InterSystems Healthcare Action Engine

FHIR-Enabled, EHR-Agnostic Alert and Notification Workflow Orchestration Engine

Developers of digital health solutions face significant challenges when trying to integrate clinical or business logic into healthcare workflows. The task is complicated by the presence of hundreds of different Electronic Health Records (EHRs) and other clinical and business systems. Recent healthcare interoperability standards such as HL7® FHIR®, SMART, and CDS Hooks™ are helpful, but they still require developers to keep up with these evolving standards and manage differences across vendors and sites - all while managing their core code and steering development of their product.

The **InterSystems Healthcare Action Engine**™, an alert and notification workflow orchestration engine, simplifies these challenges by enabling you to:

- Create and manage business logic using a no-code editor specifically designed for compatibility with the FHIR standard.

- Leverage HL7's CDS Hooks specification to embed your logic seamlessly within health information systems.

- Launch your application within clinical workflows and provide timely information to users via CDS Hooks "cards."

- Continuously monitor application usage to adapt and optimize your solution.

InterSystems®
Creative data technology

With InterSystems Healthcare Action Engine on top of InterSystems IRIS for Health, a comprehensive digital health development platform, developers can streamline development, reduce integration complexity, and quickly add healthcare interoperability, data management, analytics, and AI features into their applications. InterSystems IRIS for Health provides many of the capabilities required to implement data intensive, real-time, digital health applications in a single platform, eliminating the need to implement, integrate, and maintain dozens of different technologies. Developers have fewer pieces to learn and integrate, and can build on a robust, highly scalable, and fully interoperable platform. This accelerates the time to value, and also enhances the overall efficiency and effectiveness of digital health solutions, allowing developers to focus on innovation and delivering high-value features to their customers.

Real-time, FHIR®-enabled, No-code Application

The InterSystems Healthcare Action Engine is a FHIR-enabled, EHR-agnostic alert and notification workflow orchestration engine designed to deliver real-time actionable insights. It provides a single application to create and manage knowledge artifacts, triggering events, alert messages, and system configuration settings. It combines a no-code healthcare-specific rule builder with end-to-end intelligent alert management to easily generate meaningful patient-centric insights for a variety of applications.
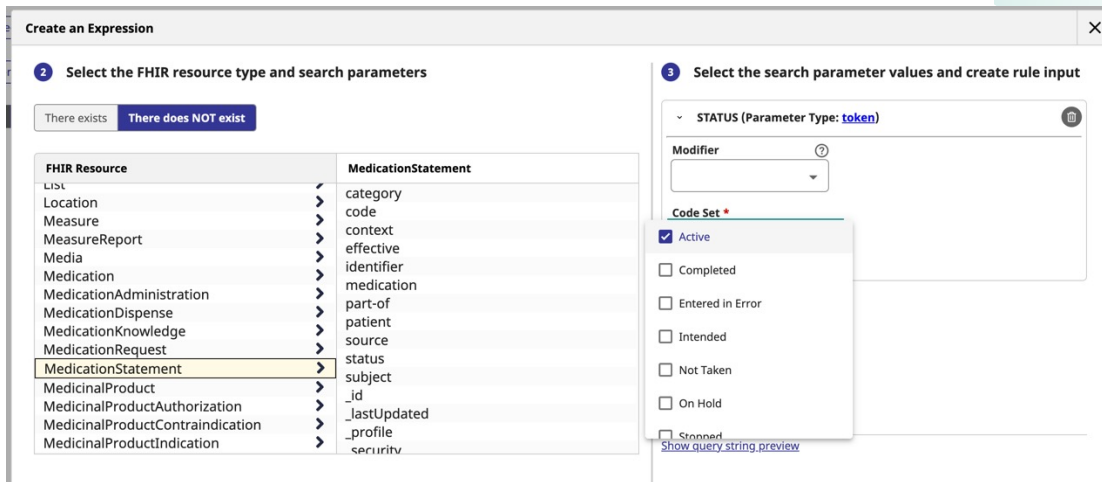
Trigger and Execute Rules Against Any FHIR Data Source

Traditionally tied to specific EHRs, CDS logic integration across multiple platforms is challenging. By using FHIR and the Healthcare Action Engine, decision support logic can be normalized across environments. The Healthcare Action Engine is a FHIR-first solution, and authors can easily create expressions from any data that are represented by a FHIR resource and logically link them into complex conditions to handle even the most intricate scenarios. If the data is not in FHIR format, InterSystems IRIS for Health includes a full FHIR stack including transformations from other healthcare protocols.

For more information about FHIR, please visit: **www.intersystems.com/fhir/**

Quickly Author CDS Logic Without the Need of a Software Engineer

Creating clinical guidance is a time-consuming and complex process that often requires software engineers, who are costly and in short supply, to translate the guidance into computer code. However, with the Healthcare Action Engine's no-code, FHIR-based rule editor, clinical analysts can quickly create and update Clinical Decision Support (CDS) logic themselves. This speeds up the integration of new guidance into clinical workflows and allows for rapid adaptation to changing requirements. Additionally, if decision support logic is already defined in another system, the Action Engine can incorporate those rules into the alert orchestration workflow, handling triggering, rule execution, message generation, and notification support.

All FHIR resources listed; value sets pre-populated

CDS Hooks™: Empowering Developers for Rapid App Development

InterSystems Healthcare Action Engine leverages CDS Hooks, a powerful interoperability standard published by Health Level Seven® (HL7®) International to integrate real-time, actionable Clinical Decision Support (CDS) into EHRs and other clinical systems.

CDS Hooks provide a standardized way for EHRs to communicate with external applications, allowing for rapid development, agile iteration, and continuous improvement. Developers can create robust, context-aware solutions that enhance clinical workflows without the need for extensive custom integration. This significantly reduces the time and complexity associated with developing and deploying new features and updates.
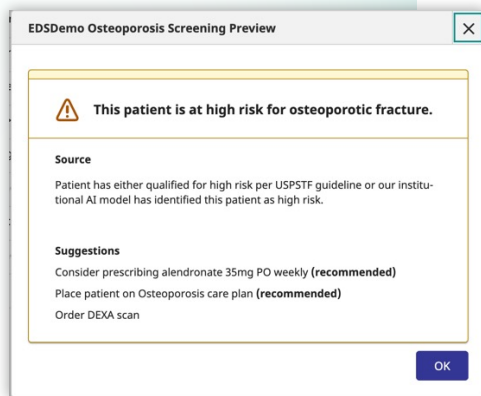
By leveraging CDS Hooks, the Healthcare Action Engine frees developers to focus on what they do best: creating innovative applications that deliver real value to healthcare providers and patients. Whether it's integrating patient-specific recommendations, streamlining clinical workflows, or enhancing decision-making processes, the Healthcare Action Engine empowers developers to build and deploy impactful solutions swiftly and effectively.

Integrate Alerts into the Clinician's EHR Workflow

To enable timely interventions, such as providing CDS guidance, identifying patients for clinical trials, or intervening for those with specific conditions, digital health solutions need a streamlined process to define events or activities that necessitate intervention, execute the relevant logic, and seamlessly connect with the EHR.

Integrate Patient-Specific Decision Support into the Clinician's EHR Workflow

Displaying real-time, actionable data within a clinician's native environment can be very difficult, especially when the data or logic comes from outside the EHR (like claims and national/HIE data and systems). The Healthcare Action Engine can operate with any of that data, allowing the resulting messages to be seamlessly delivered to any system that supports CDS Hooks, including EHRs and dedicated applications. This ensures versatile and effective clinical decision support across various platforms.

Card displayed to Clinician

Measure and Improve Rule Performance

Clinician alert fatigue is a huge issue, and it's important to reduce it by modifying or deleting low performing rules to ensure that only high-quality, effective information is being displayed to the right person at the right time. The Healthcare Action Engine tracks alert performance and clinician responses, allowing for the refinement or removal of ineffective rules. This can also be fed into analytics, workflows, and your own application logic using facilities in InterSystems IRIS for Health.

Everything You Need to Get Up and Running

The Healthcare Action Engine is available as an add-on module for a new or existing instance of the InterSystems IRIS for Health data platform (version 2024.1 or later needed).

As part of InterSystems IRIS for Health platform, the Healthcare Action Engine includes:

1. An application to create and manage knowledge artifacts, triggering events, alert messages, and system configuration settings.

2. A Rule Editor, a no-code authoring tool based on the FHIR standard.

3. A fully implemented CDS Hooks Service Endpoint. This provides an EHR agnostic endpoint to host and access knowledge artifacts.

4. Demo data and sample rules to demonstrate sample use cases such as CMS quality measures, high-risk diabetes patient monitoring, medication prior auth logic, missing diagnoses, and outdated vaccine status.

5. A github repository with sample Postman scripts to help guides users through the deployment of a demo Healthcare Action Engine environment and the execution of a series of increasingly advanced CDS Hooks interactions.

Customer Support

Like all solutions from InterSystems, we provide you more than technology - you also get our acclaimed customer support. InterSystems is geared to support software shops with ISV-friendly release cycles and support policies, developer-focused tools and resources, and top-notch technical support staff.

Our best people are on the front lines 24/7. Every one of our customers receives immediate help from someone who genuinely cares , without having to go through multiple layers of people or processes. To learn more about our 24/7 support resources visit **InterSystems Support**