Get Your Data AI-Ready with InterSystems

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>
> Gartner[2]

Clean and Trusted Data Drives Better AI Outcomes for Health and Care

Artificial intelligence is fundamentally transforming healthcare and represents a massive market opportunity for digital health solution developers. **The global AI healthcare market is projected to reach USD 187.69 billion by 2030, growing at a CAGR of 38% from 2025**[1].

By transforming raw data into meaningful and actionable insights AI can help improve clinical outcomes and business performance. Different AI methodologies deliver value in distinct ways. GenAI, for example, can help improve diagnosis and treatment, and contribute to increased patient safety and satisfaction. Agentic AI systems can help to reduce costs and inefficiencies, streamline business and payment processes, and accelerate research and discovery. And traditional machine learning applications can uncover data relations that are predictive of disease risk, financial instability, or scheduling inefficiencies.

Yet despite the huge promise, data integration and management challenges often complicate healthcare AI development efforts, stall projects, and erode product margins. AI solutions for health and care leverage complex data from a variety of sources including clinical, operational, and financial systems as well as smart medical devices, remote monitoring equipment, wearables, and public health databases. Healthcare data standards, formats, and structures vary from system to system and vendor to vendor. Data inconsistencies and redundancies can impair data quality and hamper digital health AI initiatives. According to Gartner®, organizations that don't enable and support their AI use cases through an AI-ready data practice will see over 60% of AI projects fail to deliver on business SLAs and be abandoned.

[1] AI in Healthcare Market Size, Grand View Research, 2025
[2] Through 2026, Gartner ID G00836469, July 11, 2025

InterSystems®
Creative data technology

With InterSystems you can build and deliver AI-powered healthcare solutions quickly, efficiently, and cost-effectively.

To succeed with digital health AI, developers must find ways to gather, unify, and clean data to get it AI-ready. They must find ways to optimize the speed, efficiency, and economics of AI pipelines. And they must find a partner to deliver the tools to jumpstart development efforts and accelerate the pace of innovation.

Improve Data Readiness and Accelerate Success with InterSystems

When choosing a partner for your AI solution development, you need more than just technology. You need a company with deep healthcare expertise, a principled approach to AI, and yes, the technical capabilities to get the job done.

InterSystems® has been a leader in health data management and standards-based interoperability from the earliest days of digital health. Much of the industry has relied on and grown with InterSystems. In fact, globally, more than one billion health records are managed by digital health solutions built on InterSystems technology.

Foster Trust and Responsibility with AI

InterSystems commitment to maintaining the highest standards of privacy, security, and responsibility guides a thoughtful and conscientious approach to AI that creates trust while accelerating innovation, ensuring customer success, and demonstrating a commitment to excellence. InterSystems has developed **a set of principles** to guide the incorporation of AI into our products, in order to drive innovation with AI systems and fulfil its promise as an advisor, an assistant, and an enabler for your solution development team.

We offer a comprehensive portfolio of healthcare data management solutions and development tools to help you break down integration and interoperability barriers, get your data AI-ready, and accelerate time-to-market. Our cloud-first digital health development platforms deliver all the building blocks you need to work with any healthcare data protocol and standard, providing out-of-the-box connectivity for a wide range of applications, databases, and technologies. They include built-in generative AI capabilities so that you can build smart digital health applications powered by semantic search, generative AI, and software agents.

Our solutions make it easy to gather, clean, harmonize, and govern healthcare data at speed and scale. We bring structured, unstructured, audio, and imaging data into a single, integrated source for AI analysis. And we provide robust logging, traceability, and data security for auditing and attestation.

With InterSystems you can build and deliver AI-powered healthcare solutions quickly, efficiently, and cost-effectively. Extensive AI orchestration tools, vector search capabilities, **integral GenAI** and ML functionality, support for the emerging Model Context Protocol (MCP), and intuitive low-code graphical editors simplify development efforts and speed up solution delivery and deployment.

Add Semantics and Reduce Hallucinations with Robust Vector Search and RAG Functionality

Our embedded vector search capabilities let you search structured, unstructured, and semi-structured data, quickly and efficiently. Data is converted to vectors and then stored and indexed for semantic search, text analysis, recommendation engines, and other use cases. Innovative retrieval-augmented generation (RAG) functionality helps you improve accuracy and avoid traditional LLM shortcomings like stale data, token limits, and hallucinations.

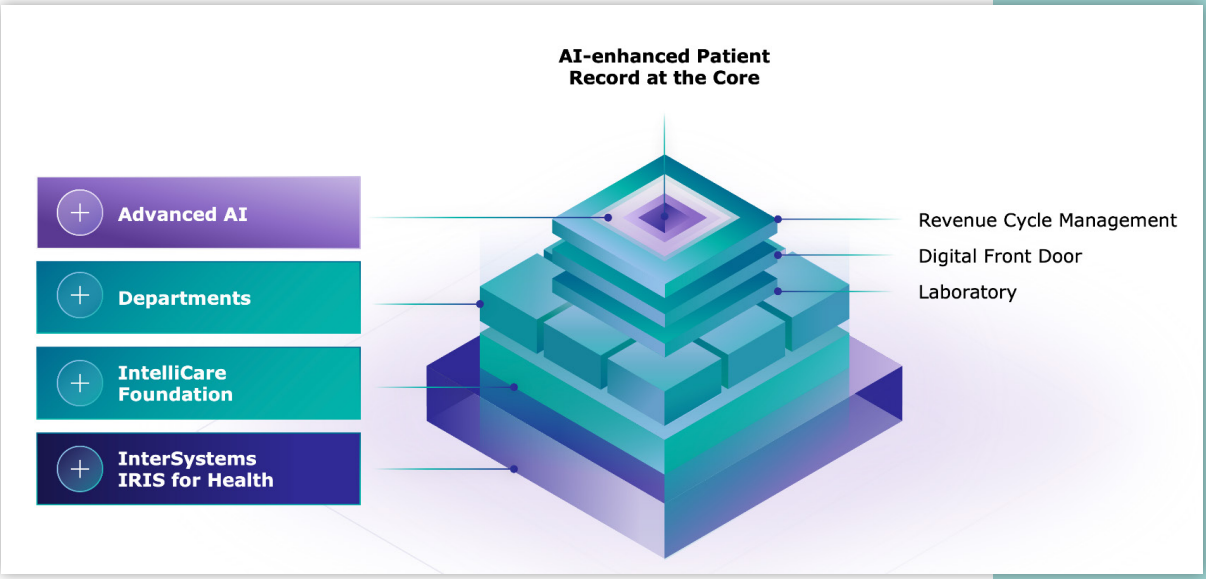
With InterSystems, developers can leverage a large AI ecosystem, using popular platforms, plugins, and libraries like Langchain, Autogen, and Swarm to build intelligent healthcare applications quickly and easily, and then operate them confidently in production with the models of your choice. Our enterprise-ready solutions let you maintain full control over your data to safeguard privacy and assist with compliance.

InterSystems technology is field-proven and used to power a wide range of healthcare AI applications including our own AI-enabled healthcare-industry solutions.

With agentic AI, IntelliCare transforms the EHR into a true clinical assistant.

Powering Smarter Healthcare Applications with a Unified Foundation

InterSystems IRIS® for Health data management platform underpins **InterSystems IntelliCare™**, our comprehensive, AI-native EHR system. This next-generation EHR embeds agentic AI in clinical and operational processes and includes natural-language AI assistants, ambient listening, AI-driven documentation, and automated coding to help streamline clinical workflows and optimize operations. With agentic AI, IntelliCare transforms the EHR into a true clinical assistant. It relieves doctors and nurses of administrative burdens by streamlining routine tasks and delivering real-time, in-app insights within workflows, allowing them to focus on patient care instead of paperwork.



InterSystems Technology Reduces HealthCare AI Development Cost and Complexity

The underlying InterSystems technology provides a variety of functions and advantages including:

- **A single secure gateway** – InterSystems IntelliCare developers leverage a common API for all AI data flows, simplifying integration and ongoing maintenance
- **One toolbox for all workflows** – a unified toolset reduces solution development cost, complexity, and overhead

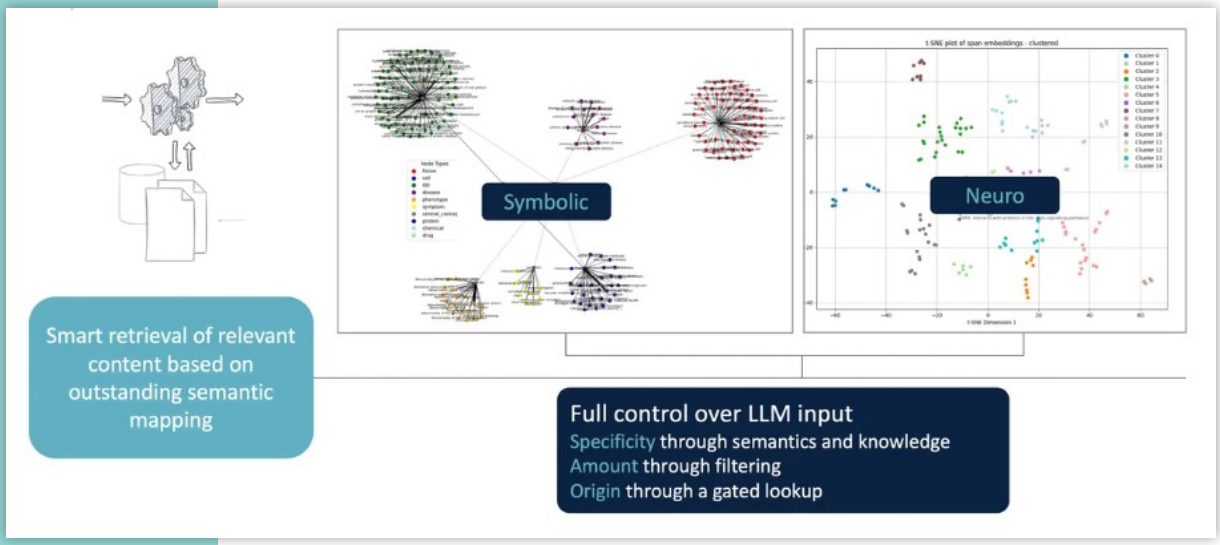
- **Smart data profile engine** – intelligent filtering ensures LLMs receive only necessary inputs, reducing token volumes, optimizing inference costs and performance
- **Privacy and compliance by design** – a multitenant architecture and robust data protection features safeguard PHI and support regulatory compliance
- **Model and cloud-neutral approach** – vendor-agnostic platforms make it easy to change clouds or AI models without modifying code

Capabilities like vector search and RAG are crucial when working with LLMs and unstructured biomedical data.

Unearthing Unstructured Data Insights with Vector Search and RAG

BioStrand, an AI-powered drug discovery company, uses InterSystems technology to power its LENSai™ integrated intelligence platform. LENSai takes advantage of InterSystems advanced vector search and RAG functionality to analyze massive volumes of unstructured data quickly, reliably, and efficiently. The integration enables more precise, semantically rich searches across vast repositories of complex biological data, empowering scientists to uncover insights that were previously difficult to obtain. It lets researchers identify novel therapeutic targets more quickly, dramatically shortening the path from discovery to clinical trials.

Capabilities like vector search and RAG are crucial when working with LLMs and unstructured biomedical data. Vector search enables LENSai to rapidly locate semantically similar information from across millions of files and data sources, no matter the original format. Retrieval-augmented generation builds on this capability by dynamically retrieving the most relevant, up-to-date information in response to each query, significantly reducing errors and hallucinations.



BioStrand Efficiently Analyzes Massive Volumes of Unstructured Biological Data with InterSystems

Boosting Performance and Scalability with FHIR

Stanford Health Care, one of the world's leading academic health systems, uses InterSystems technology to optimize the responsiveness of its ChatEHR AI assistant. This internally developed AI companion helps clinicians save time and increase insights by using natural language queries to quickly retrieve and summarize critical patient data from the hospital system's Epic EHR platform.

InterSystems advanced HL7® FHIR® server and repository accelerates the AI pipeline by minimizing API calls and reducing latency. FHIR is a modern, global standard for efficiently exchanging electronic healthcare information.

ChatEHR draws on a range of clinical and non-clinical data scattered across different healthcare IT applications and systems. InterSystems technology helps the AI-powered solution collect and examine large datasets at high speed and scale.

Streamlining Development with Out-of-the-Box Building Blocks

InterSystems HealthShare® AI Assistant is an intelligent, conversational tool that helps clinicians and other healthcare professionals uncover data insights across the patient journey. The solution is built on and powered by InterSystems healthcare data management platforms and tools. These core technologies helped the development team simplify integration tasks, accelerate time-to-market, and focus on differentiating capabilities rather than underlying infrastructure.

InterSystems out-of-the-box data transformations helped developers save time and effort, enabling seamless support for healthcare standards like FHIR, HL7 V2, and CDA without custom coding.

The development team also tapped into built-in AI capabilities that are increasingly important for modern healthcare applications, including:

- **Adapters for LangChain and llama-index** – simplifying integration with popular AI development frameworks and avoiding the need for custom connectors
- **Embeddings generation** – converting text into numeric vectors that allow AI models to recognize meaning, context, and similarity
- **Approximate nearest-neighbor indexing** – speeding up vector searches by efficiently identifying the closest matches among millions of records

Finally, the team was able to use their familiar development framework, leveraging InterSystems native Python support to avoid retraining or retooling.

InterSystems out-of-the-box data transformations helped developers save time and effort.

Looking Ahead: The Future of AI for Health and Care is Full of Promise

Healthcare AI is still in the early stages of its evolution, but the momentum is undeniable. As solutions mature and become more deeply embedded in clinical and operational workflows, their capacity to interpret complex data, surface timely insights, and support decision-making will expand dramatically.

In the years ahead, healthcare AI will move from simply assisting with tasks to actively shaping care delivery—enabling more accurate and earlier detection of diseases, predicting health risks and recommending interventions, and empowering patients to take a more active role in their health. Organizations that lay the groundwork now with strong data foundations will be best positioned to unlock these emerging opportunities.

Next Steps

To learn how InterSystems can help get your healthcare data AI-ready and accelerate your Healthcare AI success, click **here**.

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