Medical device in-service requests configuration tasks**

| Task | Description |
| --- | --- |
| Configure a playbook to set medical devices in-service. | Configure a playbook to provide step-by-step guidance to set the medical devices in-service. |
| Configure the risk assessment questionnaire to set medical devices in-service. | Configure the risk assessment questionnaire for all the medical devices in-service within a medical device model by using a risk assessment methodology. |

| Task | Description |
| --- | --- |
| Configure the process for creating medical devices included in medical device in-service requests. | Use scripted extension points to decide what medical devices are created after an medical device in-service request for a medical device is submitted. |
| Configure the process for submitting requests to set medical devices in-service | Configure the process for submitting requests to set the medical devices in-service from the service portal of your healthcare organization. |

You can configure a playbook to provide step-by-step guidance to set the medical devices in-service in the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application.

As a user with the admin role, you can create a playbook by using Process Automation Designer, a Now Platform® feature. For more information, see Process Automation Designer.

The playbooks in the Healthcare CMMS application use the CSM Configurable Workspace playbook experience. By default, the Healthcare CMMS application includes the playbook for medical devices in-service to assist clinical engineers to resolve medical device in-service cases.

Configure a playbook by navigating to **All > Process Automation > Process Automation Designer**. You can either select an existing process definition or create a new process definition for the playbook associated with the medical device cases. For more information, see Process definitions.

**Note:** When configuring a process definition for the playbook associated with medical device in-service cases, ensure that the application scope is set to Healthcare Computerized Maintenance Management System using the application picker. For more information, see Application picker.

You can configure the risk assessment questionnaire to set all the medical devices in-service within a medical device model by using a risk assessment methodology.

As a user with the admin role, you can configure a risk assessment methodology for assessing risks related to the patient safety identification and compliance risk management when setting a medical device in-service for your healthcare organization.

By default, the Medical device risk assessment methodology is available for assessing medical device risks. You can use the default risk assessment methodology to add a questionnaire for assessing device risks or create another risk assessment methodology. For more information, see Configure a risk assessment methodology.

Note the following points when configuring a risk assessment methodology for assessing medical device risks:

- The risk assess type must be **Residual risk**.

- The assessment context is configured for the Medical device install base item [sn_hcls_medical_device_install_base_item] table.

- The residual assessment is generated when you save a risk assessment methodology. You must then create and map the published manual factors or questionnaires to the generated residual assessment and publish the assessment and methodology.

  **Note:** The character limitations for manual factors are:

  - 100 chars for Manual factor (question)

  - 50 chars for Manual factor choice (answer)

- The residual risk rating is mapped to the **Risk score** column (field) of the Medical device install base item [sn_hcls_medical_device_install_base_item] table by default. Therefore,

the risk score is displayed on the playbook to set medical devices in-service. You can modify the residual risk rating to another column (field) of the Medical device install base item [sn_hcls_medical_device_install_base_item] table.

- The UI action for risk assessment can be configured for the Now Platform view. For more information, see the Best practices to perform Any Object Assessment [KB0826429] article in the Now Support Knowledge Base.

Use scripted extension points to decide what medical devices are created after an in-service request for a medical device is submitted.

## Before you begin

Set the application scope to Healthcare Computerized Maintenance Management System using the application picker. For more information, see Application picker.

Role required: admin

## About this task

The Healthcare Computerized Maintenance Management System (Healthcare CMMS) application installs the sn_hcls_cmms.CreateDevicesForOnboardCase script, the CreateDevicesForOnboardCase script include, and the CreateDevicesForOnboardCase extension point.

The sn_hcls_cmms.CreateDevicesForOnboardCase script is preconfigured to set the medical devices in-service request form available by default within the application. Before creating a medical device in-service request case, the application runs the sn_hcls_cmms.CreateDevicesForOnboardCase script and uses the following submission workflow logic to create records and avoid duplication of records:

1. Create a medical device if the serial number of the device doesn't exist.

2. Create a medical device model if one doesn't exist or associate the medical device with an existing model as included in the medical device in-service request form.

3. Create work orders for the initial inspection of medical devices.

4. Set the state of the devices to **Installed** when the medical device in-service case is set to **Closed complete**.

Using extension points makes it easier to integrate customizations without actually altering the base code. You can extend standard base functionality using customized scripts. For more information, see Using extension points to extend application functionality.

An implementation is available in the base system for scripted extension points. You can modify the data and add additional fields.

### Procedure

1. Navigate to **All > System Extension Points > Scripted Extension Points**.

2. In the **API Name** column, search for and click **sn_hcls_cmms.CreateDevicesForOnboardCase**.

3. On the Extension Point form, select a script include to use the CreateDevicesForOnboardCase extension point by creating and registering a custom script include.

   You can refer to the CreateDevicesForOnboardCase script include provided with the application to create a custom script include to set the medical device in-service cases. For more information, see Registering custom script includes against the scripted extension points.

4. Customize the submission workflow logic of your medical device in-service request form by adding the createDevices,checkForDuplicateDevices, checkForDuplicateDevicesForNewModel, associateToExistingModel, createModel, createInspectionWorkOrders, installDevices, and cancelDevices methods to your script include that implements the CreateDevicesForOnboardCase extension point. You can create multiple implementations for an extension point and provide an order number for each implementation. The implementation that has the lowest order number is executed first.

## Medical device in-service customizations

| Customization | Implementation |
|---|---|
| Create a medical device only when the selected model contains a device with a unique serial number. | Include the createDevices method of the CreateDevicesForOnboardCase extension point in the implementation. |
| When selecting an existing medical device model, check whether the serial numbers of the medical devices included in the medical device in-service request exist. | Include the checkForDuplicateDevices method of the CreateDevicesForOnboardCase extension point in the implementation. |
| When adding a new medical device model, check whether the serial numbers of the medical devices included in the medical device in-service request exist. | Include the checkForDuplicateDevicesForNewModel method of the CreateDevicesForOnboardCase extension point in the implementation. |
| Check whether any existing medical device model of the same name, serial number, and manufacturer included in the medical device in-service request exists and associate the model of the medical device with the medical device in-service case. | Include the associateToExistingModel method of the CreateDevicesForOnboardCase extension point in the implementation. |

| Customization | Implementation |
|---|---|
| Create a medical device model with the name, serial number, manufacturer, and description as included in the medical device in-service request and associate the medical device model with the medical device in-service case. | Include the createModel method of the CreateDevicesForOnboardCase extension point in the implementation. |
| Create work orders for the initial inspection of each medical device included in the medical device in-service case. | Include the createInspectionWorkOrders method of the CreateDevicesForOnboardCase extension point in the implementation. |
| Set the status of medical devices that are associated with the medical device in-service case to **Installed**. | Include the installDevices method of the CreateDevicesForOnboardCase extension point in the implementation. |
| Set the status of medical devices that are associated with the medical device in-service case to **Canceled**. | Include the cancelDevices method of the CreateDevicesForOnboardCase extension point in the implementation. |

5. On the Extension Point form, click **Update**.

You can configure the process for submitting requests for the medical devices in-service from the service portal of your healthcare organization.

By default, the users with the sn_hcls_cmms.device_service_org_contributor role can create medical device in-service cases from a Customer Service Portal page of a healthcare organization. The Medical device in-service option is available from the Case menu on the Customer Service Portal page to create medical device in-service cases.

As a user with the admin role, you can use the Medical device in-service record producer, which is available by default, or create your own record producer to enable creating medical device in-service cases from a service portal. You can include the record producer for creating medical device in-service cases in a service catalog and display the service catalog as a module on the service portal page. You can then enable users with the sn_hcls_cmms.device_service_org_contributor role to use the module for creating medical device in-service cases.

To learn about record producers and service catalogs, see Record Producer and Set up a service catalog.

## Configuring Healthcare CMMS for the review of AEM requests

You must perform the configurations tasks to enable clinical engineers to complete the review requests for alternative equipment maintenance (AEM) associated with medical devices.

**Medical device AEM review requests configuration tasks**

| Task | Description |
| --- | --- |
| Configure a playbook for reviewing AEM requests of medical devices. | Configure a playbook to provide step-by-step guidance for resolving medical device cases |

| Task | Description |
|------|-------------|
|  | for reviewing AEM request for a medical device model. |
| Configuring the process for submitting AEM requests. | Configure the process for submitting AEM requests from the service portal of your healthcare organization. |
| Configure the approval process of AEM for a medical device model. | Define the conditions for approval of changes to the current maintenance plan for a medical device model associated with a medical device AEM case. |

Configure a playbook to provide step-by-step guidance for resolving medical device cases for reviewing alternative equipment maintenance (AEM) requests in the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application.

As a user with the admin role, you can create a playbook by using Process Automation Designer, a Now Platform® feature. For more information, see Process Automation Designer.

The playbooks in the Healthcare CMMS application use the CSM Configurable Workspace playbook experience. By default, the Healthcare CMMS application includes the playbook for reviewing AEM requests for medical device models and its devices to assist clinical engineers to resolve medical device AEM cases.

Configure a playbook by navigating to **All > Process Automation > Process Automation Designer**. You can either select an existing process definition or create a new process definition for the playbook associated with the medical device cases. For more information, see Process definitions.

**Note:** When configuring a process definition for the playbook associated with medical device AEM cases, ensure that the application scope is set to Healthcare Computerized Maintenance Management System using the application picker. For more information, see Application picker.

You can configure the process for requesting the review of alternative equipment maintenance (AEM) for the medical device models from a service portal of your healthcare organization.

By default, the users with the sn_hcls_cmms.device_service_org_contributor role can create medical device AEM cases from a Customer Service Portal page of a healthcare organization. The Request AEM review option is available from the Case menu on the Customer Service Portal page to create medical device AEM cases.

As a user with the admin role, you can use the Request AEM review record producer, available by default, or create your own record producer to enable creating medical device AEM cases from a service portal. You can include the record producer for creating medical device AEM cases in a service catalog and display the service catalog as a module on the service portal page. You can then enable users with the sn_hcls_cmms.device_service_org_contributor role to use the module for creating medical device AEM cases.

To learn about record producers and service catalogs, see Record Producer and Set up a service catalog.

You can define the conditions for approval of changes to the current maintenance plan for a medical device model associated with a medical device AEM case.

As a user with the admin role, you can configure decision tables to initiate the approval workflow for an alternative equipment maintenance (AEM) request when the decision condition is satisfied for a medical device AEM case. For example, as part of the maintenance plan scheduling process, you can define conditions to send the AEM request for approval to specific users for reviewing and approving the plan when the state of the medical device AEM is set to **Review in progress**.

You configure decision tables for medical device AEM cases by navigating to **All > System Definition > Decision Tables**. When configuring

decision tables for medical device AEM cases, associate the column in the Medical device case [sn_hcls_cmms_case] table as a decision input. By default, the Medical device AEM approval decision table is available within the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application to configure the decision conditions for the approval of AEM requests.

The **Trigger medical device AEM approval** business rule runs when a clinical engineer selects **Request approval** during the review of an AEM request in the playbook. The business rule triggers the approval workflow, if available, for the AEM review. When the decision conditions are satisfied, the approval request is sent to all the approvers. If no approval workflow is available, the AEM request is automatically approved.

> **Note:** When configuring the decision approval flow using the Flow Designer feature, make sure that the **Approval** field configured for the Medical device case [sn_hcls_cmms_case] table is set to **Approval** for the last level of the approval action only. For more information, see Ask for Approval step.

To learn more, see Decision Tables .

## Configuring Healthcare CMMS to set medical devices out-of-service

You must perform the configurations tasks to enable clinical engineers to complete the out-of-service requests for the medical devices.

**Medical device out-of-service requests configuration tasks**

| Task | Description |
|------|-------------|
| Configuring playbooks to set medical devices out-of-service. | Configure a playbook to provide step-by-step guidance to setting medical devices out-of-service. |

| Task | Description |
|------|-------------|
| Configuring the process for submitting medical device out-of-service requests for medical devices. | Configure the process for submitting requests to set medical devices out-of-service from the service portal of your healthcare organization. |

You can configure a playbook to provide step-by-step guidance to set medical devices out-of-service in the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application.

As a user with the admin role, you can create a playbook by using Process Automation Designer, a Now Platform® feature. For more information, see Process Automation Designer.

The playbooks in the Healthcare CMMS application use the CSM Configurable Workspace playbook experience. By default, the Healthcare CMMS application includes the playbook for medical device out-of-service to assist clinical engineers to resolve medical device out-of-service cases.

Configure a playbook by navigating to **All > Process Automation > Process Automation Designer**. You can either select an existing process definition or create a new process definition for the playbook associated with the medical device cases. For more information, see Process definitions.

> **Note:** When configuring a process definition for the playbook associated with medical device out-of-service cases, ensure that the application scope is set to Healthcare Computerized Maintenance Management System using the application picker. For more information, see Application picker.

You can configure the process for submitting requests to set medical devices out-of-service from the service portal of your healthcare organization.

By default, the users with the sn_hcls_cmms.device_service_org_contributor role can create medical device out-of-service cases from a Customer Service Portal page of a healthcare organization. The Medical device out-of-service option is available from the Case menu on the Customer Service Portal page to create medical device out-of-service cases.

As a user with the admin role, you can use the Medical device out-of-service record producer, which is available by default, or create your own record producer to enable creating medical device out-of-service cases from a service portal. You can include the record producer for creating medical device out-of-service cases in a service catalog and display the service catalog as a module on the service portal page. You can then enable users with the sn_hcls_cmms.device_service_org_contributor role to use the module for creating medical device out-of-service cases.

To learn about record producers and service catalogs, see Record Producer and Set up a service catalog.

## Configuring the process for reporting medical device issues

You can configure the process for reporting medical device issues from a service portal of your healthcare organization.

By default, the users with the sn_hcls_cmms.device_service_org_contributor role can create medical device issue cases from a Customer Service Portal page of a healthcare organization. The Report medical device issue option is available from the Case menu on the Customer Service Portal page to create medical device issue cases.

As a user with the admin role or contributor, you can use the Report medical device issue record producer, which is available by default, or create your own record producer to enable creating medical device issue cases from a service portal. You can include the record producer for creating medical device issue cases in a service catalog and display the service catalog as a module on the service portal page. You can then enable users with the sn_hcls_cmms.device_service_org_contributor role to use the module for creating medical device issue cases.

To learn about record producers and service catalogs, see Record Producer and Set up a service catalog.

# Managing medical device cases in Workspace

You can use Workspace to manage medical device cases.

As a clinical engineer, manage the following types of medical device cases from Workspace:

### Medical device in-service case

When a request for medical device in-service is submitted from a service portal, a medical device in-service case is created. As a clinical engineer, you can use Workspace to view medical device in-service cases and complete the in-service request for a medical device.

### Medical device AEM case

When a request for reviewing an alternative equipment maintenance (AEM) request for a medical device model is submitted from a service portal, a medical device AEM case is created. As a clinical engineer, you can use Workspace to view medical device AEM cases and complete the AEM review request for a medical device model.

### Medical device issue case

When a medical device issue is reported from a service portal, a medical device issue case is created. As a clinical engineer, you can use Workspace to view medical device issue cases and perform corrective maintenance of medical devices to resolve medical device issues.

### Medical device out-of-service case

When a request for setting a medical device to out-of-service is submitted from a service portal, a medical device out-of-service case is created. As a clinical engineer, you can use Workspace to view medical device out-of-service cases and complete the out-of-service request for a medical device.

# Viewing the landing page for medical device cases in Workspace

As a clinical engineer, you can use the landing page of the Workspace to quickly scan and access medical device cases.

The landing page of the Workspace provides an overview of the medical device cases assigned to you and your groups.

Medical device related cases Workspace landing page
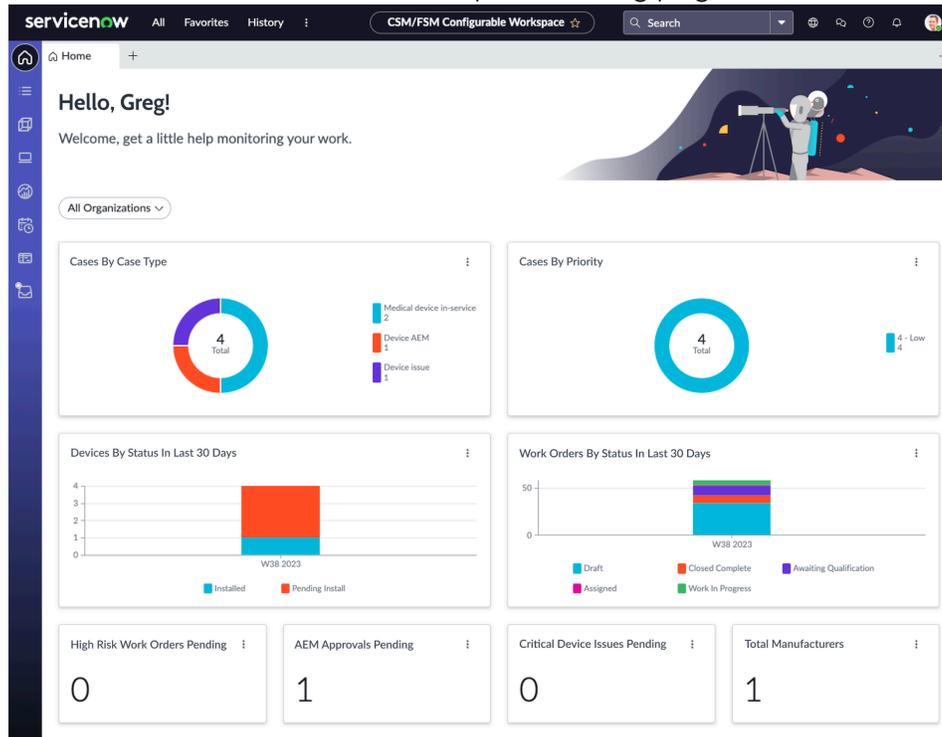


## Role required

Clinical engineers must have the sn_hcls_cmms.clinical_engineer role to use the Workspace. For more information, see Assign roles for Healthcare CMMS users.

**Accessing and using the landing page**

To access the Healthcare CMMS, navigate to **All > Healthcare CMMS > Workspace**.

The Workspace landing page includes components that display medical device case information, plus visualizations that further breakdown the component data. Each visualization is connected to a data source. For example, the New Cases component includes visualizations for new cases.

As a clinical engineer, you can perform the following tasks from the landing page of the Workspace:

• View the case information presented in each component.

• Drill into each component to see the case list behind the single score.

• Navigate to individual records from the case lists.

**Viewing data**

The Workspace landing page for medical device cases is same as the landing page of Workspace for any healthcare-related cases and displays healthcare case-related data including cases created for medical devices in-service, reviewing AEM requests for medical device models, addressing medical device issues, and medical devices out-of-service. For more information, see Viewing the landing page for healthcare-related cases in Workspace.

> **Note:** Your administrator can customize the landing page of the Workspace and change the data that appears on it.

As a clinical engineer or clinical engineer manager, you can access the Medical Device Model Management overview to view medical device model management information and take action as needed.

Medical Device Model Management view
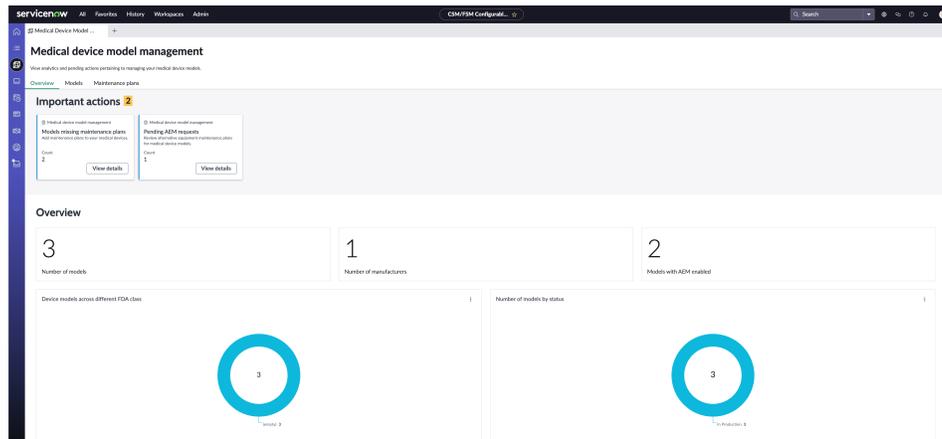
## Overview

The Medical Device Model Management overview in Workspace provides a central space to view medical device model data and manage pending actions pertaining to your medical device models.

The **Overview** tab provides the following **Important Actions**, which allow you to take the following actions directly from this space:

- Add maintenance plans to your medical devices.

- Review alternative equipment maintenance plans for medical device models.

It also displays the following visuals:

- Number of models

- Number of manufacturers

- Models missing maintenance plans

- Device models across different FDA class

## Models

The **Models** tab displays a list of all medical models. You can click directly into a medical model on this list to manage medical model information.

When you click into a model, you can view an Overview page of the model displaying a summary, total number of open cases, total number of cases, active devices, total devices, activity, and all maintenance plans associated with this device.
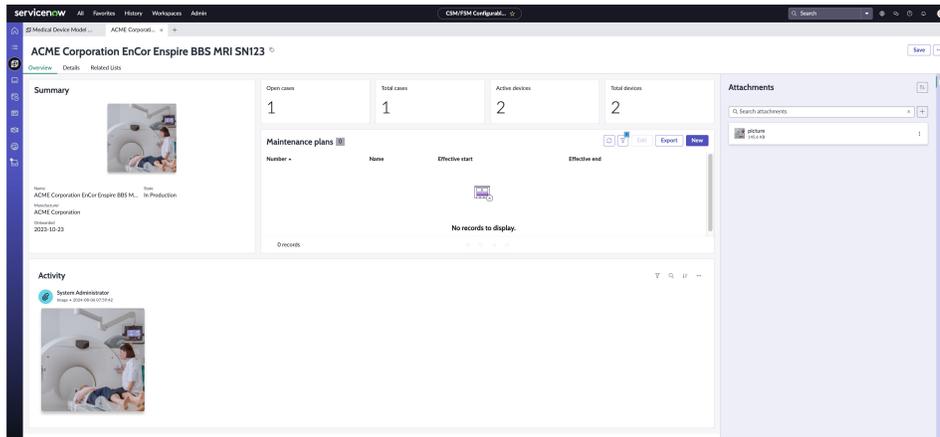


## Maintenance plans

The **Maintenance plans** tab displays a list of current maintenance plans. You can click directly into a maintenance plan on this list to manage work plans.

## Role required

Users must have either the sn_hcls_cmms.clinical_engineer or sn_hcls_cmms.clinical_engineer_manager role to use the Workspace. For more information, see Assign roles for Healthcare CMMS users.

As a clinical engineer or clinical engineer manager, you can access the Medical Device Management overview to view medical device information and take action as needed.

Medical Device Management view
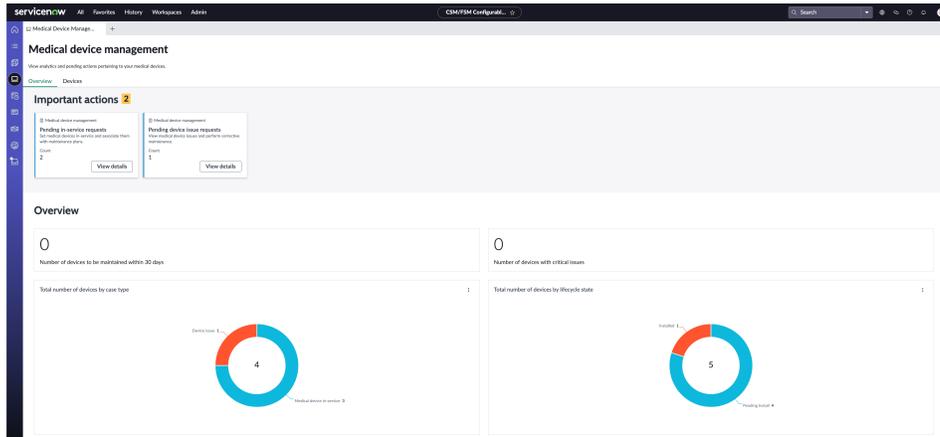
## Overview

The Medical Device Management overview in Workspace provides a central space to view medical device data and manage pending actions pertaining to your medical devices.

The **Overview** tab provides the following **Important Actions**, which allow you to take the following actions directly from this space:

- Set medical devices in-service and associate them with maintenance plans.

- View medical device issues and perform corrective maintenance.

- Set medical devices out-of-service and create disposal work orders.

It also displays the following visuals:

- Number of devices to be maintained within 30 days

- Number of devices with critical issues

- Total number of devices by case type

- Total number of devices by lifecycle state

## Devices

The **Devices** tab displays a list of all your medical devices. You can click directly into a device on this list to manage device information.

When you click into a device, you can view an Overview page of the device displaying a summary, total number of open cases, total work orders, additional information, activity, and all open and closed work orders associated with this device.



### Role required

Users must have either the sn_hcls_cmms.clinical_engineer or sn_hcls_cmms.clinical_engineer_manager role to use the Workspace. For more information, see Assign roles for Healthcare CMMS users.

# Managing medical device in-service cases in Workspace

You can use Workspace to manage medical device in-service cases.

When a request to set a medical device in-service is submitted from a service portal, a medical device in-service case is created for a clinical engineer to work on. As a clinical engineer with the sn_hcls_cmms.clinical_engineer role, you can review the medical device in-service request, create the medical device and medical device model, or associate the medical device with an existing model to complete the medical device in-service request.

## Medical device in-service cases managing tasks

| Task | Description |
|------|-------------|
| Access the Workspace. | Use the home page in Workspace to quickly scan and access medical device in-service cases. |
| View a medical device in-service case in Workspace. | View a medical device in-service case in Workspace to complete the activities for a medical device in-service. |
| Understand the life cycle of a medical device in-service case. | Understand the various states of a medical device in-service case. |
| Work on a medical device in-service case. | Use the playbook available with the Healthcare CMMS application to manage medical device in-service cases. |
| Assess the medical device risks. | Assess risks and complete your assessments when a medical device is set to in-service and submit the assessment to relevant approvers. |

View a medical device in-service case in Workspace to complete the process of medical devices in-service.

**Before you begin**

You must have access to medical device in-service cases.

Role required: sn_hcls_cmms.clinical_engineer

**Procedure**

1. Open your Workspace by navigating to **All > Healthcare CMMS > Workspace**.

2. View medical device in-service cases assigned to you or your groups.

   - View medical device in-service cases assigned to you by navigating to **Lists > Medical device in-service case > My cases**.

   - View all open medical device in-service cases assigned to you by navigating to **Lists > Medical device in-service case > My open cases**.

   - View medical device in-service cases that belong to your groups but have not been assigned to anyone by navigating to **Lists > Medical device in-service case > My groups unassigned cases**.

   - View all medical device in-service cases by navigating to **Lists > Medical device in-service case > All**.

3. Click the link to the case you want to view.

**Result**

The selected medical device in-service case page opens in another tab within Workspace displaying the following components:

**Playbook**

The actionable activities used to complete the medical device in-service workflow.

**Details**

Details of the medical device in-service case.

**Work Orders**

Work orders for the initial inspection of medical devices.

**Affected Install Base Items**

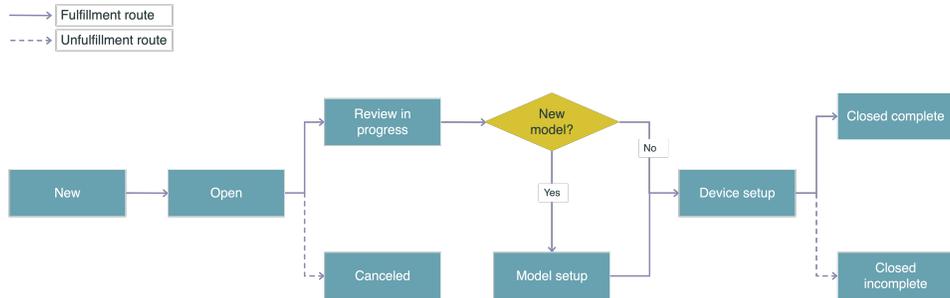Medical devices configured as install base items.

A medical device in-service case is a type of medical device case based on a healthcare case that instead is based on a customer service case. Depending on the configurations made by your administrator and your role, additional tabs similar to a customer service case might appear for the medical device in-service case.

For more information on tabs available for a customer service case, see Customer service case form.

Medical device in-service cases within the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application can be in one of the several states as it progresses through the fulfillment cycle.

The following diagram shows the different states of a medical device in-service case.

Medical device in-service case life cycle

## Medical device in-service case states

| State | Description |
| --- | --- |
| New | Medical device in-service case is created but not yet assigned to anyone. |
| Open | Medical device in-service case is assigned. |
| Review in progress | Medical device in-service case is being reviewed by a clinical engineer. |
| Model setup | New medical device model is being created and a maintenance plan is being created for the model.<br><br>**Note:** The **Model setup** state occurs when a new medical device model is requested for the medical device. |
| Device setup | Medical device is being added to the application, risks are being assessed for the medical device, and the work order for the initial inspection of the medical device is being completed. |

| State | Description |
|---|---|
| Closed complete | Medical device in-service case was closed with the resolution code and notes, and the in-service process of the medical device was completed. |
| Closed incomplete | Medical device in-service case was marked as incomplete because the medical device was not in-service. |
| Canceled | Medical device in-service case was canceled because it was an invalid request. |

**Note:**   You can't edit a medical device in-service case when the state of the case is set to **Closed complete**, **Closed incomplete**, or **Canceled**.

Use the playbook available with the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application to manage medical device in-service cases and complete requests to set the medical devices in-service.

The playbook experience provides fulfillers with visibility into cross-business workflows and the actionable activities used to complete these workflows. When the playbook experience is activated with Workspace in Healthcare CMMS, the **Playbook** tab appears for a medical device in-service case. For more information on how to interact with a playbook, see Interact with Playbook.

As a clinical engineer with the sn_hcls_cmms.clinical_engineer role, you can use the Healthcare CMMS playbook to complete all medical device

in-service activities for a medical device. You can access the **Playbook** tab on your Workspace when a medical device in-service case is assigned to you. The Healthcare CMMS workflow populates the case data for all launched activities on the **Playbook** tab. You can select a stage in the playbook to complete the activities associated with the stage.

By default, the following stages are available to you as a clinical engineer with the sn_hcls_cmms.clinical_engineer role on the **Playbook** tab of the Workspace.

**Healthcare CMMS playbook stages for medical device in-service cases**

| Stage | Description |
| --- | --- |
| Medical device model intake | Review the medical device model associated with the medical device. |
| Maintenance plan intake | Capture or review the benefits investigation preference opted by the patient and manage the pre-authorization activities. |
| Medical device intake | Review the medical devices to be in-service and the work orders created for the initial inspection of those devices. |
| Maintenance plans | Review the maintenance plans selected for the medical devices to be in-service. |

| Stage | Description |
|---|---|
| Review and confirm | Close the medical device in-service request. |

> **Note:** The state of the medical device in-service case progresses as you complete a stage in the playbook. For more information, see Life cycle of a medical device in-service case.

## Reviewing the medical device model

In the **Medical device model intake** stage of the playbook, complete the **Review model** activity by reviewing the name, number, and manufacturer details including the short description entered for a medical device model included within an medical device in-service request and modify the details, if needed.

> **Note:** If there's no new model required for the medical device, the **Medical device model intake** stage doesn't appear in the playbook.

## Managing maintenance plans

In the **Maintenance plan intake** stage of the playbook, complete the **Manage maintenance plans** activity by managing maintenance plans and schedules for the medical device. You can create a new maintenance plan by clicking **Add plan** and creating a work plan from the Work Plan page.

In the new Work Plan page, the required conditions and set conditions are automatically populated.

> **Note:** If there's no new model required for the medical device, the **Maintenance plan intake** stage doesn't appear in the playbook.

## Completing the medical device intake activities

In the **Medical device intake** stage of the playbook, complete the following activities:

1. **Review devices**: Review the medical devices included within a medical device model and edit their details, if needed. You also evaluate the risks for a medical device. When the risk assessment is completed, the risk score is displayed for the device. For more information, see Assess the risks when setting a medical device in-service.

   After the medical device is reviewed, a work order for the initial inspection for each device included in the model is created automatically.

2. **Review work orders**: Mark this step as complete when a technician completes the work order associated with the device. You can also view all work orders associated with the medical device model or create another work order by clicking **View all**.

### Reviewing maintenance plans

In the **Maintenance plans** stage of the playbook, review the schedule of the maintenance plan for the device that is automatically populated from the medical device model.

### Closing the medical device in-service request

In the **Review and confirm** stage of the playbook, complete the **Close case** activity by waiting until all other activities are completed, and then selecting a resolution code and adding any resolution notes.

> **Note:**  After the state of the medical device in-service case is set to **Closed complete**, the state of the medical device is automatically set to **Installed**.

Assess the risks related to the patient safety identification and compliance risk management when setting a medical device in-service and submit the assessment to relevant approvers.

### Before you begin

- Your administrator must have configured a risk assessment methodology to set a medical device in-service within a medical device model.

- You must have access to medical device in-service cases.

Role required: sn_hcls_cmms.clinical_engineer or sn_hcls_cmms.sm_agent

**About this task**

You can also perform risk assessment in the Risk Workspace. For more information, see Perform advanced risk assessment in the Risk Workspace.

> **Note:** The risk assessment methodology to set a medical device in-service is the residual risk assessment type.

**Procedure**

1. Open your Workspace by navigating to **All > Healthcare CMMS > Workspace**.

2. View medical device in-service cases assigned to you by navigating to **Lists > Medical device in-service case > My cases**.

3. Click the link to the case associated with the medical device for which you want to assess risks.

4. On the Record details pane in the Contextual side panel, click **Assess risk**.

5. On the dialog box that is displayed, click the link to the risk assessment.

6. On the HCLS risk assessment tab, click **Start assessment**.

7. On the Risk assessment tab, complete the risk questionnaire to set the medical device in-service.

8. Click **Review and submit**.

9. To finish your assessment and send it for approval, click **Save**, and then click **Request Approval**.

10. In the Add comments dialog box, enter your comments in the text box, and then click **Submit**.

# Managing medical device AEM cases in Workspace

You can use Workspace to manage medical device AEM cases.

When an AEM request for reviewing the current maintenance plan for a medical device model is submitted from a service portal, a medical device AEM case is created for a clinical engineer to work on. As a clinical engineer with the sn_hcls_cmms.clinical_engineer role, you can review the AEM request, remove any current maintenance plan, and change the schedule of the maintenance plan to complete the AEM request.

**Medical device AEM cases managing tasks**

| Task | Description |
|---|---|
| Access the Workspace. | Use the home page in Workspace to quickly scan and access medical device AEM cases. |
| View a medical device AEM case in Workspace. | View a medical device AEM case in Workspace to complete review of an AEM request associated with a medical device model. |
| Understand the life cycle of a medical device AEM case. | Understand the various states of a medical device AEM case. |
| Work on a medical device in-service case. | Use the playbook available with the Healthcare CMMS application to manage medical device AEM cases. |

View a medical device AEM case in Workspace to complete the review of an alternative equipment maintenance (AEM) request for a medical device model.

**Before you begin**

You must have access to medical device AEM cases.

Role required: sn_hcls_cmms.clinical_engineer

**Procedure**

1. Open your Workspace by navigating to **All > Healthcare CMMS > Workspace**.

2. View medical device AEM cases assigned to you or your groups.

   - View medical device AEM cases assigned to you by navigating to **Lists > Medical device AEM case > My cases**.

   - View all open medical device AEM cases assigned to you by navigating to **Lists > Medical device AEM case > My open cases**.

   - View medical device AEM cases that belong to your groups but have not been assigned to anyone by navigating to **Lists > Medical device AEM case > My groups unassigned cases**.

   - View all medical device AEM cases by navigating to **Lists > Medical device AEM case > All**.

3. Click the link to the case you want to view.

**Result**

The selected medical device AEM case page opens in another tab within Workspace displaying the following components:

**Playbook**

The actionable activities used to complete the AEM recommendations.

**Details**

Details of the medical device AEM case.

**Approvers**

Approvers of the AEM requests.

A medical device AEM case is a type of medical device case based on a healthcare case that instead is based on a customer service case. Depending on the configurations made by your administrator and your role, additional tabs similar to a customer service case might appear for the medical device AEM case.

For more information on tabs available for a customer service case, see Customer service case form.

Medical device AEM cases within the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application can be in one of the several states as it progresses through the fulfillment cycle.

The following diagram shows the different states of a medical device AEM case.

Medical device AEM case life cycle
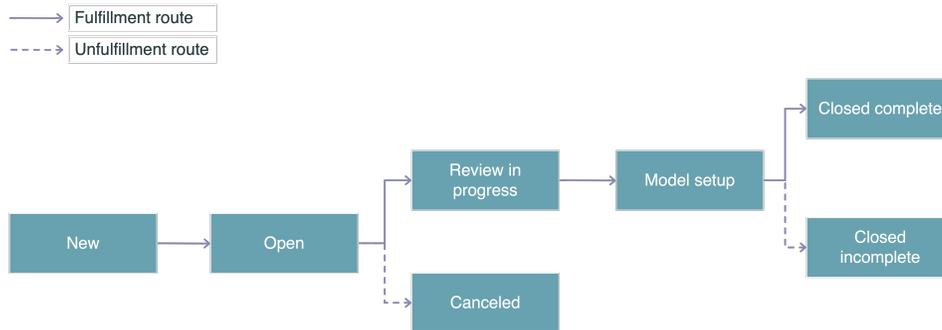


**Medical device AEM case states**

| State | Description |
|---|---|
| New | Medical device AEM case is created but not yet assigned to anyone. |

| State | Description |
| --- | --- |
| Open | Medical device AEM case is assigned. |
| Review in progress | Medical device AEM case is being reviewed by a clinical engineer. |
| Model setup | New maintenance plan is being created for the model based on the AEM request. |
| Closed complete | Medical device AEM case was closed with the resolution code and notes, and the review process of the AEM request was completed. |
| Closed incomplete | Medical device AEM case was marked as incomplete because the AEM request was not approved. |
| Canceled | Medical device AEM case was canceled because the AEM request was invalid. |

**Note:** You can't edit a medical device AEM case when the state of the case is set to **Closed complete**, **Closed incomplete**, or **Canceled**.

Use the playbook available with the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application to manage medical device AEM cases and complete the review of an alternative equipment maintenance (AEM) request for a medical device model.

The playbook experience provides fulfillers with visibility into cross-business workflows and the actionable activities used to complete these workflows. When the playbook experience is activated with Workspace in Healthcare CMMS, the **Playbook** tab appears for a medical device AEM case. For more information on how to interact with a playbook, see Interact with Playbook.

As a clinical engineer with the sn_hcls_cmms.clinical_engineer role, you can use the Healthcare CMMS playbook to complete all activities for reviewing an AEM request for a medical device model. You can access the **Playbook** tab on your Workspace when a medical device AEM case is assigned to you. The Healthcare CMMS workflow populates the case data for all launched activities on the **Playbook** tab. You can select a stage in the playbook to complete the activities associated with the stage.

By default, the following stages are available to you as a clinical engineer with the sn_hcls_cmms.clinical_engineer role on the **Playbook** tab of the Workspace.

**Healthcare CMMS playbook stages for medical device AEM cases**

| Stage | Description |
| --- | --- |
| Intake | Review the medical device AEM case details, make changes to the existing maintenance plan, |

| Stage | Description |
|---|---|
| | and submit the AEM request for approval. |
| Manage AEM plan | Remove the medical device model from the current maintenance plan. |
| Review and confirm | Close the review request. |

**Note:** The state of the medical device AEM case progresses as you complete a stage in the playbook. For more information, see Life cycle of a medical device in-service case.

## Completing the initial review activities

In the **Intake** stage of the playbook, complete the following activities:

1. **Review AEM request**: Review the details entered for an AEM request for a medical device model and update the details, if needed.

2. **Submit AEM request for approval**: Review any additional information required for the medical device model and submit the AEM request for approvals. If an approval workflow for AEM request is configured by your administrator, the AEM request is submitted for approvals.

## Managing AEM requests

In the **Manage AEM plan** stage of the playbook, complete the **Remove from maintenance plans** activity by removing the medical device model from the current maintenance plan, if available.

You can create a new maintenance plan by clicking **Add plan** and creating a work plan from the Work Plan page.

In the new Work Plan page, the required conditions and set conditions are automatically populated.

**Closing the AEM request**

In the **Review and confirm** stage of the playbook, complete the **Close case** activity by waiting until all other activities are completed, and then selecting a resolution code and adding any resolution notes.

# Managing medical device issue cases in Workspace

You can use Workspace to manage medical device issue cases.

When a medical device issue is reported from a service portal, a medical device issue case is created on the associated ServiceNow instance.

As a clinical engineer with the sn_hcls_cmms.clinical_engineer role, you can manage the corrective maintenance of medical devices by resolving the medical device issue cases. To learn more, see Work on a medical device issue case.

Work on the medical device issue case for the corrective maintenance of medical devices.

**Before you begin**

Role required: sn_hcls_cmms.clinical_engineer

**Procedure**

1. Use the home page in Workspace to quickly scan and access medical device issue cases.

2. View a medical device issue case in Workspace.

3. (Optional) Create a work order to specify the nature of the work required to resolve the medical device issue.

4. Close the medical device issue case.

View a medical device issue case in Workspace to resolve the issues reported for medical devices.

**Before you begin**

You must have access to medical device issue cases.

Role required: sn_hcls_cmms.clinical_engineer

**Procedure**

1. Open your Workspace by navigating to **All > Healthcare CMMS > Workspace**.

2. View medical device issue cases assigned to you or your groups.

   - View medical device issue cases assigned to you by navigating to **Lists > Medical device issue case > My cases**.

   - View all open medical device issue cases assigned to you by navigating to **Lists > Medical device issue case > My open cases**.

   - View medical device issue cases that belong to your groups but have not been assigned to anyone by navigating to **Lists > Medical device issue case > My groups unassigned cases**.

   - View all medical device issue cases by navigating to **Lists > Medical device issue case > All**.

3. Click the link to the case you want to view.

**Result**

The selected medical device issue case page opens in another tab within Workspace displaying the following components:

**Details**

Details of the medical device AEM case.

**Work Orders**

Work orders for clinical engineer technicians to perform the necessary actions and resolve the issues with medical devices.

**Affected Install Base Items**

Medical devices configured as install base items.

A medical device issue case is a type of medical device case based on a healthcare case that instead is based on a customer service case. Depending on the configurations made by your administrator and your role, additional tabs similar to a customer service case might appear for the medical device issue case.

For more information on tabs available for a customer service case, see Customer service case form.

Medical device issue cases within the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application can be in one of the several states as it progresses through the fulfillment cycle.

The following diagram shows the different states of a medical device issue case.

Medical device issue case life cycle
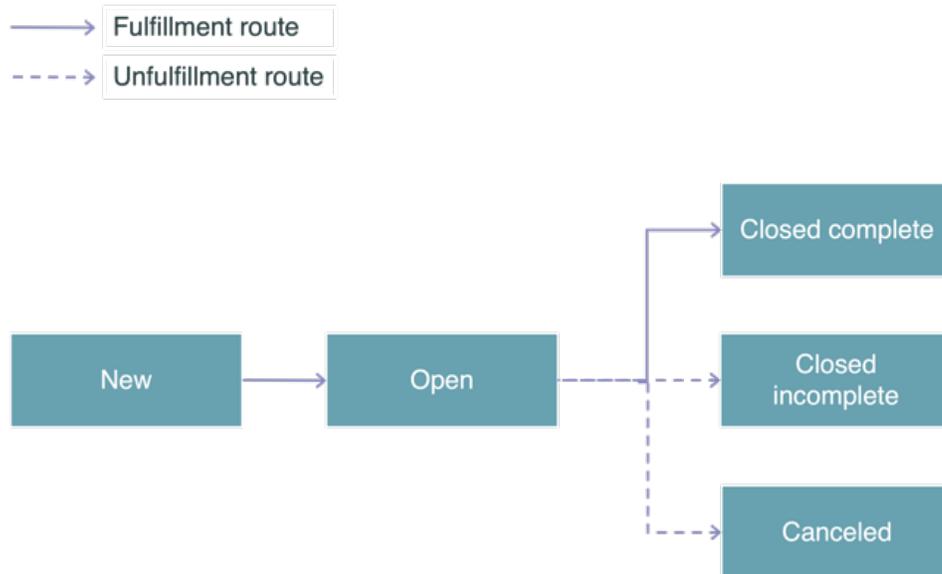
## Medical device issue case states

| State | Description |
|---|---|
| New | Medical device issue case is created but not yet assigned to anyone. |
| Open | Medical device issue case is assigned. |
| Closed complete | Medical device issue case was closed with the resolution code and notes, and the issue with the medical device as resolved. |
| Closed incomplete | Medical device issue case was marked as incomplete because the issue was not resolved. |
| Canceled | Medical device issue case was canceled because it was an invalid request. |

**Note:** You can't edit a medical device issue case when the state of the case is set to **Closed complete**, **Closed incomplete**, or **Canceled**.

Create a work order to specify the nature of the work required to resolve a medical device issue case.

**Before you begin**

Role required: sn_hcls_cmms.clinical_engineer

**Procedure**

1. Open your Workspace by navigating to **All > Healthcare CMMS > Workspace**.

2. Go to **Lists > Medical device issue case > All**.

3. Click the link to the case for which you want to a create work order.

4. On the Details tab, click **Create Work Order**.

5. On the Work Order tab, describe the work requested in the **Short description** and **Description** fields.

6. Fill in the other details such as location where work is required, template for creating the work order, and skills required to complete the work order.

7. In the **Requested due by** field of the Scheduling section, click the 🗓 and select enter a date and time by when the work order must be completed.

8. Click **Ready For Qualification**.

**Result**

A work order task is automatically created. The short description, description, and location of the work order are copied into the task.

**What to do next**

A user with the sn_hcls_cmms.clinical_engineering_technician role can then complete the work order task. For more information, see Managing work orders and work order tasks.

After the work order task is completed, you can close the case. For more information, see Close a medical device issue case.

Enter the resolution details of the medical device issue case and close a medical device issue case.

**Before you begin**

Role required: sn_hcls_cmms.clinical_engineer

**About this task**

You can close a case, when the associated work order is completed and the medical device issue is resolved.

**Procedure**

1. Open your Workspace by navigating to **All > Healthcare CMMS > Workspace**.

2. Go to **Lists > Medical device issue case > All**.

3. Click the link to the case that you want to close.

4. In the Closure Information section of the Details tab, indicate the resolution state of the case by selecting a resolution code in the **Resolution Code** list.

5. Enter any information related to the closure in the **Resolution notes** field.

6. Click **Close case**.

# Managing medical device out-of-service cases in Workspace

You can use Workspace to manage medical device out-of-service cases.

When a request for setting a medical device to out-of-service is submitted from a service portal, a medical device out-of-service case is created for a clinical engineer to work on. As a clinical engineer with the sn_hcls_cmms.clinical_engineer role, you can manage the setting of a medical device to out-of-service. To learn more, see Healthcare Computerized Maintenance Management System - Medical devices out-of-service scenario.

## Medical device out-of-service cases managing tasks

| Task | Description |
|------|-------------|
| Access the Workspace. | Use the home page in Workspace to quickly scan and access medical device out-of-service cases. |
| View a medical device out-of-service case in Workspace. | View a medical device out-of-service case in Workspace to complete out-of-service activities for a medical device. |
| Understand the life cycle of a medical device out-of-service case. | Understand the various states of a medical device out-of-service case. |
| Work on a medical device out-of-service case. | Use the playbook available with the Healthcare CMMS application to manage medical device out-of-service cases. |

View a medical device out-of-service case in Workspace to complete the process of setting medical devices to out-of-service.

### Before you begin

You must have access to medical device out-of-service cases.

Role required: sn_hcls_cmms.clinical_engineer

**Procedure**

1. Open your Workspace by navigating to **All > Healthcare CMMS > Workspace**.

2. View medical device out-of-service cases assigned to you or your groups.

   - View medical device out-of-service cases assigned to you by navigating to **Lists > Medical device out-of-service case > My cases**.

   - View all open medical device out-of-service cases assigned to you by navigating to **Lists > Medical device out-of-service case > My open cases**.

   - View medical device out-of-service cases that belong to your groups but have not been assigned to anyone by navigating to **Lists > Medical device out-of-service case > My groups unassigned cases**.

   - View all medical device out-of-service cases by navigating to **Lists > Medical device out-of-service case > All**.

3. Click the link to the case you want to view.

**Result**

The selected medical device out-of-service case page opens in another tab within Workspace displaying the following components:

**Playbook**

The actionable activities used to complete the medical device out-of-service workflow.

**Details**

Details of the medical device out-of-service case.

**Work Orders**

Work orders for the initial inspection of medical devices.

**Affected Install Base Items**

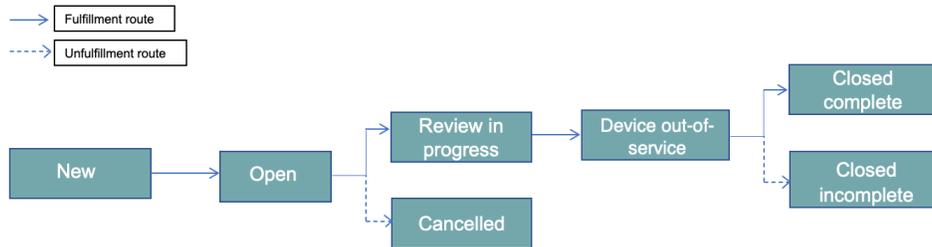Medical devices configured as install base items.

A medical device out-of-service case is a type of medical device case based on a healthcare case that instead is based on a customer service case. Depending on the configurations made by your administrator and your role, additional tabs similar to a customer service case might appear for the medical device out-of-service case.

For more information on tabs available for a customer service case, see Customer service case form.

Medical device out-of-service cases within the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application can be in one of the several states as it progresses through the fulfillment cycle.

The following diagram shows the different states of a medical device out-of-service case.
Medical device out-of-service case life cycle



**Medical device out of service case states**

| State | Description |
| --- | --- |
| New | Medical device out-of-service case is created but not yet assigned to anyone. |

| State | Description |
|---|---|
| Open | Medical device out-of-service case is assigned. |
| Review in progress | Medical device out-of-service case is being reviewed by a clinical engineer. |
| Medical device out-of-service | Cancel all work orders for the medical device and sets the medical device to out-of-service. |
| Closed complete | Medical device out-of-service case was closed with the resolution code and notes, and the out-of-service process of the medical device was completed. |
| Closed incomplete | Medical device out-of-service case was marked as incomplete because the medical device was not set to out-of-service. |
| Canceled | Medical device out-of-service case was canceled because it was an invalid request. |

Use the playbook available with the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application to

manage medical device out-of-service cases and complete requests for setting the medical devices to out-of-service.

The playbook experience provides fulfillers with visibility into cross-business workflows and the actionable activities used to complete these workflows. When the playbook experience is activated with Workspace in Healthcare CMMS, the **Playbook** tab appears for a medical device out-of-service case. For more information on how to interact with a playbook, see Interact with Playbook.

As a clinical engineer with the sn_hcls_cmms.clinical_engineer role, you can use the Healthcare CMMS playbook to complete all out-of-service activities for a medical device. You can access the **Playbook** tab on your Workspace when a medical device out-of-service case is assigned to you. The Healthcare CMMS workflow populates the case data for all launched activities on the **Playbook** tab. You can select a stage in the playbook to complete the activities associated with the stage.

By default, the following stages are available to you as a clinical engineer with the sn_hcls_cmms.clinical_engineer role on the **Playbook** tab of the Workspace.

> **Note:** The state of the medical device out-of-service case progresses as you complete a stage in the playbook. For more information, see Life cycle of a medical device out-of-service case.

## Completing the initial review activities

In the **Medical device out-of-service** stage of the playbook, complete the following activities:

1. **Review medical device details**: Review the medical device details for a medical device model and update the details, if needed.

   After the medical device is reviewed and approved, a work order for the initial inspection for each device included in the model is created automatically.

2. **Cancel work orders**: Review and cancel the work orders for each medical devices.

3. **Set medical device out-of-service**: Set the medical device to out-of-service.

4. **Disposal work order**: Create a disposal work order for the out-of-service device.

**Closing the out-of-service request**

In the **Review and confirm** stage of the playbook, complete the **Close case** activity by waiting until all other activities are completed, and then selecting a resolution code and adding any resolution notes.

# Creating requests for medical devices

Create requests for setting medical devices in-services, reviewing alternative equipment maintenance (AEM), resolving medical device issues, or setting medical devices out-of-service from a service portal.

Your administrator can configure the option for creating medical device cases based on the service request type for a medical device. The submission form for each request type is configured by your administrator.

As a user with the sn_hcls_cmms.device_service_org_contributor role, use the following options available by default from the Case menu on the Customer Service Portal page to place service requests for your medical devices:

**Medical device in-service**

Request to set a medical device in-service and associate the device with a maintenance plan.

If an existing asset is in inventory, you can select it to set in-service under **New devices**. Otherwise, you can manually add a new asset by adding a row and entering values into the following fields: **Serial number**, **Cost center**, **Critical alarms**, and **Comments**.

Once the case has been submitted, medical device install base items are created for each asset.

**Request AEM review**

Request to review the current maintenance plan changes associated with a medical device model.

**Report medical device issue**

Report medical device issues and request to perform corrective maintenance for resolving them.

**Medical device out-of-service**

Request to set a medical device out-of-service.

After a request is submitted, a corresponding medical device case is created on the associated ServiceNow instance. A clinical engineer then works on the case. To learn more, see Managing medical device cases in Workspace.

# Healthcare CMMS reference

Reference topics provide additional information about Healthcare Computerized Maintenance Management System (Healthcare CMMS) components.

- Components installed with Healthcare Computerized Maintenance Management System

  Several types of components are installed with installation of the Healthcare Computerized Maintenance Management System (Healthcare CMMS) application, including tables, user roles, plugins, ServiceNow Store applications, and business rules.

- Domain separation and Healthcare Computerized Maintenance Management System

  Domain separation is supported for Healthcare Computerized Maintenance Management System (Healthcare CMMS). Domain separation enables you to separate data, processes, and administrative tasks into logical groupings called domains. You can control several aspects of this separation, including which users can see and access data.

## Components installed with Healthcare Computerized Maintenance Management System

Several types of components are installed with installation of the Healthcare Computerized Maintenance Management System

(Healthcare CMMS) application, including tables, user roles, plugins, ServiceNow Store applications, and business rules.

**Note:** The Application Files table lists the components that are installed with this application. For instructions on how to access this table, see Find components installed with an application.

Demo data is available for this feature.

**Roles installed**

### Roles installed in Healthcare CMMS

| Role | Description | Contains roles |
|------|-------------|----------------|
| sn_hcls_cmms.case_creator | Grants access to create medical device cases. | sn_hcls_cmms.case_viewer |
| sn_hcls_cmms.case_viewer | Grants access to view medical device cases. | None |
| sn_hcls_cmms.clinical_engineer | Creates and updates maintenance plans for medical device models and install base items for medical devices. Works on medical device cases. | • sn_customerservice_agent<br>• sn_hcls_cmms.sm_agent |
| sn_hcls_cmms.clinical_engineering_admin | Administers who can access the Healthcare CMMS application. | • sn_hcls_cmms.clinical_engineer |

| Role | Description | Contains roles |
|---|---|---|
| | | • sn_risk_advanced.ar a_admin<br><br>• wm_admin |
| sn_hcls_cmms.clinical_ engineering_technicia n | Works at medical device locations and records details in the work order form, including parts used and incidental expenses. | • sn_hcls.device_data _viewer<br><br>• sn_hcls.foundation_d ata_viewer<br><br>• sn_hcls_cmms.case_ viewer<br><br>• wm_agent |
| sn_hcls_cmms.clinical_ engineer_manager | Creates and updates maintenance plans for medical devices, medical device models, and install base items for medical devices. Works on medical device cases. | • sn_customerservice_ manager<br><br>• sn_hels_cmms.sm_ag ent<br><br>• wm_manager<br><br>• wm_dispatcher<br><br>• pa_admin |

| Role | Description | Contains roles |
|---|---|---|
| sn_hcls_cmms.device_service_org_contributor | Creates medical device cases for a organization as a clinician.<br><br>**Note:** To create medical device cases for a organization (business location), a user with the sn_hcls_cmms.device_service_org_contributor role must be the member of the organization and assigned the **Location Contributor** responsibility type. The mapping of a organization and its members is included in the Organization Member [sn_csm_service_organization_member] table. | • sn_customerservice.service_organization_contributor<br><br>• sn_hcls.device_data_viewer<br><br>• sn_hcls.foundation_data_viewer<br><br>• sn_hcls_cmms.case_creator |
| sn_hcls_cmms.sm_agent | Accesses and views all device data and medical device cases. | • model_manager<br><br>• sn_fsm_planned_wm |

| Role | Description | Contains roles |
|---|---|---|
| | | .planned_work_admin<br><br>• sn_hcls.device_data_writer<br><br>• sn_hcls.foundation_data_writer<br><br>• sn_hcls_cmms.case_creator<br><br>• sn_risk_advanced.ara_assessor<br><br>• sn_risk_advanced.ara_creator |

**Tables installed**

### Tables installed in Healthcare CMMS application

| Table | Description |
|---|---|
| Medical device case [sn_hcls_cmms_case] | Stores the medical device cases. |

## Plugins installed

### Plugins installed in Healthcare CMMS

| Plugin | Description |
|---|---|
| Customer Service with Field Service Management (com.snc.csm_fsm_integration) | Enables the integration between the Healthcare CMMS and Field Service Management applications and makes available account, contact, partner, partner contact, and consumer information from Customer Service in Field Service Management. |

## ServiceNow Store applications installed

### ServiceNow Store applications installed in Healthcare CMMS

| Application | Description |
|---|---|
| Healthcare and Life Sciences Service Management Core (sn_hcls) | Provides a data model and critical digital health capabilities including patient 360-degree view, consent management, and digital documentation to better address healthcare services. |
| GRC: Advanced Risk (com.sn_risk_advanced) | Enables decision makers to avoid any negative impact on business operations by identifying, assessing, responding to, and continuously monitoring risks. |

| Application | Description |
|---|---|
| GRC: Common Workspace Elements (sn_grc_workspace) | Enables the use of the Advanced Risk feature in the CSM Configurable Workspace. |
| Performance Analytics Content Pack for Healthcare CDM (sn_hcls) | Install the Performance Analytics Content Pack for Healthcare CDM separately from ServiceNow Store.<br><br>Provides Performance Analytics capabilities and dashboard for healthcare clinical device management applications. The dashboard provides visibility to the clinical engineering team to refer to all the metrics of the CMMS application. |

**Business rules installed**

### Business rules installed in Healthcare CMMS

| Business rule | Table | Rule criteria | Description |
|---|---|---|---|
| Create inspect WOs | Medical device case [sn_hcls_cmms_case] | Async update | Creates work orders for the initial inspection of a medical device when the state of the associated medical device in-service case |

| Business rule | Table | Rule criteria | Description |
|---|---|---|---|
| | | | is set to **Device setup**. |
| Mark devices as installed | Medical device case [sn_hcls_cmms_case] | Async update | Sets the install state of a medical device to **Installed** or **Canceled** when the state of the associated medical device in-service case is set to **Closed complete** or **Canceled**, respectively. |
| Setup medical device model | Medical device case [sn_hcls_cmms_case] | Before update | Creates a medical device model when none exists for a medical device and the state of the associated medical device in-service case is set to **Model setup**. |
| Trigger medical device AEM approval | Medical device case [sn_hcls_cmms_case] | Async update | Triggers the approval workflow, if available, for an alternative |

| Business rule | Table | Rule criteria | Description |
|---|---|---|---|
| | | | equipment maintenance (AEM) request. |

# Domain separation and Healthcare CMMS

Domain separation is supported for Healthcare Computerized Maintenance Management System (Healthcare CMMS). Domain separation enables you to separate data, processes, and administrative tasks into logical groupings called domains. You can control several aspects of this separation, including which users can see and access data.

### Support level: Basic

- Business logic: Ensure that data goes into the proper domain for the application's service provider use cases.

- The application supports domain separation at run time. The domain separation includes separation from the user interface, cache keys, reporting, rollups, and aggregations.

- The owner of the instance must set up the application to function across multiple tenants.

Sample use case: When a service provider (SP) uses chat to respond to a tenant-customer's message, the customer must be able to see the SP's response.

For more information on support levels, see Application support for domain separation.

### Overview

The Healthcare CMMS application includes domain separation for transactional data like medical device cases including AEM, in-service, device issue cases, and out-of-service devices.

### How domain separation works in Healthcare CMMS

For customers using the Healthcare CMMS application to raise medical device requests, the domain is set from the logged-in user's session, in the case created, and within the associated healthcare data.

### Use cases

When healthcare providers have their healthcare data separated by domains, the healthcare requests and corresponding fulfillment tasks are associated with the respective customer domains.