



Maximise the benefits of your electronic health record (EHR) using the **3i-model**

An essential guide for healthcare institutions

An integrated approach towards better care.

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The electronic health record (EHR) as the foundation of your healthcare institution

Hospitals are facing major challenges. The demand for care continues to rise, while the number of available healthcare professionals is more limited than ever. The increasing complexity and rising demand make it essential to work more efficiently. EHRs play a crucial role in achieving this. However, in practice, many hospitals still struggle with fragmented IT systems, complex integrations and underutilised valuable data.

An EHR has to be more than just a digital archive. It needs to support healthcare providers in their work, reduce the administrative burden, promote collaboration and provide reliable insights. How do you ensure that an **EHR** actually **increases the quality of care** while **improving the efficiency of your hospital**?



3i-model

Success is built on a model with three strategic pillars: **Integration, Interoperability** and **Insights**.

An EHR should not be a collection of separate modules, but an integrated system that is seamlessly connected to hospital processes.

INTEGRATION

INSIGHTS

Hospitals collect vast amounts of data every day. By leveraging this data in a structured and integrated way, healthcare providers can make better-informed decisions and proactively respond to healthcare needs.

INTEROPERABILITY

Patient care doesn't end once they leave the hospital. EHRs must be able to share data securely and efficiently with general practitioners, home nurses, pharmacies, laboratories and other care partners.

The 3i model forms the basis for future-proof, value-driven healthcare.

In this whitepaper you'll discover how you can **maximise** the value of the EHR in your healthcare institution by focusing on the three strategic pillars mentioned above. You'll then learn how, using smart optimisations, your hospital can transform the EHR into a **powerful tool** for not only better patient care but also more efficient management and more effective use of resources and budgets.



Pillar 1: Integration

From data silos in your organisation to a streamlined EHR

In a hospital, numerous departments, healthcare professionals and systems work together 24/7. **An integrated EHR** is not just beneficial, it's essential. In practice, however, many healthcare institutions still use a 'best-of-breed' approach, meaning there are separate software packages for emergencies, radiology and medication prescriptions, for example.

While a best-of-breed model offers flexibility, it also introduces specific challenges:

Data silos

Data is siloed in separate systems, preventing healthcare providers from having a complete picture of their patient.

Duplicate entries

Medical information has to be manually entered into different systems. This process is both error-prone and time-consuming.

Lost time

Healthcare providers waste valuable time having to manually search for the correct and most up-to-date information.

An **integrated EHR breaks through these barriers**. It connects data, processes and departments so that **all information** is available in **one integrated system**. This gives healthcare providers access to the most up-to-date patient information anytime, anywhere, and without any unnecessary intermediate steps.

A patient comes into A&E, is transferred to another department, then has a doctor's consultation...
They can find all the info they need, including invoicing, in the integrated EHR. At any point in time, this provides a much better picture of a patient's status and location compared to our previous EHR.

Sam Lowie, EHR programme manager at Vitaz

From basic integration to advanced workflows

Building a truly integrated EHR is a phased process that begins within the hospital and seamlessly extends to external partners.

- 1 Start with the core processes: Consider appointment management, patient registration, medication management, consultations and care planning. These are some of the **fundamental workflows** that keep a hospital running.
- 2 Extend to smart, advanced workflows: Radiology, emergencies, surgical planning, <u>anaesthesia</u> and telemonitoring require deeper integration. For example, **real-time dashboards** that provide healthcare providers with immediate insight into critical situations. Automation and smart decision-making support can also make a difference. This reduces administrative tasks, **freeing up more time for patient care** and reducing the risk of errors.
- **3 Optimise using mobile workflows:** Ensure that your **EHR is available on different devices** and is also tailored to the needs of your organisation and users. This allows for greater optimisation, for example through an integrated app that enables doctors to view data during rounds or while on call.
- 4 Actively involve the patient: Patients can access their own data, complete questionnaires and schedule appointments via patient portals and smart integrations. There are also wearables and remote devices that allow them to monitor important parameters at home. This increases patient engagement and reduces the administrative burden for healthcare providers.
- 5 Efficiently manage your hospital resources: A well-integrated EHR helps hospitals manage their staff, finances and occupancy more efficiently. By monitoring patient flows and bed occupancy in real time, you can respond more quickly to changes and get the most out of your resources.

From theory to practice | Customer case

Digital patient journey

With the introduction of digital care pathways, AZ Herentals hospital has taken a major step in transforming their patient journey. Patients undergoing a full knee replacement can access all information digitally and at the appropriate moment via the patient portal. From the preoperative appointment to rehabilitation.

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From theory to practice | Customer case

Efficient patient transport

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The CPT app (Central Patient Transport) increases efficiency, saving time and energy. The app also supports patient safety and is extremely user-friendly. "We now have much better control over where a patient is and what transport is needed. The number of phone calls between departments is also significantly less. This gives healthcare providers more time to focus on patient care,"

says Benjamin Peeters, ICT director of the H. Hartziekenhuis hospital in Mol.

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Key takeaways

Thanks to an **integrated EHR** with **automated workflows**, healthcare providers are more **(cost) efficient** and less likely to make errors. Doctors can now handle routine tasks more quickly – even when they're on the move or in emergency situations – via mobile apps. This reduces the administrative workload and allows them to spend their time more effectively.

Patient safety also improves. When all the information is centralised, duplicate entries and the risk of miscommunication between departments are eliminated. **Alerts and automatic checks** help care professionals act – thanks to an **integrated system**, they have immediate access to up-to-date information, enabling them to make faster and safer decisions. Collaboration runs a lot smoother too.

In short, integration ensures less manual work, fewer errors and a care process that runs smoothly – without any wasted time.

Thanks to the Safe Fast Infusion project, patients with chronic conditions such as Crohn's disease or ulcerative colitis now save up to an hour per treatment.

Cindy Pieters, IT Process Manager at AZ Voorkempen hospital

Pillar 2: Interoperability

Collaboration beyond borders

Healthcare doesn't end when the patient leaves the hospital. Specialists, general practitioners, home nurses and other (para)medics must be able to consult and share patient data **securely, efficiently and in real time – regardless of the systems they use**. This also applies to data exchanges with government platforms, highlighting the need for an interoperable EHR that benefits both patients and all care professionals involved. And it is about much more than simply connecting platforms, technologies and healthcare providers.

FAIR principles

A robust EHR is based on the **FAIR principles**. This means that the data is Findable, *Accessible, Interoperable and Reusable*. Achieving seamless and secure data exchange between hospitals and primary care requires accurate data interpretation. This can be achieved by using **international standards** such as HL7 and FHIR and **terminology systems** such as SNOMED CT, ICD11 and LOINC. The option to integrate with **telemonitoring, wearables and other digital applications** for real-time health insights is also paramount.

Partner strategy

A well-defined **partner strategy** helps you to decide which external platforms will enhance your EHR – it is important to opt for **integrated partnerships** that enhance your EHR without impacting essential functions. When evaluating external solutions, ensure they comply with established data exchange standards.

Telemonitoring

Wearables and remote monitoring devices are becoming increasingly vital. These smart devices collect real-time patient data, offering valuable insights and even generating alerts for potential abnormalities. A prime example is <u>OncoCare@Home</u>, which remotely monitors vital signs in cancer patients.

Collaborating with government platforms

In Belgium, multiple initiatives already facilitate data sharing through the national eHealth platform and regional 'health vaults'. Looking ahead, the **European Health Data Space (EHDS)** will enable the secure exchange of key health data across Europe for both primary and secondary use. Standardisation and smooth collaboration are therefore critical.

The benefits of interoperability in your EHR

An interoperable EHR makes care more efficient and improves collaboration between care providers. The main advantages include:

- Better coordination of care Real-time data sharing ensures that care teams are always aligned, with every care provider always having access to the most up-to-date information.
- Improved remote follow-up Integrations with telehealth platforms and monitoring tools support better patient follow-up beyond the hospital setting, enabling timely interventions and ensuring continuity of care.
- Reduced duplicate data-gathering Centralised patient data eliminates the need for patients to repeatedly share their medical history and helps avoid unnecessary tests. This contributes to faster diagnoses and more efficient care.

- More patient-centred care With all the necessary information available, the relevant healthcare providers can develop a more personalised care plan, tailored to the patient's complete medical history.
- Seamless collaboration between (network) hospitals
 Connecting systems across
 different healthcare institutions
 facilitates easy data sharing. This
 ensures efficient collaboration
 and a smooth flow of information,
 regardless of where the patient is
 being treated.
- More efficient communication
 with partners

Integration with external platforms ensures that the right information consistently reaches the right healthcare provider, improving **quality of care and patient safety**.

From theory to practice | Customer case

Smoother communication with Dutch GPs

Many Dutch patients travel to Belgium for treatment at the AZ Vesalius hospital. A smart EHR integration ensures that reports are sent seamlessly and securely to Dutch general practitioners. This provides patients with faster and better care, while minimising administrative burdens. "Nothing changes in the daily workflow of our doctors. That's what makes this solution so powerful," explains Marie-France Vallé, EHR programme manager at AZ Vesalius hospital in Tongeren..

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Key takeaways

Investing in interoperability not only enhances healthcare efficiency,

but also ensures that patients receive the right care, wherever they are.



From theory to practice | Customer case

Telemonitoring ensures shorter hospital stays

Thanks to TOTeM – Transmural Follow-up by TeleMonitoring – patients can recover safely at home 48 hours after treatment. "All important data flows directly into the electronic health record, allowing the specialist and general practitioner to follow up on everything," explains Karine Van Zande, EHR manager at AZ Sint-Blasius hospital.

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Integrated care doesn't stop at the hospital's revolving doors. We always have to start from the patient and, as healthcare providers, join forces to align all aspects of their care.

Charlotte Cleuren, policy officer at Jessa

Pillar 3: Insights

From qualitative data to better decisions

Hospitals register vast amounts of information every day. The challenge lies in translating this information into actionable insights. A well-optimised EHR empowers healthcare providers in making **faster, more accurate decisions** – both clinical and operational. This improves **patient safety**, enables **hospital process optimisation** and makes it possible to predict future care needs.

Working smarter with data

In the future, an integrated EHR could combine data from different departments and healthcare professionals. This could pave the way for implementing Clinical Decision Support Systems (CDSS) that proactively alert and advise healthcare providers.

A few potential applications:

- Medication safety: automatic alerts for contraindications or duplicate medication.
- Diagnosis support: clinical decision trees that assist doctors with complex cases.
- Alert & monitoring: real-time indications of abnormal vital signs.
- More efficient work processes: automatic prioritisation of patients in emergency or intensive care.

The incorporation of **automated decision logic** into the EHR will help hospitals act faster and more safely in the future.

Example

In a split second, an integrated decision system can detect if a patient with a kidney problem is being prescribed a nephrotoxic drug. Instead of a doctor having to look this up manually, the system immediately shows a warning and suggests an alternative.

Data-driven hospital management and benchmarking

Data not only provides clinical insights but also offers significant benefits for hospital management.

For example:

- **Capacity management:** Capacity management: predicting and optimising bed occupancy, operating theatres and staff scheduling.
- Cost control: gaining insight into the efficiency of treatments and care pathways.
- **Dashboarding:** visualising real-time data for targeted decisions and process optimisation. A tailored dashboard per department provides immediately actionable insights.
- Benchmarking: comparing performance with other hospitals to identify areas for improvement.
- **Quality monitoring:** analysing readmissions, waiting times, as well as patient-reported outcome and experience measures (PROMs and PREMs)

Example

By combining historical and real-time data, hospitals can predict when certain departments will experience peak demand and proactively respond to it.

Al and predictive analytics: the future of data-driven healthcare

Artificial intelligence (AI) and machine learning are playing an increasingly important role in healthcare. A well-optimised EHR provides the foundation for forward-thinking innovations, such as:

- Predictive analytics: anticipating which patients are at increased risk of complications.
- Al-supported image analysis: delivering faster and more accurate analysis of radiology images.
- Automatic pattern recognition: enabling early detection of infections or sepsis.

For AI to work effectively, data must be **well structured and accessible**. While many hospitals are already exploring AI, without a solid data foundation – such as a well-functioning EHR or data warehouse – the potential remains limited.

Key takeaways

EHRs hold a wealth of information, yet many hospitals are still not fully leveraging their potential. By strategically using data, healthcare institutions can not only work more efficiently but also proactively enhance the quality of care.



Conclusion

An EHR built on the 3i model is essential for future-proofing healthcare institutions

An EHR that focuses on **integration**, **insights and interoperability** serves as the backbone of an efficient hospital. Healthcare institutions that invest in this not only increase the quality of care but also strengthen their position in an increasingly digital healthcare landscape.

Considering a new EHR or looking to optimise your current system? Make integration, interoperability and insights the core of your strategy.

Want to learn more? Get in touch with nexuzhealth. ►

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