

Solution Brief

GE Healthcare Edison HealthLink
Rapid Access to Critical Insights at the Point of Care



Delivering Critical Insights at the Point of Care for Faster Decision-Making and Smoother Workflows



“Accurate data insights accessed at the right time can help clinicians save lives. By partnering with Intel, we’re able to amplify our deep domain expertise and the capabilities of Edison HealthLink to ensure that practitioners get these insights at the point of care, keeping the focus on the patient and providing more value from existing assets.”

— Roshni Bhagalia, PhD, Vice President,
Product Management, Edison Health
Services at GE Healthcare

Edison HealthLink allows practitioners to rapidly collect, analyze, and apply intelligence using the devices they work with every day.

Each patient who comes through the healthcare system generates large amounts of valuable data that can potentially be used to improve clinician workflows. With near-real-time data from medical services and advances in imaging technology, the amount of data in healthcare is growing at an unprecedented rate.

But many times providers have no easy way to access or get insights from that data when and where they need it most—at the point of care. GE Healthcare’s Edison platform was developed to empower clinicians to access data and high-quality imaging associated with patient visits and immediately convert them into actionable insights with the help of analytics, AI, and visualization technologies—without disrupting their regular workflow.

To allow healthcare providers to rapidly collect, analyze, and employ critical data closer to the source, the Edison platform incorporates Edison HealthLink, a market-ready edge computing solution that brings intelligence capabilities to the devices clinicians use on a daily basis, such as CT and MRI machines. A hub for data and access at the point of care, Edison HealthLink enables precision health by using AI technology to make existing equipment smarter, enhancing clinical workflows.

Edison HealthLink uses the Intel® Distribution of OpenVINO™ toolkit to accelerate analytics of imaging data so clinicians can quickly get the information they need to help provide more-efficient care, reduce errors, and improve patient experiences. And, because OpenVINO runs on existing infrastructure, healthcare institutions can keep costs down as well.

Benefits of Edison HealthLink include:

Better workflows for faster decision-making: With the ability to access insights closer to the source, clinicians save valuable time in determining and taking the best course of action for patients. Because AI is applied at the point of care, the technology is imperceptible, helping providers focus on the patient and not the technology.

Higher value from existing technology devices: Because Edison Health Services can run at the edge with virtualization capabilities, it can bring AI to multiple existing imaging modalities and patient-monitoring systems, extending the equipment investment healthcare organizations have already made. By deploying medical devices that connect to Edison HealthLink, health systems can continually receive advanced, secure software updates without requiring new equipment—essentially extending the life of existing assets and legacy infrastructure.

Scalable solutions for smoother workflows: Making a real difference in healthcare will require an entire ecosystem of AI solutions working together to deliver technologies that integrate into clinical workflows. With Edison, GE Healthcare is building a developer ecosystem to benefit patients and providers around the world. The platform allows GE Healthcare and strategic partners to design, develop, manage, secure, and distribute applications and algorithms at scale. And because the AI developed by both GE Healthcare and third-party independent software vendors can run on Edison, AI can be consolidated at the edge, delivering insights to practitioners at the point of care faster.

Challenge: Accessing critical data and reducing medical errors

Every second counts when patients are critical, so it's important that clinicians have immediate access to the data they need to provide appropriate care at the right moment. However, data is typically locked in silos in hospital settings, hampering access to life-saving information. For example, when diagnosing and treating stroke, about two million brain cells die each minute until blood flow is restored, increasing the risk of permanent damage. Processing data at the edge to evaluate brain scans allows clinicians to analyze and take action without sending data to the cloud, enabling them to view the information at the point of care.¹

Applications hosted on Edison HealthLink can also reduce the potential for human error by using AI to perform routine tasks, giving providers more time to concentrate on their patients. In addition, the services and applications running on Edison HealthLink give more clinicians access to these capabilities. This means more patients have access to the healthcare they need.

Solution: Accurate, accelerated analysis at the point of care

The Edison ecosystem enables solutions for a variety of clinical applications—from neuro exams to identification of collapsed lungs. For example, AIRx MR uses deep learning algorithms that automatically identify anatomical structures to prescribe slices for routine and challenging neurological exams, improving productivity and delivering consistent results. In testing, AIRx completed a neuro exam of the brain up to 4.37x faster and more accurately with the help of AI, accelerated by the Intel Distribution of OpenVINO toolkit running on Intel® Xeon® processors.²

This solution gives patients confidence that testing is completed quickly and accurately the first time, reducing the need for retesting based on a testing discrepancy. At the same time, clinicians can complete work more efficiently without interrupting their existing workflows.

Critical Care Suite is a collection of AI algorithms embedded on X-ray systems for automated case prioritization and quality control. This solution automatically analyzes images upon acquisition for critical findings like pneumothorax, producing triage notifications to be sent directly to PACS without having to route images to an edge server or cloud-based AI solution.



Pneumothorax triage

On-device AI solution analyzes images to help triage critical conditions, such as pneumothorax, shown here.



Triage notifications

Sends an image to PACS and provides the radiologist with AI results, such as image flags, to enable worklist prioritization.

Critical Care Suite

- Detects nearly all large pneumothoraces (96% sensitivity)³
- Identifies three out of four small pneumothoraces (75% sensitivity)³
- Limits false alerts (94% specificity)³
- Has an area under curve (AUC) of 0.96³

How it works

Edison HealthLink takes the benefit of the cloud and places it right where clinicians need it—at the edge, on or close to the devices they use every day. It runs Edison Health Services software solutions that include HIPAA-compliant data aggregation⁴, AI and non-AI algorithms, connectivity, and advanced visualization. Developers can use these services to build and deploy clinical applications and workflows, and Edison HealthLink can serve as the delivery platform for third-party developers with edge applications for healthcare.

Edison HealthLink uses Intel Xeon processors in a virtualized environment, relying on Intel® Virtualization Technology to help run multiple applications on one server. This allows servers to support multiple pieces of equipment for a single imaging modality like CT scanners or mixed modalities. It also uses the Intel Distribution of OpenVINO toolkit to accelerate AI capabilities, as well as Intel Xeon processors for trusted reliability, Intel® Solid State Drives (Intel® SSDs) for performance, and 10GbE Intel® Ethernet network adapters.

Conclusion: Rapid access to critical intelligence, where it counts most

Edison HealthLink, powered by Intel® processors and the Intel Distribution of OpenVINO toolkit, empowers institutions to get the most from their healthcare data. From monitoring patient data to image reconstruction, Edison HealthLink assembles, analyzes, and shares data from connected devices and information systems, giving practitioners the insights they need the moment they need them.

About GE Healthcare

As a leading global medical technology, diagnostics, and digital solutions innovator, GE Healthcare enables clinicians to make faster, more-informed decisions through intelligent devices, data analytics, applications, and services, supported by its Edison intelligence platform.

gehealthcare.com

Learn more

Visit gehealthcare.com/products/edison to learn about how GE Healthcare's Edison platform helps clinicians get the insights they need to deliver better patient care.

Find out more about the Intel Distribution of OpenVINO toolkit and how it may help in accelerating analysis by visiting intel.com/openvino.

For more information about healthcare and life sciences technology solutions powered by Intel, visit intel.com/healthcare.



1. "GE Healthcare Introduces New Edge Technology Designed to Give Clinicians Rapid Access to Critical Data," GE, October 14, 2020.

2. "GE Healthcare's AIRx™ Tool Accelerates Magnetic Resonance Imaging Using Intel® AI Technologies," GE, September 2018.

3. Source: "Critical Care Suite 2.0", GE Healthcare.

4. "GE Healthcare Introduces New Edge Technology Designed to Give Clinicians Rapid Access to Critical Data," Business Wire, October 14, 2020.

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