Strategies for advancing healthcare with AI

intel®

Get started with Intel AI in
Healthcare and Life Sciences

**Smarter
technology
for all**

Lenovo

The rapid advancement of artificial intelligence (AI) has ignited global excitement about its transformative potential. Poised to revolutionize the human experience by streamlining and enhancing countless aspects of daily life, AI is capable of bringing a wide range of benefits—from advancing mobility solutions and optimizing food production and distribution to ensuring higher precision in manufacturing quality assurance. It offers unprecedented opportunities to tackle challenges and drive progress across industries including advancement in healthcare and life sciences.

With AI in healthcare, considerations such as privacy, professional relationships, and diagnostic accuracy must be addressed to ensure effective and responsible implementation. Ethical implications, data ownership rights, liability issues, and potential bias introduced through data selected for use in training sets all need extensive exploration, debate, and development. Only then, can AI then realize its potential and become an integral part of healthcare delivery.

The challenges of healthcare. An ailing environment ready for innovation:

Increasing access to healthcare, health equity, and the availability of specialty care is the key problem within global healthcare provision today, caused by demand, administrative pressures, and burnout of a workforce under stress.

- **Increased demand from an aging population**

  Improved patient care, better nutrition, and heightened understanding of infection control is helping people live longer, with the global 60+ population expected to grow 12% between 2015 and 2050[1].

  This, coupled with the rise in obesity, diabetes, and other conditions[2] places greater demand on frontline healthcare providers[3].

- **Growing administrative burden**

  Workflows and protocols mean physicians are spending, on average, 15.5 hours a week on paperwork which steals time from patient care. This is a possible contributor to the fact that just 6% of doctors are extremely or very satisfied with their workload[4].

- **Clinical workforce burnout**

  With burnout rates currently at 48.2%[5], and job dissatisfaction increasing, more health workers are leaving the industry. The World Health Organization (WHO) estimates that, by 2030, there will be a projected shortfall of 10 million health workers[6].

Using AI to record and manage unstructured data and reduce the administrative burden

With careful planning and technical expertise, there are opportunities for AI to alleviate some of the burgeoning pressure the healthcare industry is under.

By using natural language processing (NLP) to structure data and consolidate handwritten notes, voice dictation, and computer-entered information into a patient's electronic health record, AI can lift some of the administrative stressors on physicians.

Another way that AI can reduce the administrative burden on the healthcare industry around the world, is by providing insight and predictive value from the large amounts of collected and stored healthcare data. Currently, approximately 30% of the world's data is related to healthcare. This figure is set to rise, in part, due to the widespread adoption of wearable medical devices and technology. The wearable tech market is tipped for an anticipated four-fold growth in the next decade[7]. AI-powered automation can help manage this coming data surge more effectively, and also provide medical researchers and clinicians with deeper insights to better plan for population health.

This application of AI can also assist practitioners to understand and interpret the data they receive in real time. AI can flag key information or conditions, make recommendations for approval by a trained physician, and provide context from other information sources. It has the power to spare physicians and nurses from navigating 11,000 procedural terminology codes used in the USA today, and from looking up referral procedures for each of the 2000 different insurance policies provided across 15 individual insurance companies operating under the US Affordable Care Act[8].

Just these measures alone will make dramatic inroads to enable physicians, nurses, and support staff to focus their efforts faster and make limited resources stretch further.

Capitalizing on AI capabilities for the now

AI may not be an immediate panacea for all ills within global healthcare, but even in these early stages it's ready to shoulder some of the burden currently weighing down the healthcare profession.

By supplementing and supporting frontline healthcare, AI can support healthcare in ways that are safe, ethical and responsible. Many independent software vendors (ISVs), clinical workflow platforms, electronic health records, and clinical trial management companies are already developing these types of AI applications within their existing platforms.

This kind of leap forward in technological capabilities isn't the kind that healthcare providers or technology companies are making alone. Cooperation between healthcare organizations, ISVs, and technology thought leaders is ongoing to ensure AI development is conducted in an ethical, and responsible, way.

These wins are both accessible and realistic right now, but to achieve them, healthcare organizations will need to partner with experts in technology that understand the unique industry challenges.

Trusted technology partners like Lenovo and Intel are working together to deliver infrastructure, computing power, and AI services at each stage of the process will be key for sustained success. Lenovo has a long history in supplying technology for the healthcare and life sciences industry—from powerful workstations to PCs, IoT devices, edge computing, AI-ready infrastructure, high-performance computing and hybrid cloud environments.

Futureproofing your technology investment

Healthcare organizations must also plan for increased computing demands now if they are to effectively invest and leverage this emerging technology as it evolves. This is why Intel based Lenovo solutions are powered by high performance processors that can cope with the high-density compute demands is also an important consideration for organizations wanting to futureproof their investment.

Embracing AI safely, ethically, and responsibly can ease the strain on the global healthcare system and help physicians achieve better outcomes more quickly and effectively. We can give physicians, nurses, and support staff space to focus on that skill they trained so hard to learn—patient care—and, with strategic consideration, we can do so in a way that positions the healthcare industry to leverage the full benefits of AI at the appropriate time.

Lenovo's range of AI models brings you exactly the right range of devices, infrastructure, operations and expertise to unlock the potential in your data. AI PC and edge devices, powered by Intel® Core™ Ultra processors put AI compute directly in the hands of users. From the **ThinkPad X1 Carbon** that integrates AI to allow users to automate freely, to the **ThinkPad X1 Yoga 2-in-1** that adapts to user preferences for heightened efficiency. Lenovo **ThinkEdge, ThinkSystem,** and **ThinkAgile** infrastructure, all powered by Intel® Xeon® processors, built to handle the high-density compute capabilities needed to deliver AI-driven functionalities. You can keep transforming operations across your entire Healthcare and Life Sciences ecosystem, all with Lenovo, powered by Intel.

Explore AI for All

See how Lenovo and Intel can help you accelerate your AI journey.

1. Age UK | www.ageuk.org.uk
2. World Health Organization | https://who.int
3. American College of Sports & Medicine | www.acsm.org
4. National Library of Medicine | https://pmc.ncbi.nlm.nih.gov/
5. American Medical Association | www.ama-assn.org
6. World Health Organization | https://who.int
7. RBC Capital Markets | www.rbccm.com
8. IRS Affordable Care Act | www.irs.gov

intel®

Get started with Intel AI in Healthcare and Life Sciences

Smarter technology for all

Lenovo