



# SMART HOSPITALS FOR SMART CARE

**Digital Transformation in  
Healthcare – Moving towards  
Connected & Smart Healthcare**



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# Introduction

Digital Transformation in healthcare is all about adopting new age technologies to deliver efficient patient care backed by robust and secure systems that enable instant and secure access to patients' data across platforms. Various aspects of healthcare operations can be digitized to render faster services and offer personalized care programs and services to patients. Process automation projects can provide more efficiency and quick ROI. Advance technologies such as artificial intelligence (AI), big data analytics, and IoT can re-invent patient care.

Hospitals can increase overall operational efficiency and interact with patients and customers in real time. Use of connected and integrated systems help provide instant access to patients' data. Most importantly, reports are available on the go. In addition, management and administration has better control over the operations and revenue utilization resulting in informed decision-making.

Some of the direct benefits of Digital Transformation for healthcare industry are as follows:

- **Enhanced Customer Relationship/ Patient-Hospital relationship**
- **Better patient care experience – including patient-anywhere telehealth**
- **Data storage, access, backup and recovery**
- **Improved operational efficiency**
- **Enhanced and smart revenue utilization**
- **Advanced Medical care**
- **Security**





## Futurism recommended approach

While budget is concern amid the current economic turmoil, it is advisable for healthcare providers and organizations to seek-out areas or cost-cutting measures to accelerate their digital transformation initiatives. Reason – cutting costs alone is fast turning out to be an outdated business strategy to thrive. In fact, cutting costs as a part of your digital transformation strategy not only saves money, but also helps to restructure and evolve much stronger.

Though cost cutting has evolved as a key step to aid businesses fund necessary growth related initiatives and projects over the years, businesses today are utilizing this practice to fund digital transformation initiatives in an effort to bolster cost-efficiencies and business continuity with a sharp focus on revenue generating projects.

Futurism can help hospitals and healthcare institutions leverage digital technology to fast track their operations and provide on-demand patient care. Digital technologies facilitate seamless and end-to-end patient care within a secured and highly connected environment.

There are so many possibilities with Digital Transformation (DX) that a healthcare provider can imagine. Also, DX projects do not have to be massive and expensive. Even smaller healthcare institutions can leverage the power of digital transformation for efficiency and improved patient care service.

At Futurism, we use a stepwise approach to creating a seamless digital transformation framework that paves way for an iterative project approach for 'self-funding' DX journey. Though every DX journey needs to be planned out with a high-level strategy, we won't spend six months with no action. Together we will uncover and rollout solutions that can quickly yield an ROI and lead to an advanced digital transformation journey. Importantly, this stepwise approach is a proven way to yield results in smaller increments that continually increase efficiency, patient satisfaction, and better care.

Futurism can employ multiple business models: completely outsource specific IT functions; work with existing IT to deploy projects that need additional staff and skills; deliver projects with IT. We work with the aim to eliminate barriers, providing the highest quality projects at affordable rates.



DX



## Solutions that make up a Smart Hospital

A smart hospital is a healthcare facility or system that relies on automated and optimized processes built atop a network of interconnected platforms/assets often based on IoT and AI to improve existing patient care practices. Smart hospitals are the need of the hour wherein every operational aspect of a hospital is recorded/tracked and conducted on automated platforms and in real-time.



## Electronic Health Records – data management, storage, access, backup and recovery

### EMR vs. EHR – Know the Difference

Surprisingly, many people still find it taxing to distinguish between EHR (Electronic Health Record) and EMR (Electronic Medical Record).

EMRs hold digitized files in a clinician's office. These can include medical and treatment history of patients. EMRs help to track historical data, identify patients due for checkups/follow-ups, keep a tab on a patient's health levels like vaccinations, blood pressure levels, etc., and improve the quality of care.

EHR systems on the other hand offer a holistic view of a patient's overall health. With EHR, healthcare providers and caregivers have access to not only the basic clinical data pertaining to a patient, but also get a broader view of the care and treatment being provided to the patient. EHR systems facilitate cross-platform collaboration bringing healthcare providers such as laboratories, specialists, pathologists, etc. on the same page.

Simply put, EHR is an advanced form of EMR with interoperability, which means it supports integration with the systems of other providers.

Did you know? Telehealth adoption in the US has exploded to around 3,000% since the beginning of the COVID-19 crisis, taking much of primary care to people's homes rather than being tied to a doctor's office or hospital.

- **Better patient-hospital care experience including patient-anywhere telehealth**
- **Paperless processes**
- **Process automation**
- **Efficient patient data management**
- **Cross-platform collaboration**
- **Self-service patient portal**
- **Automate critical processes like insurance, etc.**





For years, doctors and caregivers have been toiling with the problem of managing unfragmented medical records of patients across multiple platforms. Using coming-of-age technologies such as Big Data, cloud ERP and Blockchain, healthcare providers can crunch out gigantic volumes of unstructured medical data. Now this data can be anything such as a patient's diagnoses, medical history, vaccinations, treatment plans, social security number, credit card details, etc. This is what makes electronic health records a hot favorite among hackers thus; security is of paramount importance here.

Most of the electronic health information is often unstructured and stretched across various different EHR systems. Now for a hospital with short-staffed caregivers and doctors, it becomes a nightmare to track down and retrieve every piece of data manually leading to duplication in medical records, delayed treatments, misdiagnoses and in severe cases, even deaths.

Our experts and consultants can help understand current data management storage processes at the hospital and map those with new age technology solutions to ensure that the patient's health data is recorded, tracked and is shareable across multiple platforms in real-time. Long story short, digital transformation will help bring pharmacists, doctors, patients and health insurers on the same page thus, facilitating cross-platform collaboration.

In addition, having a patient portal allows patients to extract, update and check their records on their mobile devices on the go, book appointments, check insurance details, medical reports and lot more without the need to call up the hospital. Talk about a patient-centric healthcare model!





# Futurism - Empowering Healthcare IT for a Connected Care System

## Why cloud should be a priority in a hospital's DX journey? Business Continuity aka Healthcare Cloud: Connected Care System

Hospitals these days work on value-based reimbursement models that call for real-time access to data storage and analytics. Unfortunately, legacy and/or on-premise IT infrastructure most hospitals and healthcare institutions use fail to offer scalability and agility.

This is the reason an increasing number of healthcare organizations are moving their operations to cloud. We can help you with cloud-based data services that will offer you the much-needed flexibility and agility.

Cloud allows storage and access from anywhere, anytime. It also allows for immediate backup and recovery to drive business continuity.

**Data storage:** Healthcare organizations deal with enormous volume of data in the form of electronic records, medical reports, patient information and much more on a daily basis. This is a lot of data to analyze and breakdown. Cloud technology facilitates healthcare organizations to store and access all this data whilst avoiding additional costs of maintaining physical servers in-house. Talk about access to critical medical records on the go.

**Backup/Recovery:** Cloud not only lets you access data on the go from remote locations, but it also facilitates automated backups and data recovery options thus, saving your IT team a great deal of time and efforts.

**Better collaboration:** On-demand and unparalleled access to all this critical data means reduced hospitalization time, improved overall efficiency, better decision-making ability/diagnosis, patient care and efficient remote monitoring.

**Scalability:** Unlike the traditional on-premise infrastructure, cloud offers healthcare providers with the much-needed flexibility to increase or decrease data storage capacities depending on the needs and demands.

**Cost-saving:** Since cloud services run on a subscription-based model. You pay only for what you use instead of having to physically house servers and perform all the maintenance that goes with owning a server in-house.





## Web Presence and Mobility

If your Internet presence is not clear and adding value, it is time to upgrade. Having a well-designed and easy to navigate website can reduce the cost and need of patient phone calls and improve overall patient experience. In addition, mobile applications and presence is becoming increasingly important today. Thus, having a well-designed and user-friendly mobile application can improve your internet presence and also serve as the basis of improved patient processes such as registration, appointment setting, follow-ups and check-ins. Further, the addition of a chat application to your web presence can also help reduce costs and improve customer experience. The chat applications can be monitored by staff, and/or can include a chatbot to automate routine and repetitive questions. Over time, these bots can become intelligent and handle many more questions.

As an extension, you can add a patient portal so that they can access records, schedule appointments, ask questions, pay their bills, update their details, etc. on their own without the need to ring up the hospital. Talk about empowering your patients!

Flexibility and choice. Today, patients expect instant access to care and information, which means that digital interactions and channels would be more essential than before in the healthcare landscape.

It is important to secure the website and mobile applications, both of which are extremely vulnerable to cyber attacks that are after your patients' highly sensitive data.



# Robotics Process Automation - The Key to Drive Operational Efficiency in Healthcare

Robotics Process Automation (RPA) is an intelligent form of business process automation that can record tasks/processes performed by humans on their computer and then perform the same tasks without the need of human intervention. Simply put, RPA can automate all those repetitive tasks that require human intervention in a hospital.

The pandemic unleashed a range of challenges and issues for the healthcare sector such as shortage of protection kits/equipment, medical staff, poorly developed process and overwhelming paperwork to name a few. The surge in demand to optimize costs and deal with scarce resources/staff during COVID-19 has accelerated the adoption of RPA by many healthcare organizations across the world.

In fact, half of U.S. healthcare organizations are expected to invest in robotics process automation (RPA) in the next few years to streamline patient experience, bolster operations and healthcare delivery, says Gartner. RPA can pave way for a robust healthcare system.

## ▪ Simplifying claims processing:

RPA can speed up the process of insurance approval and claims processing. Often the lack of integration among the various electronic systems slows down the approval process. Most claims processing includes silos of data input, processing and evaluation – which when conducted manually, is often time-intensive and error prone. RPA bots can be pre-programmed to accumulate all the relevant information from disparate locations or systems in a much faster way thus, helping speed up the claims approval process.

## ▪ Automate appointment scheduling and follow-up:

Get rid of manual forms. Automate appointment and registration/follow-ups to increase patient satisfaction and reduce phone calls and other costs. We all know that filling out healthcare forms is a frustrating process. How many times do you fill in your name and birthdate in this process? Integration of this process would not only increase patient satisfaction, but would reduce the cost of adding a new patient. RPA bots can help scan the incoming data, build out a condensed report and direct the appointment request to the correct work queue based on its defining attributes.

## ▪ Automate paperwork administration:

Reduce paperwork and the need to add administrators. Automating walk-in paperwork and check-in forms would make life easier for both patients as well as healthcare personnel. Eureka! Imagine the amount of money, time and efforts that hospitals can save by automating all those manual paperwork whilst keeping data duplication and data entry errors at bay.

## ▪ On-demand access to and analysis of patient data:

RPA can provide patients with a single-point access to their data. Patients can access their billing info, appointment details, medical history and much more, all from a unified platform. With the help of RPA software, healthcare organizations can extract and optimize patient data more effortlessly. RPA software can integrate with many systems and analyze collected data to provide valuable insights to help clinical staff make accurate diagnoses and offer tailored treatments to patients.

## ▪ Inventory:

Hospitals can tame supply chain costs through real-time analytics and reporting. They can leverage these insights to set optimal inventory levels on the basis of previous patterns and needs/demands.



## Predictive Analysis of “Big Data”

Patients undergo treatment for life-threatening diseases and acute illnesses in ICUs and critical care units, requiring specialized treatment and high-end monitoring using advanced healthcare equipment. In addition, caregivers are often flooded with data generated from various gadgets and equipment, creating difficulties in decision-making. A lot of data is available from multiple devices, including MRIs, pulse monitors, heart rates, etc. Most oft, such data is unstructured making it a draconian task for doctors and caregivers to decode it.

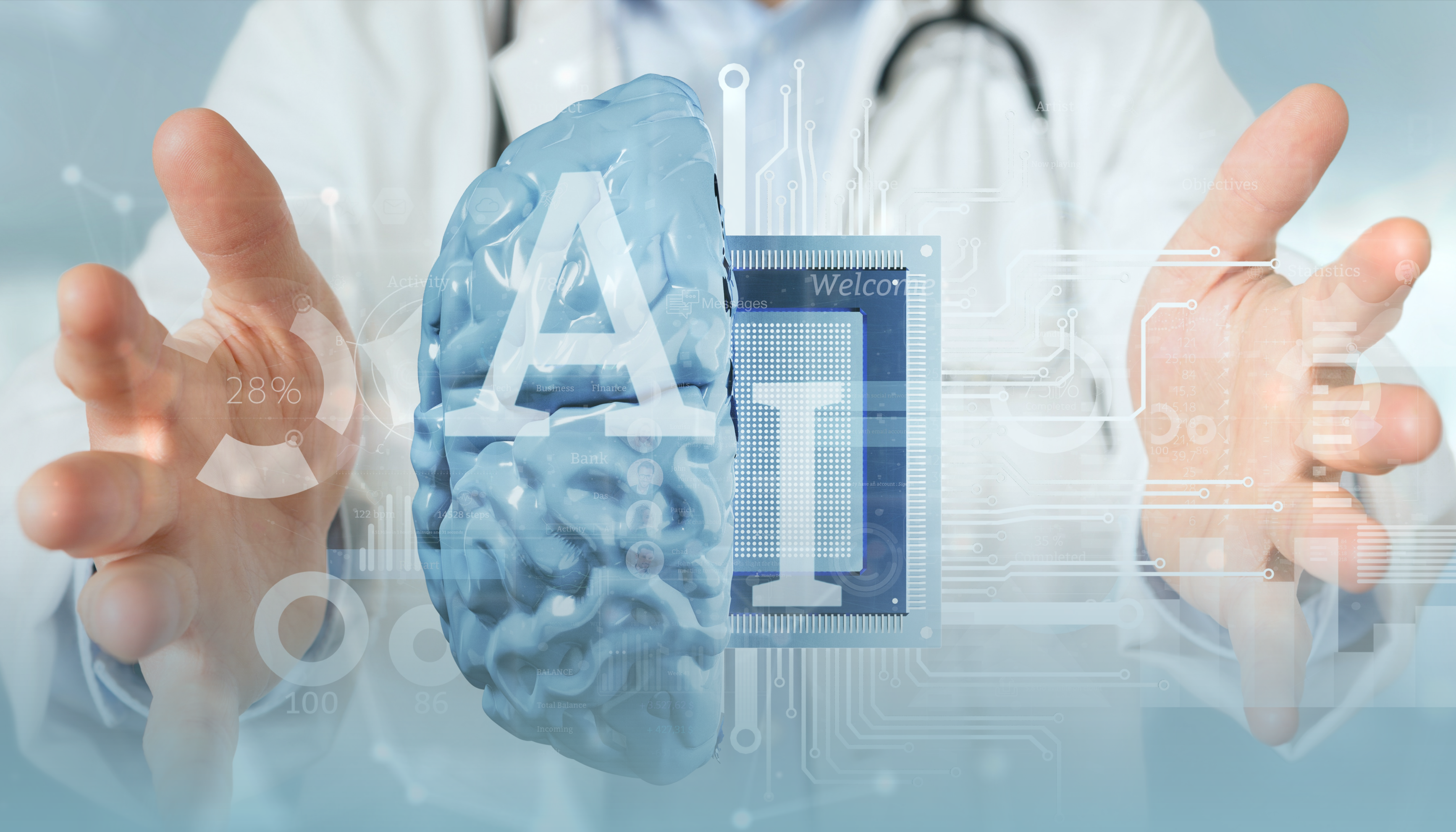
Big data can offer several crucial benefits to the healthcare industry and its people:

- **Reduced medical errors:** Big data through patient’s record analysis can help identify any discrepancies or inconsistencies between a drug prescription and patient’s health thus, alerting caregivers about the same.
- **Improved preventive care:** Often, patients stepping into these emergency rooms are recurring patients. Big data analysis could help identify these patients and come up with personalized preventive plans.
- **Apt staff allocation:** Big data’s predictive analysis ability could help clinics and hospitals estimate future patient admission rates, which would in turn help healthcare institutions allocate apt staff to deal with a surge in patients. Eureka! Saves money and curbs emergency waiting room time significantly.

With these advantages in mind, healthcare organizations ought to invest in organizing and structuring their data. Now that requires investing in data scientists or data analytics, who would help crunch the data helping you identify the weaker areas. Our data science solutions would assist you in deriving actionable insights from all the data that your hospital generates for improved decision-making.







## Artificial Intelligence to Drive Intelligent Healthcare Decisions

AI-based solutions would help doctors and medical staff take data-driven decisions. Rather than using the rule-based registries, AI-powered data retrieval method can offer substantially accurate patient information. Further, advanced AI solutions powered by machine learning technology can mimic and study human patterns and classify data accordingly. As technology advances, AI can propel efficient treatments and diagnosis helping doctors and caregivers in the long run.

In addition, RPA enabled by AI would help automate routine and repetitive tasks, which in turn would contribute towards fostering a digital workforce in a hospital that can focus more on value-added tasks.

According to [Gartner](#), 20% of all the patient interactions will include some form of AI tech within nonclinical as well as clinical processes. Yes, AI-powered virtual assistants and/or chatbots would drive most of the patient-hospital interactions in the near future. Chatbots can fill in a number of roles from customer service reps to therapists and can even serve as self-diagnostic tools.

Further, the increasing demand to unlock hidden analytics in patient data and facilitate better decision-making ability would drive the demand for AI based cloud services.

With cloud-based AI services, a healthcare organization can foresee upcoming patient requirements, before the patient's health starts deteriorating.



## IoT Enabled Interconnected Devices and Equipment

Internet of Things or IoT empowers a hospital's diagnosis rooms, labs, and operation theatres with highly sophisticated technology that connects the equipment, machinery, and tools to provide seamless integration where data is shared. There are real time accessibility and controls within a secured environment and EndPoint Secure can help secure all your IOT Devices across multiple platforms.

## IoT - On the Cusp of Redefining Healthcare

Besides monitoring a patient's health stats, there are various other areas where IoT solutions can come handy for hospitals. For instance, IoT devices equipped with sensors are useful in tracking real-time location of medical equipment such as oxygen pumps, nebulizers, defibrillators, wheelchairs, etc. Deployment of clinical staff at different geographies can also be tracked in real-time. Further, IoT devices also assist in asset management such as pharmacy inventory and real-time environmental monitoring of refrigerator temperature, temperature control and humidity.

The influx of healthcare-specific IoT devices and products has opened up immense opportunities. And the gigantic amount of data generated by these interconnected devices could transform the way a healthcare organization operates.

Our Smart Hospital (IoT) solutions will help unlock actionable insights for better decision-making, which in turn would help redefine healthcare by ensuring improved treatment outcomes, faster diagnosis, efficient drugs/medical equipment management, proactive treatment, better care, improved workflows/processes, reduced costs and better patient experience.

# IOT



## MSSP/Cybersecurity

Hackers and cybercriminals have continually targeted hospitals and healthcare institutions to steal sensitive patient data and then misuse the same for unjust reasons. Cybersecurity practices are of utmost importance for hospitals to ensure patient safety and sanity of the data. And the COVID-19 pandemic has only added to the nightmare. The pandemic has witnessed an alarming increase in the number of cyberattacks in the healthcare vertical.

Electronic health record vendors and hospitals have always been the hot targets for malware and ransomware attacks. This is why it is imperative for healthcare providers to have a robust cybersecurity architecture in place to identify and stop the threats before they turn ugly.

We can help you set up a strong line of defense to help you deal with cyberattacks and security vulnerabilities. Our EndPoint Secure Healthcare solution is powered by **IBM Watson Threat** technology, which helps healthcare providers to secure electronic health records on all mobile devices, manage cyber threats, comply with HIPAA, and curb IT workloads and much more.

## Futurism's EndPoint Secure Healthcare solution in a nutshell:

- Gain 360° visibility and control over all mobile devices, documents and apps
- Secure devices and data from Cyber attacks
- Automate encryption, password policy
- Instant remote action on nonconforming devices or systems
- Low implementation costs
- No additional infrastructure
- Cloud identity and access management
- Real-time reporting and analytics





## We Help You in Seamless Digital Transformation

Futurism is a trusted DX advisor and consulting partner assisting businesses to unlock the true value of digital. We offer DX services across the entire value chain including digital infrastructure, business process automation, digital customer engagement, and cybersecurity.

We boast of a rewarding experience working in the healthcare sector for our clients. We've successfully delivered a number of digital transformation projects for enterprise-grade pharmaceutical companies, medical equipment/device manufacturers, hospitals, health tech firms and many more in the last two decades.

Futurism Technologies can help your healthcare organization get aboard the digital transformation journey on the right foot.

The future is digital, the future is now – especially for healthcare. Futurism can help.





# Thank You

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