



Streamline Healthcare AI Initiatives with InterSystems

Get Your Data AI-Ready and Simplify Development and Deployment

The Challenge: Getting Your Data AI-Ready

Healthcare providers are looking to artificial intelligence (AI) and machine learning (ML) to improve care, streamline processes and workflows, and increase insights. AI has the potential to transform healthcare, but data management and integration challenges can impede AI development efforts, stall healthcare AI projects, and hamper AI investment returns.

Many AI-powered applications leverage data from diverse sources such as EHR systems, smart medical devices, hospital scheduling and billing systems, and public health databases. Data redundancies, inconsistencies, and gaps can impact data quality and integrity, and impair healthcare AI initiatives. Whether you are building an AI-driven healthcare application or deploying one, data that is accessible, reliable, and accurate is critical to success.

Data is Fundamental for Healthcare AI Initiatives

Data is the basis for all AI. The old axiom garbage in, garbage out certainly applies to AI. If the data fed into an AI system is incomplete, inaccurate, or inconsistent, the conclusions drawn from its analysis will certainly be flawed. Unfortunately, in the real world, data is dirty and fragmented, and does not come in tidy, normalized, structured tables. In many cases, data scientists must preprocess, clean, and label data to prepare it for analysis or machine learning.

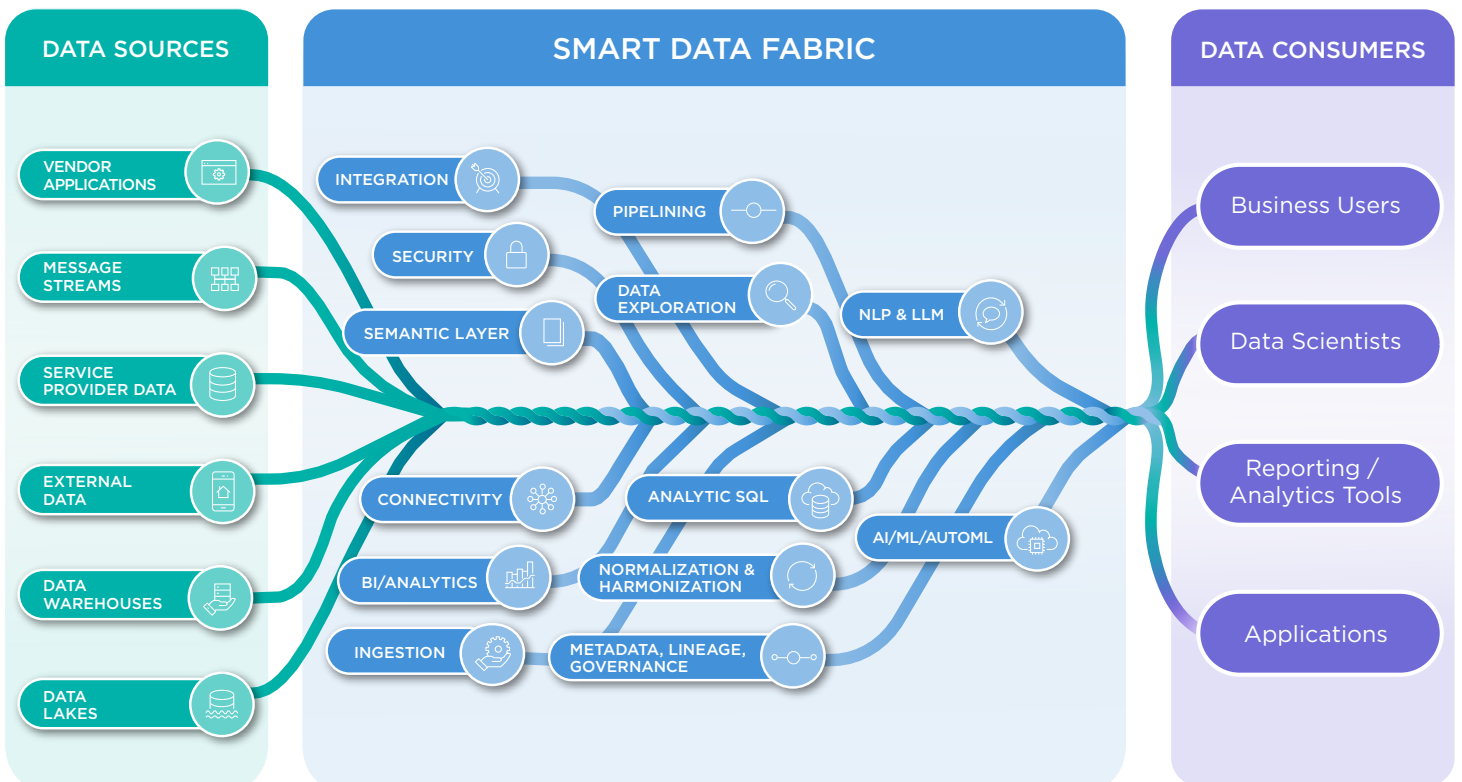
The ability to control data is key to AI. To be successful, you need to determine which data to feed to AI, understand where that data came from, trace and audit how that data is used, and control access to data and avoid data leaks. You also need to prepare the data in multiple ways and combine multiple data sources.

The Solution: InterSystems IRIS for Health

InterSystems® is a leader in healthcare data technology and standards-based interoperability. We have the technology and expertise to get your data AI-ready - quickly and easily. InterSystems IRIS for Health™ is a comprehensive, cloud-first digital health development platform that provides all the building blocks needed to work with any healthcare data standard, including HL7® FHIR®.

You can use InterSystems IRIS for Health to efficiently collect, integrate, and control the data required to build and tune accurate AI models and incorporate them into real-time clinical workflows and business processes. The solution includes a complete set of embedded integration capabilities, including out-of-the-box connectivity for a wide range of packaged applications, databases, industry standards, protocols, technologies, as well as built-in facilities for machine learning and generative AI.

InterSystems IRIS for Health provides many of the critical capabilities needed to implement a **smart data fabric** - including data integration, management, and analytics - all in a single product. Smart data fabrics lay a solid foundation for healthcare AI initiatives by providing a uniform, extensible, secure, and scalable data architecture. They give you the control and the data-processing facilities you need to make your data AI-ready.



Connect or Collect



Common Governance



Single Source of Truth

Accelerate Time-to-Value with InterSystems

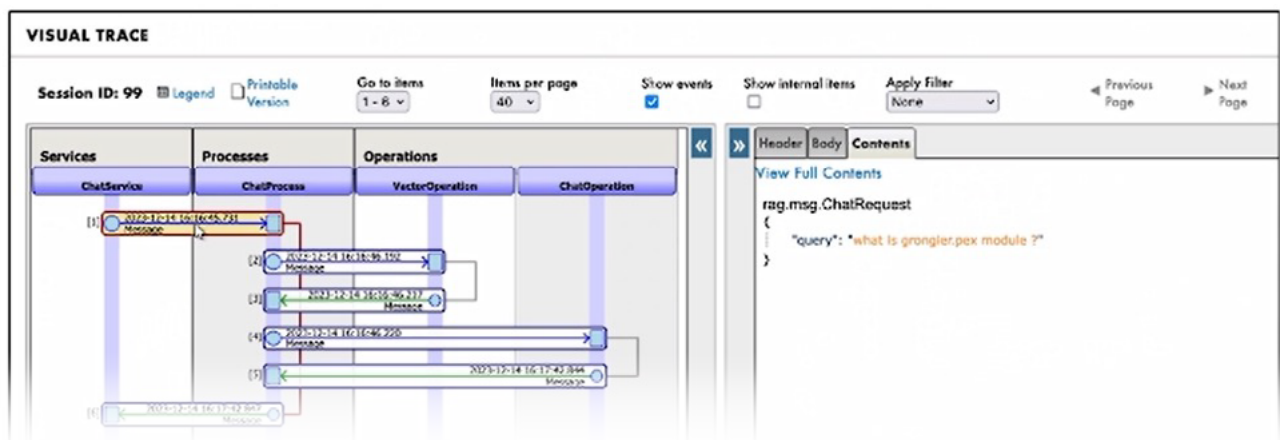
Whether you are deploying a traditional tabular AI solution or building a new GenAI-powered healthcare app, InterSystems can help you accelerate time-to-value and make the most of your AI investments. With InterSystems IRIS for Health you can:

- **Get to all the data you need.** Collect diverse healthcare data, quickly and easily.
- **Connect with everything.** Efficiently connect to a wide range of applications and systems.
- **Transform and control data.** Unify data to prepare it for AI use.
- **Govern data.** Secure data and tightly manage and audit what you feed to AI.
- **Feed large language models easily.** Feed and control any LLM for ultimate flexibility and choice.
- **Build models fast.** Get to production quickly with integrated ML, AI orchestration, and vector search capabilities, a low-code graphical editor, and more.
- **Keep it simple with one platform.** Process healthcare data and run production AI workloads on the same platform for optimal TCO.

Build Models Fast. Get to Production Quickly

InterSystems IRIS for Health is ideal for organisations that don't have experienced in-house data scientists. It includes a variety of tools and capabilities to help simplify AI application development and testing, and accelerate AI projects including:

- **Integrated ML functionality** that lets ordinary application developers, without advanced data-science skills, easily create and train machine learning models.
- **Built-in vector search** for semantic searching and retrieval-augmented generation (RAG) capabilities.
- **Integral AI orchestration with visual trace capabilities** for efficiently building and managing composite applications that span multiple AI models.



Visual trace functionality makes it easy to track and troubleshoot AI data flows

Conclusion

Artificial intelligence and machine learning have the potential to transform healthcare, but data management and integration challenges can hinder AI initiatives. InterSystems has the technology and know-how to help get your data AI-ready, speed up AI development, and make your AI programs successful.

To learn how InterSystems can help your organisation get your data AI-ready and accelerate time-to-value please visit **InterSystems.com**.

InterSystems IRIS for Health in Action

Adding Intelligence to Patient Portals

A not-for-profit integrated health system in the US uses artificial intelligence and machine learning to improve patient experiences and interactions, and boost quality of care. For years, the healthcare provider has relied on InterSystems HealthShare® Personal Community to streamline patient communications. The EHR-independent portal makes it easy for patients to interact with the provider organisation and access their medical records and lab results.

Every day, patients leave thousands of messages, including dozens of clinically urgent messages, on the Personal Community portal. But contact center agents had no automated way to identify and prioritize these important messages, potentially putting patients with urgent-care needs at risk.

Always looking for innovative ways to improve patient care, the health system used InterSystems IRIS for Health to develop a machine learning model to accurately flag urgent messages and move them

to the front of the queue. The ML model helps the centralized contact center ensure priority messages are promptly routed to the right clinician, helping improve care delivery and reduce patient frustration. During the first month following go live, 6% of messages were marked as clinically urgent, which is in line with expectations.

Based on the success of this initial application, the healthcare provider plans to use AI to assist patients with common queries like appointment requests or prescription refills, automatically directing the patient to the appropriate web page. Over 15% of portal messages are related to routine actions patients can perform on their own like scheduling an appointment.

The organisation is also exploring additional uses for AI such as summarizing patient messages using two words and generating automated responses to common portal inquiries that don't require clinician involvement or other human assistance.

Predicting Patient No-Shows

Missed appointments are a significant challenge for healthcare providers. They squander clinical resources, impair care quality, and lead to lost revenue. That's why a large InterSystems customer developed a machine learning model to forecast patient no-shows and minimize their impact.

The ML model analyses a number of variables including a patient's past attendance record, socio-economic status, age, and place of residence to predict the likelihood of a no-show. The predictive model helps the provider increase patient volumes, optimize resource utilisation, and avoid revenue loss by factoring no-show probabilities into appointment schedules.

By accurately predicting no-shows, the model enables the provider to schedule an additional 80 appointments per day. And by sending follow-up text, voice, and email reminders to those patients who are most likely to miss appointments, and automatically cancelling and backfilling unconfirmed appointments, the provider has reduced no-shows from 18% to 10% and avoided lost revenue. Now the provider is aiming to further reduce the no-shows rate to 5%.

The provider uses InterSystems IRIS for Health to clean and unify patient data from diverse EHR systems and other applications to prepare it for machine learning.

