

When Efficiency Improves, So Does ROI: The Business Case for Edison

Inefficiency plagues radiology departments. This directly affects clinicians and patients, of course, but it also drains people, time, and money from promising new services. In this sense, inefficiency is a business problem, too.

By one estimate, more than \$750 billion of U.S. healthcare spending is wasted each year.¹

Why haven't ever-more-capable EHRs and imaging devices solved the inefficiency problem? The answer is that the root causes of operational inefficiency cannot be fixed with any individual solution. Instead, a systemwide approach, starting at the device level, is required. Inefficiency can be solved only when smart devices are *integrated* into efficient workflows.

Three pain points

Inefficiency hits radiology departments in three broad ways:

- Unexamined data
- Repeat tests (because of inconsistent or incomplete scans due to operator error, patient movement, etc.)
- Late or nonexistent notification of test results within and between departments

A staggering 90% of all healthcare data comes from imaging technology, yet 97% of it goes unanalyzed or unused.² AI can help radiologists process mountains of scan data, including identifying disease and prioritizing scans for review.

"Hospitals generate an enormous amount of data," said Matthew DiDonato, Director, Product Management, Edison AI Platform, at GE Healthcare. "On average, a hospital generates 50 petabytes (50,000 terabytes) of data annually."

DiDonato also points out that much of this data is stored in disparate systems, spanning patient health records, imaging, pathology, billing, and operational data, to name a few.

"The result is numerous data silos," he said. "This, in turn, creates barriers to a consolidated view of the patient, and makes it much harder to develop cross-departmental systems."

Consequently, automation will also address the widely documented crisis of burnout among clinicians. According to Medscape's 2019 report, some 54% of radiologists feel burned out or depressed.³ It's reasonable to assume that improving the clinician experience should lead to better retention of these expensive professionals, as well as fewer mistakes and legal costs.

AI can improve scan accuracy and reduce errors, resulting in fewer repeat procedures.

Take AIRx™, an AI-based technology developed for intelligent MR slice prescription for neurological exams. What makes AIRx compelling is that it provides quality and consistency regardless of patient position, time between sessions, or technologists. AIRx features a pretrained neural network model that leverages deep learning algorithms and anatomy recognition to define the correct anatomical landmarks and automate the scanning process for routine-to-challenging setups.

Ultimately, AIRx will help productivity across the entire workflow, helping to minimize rescans and scanning inefficiencies, while also creating consistency if the patient has a follow-up exam.

Finally, notification can be improved by an intelligence platform.

An example is Critical Care Suite on Optima™ XR240amx, a portable X-ray device that uses AI to automatically review a chest image to detect pneumothorax, and if suspected, flag the exam for prioritized review. This device is powered by Edison, GE Healthcare's intelligent platform, built to connect data from millions of medical and imaging devices, leading to new, AI-powered apps and services.

Starting at the device level, Edison as a platform for intelligence tools will permit cross-enterprise, cross-application integrations that will improve hospitalwide efficiency — speeding care, and freeing resources for new models and services.

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Matthew DiDonato
Director, Product Management,
Edison AI Platform
GE Healthcare

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¹ William H. Shrank, MD, Teresa L. Rogstad, Natasha Parekh, MD, "Waste in the US Health Care System: Estimated Costs and Potential for Savings," *JAMA*, October 7, 2019, 2019;322(15):1501-1509. <https://jamanetwork.com/journals/jama/fullarticle/2752664>

² "One of the Largest AI Platforms in Healthcare Is One You've Never Heard of, Until Now," *HealthManagement*, Vol. 19, Issue 2, 2019. <https://healthmanagement.org/c/healthmanagement/issuearticle/one-of-the-largest-ai-platforms-in-healthcare-is-one-you-ve-never-heard-of-until-now>

³ Leslie Kane, *Medscape National Physician Burnout, Depression & Suicide Report 2019*, Medscape, January 16, 2019. <https://www.medscape.com/slideshow/2019-lifestyle-burnout-depression-6011056#1>