

# EHR Integrations

## Technical Overview



## Overview

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Bi-directional integration with Epic, Cerner and other EHRs enables syncing of curated, actionable data between the systems. In addition, workflows can also be triggered directly by the EHR. Integration with alternative EHRs that support meaningful use requirements by CMS can generally deploy within a few weeks.

Integration is supported through the following methods:

EHR	Request Response	Events (Updates)
<b>Elation</b>	REST API	Webhook
<b>Cerner</b>	FHIR	SFTP/HL7-ADT
<b>Epic</b>	HL7/FHIR	HL7-ADT
<b>Athena</b>	FHIR	Poll
<b>MicroMD</b>	XML API	N/A

## Integration Use Cases

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Data integration requirements vary considerably based on the care management workflow Carium supports.

For example, a transitional care workflow might simply consist of an EHR trigger launching a patient synchronization event. A summary report pushes back to the EHR at the end of the transitional care period. Ongoing CCM, RPM or disease management use cases require ongoing synchronization of patient demographics, biometric data and scheduling information.

High-level examples of use cases currently in deployment include but aren't limited to:

- ▶ Medication Engagement - Medication Reminders, Tracking and Adherence Reports
- ▶ Appointment - Appointment Reminders
- ▶ Referral Workflow
- ▶ Lab Order Workflow
- ▶ RPM
- ▶ CCM

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## Supported Object Models

To support the widest variety of use cases, Carium supports integration of the following objects, assuming EHR support. Bi-directional (pull & push) support is case specific and outlined below:

<b>Patients</b>	Pull & Push	Sync patient list and demographics between EHR and Carium. Create onboarding flow utilizing tags (or encounters) to establish patients in Carium with different modalities
<b>Provider/ Practitioner</b>	Pull	Sync provider information between EHR and Carium
<b>Appointments</b>	Pull & Push	Sync appointments from EHR to Carium and engage patients with reminders, etc in Carium. Also supports creating an appointment generated from Carium into EHR (beta version with API support)
<b>Medications</b>	Pull & Push	Sync medications in EHR to Carium and optionally engage with reminders. Push a summary of medication adherence data as a report into the EHR
<b>Lab Orders &amp; Lab Results</b>	Pull	Sync lab orders and results from EHR into Carium
<b>Encounters</b>	Pull & Push	Sync encounters from EHR to Carium to trigger workflows or push data against a given encounter back into the EHR
<b>Observations</b>	Pull & Push	Push selected patient-reported biometric data from Carium into EHR
<b>Referrals</b>	Pull	Sync referrals from EHR into Carium and create a patient workflow
<b>Visit Notes</b>	Pull & Push	Create notes directly within Carium and sync into EHR
<b>Reports</b>	Pull & Push	Upload reports from Carium into EHR, such as summaries, message logs, etc.
<b>Office Message/Tasks (beta version)</b>	Push	Map Carium alerts/worklists into Office Message (beta version with corresponding API support in the EHR)

## Integration Workstream

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Integrations can be as simple as a timed data synchronization between Carium and the EHR but are more frequently designed to support complex workflows with various triggers, event-driven notifications and bi-directional data synchronization driven by the completion or initiation of processes. A typical integration work plan includes the following elements:

**Determine Integration Requirements** – Identify EHR integration required to support target use cases (see objects above).

**Define Deployment Process** – Document deployment process, testing & sign off requirements for environments (e.g. staging, test, production)

**Establish Connectivity** – Identify and configure access to target environments. Includes white listing IPs, Firewall configurations, setup of asynchronous file share (SFTP), exchanging API keys, etc.

**Define & Deploy Trigger Events** – Develop workflow specific trigger events in EHR or Carium and test initiation points.

**Define, Deploy & Test Data Synchronization** – Develop workflow specific data synchronization events.

