

ICW Health Information Exchange

Shared information for the bigger picture



connect.

manage.

personalize.

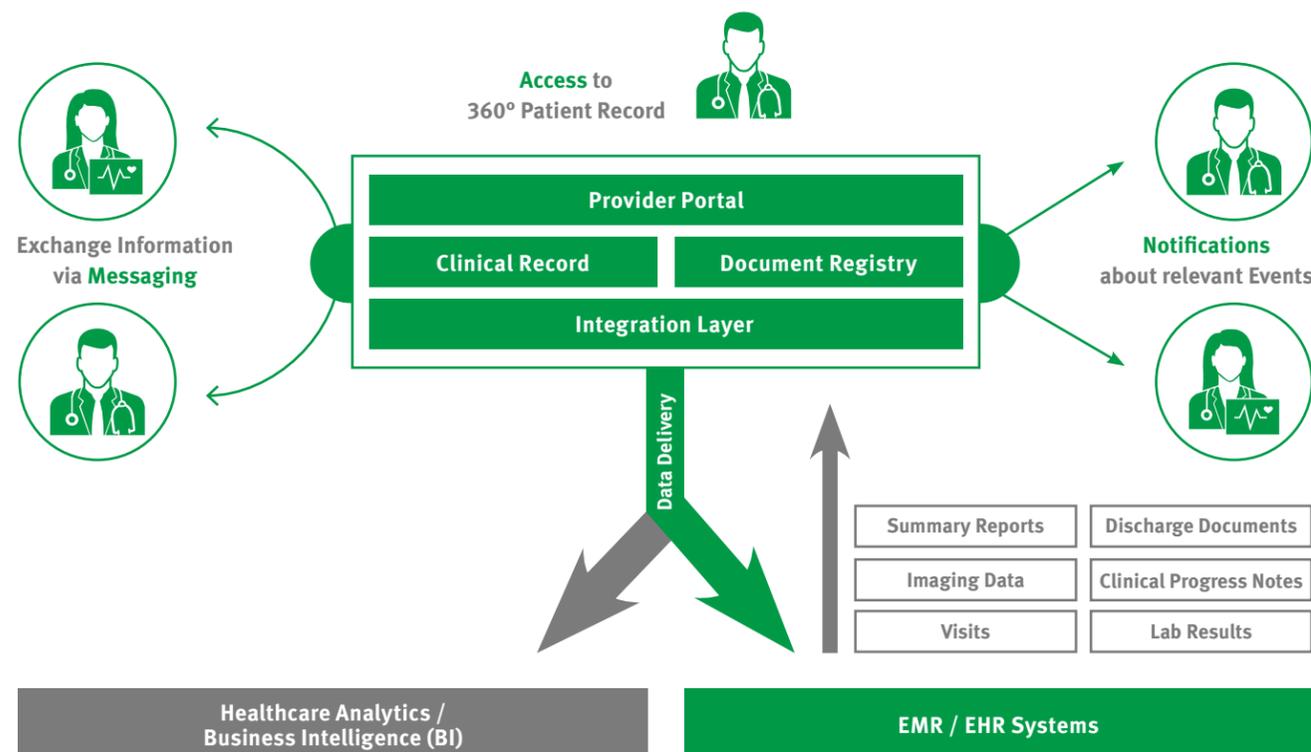
ICW Health Information Exchange

Risk-based contracting and cooperative care delivery scenarios, such as cross-enterprise care plans or hospital discharge management, are essential to achieve the triple aim of healthcare:

- Improving the patient's experience of care
- Improving the population's health
- Reducing per capita health care cost

ICW enables healthcare organizations to achieve these goals with a powerful Health Information Exchange solution that combines a secure and highly interoperable longitudinal record with a powerful cross-enterprise master patient index. Supporting all relevant interoperability standards by design, it enables a broad variety of collaboration tools within and across enterprises, including classical HL7 messaging, IHE query-based web services, a provider portal, and Direct e-mail services for secure messaging.

ICW Health Information Exchange at a glance



Many application scenarios – one solution

Patient identification – The foundation of patient-centered care across the enterprise

An individual's health information is typically scattered across numerous information systems; linking these health records together and aggregating the data into one uniform view can be a significant challenge. ICW Master Patient Index (ICW MPI), seamlessly integrated into ICW's HIE solution, reliably identifies individual patients across organizational boundaries. It ensures that connected systems always have access to complete, reliable and up-to-date patient master data. ICW MPI lays the groundwork for patient-centered medical care and successful cooperation between care providers across organizational boundaries in the care continuum.

Community-wide health record – one single record across the care continuum

Facilitating care coordination and seamless care transitions are the ultimate goals of an HIE. For multidisciplinary care teams, ICW's HIE solution is a reliable and comprehensive source of medical and administrative data relevant to treatment. It provides a cross-enterprise clinical record that aggregates patient data from different sources including ambulatory care, inpatient facilities and lab. It thereby creates a comprehensive longitudinal view of the patient's medical history. As a result, the whole care team is kept up to date about the current state of the patient's health, at any time and in any place. Built-in real-time notifications about relevant events (e.g. ER visits or abnormal lab results) enable the care team to coordinate all necessary interventions. Thanks to the tight integration with the ICW Care Manager, the ICW HIE provides a robust, context-aware information base to implement and monitor clinical pathways and care management.

Efficient, secure and reliable communication in collaborative care delivery models

An efficient way to communicate among providers and stay up to date with a patient's care plan is vital for the success of collaborative care models. The ICW HIE users can communicate via patient-related messages without

sensitive data leaving the system, minimizing risk and liability. This secure e-mail functionality is tightly integrated with the patient record, so that users can easily include links to documents or even entire patient records in their messages, making referrals and requests for consultation easy. 3rd party Direct HISP services can be integrated for secure messaging with providers outside the local community. Furthermore, a reliable subscription mechanism allows providers to sign up for clinical events such as incoming documents, lab results or hospital visits. These tools make it easy for health care providers to stay up to date with their patients' health status even in complex cross-enterprise care delivery models.

Making health care measurable – clinical information hub for analytics and business intelligence (BI) applications

The availability of comprehensive clinical data is the key to the continuous improvement of processes and quality of care. Our solution receives, extracts, and de-duplicates clinical data from all connected source systems. It provides clinical data for entire populations and makes them available to 3rd party stratification, analytics and reporting engines. This data set is the key for measuring health care quality across enterprises. Providers and care organizations are thus enabled to continuously manage the quality of care and report on ACO and Meaningful Use measures.

Image exchange – exchange of medical images and findings

The ICW HIE enables the integration of medical image archives (PACS) into the longitudinal patient record. The consolidation of images, findings, and further data offers health care providers an even more comprehensive picture of their patients' status. The integration of various DICOM viewers allows users to open image data directly from the portal interface. Other clinical information systems can leverage the mature PACS integration of the ICW HIE to locate and display medical images.

Intuitive provider portal



Quick access to relevant information – available immediately via the web portal

Thanks to the ICW HIE web-based portal interface, access to the longitudinal patient record is convenient and available to the user immediately.

- **Dashboard:** Recent activities at a glance – new messages, notifications about new clinical information, user-specific patient lists
- **Overview:** Gives a quick summary of a patient's most recent clinical data and documents
- **Consolidated patient medical history** and dedicated views for documents, images, and medical data such as problems, medications, allergies, vital signs, procedures, immunizations and lab results
- **Lists for filtering and grouping relevant data by date, source, type or encounter**
- **Medications:** What was prescribed, what is planned, which medications were issued or administered and in which dose
- **Allergies:** All existing allergies and intolerances
- **Lab and micro biology results:** Panel-based views and cross-panel drill-downs for individual tests, markers and active notifications for values outside of the reference range, graphical indicators show the position of values in the reference range
- **Vital signs:** Overview of measurements such as blood pressure, body weight and height, including dynamic calculation of indicators (e.g. BMI)
- **User-specific patient lists:** Recently accessed patient records, bookmarked patient records
- **Subscription:** Active and personalized notifications, users can sign up for the default set or fine-tune subscriptions according to their needs considering the patient, types of data, timeframes and contact channel (e.g. email, SMS)
- **Access Control:** Attribute- and role-based access control, using electronic patient consent, supports conditional emergency access, highly customizable through a standards-based rule engine
- **Printing function**
- **Add medical data:** Upload documents or fill out custom digital forms in the portal, created in our intuitive graphical forms editor (ICW FormDesigner), supports print views, scripting and other advanced features
- **Always visible indicators for End-of-Life Planning documents** (with support for PDFs a. custom digital-forms)
- **Individual adaptation options for the web interface** (such as color schemes, configurable overview page)



Customer reference

Heidelberg University Hospital (Universitätsklinikum Heidelberg)

“With the Inter-Sector Information System, we are pursuing two main goals: facilitating access to treatment-relevant information of joint patients and more actively involving patients. With ICW, we have found an ideal partner for both that will help us to achieve these goals.”

Prof. Dr. Björn Bergh, Director of the Center for Information and Medical Technology, Heidelberg University Hospital

360° Patient Record view



Powerful backend

All medical data available in every system

The web-based portal interface is only one option to access the medical data captured for a patient. ICW HIE provides all interfaces required for deep integration into existing applications. By relying on open standards instead of proprietary interfaces, customers can avoid vendor lock-in and reduce integration costs.

- IHE XDS to register and retrieve documents, as links or copies (XDS Document Registry and Repository)
- HL7v2 MDM to store documents
- IHE XDS-I to register references of image data stored in PACS and transfer it to a DICOM viewer
- IHE DSUB to automatically send notifications regarding new documents to connected systems
- HL7v2 ADT to receive visit and encounter information
- HL7v2 ORU to add laboratory results to the medical record including micro biology
- IHE QED for HL7v3-based query of medical data such as diagnoses, medications and allergies
- IHE On-Demand Documents to retrieve structured medical data as a dynamically compiled CCD document via XDS.b
- IHE BPPC for patient-consent documents that control access to PHI
- IHE XCA and XCPD for document sharing across communities using federated record systems
- DIRECT for secure messaging between clinicians

Even if the system to be connected does not support any of these interfaces or profiles, ICW, thanks to its flexible technology and years of experience in integration, can achieve an efficient connection.

Customer reference

Sandlot Solutions

ICW's new HIE release supports Sandlot Solutions' plans to expand its business in healthcare information technology and offer its customers, especially hospitals, physicians' networks, IDNs, ACOs and government organizations such as healthcare networks, more flexible, cost efficient and powerful healthcare information management solutions:

"The consistent orientation of ICW's development work to international standards such as IHE, and the know-how and performance of its employees, is what convinced us in the end. We are pleased with this partnership and will optimally expand our portfolio with the help of the ICW team. This will put us in a good position to increase efficiency, drive down cost and bring the best of class solution to our market."

Joe Casper, Chief Executive Officer of Sandlot Solutions

Scalable, flexible, integrative

ICW's HIE solution is scalable and suitable for facilities of all sizes – from individual hospitals with low volumes of clinical documents to regional networks or state-wide scenarios, where large amounts of medical information are exchanged. The flexible, modular structure allows for a customized longitudinal patient record with functionality that fits the customer's needs today without sacrificing extensibility. The master data required for record registration can be acquired from any patient management system via HL7v2 or HL7v3 interfaces, and ICW's offering also contains a powerful Master Patient Index. The ICW MPI is ideal for enabling a reliable central patient identity, even across facility boundaries. With its diverse interfaces, high-performance algorithms, and support of clearing workflows it is a sophisticated solution for patient identification.

Security and Privacy made in Germany

ICW solutions provide comprehensive privacy and security features for the safety of clinical data and documents. This includes authorization, authentication, encryption of data and an audit trail for the access to personal health information (PHI). Authorization is a particularly difficult issue for many HIE organizations, as state and federal laws, including HIPAA, have different and changing rules on how to determine access to the patients' records: some require explicit consent ("opt-in") before access, others assume consent and only require manual intervention for patients who do not want to participate in the exchange ("opt-out"). The ICW HIE solves this problem through a configurable rules engine that is powerful enough to support all state and federal privacy rules as well as the customer's own needs, e.g. special data sharing rules within an ACO. Using widely supported standards such as IHE BPPC, IHE XUA, SAML and XACML ensures that the security system can be smoothly integrated into the customer's IT ecosystem. No matter whether you need "opt-in", "opt-out", "Break the glass", or a special rule to limit access to HIV-related data to organizations that had direct patient contact, the ICW HIE can fulfill those requirements through simple configuration changes.

Modular layout to empower full-fledged HIE

Whether a simple document registry or detailed structuring of medical data including comprehensive communication options – ICW's HIE has a module for every application scenario:

- ✔ **Document Sharing** – longitudinal patient record for document sharing
- ✔ **Clinical Record** – record enhanced with labs, problems, medications and other structured data
- ✔ **Provider Portal** – web-based portal for accessing the longitudinal record
- ✔ **Collaboration** – secure Direct e-mail and notifications
- ✔ **Cross Community Exchange** – document sharing across HIE boundaries
- ✔ **Image Integration** – view high-quality medical image data in the portal
- ✔ **Integrated Forms** – custom digital forms with a graphical editor





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of this brochure here.

Do you have further questions?
Then give us a call!

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