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How AI Orchestration Will be Music to the Ears of Weary Radiologists

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How can health organisations speed up AI adoption to gain efficiency, quality and resourcing advantages, without a slow and complex set-up process that could add to the cognitive overload already being experienced by radiologists?



Key Points

- Coronavirus has generated greater empathy for the radiology profession and has highlighted the need for a more agile approach to tackling clinical overload in hospitals.
- The COVID-19 pandemic has forced nations to delay routine imaging procedures resulting in a new imaging backlog to address.
- Health data and Artificial Intelligence could be potential solutions to deal with these new challenges.
- GE Healthcare has a ready supply of innovative and proven deep-learning and AI technologies plus the know-how to put it all together quickly and easily.

Well before 'Coronavirus' entered our vocabulary, stories about clinician burnout, radiologist retirements and health workforce shortages were hitting the headlines. Now, as the virus pandemic has cascaded across the globe, greater empathy has been generated for a tired health profession, and a more agile approach to tackling clinical overload in hospitals forced upon most of the world. Digital solutions have great influence enabling an environment and a workflow that help to reduce clinician burnout helping to improve efficiencies at the same time, which are so important in a time when healthcare providers are shifting focus and capacity to respond to COVID-19 cases.

In addition to a decade of growing resourcing pressures across Europe, nations have now had to delay routine imaging procedures¹ such as CT scans as we deal with a raging infectious emergency. Meaning that today, it is not just increasing patient numbers and ageing populations putting pressure on our health service, but in some areas, we also now have a new imaging backlog to address.

The advantages of health data and Artificial Intelligence (AI) are being positively lauded as a solution to solve the challenges in our current, new times, aiding clinicians with

quick, confident and accurate decision support plus more efficient workflows, which could help to reduce repetitive tasks and errors. This, in turn, will benefit clinical teams in both steering the diagnostic pathway and the patients they serve.

Choice of AI is Ready to Transform Imaging Workflows

If we cast our minds back only a year, there was plenty of dialogue in the health imaging space about embracing AI and championing the proliferation of AI solutions coming to market. Indeed, over the last couple of years there has been over four billion dollars of investment in imaging AI start-ups.^{2,3} The choice of solutions is now out there and the evidence growing of how deep learning and algorithms built from data can be just as good as a human reader.⁴

But the big question remains: how can health organisations speed up AI adoption to gain the efficiency, quality and resourcing advantages that are promised, without a slow and complex set-up process that could add to the cognitive overload already being experienced by radiologists?

Empowering Radiologists by Reducing the Complexity of AI Deployment

Recent research⁵ has given insights into how health organisations wish to achieve AI integration in imaging departments. 81% stated that they would prefer to get AI from an existing PACS vendor in existing PACS workflow – they don't want a different workflow for AI. Furthermore, the quick experimentation with comparing parametrisation models were high on the AI wish list along with no extra clicks, no separate interfaces and no new user experiences to learn. People want AI, but built seamlessly into the workflow, which, in fact, should be no surprise given that, when done well, AI should be totally invisible.

Therefore, the answer lies in embracing innovative solutions from new to market and cutting-edge players orchestrated by a proven, trusted and long-term healthcare partner.

Seizing the challenge, GE Healthcare's Edison Open AI Orchestrator* enables the quick deployment of AI and non-AI based clinical applications, easy configuration of workflow and algorithm parameters. This will provide the reality to easily experiment, measure and optimise results with GE and third-party AI applications. In summary, clinical workforce orchestration brings AI applications into the workflow from one or more DICOM devices. This will help clinicians to reduce repetitive workload so that they can have more time to focus on specific patient cases and expand their holistic decision support where patients need it most.

Simplifying & Automating the Route to Operational AI

This approach overcomes the irony of some technologies being designed to help productivity actually adding work to an already beleaguered workforce. It creates a much smoother and simpler route to arriving at operational AI by automating the process and breaking down cognitive change barriers and fears of extra set-up workload. It can be brought into practice without needing to learn new tools or new interfaces.

Arriving at the desired AI destination utilising a flexible workflow management system revolves around the three Rs:

- What route is the data coming from – a device, PACS, or a vendor neutral archive?*
- What are the rules for the algorithms – patient age, modality, or body part?



- What role** do we want the algorithm to apply to the rules – for example, count lung nodules?

It is this systematic framework of automation that will help healthcare providers scale with AI and quickly integrate the algorithms they need to experiment and deploy into real clinical conversations.

Seizing the Moment to Make Positive Change for the Future

Never before have we asked for so much from our healthcare professionals. 2020 will be remembered for the unprecedented levels of pressure imposed on the health industry that pushed institutions, morale and medicine to its limits. But as we reflect on the challenges faced, great opportunities will arise.

It is clear, healthcare needs to change to meet capacity challenges, futureproof against unexpected events and give clinicians an extra helping hand. We have a ready supply of innovative and proven deep learning and AI technologies plus the know-how to put it all together quickly and easily. Now is the time to seize the energy and expertise from AI developments and absorb the strength of an established global healthcare partner like GE Healthcare. Let's orchestrate AI without complexity or extra headaches and improve workflow to lift the spirits of a tired and weary health imaging workforce. ■

*Edison Open AI Orchestrator is validated with Centricity PACS V7 and Centricity Universal Viewer V7. It is still not open for other solutions.

**The role is based on the approved intended use of the AI algorithm.

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