

Interoperability and more

Create the future of care



InterSystems HealthShare

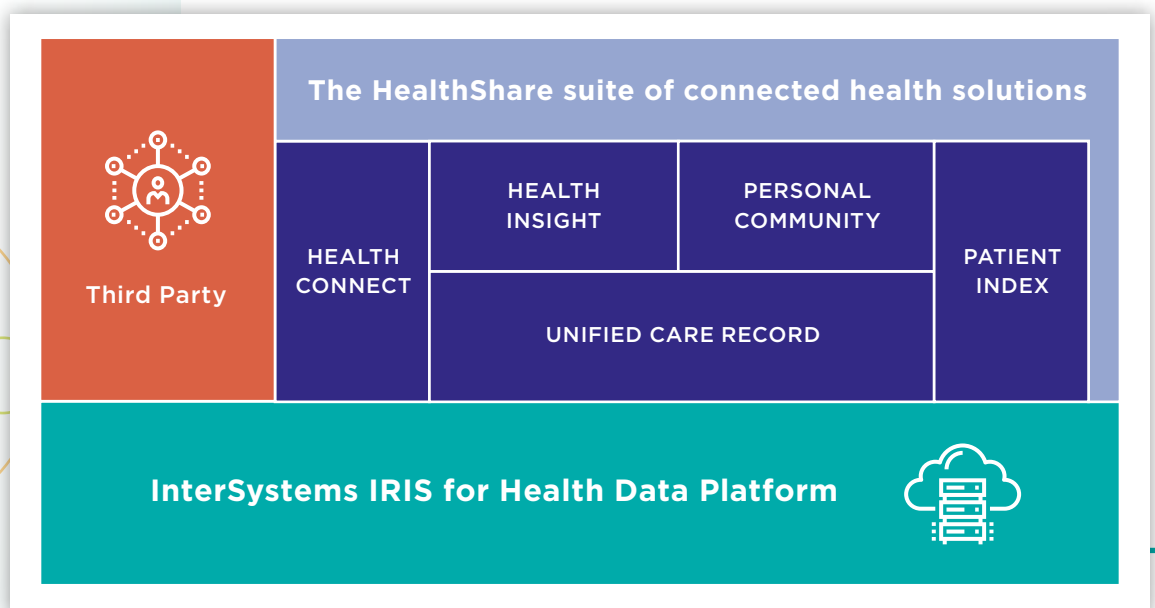
InterSystems HealthShare® is the interoperable solution for different forms of files (eGA, ePA, eFA, ePD (CH), EHR/EMR (A), medical files, research files...), regardless of whether they are administered by patients or doctors. It allows them to be implemented quickly and in a way that complies with standards.

The HealthShare product range comprises the following modules:

HealthShare Health Connect	Page 4
HealthShare Unified Care Record	Page 10
HealthShare Health Insight	Page 16
HealthShare Personal Community	Page 20
HealthShare Patient Index	Page 24
HealthShare Care Community	Page 28
HealthShare ProviderDirectory	Page 32

HealthShare has proven itself in numerous national and international projects. Users include Sint Maartens Kliniek, VieCuri, Regionaal Zorg Communicatie Centrum, GGZ Eindhoven, Sana Kliniken AG, Universitätsklinikum Erlangen, Hôpital Ambroise Paré, Hôpital Erasme, Grand Hôpital de Charleroi (GHDC) and Centre hospitalier universitaire vaudois (CHUV).

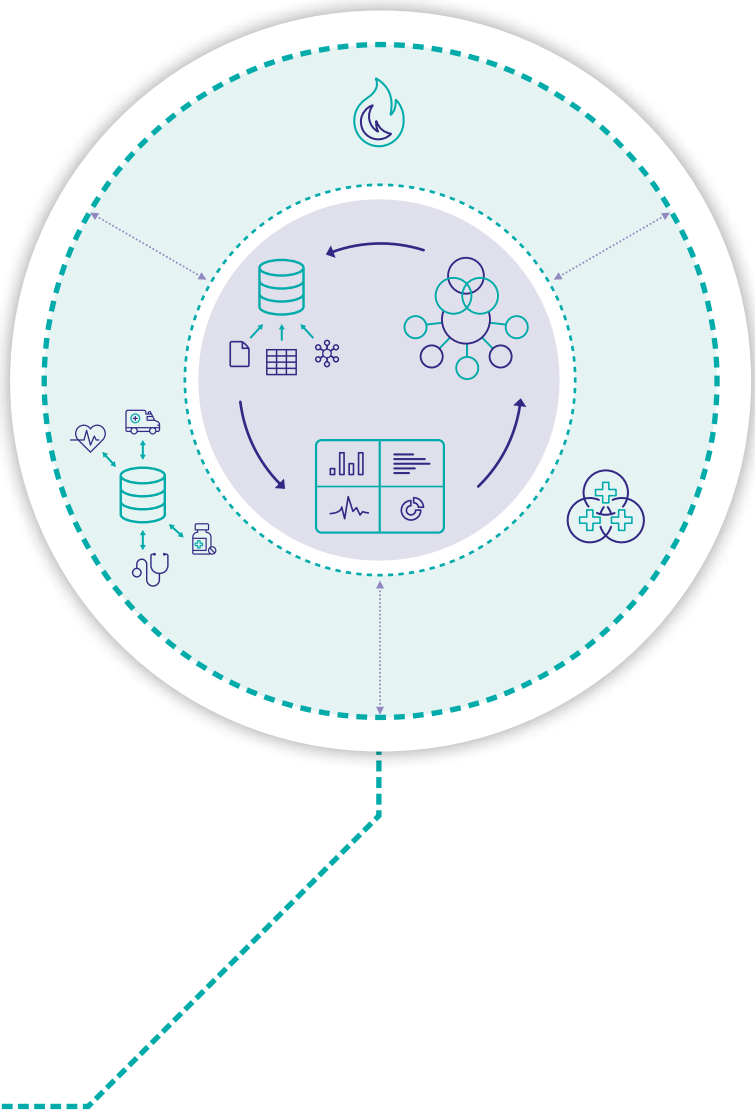
HealthShare enables service providers, sponsors, and patients to benefit equally from improved healthcare.



InterSystems IRIS for Health

InterSystems IRIS for Health™ was specially developed for the healthcare industry. IRIS for Health provides all the functionality required to develop modern, real-time, data-driven solutions in the healthcare industry quickly. The InterSystems IRIS for Health data platform is available on the three largest cloud providers (AWS, Google Cloud, and Microsoft Azure). You can try out the Community Edition there free of charge. The IRIS for Health platform is the technical basis for InterSystems Healthcare solutions.

InterSystems IRIS for Health Page 36





HealthShare Health Connect

High Availability, High Performance Integration Engine

InterSystems HealthShare Health Connect is an integration engine that delivers high-volume transaction support, process management, and monitoring to support mission critical applications.

Health Connect delivers:

- Intuitive HL7® message transformation, routing, durable process orchestration, and workflow.
- Support for high transaction volumes between systems that scales with the most demanding integration tasks.
- A powerful bridge from legacy standards to HL7 FHIR (Fast Healthcare Interoperability Resources), the next-generation standard for healthcare data sharing.
- An add-on enterprise grade, scalable FHIR server, which enables users and developers to store and retrieve FHIR resources. The server supports all the common FHIR interactions as well as advanced search capabilities.

Reliability and Management

A Health Connect database stores every message moving through integrated systems. The database enables guaranteed message delivery



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NAMES INTERSYSTEMS
BEST IN KLAS FOR
INTEROPERABILITY
PLATFORMS.**



and provides a complete audit trail of all messages for improved troubleshooting. InterSystems also delivers several options for high availability (HA) and disaster recovery, including clustering, virtualization HA, and an elegant, easy-to-implement technology for database mirroring. Mission critical capabilities include:

Mission critical capabilities include:

- Mirroring with fast failover recovery, critical for an always-on business.
- Visual diagnostics and auditing. Industry-leading message trace capabilities, a powerful test harness, and robust auditing facilitate the creation, debugging, and support of all your interfaces.
- Event detection, alerting, and monitoring to ensure that information continues to flow even when source systems pause or fail. Messages are never lost, and an interrupted business process can always restart from the point of interruption.

High Performance

At the heart of Health Connect is a high performance, multi-model data engine that seamlessly handles multiple forms of data at high speed. Health Connect easily scales from serving small clinics to handling the transaction volumes of the largest and most complex healthcare delivery systems in the world.

Interoperability – Standard by Design

Healthcare organizations worldwide use InterSystems products for interoperability and improved workflow across the care continuum. Our support for global and national standards and certifications is one reason for this success. As global healthcare information protocols and standards evolve or new ones emerge, InterSystems keeps pace with these changes so you can take advantage of them easily.

In addition to FHIR STU3 and DSTU2, Health Connect implements many IHE standards, and supports HL7 Version 2, HL7 Version 3, CDA[®] and CCD[®], C-CDA[®], DICOM, X12, ADHA (Australia), ASTM, DMP (France), EDIFACT, ITK (United Kingdom), and xDT (Germany).

You can use Health Connect’s pre-built data transformations to convert between most standard healthcare data formats. These transformations can be customized to address special cases, such as proprietary or legacy formats.

The depth of Health Connect’s standards support, and its ability to translate between health data representations – for example HL7 V2 and FHIR, or a non-standard format and FHIR – gives you unmatched interoperability power and flexibility.

HL7 V2 MESSAGE PROCESSING BENCHMARK*

- **2,046,297,600 inbound + outbound messages/24 hours**
- **40% CPU utilization**

*Real-world data, 48-core system, 2 Intel Xeon Platinum 8168 processors at 2.7GHz, 2 x 2TB Intel P3700 NVMe SSD drives, Red Hat Enterprise Linux 7.3.

InterSystems API Manager

InterSystems API Manager, a component of Health Connect, handles the entire application programming interface (API) life cycle. From planning and design, implementation and testing, deployment and operation, to versioning and retirement, InterSystems API Manager enables you to deliver business value, including monetization of API usage, faster while you focus on your core capabilities.

Key features include:

- **Publishing:** designed with the embedded administrator dashboard, a command line interface (CLI) or REST APIs. All of your APIs are discoverable.
- **Developer Portal:** APIs can be listed on a customizable portal/web marketplace which allows developers to sign-up, explore and subscribe to APIs. The system supports self-signup and multi-tenant environments.
- **Traffic Control:** allows administrators to manage, throttle, and restrict inbound and outbound API traffic.
- **Analytics & Security:** API publishers can monitor APIs and detect unusual activity. InterSystems API Manager supports TLS and SSL at the transport level, OAuth2 at the protocol level, and role based access control.

FHIR Capabilities

FHIR is the future of healthcare interoperability, and InterSystems is actively engaged in creating that future as an HL7 benefactor member and standards-committee participant. We invest time and resources to stay on the cutting edge of the HL7 standards and build HL7 FHIR into a common technology stack for all our products.

Health Connect provides all the technology interface engineers need to handle FHIR requests as easily as they now work with HL7 V2 and integration flows. Health Connect includes a FHIR client, a FHIR message model, and translation between FHIR and other health information interchange standards, such as HL7 V2 and C-CDA.

For customers interested in data storage and access, an optional add-on FHIR server and repository is available which supports FHIR R4.

Health Connect receives or sends FHIR resources via the FHIR RESTful API, in JSON or XML formats. This allows applications based on the latest technology to use FHIR data – new or mapped from legacy systems.

Leverage FHIR to Integrate with Legacy Systems

Today, thousands of integrations using HL7 V2, HL7 CDA, and other standards form the backbone of interoperability and workflows in healthcare. Health Connect is your bridge between these formats and the FHIR standard, transforming their data into a FHIR representation. Examples include:

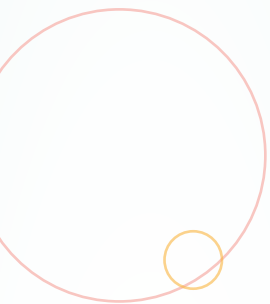
- Decomposing CDA document data into FHIR resources
- Converting HL7 V2 messages into a FHIR representation for consumption by a decision support system
- Transforming a FHIR message into an HL7 V2 message, such as an order, to send to a legacy system

New applications can access legacy data, and represent this data as FHIR messages, to expand their use for value-based care, quality improvement, and research.

Higher Productivity for Interface Engineers

Healthcare organizations may manage hundreds of different specialized applications, systems, and devices that must work together efficiently, securely, and without interruption. Health Connect provides features that make it easier for interface engineers to create, manage, and troubleshoot such systems, including:

- Drag-and-drop HL7 schema editing, data-mapping, business rule creation, and workflows
- Source control for HL7 schemas, including custom schemas
- Drag-and-drop managed file transfers using popular data storage services such as DropBox, Box, and kiteworks, or the dropping of files into other applications for processing
- DevOps-ready containerized deployment in public or private clouds
- A Java Business Host that runs Java apps as efficiently as native components within integrations and workflows
- Unit testing of routing rules and data transformations
- Smart search that reveals all locations in a production where a given component is used, and routes that a message can take
- Interface converters for legacy interface engines, such as eGate and Cloverleaf



Security

A flexible, adaptable security model with enterprise-wide provisioning capabilities makes it easy to protect data both “at rest” and “in motion” across even the largest deployments, while minimizing the burden on application performance. Authenticate and authorize users via passwords, OAuth, two-factor authentication, and other means.

Customer Support and Education

When you select HealthShare Health Connect, you get more than technology. You also get our acclaimed customer support and extensive educational opportunities. Search for Health Connect education resources at [Learning.Intersystems.com](https://learning.intersystems.com).

Learn more about Health Connect and all of the products within the suite of HealthShare connected health solutions at [InterSystems.com/HealthShare](https://intersystems.com/HealthShare).



“We got up and running fast with health connect. development time is... maybe half the time needed with our previous interface engine.”

Randy Paruch, Director of Information Systems, Holland Hospital





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CONNECT AND ALL OF
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HealthShare Unified Care Record

The Foundation for Collaborative Care, Innovation, and Transformation

The health and wellness ecosystem is diverse, with care delivered across a wide range of organizations, geographies, and disciplines. Similarly, the information this ecosystem creates and consumes is diverse, dispersed, and dynamic. A unified care record providing a current and complete view of all the data – clinical, social, and financial – is key to improving patient care and fostering innovation.

Breaking Down the Boundaries of Care

InterSystems HealthShare Unified Care Record helps providers, payers, consumers, social care and wellness services, researchers, and solution developers overcome the challenges of decentralized data by creating a shared, comprehensive, and unified care record. HealthShare delivers relevant data from the unified record into clinical and business workflows, communicates across your application and business ecosystem, and facilitates timely action through real-time notifications.

HealthShare data is aggregated, normalized and deduplicated so all of it, regardless of source, is stored in a single, consistent format. This data can power analytics applications, HL7 FHIR® applications (including FHIR R4), and artificial intelligence for knowledge discovery. Because it is updated in near real-time, you can be confident you're always working with the latest information.



HealthShare extends and enhances the software investments you've already made. And it is a strong foundation for pursuing new business relationships and integrated care models with confidence. Additional use cases include:

- Connecting to and integrating data from national health data exchange networks, including CommonWell and Carequality
- Coordinating and optimizing team-based community care delivery for individuals and populations
- Ensuring continuity as you modernize your IT infrastructure by archiving legacy clinical data in your unified care record
- Seeing performance trends in time to make the course corrections essential for success in value-based care
- Investing limited resources cost effectively using business intelligence to identify population cohorts at highest risk
- Uniting claims and clinical data with information about social determinants of health to optimize care management and population health initiatives
- Making it easier for a patient to view coverage and explanation of benefit information by mapping clinical data to USCDI v1 and claims data to CARIN implementation guide specifications
- Using aggregated, clean data for process redesign or clinical research
- Innovative uses of aggregated, clean data in process redesign, or for clinical research
- Serving up data for connected FHIR-based applications, including FHIR R4
- Meeting CMS rule 9115-F requirements with a patient access API built on the CARIN and US Core Implementation Guide
- Payer-to-Payer Data Exchange, including support for PDex Implementation Guide

Key Features

Unified Care Record


HealthShare includes a comprehensive and extensible health data model and data normalization technology for unifying all information relevant to each person, regardless of its source or format. This includes patient-generated data, clinical content, claims, and social determinants of health. In many cases, the unified care record is integrated directly into the electronic medical record systems used by clinicians.

Clinical Viewer

Equally accessible from desktop and mobile devices, the HealthShare Clinical Viewer delivers a longitudinal representation of the patient/



CLINICAL VIEWER PRESENTS JUST THE INFORMATION YOU NEED FROM THE UNIFIED CARE RECORD. WHEREVER YOU NEED IT.



“INFORMATION IS AT ITS MOST POWERFUL WITH THE MOST VULNERABLE PATIENTS - THOSE WITH MULTIPLE CONDITIONS SEEING MULTIPLE PROVIDERS - FOR WHOM A TIMELY INSIGHT MAY BE THE DIFFERENCE BETWEEN, FOR EXAMPLE, A HOSPITAL ADMISSION OR A JAIL STAY.”

*Claudia Williams, CEO,
Manifest MedEx.*

member record. Beyond what may be available in the EMR, clinicians, care managers, care coordinators, case managers and other members of the team can use the Clinical Viewer to get the information they need. Upon a patient or member lookup, quick summaries bring the most relevant information together on one screen, and a single click provides details on history, conditions, allergies, medications, labs, vital signs, social determinants, claims, and more. Component-level grouping (e.g. medications by name, documents by encounter type) and date range filter features allow care organizations to meet niche use cases without having to create custom code.

HealthShare “Clinigraphics” in the Clinical Viewer provide condition summaries that display relevant labs, vitals, medications, and related conditions all in one place to enhance the decision-making process.

Managed Connections

HealthShare Managed Connections is available for customers who do not want to purchase, operate, secure, and maintain the system infrastructure themselves. It serves as a one-stop hub for connectivity and data exchange with many organizations and different healthcare information systems.

HealthShare Managed Connections provides a single connection to national federated networks such as CommonWell and Carequality. And it provides safe, secure connections to other data providers as they become partners in HealthShare Managed Connections. InterSystems also offers its customers on-demand connections to organizations not connected to the HealthShare Managed Connections hub.

Single-Sign On

To minimize the cognitive burden on clinicians, HealthShare includes support for single-sign on between an EMR and the Clinical Viewer. With minimal configuration, administrators can add a link in the EMR which takes clinicians to the Clinical Viewer without requiring a second log in. This saves clinicians the time and trouble of having to remember another set of credentials.

Messaging and Event Notifications

HealthShare supports coordinated care across the entire care team, including consumers, with secure messaging and automated notifications. Care managers can subscribe to alerts on their members for events such as Emergency Department visits, abnormal lab results, gaps in care, and missed appointments. These notifications help avoid costly adverse events and align care teams and patients around desired outcomes.

¹ HealthShare Managed Connections is available in the United States only

Social Determinants of Health

HealthShare makes it easier to communicate a complete picture of the individual across the health and social care community. It can store, analyze, and share non-clinical factors affecting the overall health of a patient, such as living situation, healthy food availability, or access to transportation.

Advanced FHIR Capabilities

HealthShare continues our longstanding healthcare interoperability leadership with concurrent support for FHIR R4, the latest version, and the previous version, STU3. Our FHIR support includes:

- Representing all of your data as FHIR resources, and using our FHIR Server to simplify data sharing with devices and applications
- Mapping between older data formats and FHIR to help you increase the value of legacy systems
- A graphical user interface that allows you to map your data model customizations to FHIR extensions

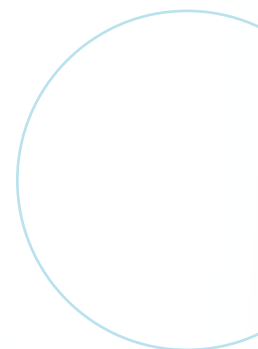
In addition to FHIR, HealthShare supports all the major national and international interoperability standards, including HL7 V2 and multiple CDA formats, that are used by your data sources.

Performance and Scale

HealthShare has become the leading solution for aggregating and sharing health information at any scale because it delivers on its promises. Data quality, system management, analytics, and operational reporting tools help you track and manage usage across facilities.

Management

HealthShare's Management Portal helps you monitor business processes and keep the system running smoothly. It includes dashboards for operations and data quality, as well as tools for managing and configuring patient consent, data filtering, and more. The Management Portal can be quickly accessed via single sign-on based on OAuth2/OpenID Connect, resulting in secure, centralized management, less password fatigue, and fewer forgotten passwords.



More than a Service

HealthShare Unified Care Record is the foundation of the HealthShare suite of connected health solutions. Delivered as a managed service offering, it can operate as the data aggregator for machine learning or your own solutions built on InterSystems IRIS for Health. It can be combined with HealthShare Health Insight, HealthShare Patient Index, HealthShare Care Community, HealthShare Provider Directory, or HealthShare Personal Community to advance your digital transformation strategy.

InterSystems Managed Services

InterSystems designs, operates, and maintains Managed Services in independent environments for each client. We eliminate the burden of purchasing and managing the infrastructure required for highly available solutions. All Managed Services include:

- Selected InterSystems product functionality
- All data center resources, including hardware and network capacity, needed to run the solution
- Ongoing maintenance of all solution components
- Customer-specific configuration and implementation services to bring the solution live, including building connections
- 24/7 support for the solution including real-time monitoring
- Seamless upgrades
- Sophisticated security and data protection programs

InterSystems Managed Operations

InterSystems operates geographically dispersed data centers for resiliency, with experienced staff managing infrastructure, security, and performance on a 24/7 basis. Managed operations include hosting, automated monitoring and alerting, ongoing maintenance, and monthly operational reports.

Customer Support and Education

When you select HealthShare, you get more than technology. You also get our acclaimed customer support and extensive educational opportunities. Search for HealthShare education resources at [Learning.InterSystems.com](https://learning.intersystems.com).

Learn more about HealthShare and its family of products at [InterSystems.com/HealthShare](https://intersystems.com/HealthShare).



“When it comes to getting to the outcomes that we are hoping for, we have been successful there. We have been able to connect our network together and establish a central repository of clinical information. We also have a relatively straightforward manner of pulling out information to place into payer reports for gaps in care. We have been able to transform documents from one EMR into a standard format that our EMR system can consume.”

Director quoted in KLAS Research, April 2020

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HealthShare Health Insight

Unlock the Value of Unified Health Information

InterSystems HealthShare Health Insight gives you real-time actionable insights for care, and in-depth retrospective analysis for clinical, business, and population health management. HealthShare Health Insight is the analytics companion to our HealthShare Unified Care Record software. When you combine the Unified Care Record's extensible, longitudinal patient information with the capabilities of Health Insight, you can:

- Automatically identify patients for community-wide care management, registries, and population health management
- Create clinical and business dashboards
- Highlight gaps in care with event and time-based notifications to clinicians and care managers
- Monitor performance over time for process improvement and quality measurement

Part of the comprehensive HealthShare Analytics Solution, Health Insight contributes to your *smart healthcare data fabric* with a curated, patient-level healthcare data model and a real-time rules engine to support advanced clinical notifications.

Key Features

Healthcare Data Model Designed for Analytics

At the heart of Health Insight is a curated healthcare data model that makes HealthShare data available for use by report writers, analysts, and data scientists. This patient-centric data model spans multiple domains including, but not limited to clinical, claims, and social determinants, and can be expanded to revenue cycle management. As you extend the information in your unified care record, the healthcare data model extends your analytics capabilities to match.

Data Quality Management

High quality decisions require high quality data. So, Health Insight tracks and exposes the sources of the data it contains, including information such as the sending facility and coding standards in use. This helps ensure provenance is known, can be vetted, and can be trusted. When relevant data in the Unified Care Record changes, and is propagated to Health Insight, consistency checking monitors these and other trends over time so you can explore and continually improve data quality.

Dynamic Intelligence for Actionable Insight

With a single lab result, missed appointment, or emergency room visit, an individual can move from one population cohort to another. Health Insight monitors your data pipeline from across your health and care ecosystem to identify relevant events, or the absence of events, and then dynamically updates the patient cohorts of interest to your team. Dynamic cohorts can be included in clinical and business workflows to optimize decision making and care by:

- **Clinicians and care managers**, who can subscribe to notifications for Emergency Department admissions, abnormal lab results, and other clinical events.
- **Quality managers**, who can subscribe to notifications based on performance over time, or missing events, to identify gaps in care or changes to calculated risk scores.
- **Population health managers**, who can leverage dynamic cohorts to focus resources on the most vulnerable members of a population.

With actionable insight delivered into your workflow at the point of decision – EHR, dashboard, or wherever you spend your workday – Health Insight’s dynamic cohorts help to close the loop on information management.

Built-In Dashboard and Reporting Capabilities

Health Insight includes a set of OLAP cubes to support end-user dashboards. Drag and drop analysis capabilities enable non-technical users to examine the data at any level, performing complex queries with ease. Health Insight dashboards display live business metrics. Sample dashboards and templates minimize the time and effort to create your own syndromic surveillance, performance measurement, or business management reporting.

Connected to Your Entire Analytics Architecture

Health Insight becomes even more valuable when paired with InterSystems IRIS Adaptive Analytics to democratize efficient data access across your entire organization. Adaptive Analytics lets nontechnical users create purpose-built OLAP cubes from your populated healthcare data model for analysis and visualization through their business intelligence tool of choice, such as Microsoft Excel, Power BI, or Tableau. The Adaptive Analytics *universal semantic layer* and data virtualization allow data stewards to make data accessible to users without the need to expose complex data structures, tables, or relationships. At the same time, data scientists can easily leverage machine learning tools and environments such as *InterSystems Integrated ML, DataRobot*, and H2O.ai. The InterSystems IRIS Adaptive Analytics extension allows users to work directly within source tables.

Flexible Deployment Options

On premises, cloud, or managed service deployment options provide flexibility for customers while InterSystems ensures that all options meet the highest standards for reliability, performance, security, and customer support. InterSystems Managed Services enables you to leverage everything HealthShare Health Insight has to offer without having to purchase, install, or maintain the infrastructure.

“Health Insight allows us to provide highly customized alerts and specific customized paneling for our clients, and we see this as something that is going to be really huge for us and beneficial to our participants as a partner in their success. The ability to refine and focus alerting to specific patients will advance services and resource allocation across the care continuum.”

Nick VanDuyne, Executive Director, NY Care information Gateway

Analyze and Act on Aggregated Data with Confidence

Becoming a data-driven organization requires reliable, quality data and trustworthy analytics. InterSystems helps you with both. No other company knows the acquisition and curation of health data as well as InterSystems. Currently, over 1 billion health records worldwide are managed using our technology. HealthShare Health Insight is part of our comprehensive HealthShare Analytics Solution, which leverages over 40 years of InterSystems interoperability, data management, and data harmonization expertise to simplify the process of getting critical insights from your data. Insights that patients, providers, administrators, and payers can trust.

To Learn More

Visit [InterSystems.com/healthinsight](https://www.intersystems.com/healthinsight). To find contact information for your local InterSystems office, visit [InterSystems.com/offices](https://www.intersystems.com/offices).

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HealthShare Personal Community

A Comprehensive, Multi-EMR, Patient Portal

Unlike electronic medical record (EMR)-specific patient portals, **InterSystems HealthShare Personal Community** is central to a community-wide patient engagement strategy. For its data source, Personal Community relies on InterSystems HealthShare Unified Care Record to aggregate information from multiple EMRs, wearables, claims, and other sources into a single, unified care record. This is the same care record used by clinicians, but with a user interface designed for patients.

Regardless of how many data sources you have, patients and their designees can access their health information securely with a single, simple user interface on their device of choice. Use cases for Personal Community include:

- Meeting patient expectations for consumer-level access to health information
- Engaging patients in their own or a family member's care to improve patient satisfaction and awareness

- Achieving and demonstrating relevant Meaningful Use criteria
- Unifying multiple patient portals into one for a better patient experience (after a merger or acquisition, for example, or when patients are seen by several non-networked providers)
- Improving workflow for staff via patient self-service options
- Empowering patients and families with all the information they need for better care decisions and outcomes

The Value of Engagement

Research shows that engaged and activated patients have higher levels of satisfaction and use fewer resources. Patients who understand their conditions and treatment options make better healthcare decisions and patient record review leads to safer care and improved record quality. Patients and their designees can use any web browser, on any device, to:

- Review, download, and manage care records
- Upload data from home or personal medical devices
- Schedule appointments
- Complete forms for the care team
- Receive alerts and notifications
- Learn about conditions and adopting healthier behaviors
- Securely interact with care providers
- Link to external systems to view and pay bills
- Access 3rd party SMART on FHIR apps once logged in

Redefining the Patient Portal to Transform Healthcare in Your Community

Shifting business models, industry consolidation, and constrained resources make a fully engaged patient population essential. Personal Community offers patients and their designees an engaging user interface with a real-time view of all the information available across any number of data providers. The look-and-feel is configurable to support your branding and market identity. You determine what data to present to patients and in what format. You select the appropriate enrollment model for your organization.

Key Features

Personal Community is easy to configure, manage, and secure, and includes features that help to engage patients and make care delivery more efficient.

User Interface

A simple user interface enhances usability on any device. This UI accesses the same unified record used by the care team. Patients and their designees can easily view, download, and print care records.

Management Workbench

A workbench, overview dashboard, and robust reporting simplify Personal Community management, including enrollment tracking, designee assignment, adoption metrics, and customization.

Patient-Contributed Information

The Personal Community My Forms section gives users a single location for form access, completion, and tracking. Data from completed forms and uploaded documents, such as advance directives, can be included in the patient's unified care record for use by care team members and in analytics.

Data from home devices such as pulsometers, scales, and blood oxygen readers can also flow into the unified care record.

Alerts and Notifications

Personal Community delivers alerts and notifications to the patient's inbox, or to patients and their designees directly, based on data and analytics in the unified care record. With multiple systems tied in to Personal Community, it becomes a single source for alerts and other notifications, helping to reduce the burden and hazards of information overload.

Language Support

Personal Community provides out-of-the-box interface localization and communication in English, French, German, Italian, and Spanish. The product supports customer translations into most other languages, as well.

Security

Flexible, positive identification during setup makes enrollment more secure for patients and their designees. Enrollment may be handled at the point of care, initiated by a patient, or via an external application such as a registration system. Patients can assign family members or others on their care team as designees who can view their records.

Personal Community does not store data on the patient's device unless a file is downloaded by the patient.

Centralized User Access

Personal Community enables you to deliver a centralized sign-in experience for your patients across applications. You can choose to use Personal Community as the patient identity provider, allowing use of credentials generated by Personal Community to sign in to your other approved and trusted applications. Or, you can enable use of your existing authentication system credentials for enrollment and sign-in with Personal Community.

Application Programming Interfaces (APIs)

Personal Community APIs enable trusted external systems (such as an EMR) to interact with it while the user of the EMR or other application continues in their existing workflow. Functions available through APIs include:

- Enrolling patients
- Managing accounts
- Establishing proxy relationships
- Delivering secure messages
- Sending important notifications

Personalized Education Content

Adopters of Personal Community can add local news and events, links to community resources, and relevant patient education materials to the portal, creating a trusted information environment that enhances patient and community relationships with your organization.

More than a Service

Personal Community is part of the HealthShare suite of connected health solutions and can be delivered as a managed service. Combine Personal Community with HealthShare Unified Care Record, HealthShare Health Insight, HealthShare Patient Index, HealthShare Provider Directory, or HealthShare Care Community to advance your digital transformation strategy.

Customer Support and Education

When you select Personal Community, you get more than technology. You also get our acclaimed customer support and extensive educational opportunities. Search for Personal Community education resources at [Learning.Intersystems.com](https://www.intersystems.com/learning).

Learn more about Personal Community and all of the products within the HealthShare suite at [InterSystems.com/HealthShare](https://www.intersystems.com/HealthShare).

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HealthShare Patient Index

One Patient, One Unified Care Record

One patient, one record is the ideal, but it's difficult to achieve. Patients are mobile and may receive care from different organizations in multiple settings. Healthcare organizations use different electronic medical record (EMR) systems, and patient identifiers often vary among them. When healthcare organizations affiliate or merge, multiple identifiers and differences between information systems complicate the process of information consolidation. And duplicate or misidentified records can be an issue even within a single information system. All it takes is a simple clerical error to result in two different, incomplete records for the same patient.

HealthShare Patient Index is an enterprise master patient index (EMPI) product that provides an automated and easily integrated solution for creating a "single source of truth" for patient identity and demographic information. Patient Index is pre-configured to work with InterSystems HealthShare Unified Care Record to accelerate the merging of multi-source patient information into a single, accurate, unified care record. Patient Index use cases include:

- Automatically linking large volumes of records in accordance with your business rules to create a unified care record within a healthcare enterprise, across a health information network, or embedded within another solution
- Recognizing the creation of duplicate records in real time and triggering corrective actions

Adding Safety and Accuracy to Shared Health Information

A sophisticated matching engine using deterministic and probabilistic logic sits at the center of Patient Index. This set of software algorithms and services provides record matching and automated tuning tools to adjust the algorithms based on your data set.

Key Features

Data Quality Framework

Data Quality Framework (DQF) is an analysis utility that makes creation of the EMPI faster and more accurate, and the EMPI itself easier to maintain. Using DQF you can determine the cleanliness, or not, of data coming from source systems. With this knowledge you can work with source system managers to improve data quality, or establish routines to clean the data before it reaches your EMPI. DQF includes dashboards that display data-source trends over time and other intelligence, making it easier to catch potential issues early and prevent bad data from entering your EMPI.

Dashboards

Patient Index includes usage and detail dashboards that help you achieve the highest levels of record-matching accuracy. Overview dashboards include information like the number of logins by user and the number of imported patient records. The Linkages detail dashboard provides insight on how records are or are not linking across particular facilities or the entire environment. The Record Summary dashboard tracks usage, including counts and trends of adds, updates, and merges against records over a given time.

Batch Import

The Batch Import utility is used to bulk-load patient data into the system. This can be useful when on-boarding a new data source, or when migrating a data source from an existing system. Batch Import provides APIs to ingest demographic data into Patient Index and export data from the patient registry.

Whole Record Viewer

To facilitate manual review and validation, the Whole Record Viewer lets you efficiently compare and validate patient identity and demographics across all source records on a single screen.

Composite Record

Patient Index automatically determines which records refer to the same individual and creates a single composite demographic record for each patient. When there are slight differences between data sources, the system uses configurable rules to choose the most trusted source. Data that is out of sync or out of date can be highlighted by the system for manual review.

Workflow Integration

Patient Index includes easy-to-use and configurable workflows to manage those cases where manual intervention is required. It also automatically notifies other systems and facilities about important changes to patient information.

Record Integrity and Configuration Evaluator

These utilities help you ensure optimal settings and operation of your EMPI before go-live and after. The utilities run on the live system, and do not need service interruptions to diagnose and repair system configuration or data integrity issues, if they exist.

Standards-Based APIs for Connectivity

Built-in secure and robust support for standards, including HL7 FHIR®, HL7®v2, IHE (PIX, PDQ, PDQm, XCPD), and Web Services, enables you to easily integrate Patient Index with the other applications in your enterprise.

Customized Rules

A built-in rules engine allows you to create and implement site-specific logic, such as customized patient matching and alerting.

Auditing and Security

A secure, role-based portal manages access to data and utilities. All record updates are audited, as are all decisions to link or unlink patient records.

More than a Service

Patient Index is part of the HealthShare suite of connected health solutions, and can be delivered as a managed service. Combine Patient Index with HealthShare Unified Care Record, HealthShare Health Insight, HealthShare Provider Directory, or HealthShare Personal Community to advance your digital transformation strategy.

Customer Support and Education

When you select Patient Index, you get more than technology. You also get our acclaimed customer support and extensive educational opportunities. Search for Patient Index education resources at [Learning.Intersystems.com](https://learning.intersystems.com).

Learn more about Personal Community and all of the products within the HealthShare suite at [InterSystems.com/HealthShare](https://intersystems.com/HealthShare).



**LEARN MORE ABOUT
HEALTHSHARE PATIENT
INDEX AND ALL OF THE
PRODUCTS WITHIN THE
HEALTHSHARE FAMILY
AT [INTERSYSTEMS.COM/
HEALTHSHARE](https://intersystems.com/HealthShare).**



HealthShare Care Community

Managing Care in Distributed Healthcare Systems

Coordinating, delivering, and managing care in a fragmented healthcare system is tough. So many moving parts and so much information to gather and process from different providers, payers, government agencies, and other organizations. InterSystems is addressing these challenges with **InterSystems HealthShare Care Community** software.

HealthShare Care Community is a solution for care givers, patients, and their families to improve communication, care transitions, and care coordination outside of the hospital setting. The whole care team – from patients and physicians to care managers and home health workers – can create a comprehensive care plan with the benefit of real-time access to the HealthShare Unified Care Record.

Users of HealthShare Care Community can document information relevant to a patient's treatment – such as clinical, demographic, and social determinants from across the care continuum – in a shared care plan. By leveraging this information at the point of care, HealthShare Care Community enables you to focus on the patients most in need, or entire cohorts susceptible to gaps in care.





HealthShare Care Community makes the care plan available to care team members, the patient, and their proxies.

Facilitating Care Planning and Communication

its information can be embedded within users' native workflows. It ensures that patients will have an accurate care plan that follows them wherever they receive care, and that everyone on the care team is on the same page. All features in HealthShare Care Community are HL7 FHIR (Fast Healthcare Interoperability Resources)-enabled, allowing the care team and care management to seamlessly share care plans, documents, and other information through HealthShare.

Care Team Identification and Management

HealthShare Care Community enables you to identify and manage one or more care teams for patients. Using HealthShare Care Community, everyone on the team can see who is involved in the patient's care; when they're involved; what role they serve; and their contact information. Care teams can include members already known to HealthShare, and additional care providers that may just be working with a particular patient. HealthShare Care Community protects your investment in time and resources with the ability to share care team information with other health and care providers using a variety of interoperability standards, including HL7 FHIR.

Creating and Sharing Care Plans

HealthShare Care Community enables role-based administrators to create care plan forms with a choice of multiple custom form elements. Depending on the status of the care plan form – draft, active, or final

– care team members can access the plan to update or contribute new information. Once a plan is marked final, it's published as a PDF file for access by the patient and other authorized users. If needed, care team members can compare care plan versions to pinpoint changes.

Proactive Care Team Communication

With care team members and their roles and contact information clearly identified, HealthShare Care Community simplifies care team communication. The collectively created and updated care plan itself is the primary means of communication and coordination. Care Community can automatically notify team members to care plan changes as well as upon a patient's admission, discharge, or transfer (ADT) event. These and other notifications make it easier to keep everyone on track with the plan. Through the HealthShare clinical message center, person to person communication among team members is saved for future reference.

Reporting

HealthShare Care Community provides a library of discrete data elements which can be exported into the Unified Care Record's data model and accessed for reporting. Elements include demographic information such as a patient's primary language, social information such as a patient's living arrangement, and care plan-specific information such as a patient's goals.

High- and Rising-Risk Cohort Management

HealthShare Care Community helps the care team and healthcare organization focus on improving care for patients most in need of care coordination. With HealthShare Health Insight or other analytics tools, you can identify patients in high- and rising-risk populations and customize care plans accordingly.

Key Features

With the power of InterSystems HealthShare behind it, HealthShare Care Community presents a simple solution to complex care management problems. Healthcare systems and their partners can move forward as a team to improve health outcomes, close gaps in care, and increase care team efficiency. Key features include:

- **Quick and easy access to the care plan:**
 - At the provider point of care, within the context of the patient's complete medical and social history
 - For users of HealthShare Unified Care Record, from the Documents section of the HealthShare Clinical Viewer
 - For patients, via HealthShare Personal Community
 - With secure web-based access for care givers and patients in any setting, and access to care plans by external systems, such as non network electronic medical records
 - Offline, in print or PDF format, when online access to HealthShare Care Community is not practical

- **Flexible templates enabling care team members to quickly establish a new care plan document and:**
 - Capture structured and unstructured information
 - Add required questions
 - Add conditional ‘if, then’ logic
 - Assign care plan tasks to a specific care team member
- **Creation of a new template by copying from an existing care plan**
- **Centrally managed care plans that multiple care team members can share and contribute to over time**
 - Team members can view all tasks, across all patients, on one screen
- **Capture of patient preferences and social determinants of health, including personal information the patient wants care givers to understand**
- **User audits, including date and time stamp, for traceability of all actions on the care plan**

Extend the Value of HealthShare

HealthShare Care Community complements other HealthShare products, such as:

HealthShare Unified Care Record, which aggregates and normalizes patient records from disparate systems across your organization, and outside it, to ensure that HealthShare Care Community and everyone using it can see a complete picture of the patient’s health

HealthShare Health Insight, which identifies high-risk populations in need of help with transitions of care and care coordination outside of the acute setting

HealthShare Personal Community, for patient access to their complete medical record, care plan, and clinician-patient communication

Customer Support

When you select HealthShare, you get more than technology. You also get our acclaimed customer support. See [InterSystems.com/support](https://www.intersystems.com/support) to learn more.

Take the Next Step

To learn more about HealthShare Care Community, go to [InterSystems.com/care-community](https://www.intersystems.com/care-community) or see [InterSystems.com/offices](https://www.intersystems.com/offices) to find contact information for your local InterSystems team. More information about HealthShare and its family of products is available at [InterSystems.com/HealthShare](https://www.intersystems.com/HealthShare).

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HealthShare Provider Directory

A Single Source of Truth for Provider Demographic and Professional Relationship Information

Inaccurate provider information has consequences – for patients, payers, and the providers themselves. Wrong telephone numbers and location information limits access to care. Inadvertently choosing an out-of-network provider can result in catastrophic healthcare bills. Health plans have been fined hundreds of thousands of dollars for publishing inaccurate directories. And inaccurate information propagated across multiple clinical and administrative systems at a hospital or Integrated Delivery Network can negatively impact efficiency and cash flow. A 2017-2018 CMS review of Medicare Advantage Organization provider directories found that nearly 49% of them contained inaccurate information.

InterSystems HealthShare Provider Directory is a master data management solution that automates the process of collecting, consolidating, and publishing accurate provider information. It enables you to more easily comply with regulations such as CMS 9115-F for patient data sharing, enhance customer service, and improve the efficiency of any business process that requires up-to-date and accurate provider information.



Key Features

The Single Source of Truth

HealthShare Provider Directory compiles data from multiple sources, including NPPES national provider identification files. It uses a linkage engine and business rules to select the most accurate and up-to-date information, and creates master records for individual providers and provider organizations. The master record is the single source of truth storing common attributes for these entities and supports the many relationship structures that occur in healthcare.

The directory includes the organizational, location, and network relationships needed to navigate care delivery. Additional attributes include contact information, demographics, credentials, identifiers, specialty, education, Direct email addresses, generic application programming interfaces (APIs), and HL7 FHIR (Fast Healthcare Interoperability Resources) APIs.

Individual providers can have relationships to organizations and locations. An organization can have relationships to other organizations, individual providers, and locations. Locations can have properties for address, location type, and references to individual providers and organizations.

Provider Directory tracks how an individual provider or organization participates in a network at practice locations. It also maintains network-to-health plan and contract administrator relationships.

Accuracy



Provider Directory ingests and processes data from multiple sources and uses its linkage engine to identify matches for individual provider records and provider organizations. During processing, Provider Directory normalizes the data, de-duplicates it, applies validation rules to screen for errors, and uses configurable business rules to consolidate matched data into a single master record for each entity. When matching results on the incoming records fall below a user-determined level of confidence, Provider Directory flags the records in a task list for human intervention.

Task Lists

The Task List contains linkage tasks for individual providers and provider organizations that require manual review or validation. Each task on the list displays the data source, source record name, and source IDs of linked records. The Task List is sortable by the work category, link reason, link weight, and task date, all of which are displayed in the user interface. Task List provides all the information needed to make informed decisions about linkages for individual providers and provider organizations.

Search

Provider Directory now includes phonetic, location, and organization type search functions. These features make it easier to find information for the provider you need, when you need it.



**NORTHWELL HEALTH
USES PROVIDER
DIRECTORY WITHIN
ITS HIE TO COMBINE
INFORMATION FROM
MULTIPLE SYSTEMS INTO
ONE MASTER RECORD,
FOR BETTER PATIENT
SERVICE ACROSS ITS
INTEGRATED DELIVERY
NETWORK.**

Master Browser

The Master Browser is the central access point for managing all records in Provider Directory. Its authorized users can search for records, see overviews, and review the content of all record types, including individuals, organizations, locations, addresses, networks, health plans, and contract administrators. Authorized users may also manually edit or enter information into the directory for individual providers, provider organizations, locations, individual to organization and organization to organization relations. The Master Browser also supports relationship records such as individual-to-organization, organization-to-organization, and in-network, as well as network-to-health plan and contract administrator.

Trust

With so many healthcare business processes depending on accurate provider data, trust of the data in your provider directory is essential. HealthShare Provider Directory inspires such trust through Master Browser features that deliver unsurpassed transparency into the process of creating and updating master records. These features allow authorized users to:

- Filter information by date, time, and source
- See and adjust the rules used to determine the most accurate sources of information
- Track when record updates have occurred and the source of those updates
- View details about update sources
- Examine source records that contributed to a master and the rules that governed their use

User Management

Provider Directory is highly automated. But when human intervention is required, its user management capability supports work-list profiles to organize the flow of record validation by your staff. Provider Directory supports roles for an administrator, data stewards, and guest users:

- The guest user can only access the public application programming interfaces (APIs), and the Master Browser overview and Search features
- The data steward has access to the Master Browser, Edit, Entry, and Task List
- A role-based access feature called Form Access can control view and edit access for data stewards at both the section and field levels
- The administrator has access to the Master Browser, Edit, Entry, Task List, and User Management, as well as permissions to view the Provider Directory linkage definitions

FHIR Repository

The FHIR Repository in Provider Directory supports the Da Vinci PDEX Plan-Net standard for search and retrieval, based on FHIR R4. Provider Directory uses a push service to send new records and updates to the FHIR Repository.

Supported FHIR resources:

- Endpoint
- HealthcareService
- InsurancePlan
- Location
- Network
- Organization
- OrganizationAffiliation
- Practitioner
- PractitionerRole

Sharing

HealthShare Provider Directory publishes public REST APIs for searching and retrieving individual provider and provider organization records. Information supplied includes related organizations, locations, and networks.

Push Updates Service

Provider Directory can update trusted provider information in real time to drive referral management, revenue cycle management, or care coordination workflows. The system translates and pushes update events in various formats (such as HL7, JSON or XML messages) to downstream systems, including to the FHIR Repository. For example, the HealthShare User Clinician Registry receives these updates to ensure that it has accurate provider information to drive clinical notifications.

Deployment

Provider Directory can be installed on premises or hosted in the cloud. The product currently is available for use by customers in the United States only.

More than a Service

Provider Directory is part of the HealthShare suite of connected health solutions and can be delivered as a managed service. Combine Provider Directory with HealthShare Unified Care Record, HealthShare Health Insight, HealthShare Patient Index, HealthShare Care Community, or HealthShare Personal Community to advance your digital transformation strategy.

Customer Support and Education

When you select HealthShare Provider Directory, you get more than technology. You also get our acclaimed customer support and extensive educational opportunities. Search for Provider Directory education resources at [Learning.Intersystems.com](https://www.intersystems.com/learning).

Learn more about Provider Directory and all of the products within the suite of HealthShare connected health solutions at [InterSystems.com/HealthShare](https://www.intersystems.com/HealthShare).

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**INTERSYSTEMS
IRIS FOR HEALTH
IS THE WORLD'S
FIRST AND ONLY
DATA PLATFORM
ENGINEERED
SPECIFICALLY
FOR THE RAPID
DEVELOPMENT
OF HEALTHCARE
APPLICATIONS
TO MANAGE THE
WORLD'S MOST
CRITICAL DATA.**

InterSystems IRIS for Health

The Fastest Path to Value for Healthcare Data Solutions

Data is at the heart of the digital transformation sweeping healthcare. Radical change requires a new foundation to handle the massive data demands of modern healthcare.

Time to market counts as you create the next therapeutic breakthroughs, genomic insights, and intelligent clinical workflows. You need to deliver them now.

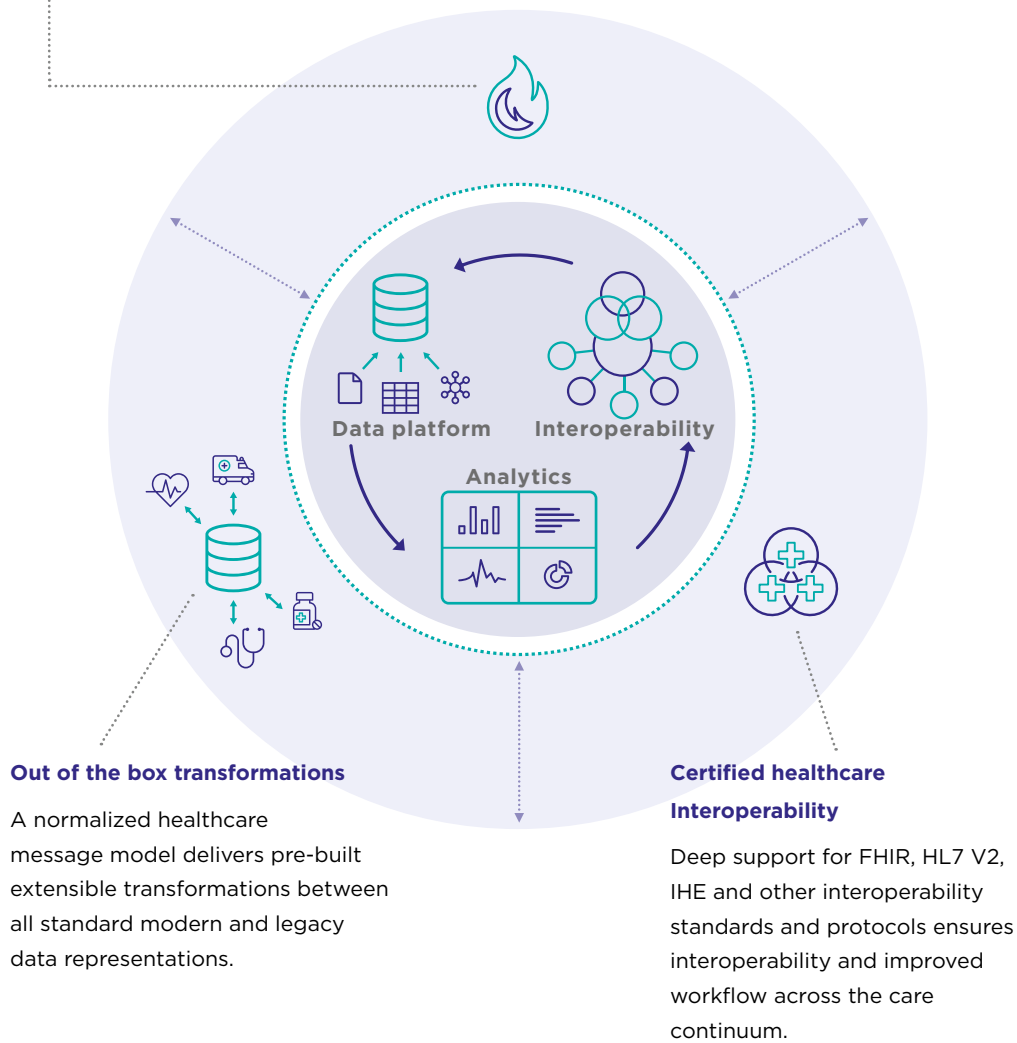
That's why we've extended the power of our InterSystems IRIS Data Platform® to address the unique characteristics of healthcare information. InterSystems IRIS for Health™ is the world's first and only data platform engineered specifically for the rapid development of healthcare applications to manage the world's most critical data.

No data management vendor has a greater commitment to healthcare or more relevant experience than InterSystems. Globally, more than one billion health records are managed by solutions built on our technology. Laboratories running on InterSystems process nearly half the specimens in the U.S. every day. The most sophisticated private and government providers depend upon devices, records, and IT powered by InterSystems.

InterSystems IRIS for Health

FHIR-based solution development

An extensible FHIR repository and comprehensive REST APIs provide the foundation of modern healthcare application development.



Out of the box transformations

A normalized healthcare message model delivers pre-built extensible transformations between all standard modern and legacy data representations.

Certified healthcare Interoperability

Deep support for FHIR, HL7 V2, IHE and other interoperability standards and protocols ensures interoperability and improved workflow across the care continuum.

InterSystems IRIS for Health provides everything you need to develop data-rich healthcare applications quickly.

Healthcare application development, quickly and intelligently.

FROM WHITEBOARD TO PRODUCTION, FAST.

InterSystems IRIS for Health provides all of the capabilities for building complex, mission-critical, data-intensive applications. It's a comprehensive platform spanning data management, interoperability, transaction processing and analytics, built to accelerate time to value.

BUILT FOR BIG.

The volume and variety of healthcare information is stunningly large and growing exponentially. InterSystems IRIS for Health efficiently enables applications to scale from scratch, both vertically and horizontally to cost-effectively handle any scale workload, data, and users.

ACCELERATING CONNECTIONS.

Truly connected health requires interchangeable information flow across all sources, modern and legacy. Since InterSystems IRIS for Health delivers native support for FHIR and every major global healthcare messaging standard, applications can rapidly ingest, normalize, and share information.

DEEPER INTELLIGENCE.

Artificial intelligence and machine learning succeed or fail on the quality of the underlying data. InterSystems IRIS for Health delivers advanced data prep capabilities to create transformative healthcare models and optimize the effectiveness of learning solutions.

RESPONSIVE INSIGHTS.

Clinical decision support, bench-to-bedside medicine, and increasing consumer expectations all demand answers in real time. InterSystems IRIS for Health excels at hybrid transactional/analytical processing (HTAP), powering solutions that respond to these accelerating demands.

STANDARDS SUPPORTED:

United States: ASTM, CDA[®] and CCD[®], CCDA, DICOM, EDI - ASC X12, HL7 V2 and 3, HL7 FHIR, IHE, NCPDP

International: EDIFACT, ITK - England, DMP - France, HPRIM - France, SS-MIX - Japan, ADHA - Australia, xDT - Germany

Tested Interoperability in the Healthcare Industry

Our HealthShare and IRIS for Health products support all common standards and profiles (IHE, HL7, FHIR, DICOM, and so on). A universal data model processes all data types in a format that enables standards such as HL7 V2/V3 to be converted into HL7 FHIR or HL7 FHIR into HL7 CDA 2.0 easily.



Data can be saved as FHIR resources and the comprehensive REST APIs grant SMART on FHIR and other FHIR applications granular access to this data. Many InterSystems employees are involved with IHE and HL7 committees. They play an active role in shaping the HL7 FHIR standard and its usage in IHE profiles.





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