NTT DATA

Reimagining healthcare for a better future

Building smarter, patient-centered healthcare

Healthcare providers today are under mounting pressure, grappling with **aging populations, skyrocketing treatment costs, critical skill shortages**, and the ever-present threat of **new epidemics**. These challenges demand more than just adaptation—they require a bold commitment to fully embrace **digital transformation to build a resilient, efficient, and patient-centered future** for healthcare.

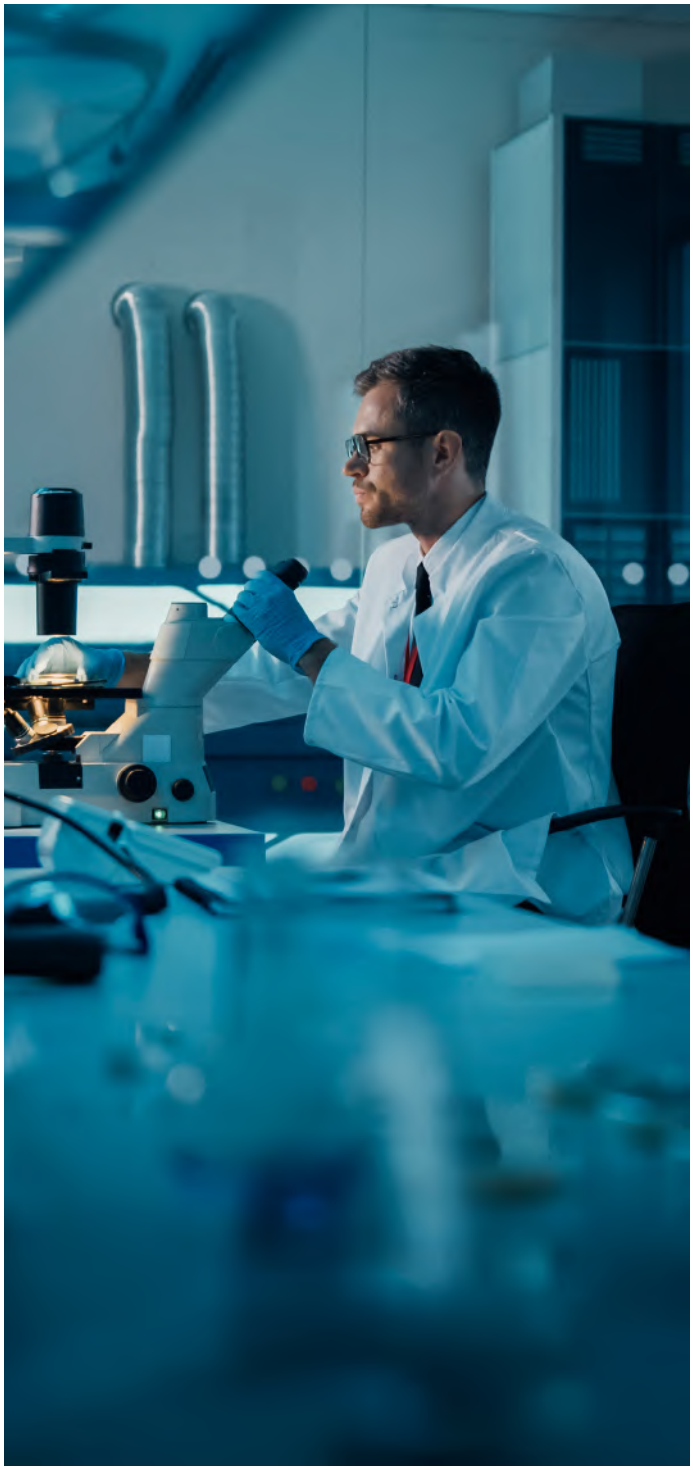
Public health plays a central role in this new era. Advancing society's goals in disease prevention and healthy living requires **integrated care models** that address **social determinants of health**, helping to reduce disparities and improve outcomes. Digital technologies are driving this shift by enabling **better care coordination and innovative prevention strategies**.

Generative AI (GenAI) is streamlining administrative workflows, enhancing patient-practitioner interactions, and optimizing medical supply chains for timely distribution. Meanwhile, healthcare professionals require new digital tools for **recruitment, training, and real-time feedback**, improving job satisfaction, retention, and ultimately, patient care.

> "We are realistic about the process needed for implementing this new generation infrastructure capability and have the proven ability to deliver."
>
> Alberto Borrego, NTT DATA Health Partner

Precision medicine: personalizing healthcare

Precision medicine is transforming global healthcare by enabling treatments tailored to each patient's genetic, environmental, and lifestyle factors. This approach enhances treatment effectiveness, reduces side effects, and optimizes resource allocation.



Advances in **genomic sequencing, bioinformatics, and data analytics help providers make better, data-driven clinical decisions.** Pharmacogenomics, for example, uses genetic profiles to guide medication selection, while wearable devices and electronic health record (EHR) data enable early risk identification and preventive care.

However, precision medicine faces challenges, particularly in integrating diverse data systems and ensuring privacy compliance. **Interoperability, data governance, and patient consent** frameworks are essential for **scaling personalized care worldwide.**

Global leadership in precision medicine

NTT Precision Medicine is pioneering personalized healthcare in Japan, integrating **genetic testing, digital health platforms, and decentralized clinical trials** to advance precision medicine.

The **Japan Precision Medical Platform** aggregates diverse medical data, facilitating research collaboration with pharmaceutical companies worldwide. NTT is building the ecosystem to integrate researchers onto the platform using its **global network and technology**.

By developing global solutions, we enable healthcare providers to deliver **more effective, patient-centered care** that helps **advance sustainability** through better resource allocation and treatment precision.

Health data interoperability: leading the way in connected care

Health data interoperability is fundamental to modern healthcare, enabling secure, standardized, meaningful and seamless data exchange across systems, organizations, and borders.

Europe leads the way in health data interoperability, pioneering initiatives that demonstrate the **power of connected care**, setting an example for global adoption and empowering and putting the patient in the middle of the management of its own data. The **European Health Data Space** (EHDS) builds on these initiatives by establishing secure infrastructures for sharing and managing health data not only for clinical care but also for public health, research, and policymaking. This model of interoperable data spaces has the potential to inspire global frameworks, supporting the creation of a truly international health data ecosystem.

Within the EHDS, different categories have been defined and prioritized including, among others, the **European Patient Summary** (EPS), which aligned with the International Patient Summary (IPS) aims to provide healthcare professionals with a standardized overview of key patient information, such as medical history, medications, and allergies. Other categories are also **electronic prescriptions and dispensations, medical images, laboratory results** and **discharge reports.**

Despite progress, challenges remain, including language barriers, technical compatibility, and privacy concerns. Addressing these issues is key to **improving clinical decision-making, reducing redundancies**, and fostering **patient-centered innovation**.

The Importance of Standards

Interoperability depends on globally recognized standards and/or classification systems, like for example:

- **HL7 / HL7 CDA / HL7 FHIR:** Global standards for healthcare data exchange.
- **OpenEHR:** A set of open specifications for interoperability and data storage.
- **SNOMED CT:** A comprehensive system for medical terminology.
- **ICD:** A universal classification system for diseases and health conditions.
- Standards bodies such as **HL7 International, SNOMED International**, and the **WHO** ensure global consistency **in healthcare data interoperability**. Europe's interoperability initiatives align closely with these standards, creating a **foundation for global collaboration and innovation.**

Shaping the future of healthcare with GenAI

GenAI has the potential to be a transformative force in healthcare, offering innovative solutions to address operational inefficiencies and improve patient and provider experiences.

By leveraging advanced machine learning models, including large language models (LLMs), GenAI can generate text, analyze complex data, and assist with a range of tasks, enabling healthcare organizations to optimize workflows and enhance care delivery.

Areas where we can help:

Interoperability depends on globally recognized standards and/or classification systems,like for example:

- **Reducing administrative burdens:** Automating documentation, from patient intake forms to clinical notes.
- **Enhancing EHR usability:** Enabling intuitive, AI-powered navigation for seamless data access.
- **Patient communication & education:** Generating personalized, multilingual educational materials.

Implementing GenAI requires strict adherence to data privacy laws, ethical guidelines, and regulatory compliance. Robust oversight is essential to guarantee accuracy, reduce bias, and build trust.

Our partner ecosystem for AI

We partner with leading AI innovators to expand capabilities, develop advanced solutions, and accelerate real-world impact in healthcare.

Smart Patient Relationship: enhancing healthcare engagement

The NTT DATA Smart Patient Relationship platform improves healthcare accessibility, patient experiences, and clinical outcomes while ensuring financial sustainability.

Aligned with global initiatives like the EDHS, it integrates AI-driven patient engagement, telemedicine, and remote monitoring, enhancing efficiency and reducing costs.

Areas where we can help:

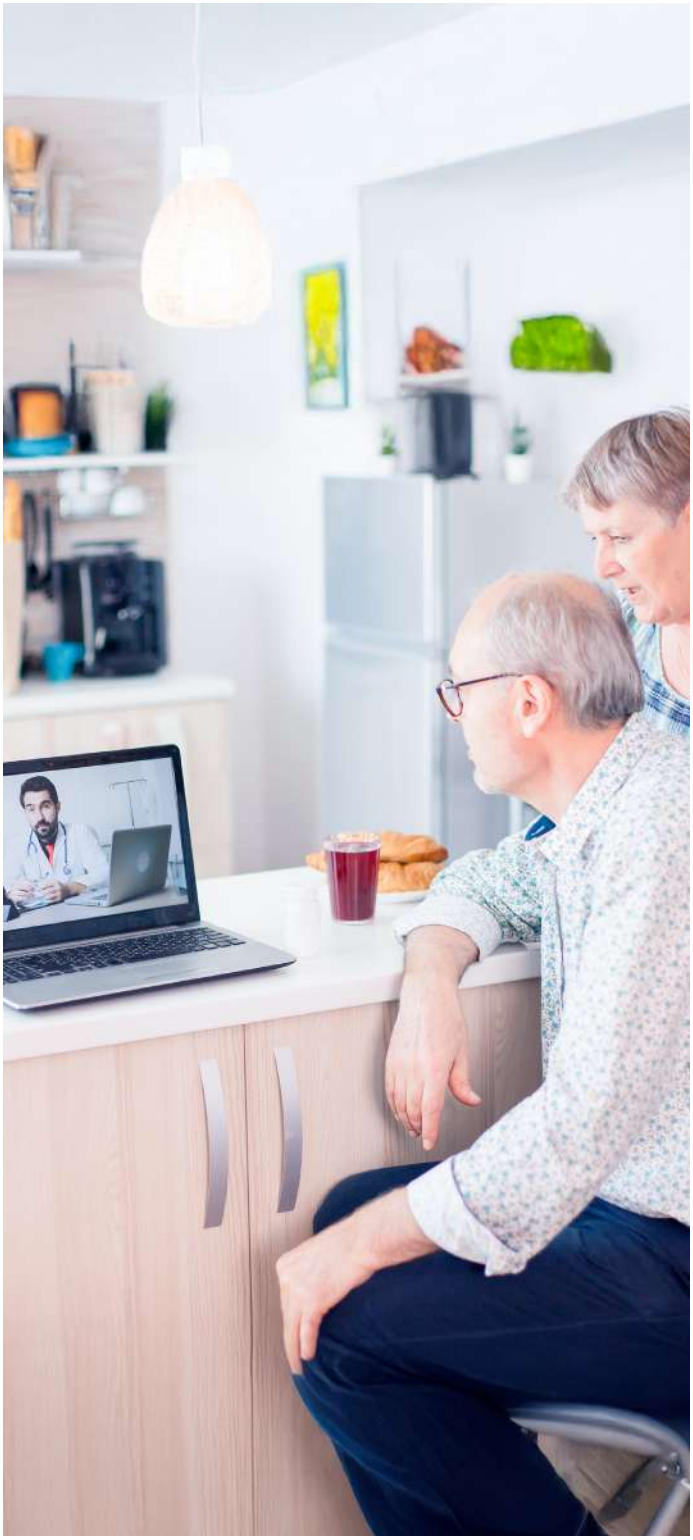
- **Digital experience:** AI-powered communication and remote care.
- **Digital talent:** Supporting hybrid work and collaborative healthcare teams.
- **Clinical improvement:** AI-driven diagnostics and predictive analytics.
- **Operational excellence:** Process automation and workflow optimization.
- **Data-Driven healthcare:** Advanced analytics for public health and policymaking.

By harnessing these innovations, healthcare systems can deliver more personalized, accessible, and efficient care, improving both patient outcomes and provider experiences.

NTT DATA has a complete suite of ready-to-use healthcare solutions called **Syntphony Virtual Care.**

This is NTT DATA's scalable, interoperable, patient- and population health-centric telehealth platform that is integrated with hospital systems, electronic health records and remote patient monitoring devices to improve the safety and quality of medical care.

Syntphony Virtual Care adds analytical capabilities to hospital and community health management, thereby helping to manage patient relationships and conduct population health campaigns.



Transforming patient care with data

While clinical data is increasingly leveraged for other uses, its primary purpose remains supporting direct patient care by providing healthcare professionals with accurate, real-time information that enhances clinical decision-making, improves patient safety, and optimizes treatment outcomes.

Advanced EHR and e-prescription systems, clinical process management platforms, and laboratory information solutions play a crucial role in ensuring that health data is standardized, accessible, and actionable. By building clinical information repositories, healthcare providers can ensure seamless coordination across departments, reduce administrative burdens, and improve overall efficiency.

The European Health Data Space (EHDS) concept is one of the most ambitious initiatives ever taken in the field of public health.

It is broad in scope (covering everything from delivering better health outcomes for patients to enhancing general medical research).

It covers a huge geographic area (with the vision of providing a common space for exchange and use of data across the entire European Union), and...It is technologically ambitious (deploying advanced tools and methods to create potentially the most effective, integrated data environment for healthcare in the world).

Areas where we can help:

- **Health records & e-prescriptions:** Standardized repositories for clinical data, ensuring accurate, real-time access to patient information.
- **Clinical & care processes:** AI-driven workflow optimization and platforms for data mining modeling, and automation.
- **Emergency, ICU & surgery:** Command centers and digital twin technology to enhance smart planning, patient tracking, and resource allocation.
- **Laboratory & biobank management:** Integrated laboratory information systems and virtual lab networks for improved sample and data handling.

By ensuring data accessibility, interoperability, and security, we empower providers to deliver safer, more efficient, and personalized care.

Advancing medicine with clinical innovation

Beyond direct care, clinical data fuels innovation in drug development, regulatory processes, and precision medicine.

By leveraging **real-world evidence, advanced analytics**, and **digital tools**, healthcare systems can accelerate the transformation of clinical research, regulatory processes, and personalized medicine.

As healthcare evolves, digital transformation plays a key role in enhancing clinical trials, optimizing drug development, and ensuring regulatory compliance. Structured and interoperable health data enables better study design, improved patient recruitment and monitoring, and more precise outcome assessments.

Areas where we can help:

- **Innovation strategy:** Process mapping, economic impact analysis, and strategic planning to enhance research and development.
- **Clinical studies & trials:** Efficient management of participants, qualitative and quantitative research, and pilot testing of new treatments.
- **Clinical data management:** Strategies for governance, regulatory compliance, and real-world evidence generation.
- **Medical devices:** Regulatory strategy, certification processes, and integration into healthcare workflows.
- **Technological innovation:** Custom algorithms, diagnostic tools, predictive analytics, and AI-driven clinical workflow optimization.

Our expertise can help you **accelerate medical breakthroughs**, bringing **innovative treatments** to patients faster and **transforming healthcare** on a global scale.

NTT DATA's Trust Research Environment (TRE) offers rapid, secure access to research environments and data. NTT DATA's service provides the speed and simplicity that comes from building on a proven, stable, secure platform, with the ideal combination of agility and customization.

Streamlining the healthcare supply chain

A digitally optimized supply chain strengthens resilience, ensures critical supplies reach patients when needed, and reduces overall costs. Predictive analytics, powered by machine learning, can analyze historical data, market trends, and real-time factors to better predict demand for medical supplies, reducing the risk of waste, overstocking and shortages.

Real-time tracking systems, supported by the Internet of Things (IoT), provide continuous monitoring of inventory levels and the location of shipments. Blockchain technology is also emerging as a powerful tool for **enhancing transparency and traceability** in the supply chain.

Finally, automation tools, such as robotic process automation (RPA), **streamline procurement processes**, reducing manual errors and freeing up administrative resources.

Areas where we can help:

- **AI-Powered forecasting:** Preventing shortages and overstocking.
- **IoT tracking:** Monitoring inventory and shipments.
- **Blockchain transparency:** Ensuring authenticity and regulatory compliance.
- **Automation & RPA:** Reducing manual errors and administrative burden.

A digitally optimized supply chain boosts resilience, reduces costs, and ensures **timely medical supply distribution.**

Empowering healthcare professionals with technology

High turnover rates, burnout, and job dissatisfaction not only undermine the well-being of healthcare workers but also impact the quality of patient care.

Digital technologies help address these challenges by modernizing human resource processes such as recruitment and onboarding, improving employee engagement, and fostering a more **supportive work environment.**

Areas where we can help:

- **AI-Driven recruitment:** Automated screening and predictive staffing.
- **Digital learning systems:** Continuous training and skill development.
- **Real-Time feedback & well-being tools:** Addressing burnout and workload imbalances.

> A digitally supported workplace results in a more engaged, motivated workforce, reduced turnover, and enhanced patient care.

Why choose us

Public health

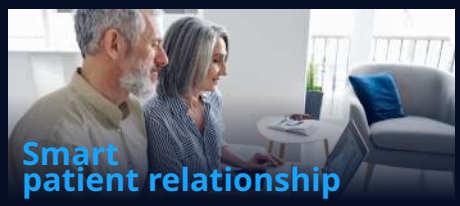
- Crisis & emergency response
- Health surveillance & monitoring
- Population management & screening

Integrated care

- Strategic and operational plans
- Integrated solutions for social and health care
- Value- based integrated care

Clinical inovation

- Innovation strategy
- Clinical studies & trials
- Medical devices
- Clinical data
- Technologicial innovation



Smart patient relationship

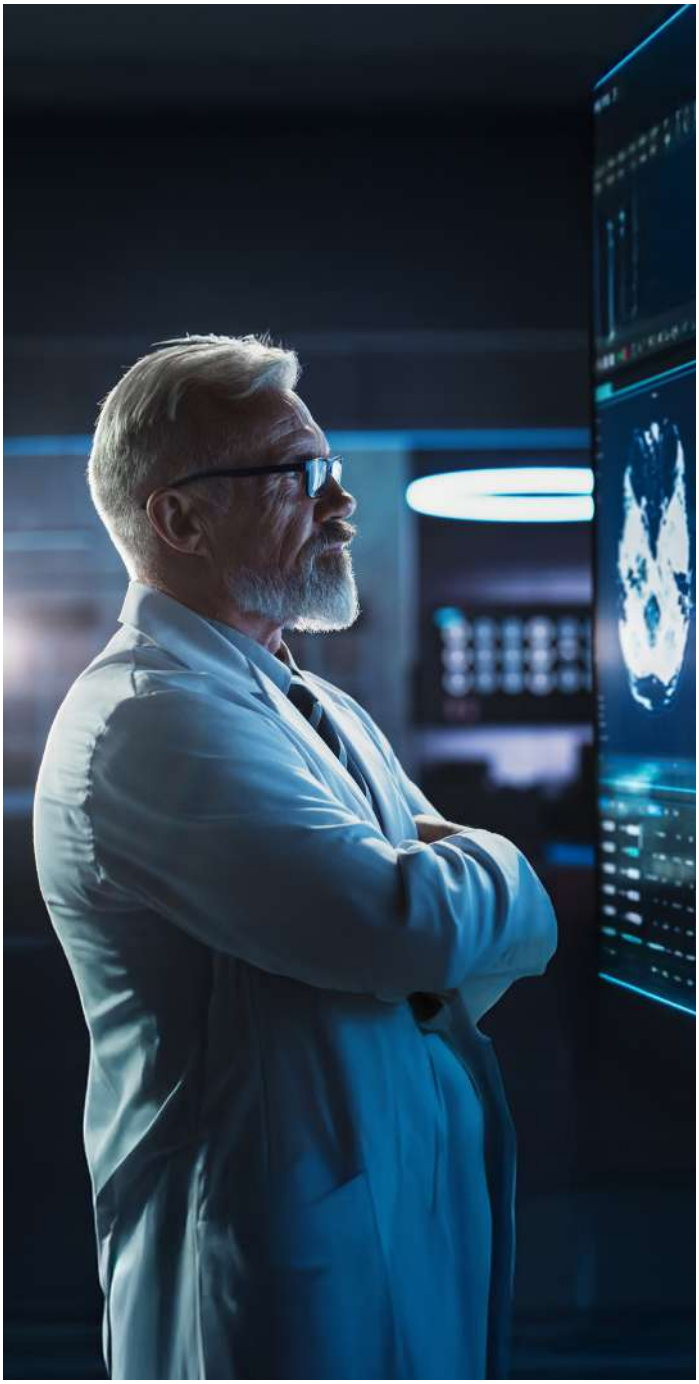
- Innovative & hybrid patient care delivery platfors (telemedicine, telemonitoring)
- Proactive patient management and communication for personalized care

Advanced clinical information solutions

- EHR & e-prescriptions
- Clinical & care processes
- ER, UCI & surgery
- Laboratory & biobank

Healthcare information standars & models

- Repositories & platforms to facilitate use of clinical data for patient care
- Integrated healthcare information (semantic resources, clinical terminologies, etc)
- Respositories and platforms to for sharing research data and secondary uses of clinical data



Our areas of specialist expertise in digital health

We bring extensive more than 20 years of experience in healthcare IT, working closely with providers globally to deliver tailored, scalable, and secure solutions that are designed to address complex requirements and evolving needs.

Our solutions are designed for the unique challenges of the healthcare sector, from precision medicine and health data interoperability to streamlining supply chains. With a focus on compliance and innovation, we ensure that our systems evolve alongside broader healthcare IT trends, such as the adoption of GenAI and remote health, creating future-proof, scalable and integrated solutions that deliver the highest levels of care and long-term success.

About NTT DATA

NTT DATA – a part of NTT Group – is a trusted global innovator of IT and business services headquartered in Tokyo. We help clients transform through consulting, industry solutions, business process services, IT modernization and managed services. NTT DATA enables clients, as well as society, to move confidently into the digital future.

We are committed to our clients' long-term success and combine global reach with local client attention to serve them in over 50 countries. **Visit us at nttdata.com.**

Keywords:
Digital healthcare, digital transformation in healthcare, smarter healthcare, patient-centered care, health data interoperability, precision medicine, Generative AI in healthcare, healthcare innovation.

Secondary keywords:
AI-powered healthcare, telemedicine and remote care, clinical data management, EHR solutions, healthcare data security, workforce management in healthcare.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