NTT DATA | Microsoft

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Agentic AI is creating a seismic shift in healthcare

Are you ready?

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The next wave of healthcare transformation

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The rapid evolution of AI has had a profound effect on every industry, including healthcare. And with agentic AI, a seismic change is underway. The emergence of agentic AI marks a new era of business transformation, where AI autonomy and innovation converge to redefine how people and technology interact.

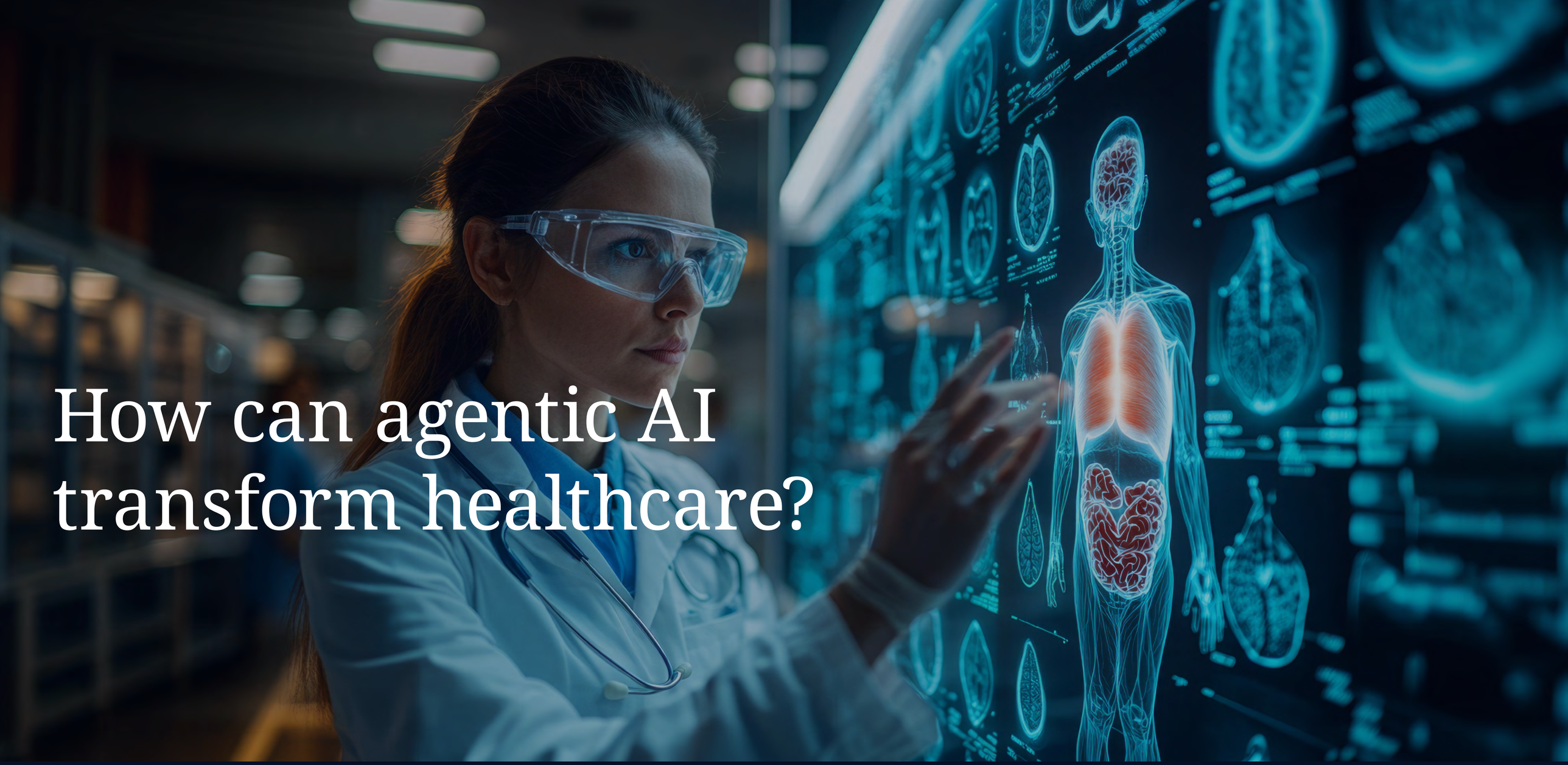
In this perspective, we uncover agentic AI's potential to transform healthcare at both a macro and micro level. We also discuss its risks and limitations, and how you can safely make a start on your agentic AI journey.

What is agentic AI?

Agentic AI is a system consisting of multiple software entities (or agents) operating as building blocks or "cogs in the machine". These agents are capable of handling specific tasks independently. They collaborate with and learn from each other to make decisions and take actions in a broader context.

Agentic AI can:

- Plan tasks and break down goals into actionable steps
- Access internal and external tools autonomously
- Utilise knowledge
- Use different models and capabilities to complete tasks



How can agentic AI transform healthcare?

How can agentic AI transform healthcare?

While traditional AI is ideal for automating specific tasks and processes, to truly automate in healthcare we need AI systems that understand and can adapt to dynamic and complex environments, and make accurate decisions in real time.

To do that, you need agentic AI.

This transformative technology is reshaping industries, redefining market dynamics and heralding a future where machines not only assist humans but also autonomously enable innovation and greater productivity.

Agentic AI is the framework that allows autonomous software entities (agents) to collaborate with other agents and with humans on an enterprise-wide scale. Within this framework, AI agents can specialise in certain tasks and have access to controlled knowledge bases for increased accuracy and autonomy. This makes agentic AI an incredibly powerful tool for solving complex healthcare challenges.

While agentic AI can have a transformative impact on all industries and across all organisations, in healthcare, that impact is primarily in two areas:

1. Reducing the administrative burden, thereby increasing productivity
2. Improving patient outcomes

Agentic AI offers numerous benefits to both patients and staff, and can contribute significantly to staff responsiveness and the quality of care provided.

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Reducing the administrative burden

Agentic AI can reduce the amount of time healthcare staff need to spend on administrative tasks, allowing a larger percentage of their time to be spent with patients and providing primary care.

It can also accelerate healthcare processes. For example, reducing the time taken for patients to be transferred from an ambulance stretcher and into a hospital emergency department (known as “patient off stretcher time”, or “transfer of care time”) will have a direct impact on patient outcomes.

The New South Wales (NSW) Ministry of Health recognised this with Time for Care, an initiative launched in August 2023,[1] working with frontline clinicians in NSW Health to identify and reduce the impact of administrative responsibilities so that clinicians could instead spend more time on delivering safe, reliable, person-centred care.

Gianrico Farrugia, M.D., President and CEO of the Mayo Clinic, states: “Within healthcare, there are few, if any, resources more precious and closely managed than time. As many healthcare providers worldwide will tell you, there is simply not enough time to care for all their patients with quality and compassion and, simultaneously, complete mandatory tasks, such as record reviews, documentation and insurance paperwork. Globally, the source of this problem is twofold: an ongoing shortage of healthcare workers, including nurses, physicians and all allied health staff, and an increase in demand due to an ageing global population with growing healthcare needs.”[2]

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[1]NSW Health. Time for Care: Relieving the administrative burden from frontline clinicians in NSW Health. August 2023.
[2]World Economic Forum. How automation gives back one of healthcare’s most valuable resources — time. 16 January 2025.

Improving patient outcomes

By analysing a patient's data, medical history and current symptoms, AI agents in healthcare can recommend a course of action to the patient's doctor, who still has the final say. This helps improve patient outcomes and lightens the workloads of healthcare providers.

A journal article on next-generation agentic AI in healthcare notes: "Beyond diagnostics, AI agents advance predictive analytics and personalized care by analyzing EHRs [electronic health records], imaging, genomics and wearable device data. They identify subtle disease indicators, such as early signs of diabetes, cardiovascular conditions, or cancer, enabling early detection, optimized resource allocation and improved patient outcomes. AI agents also enhance prognosis by forecasting disease trajectories, modeling progression and tailoring treatment plans. These insights help physicians anticipate complications and adjust therapies proactively."[3]

[3]Nalan Karunanayake. Next-generation agentic AI for transforming healthcare. Informatics and Health, Volume 2, Issue 2, 2025.

AI has to be safe

AI has to be safe

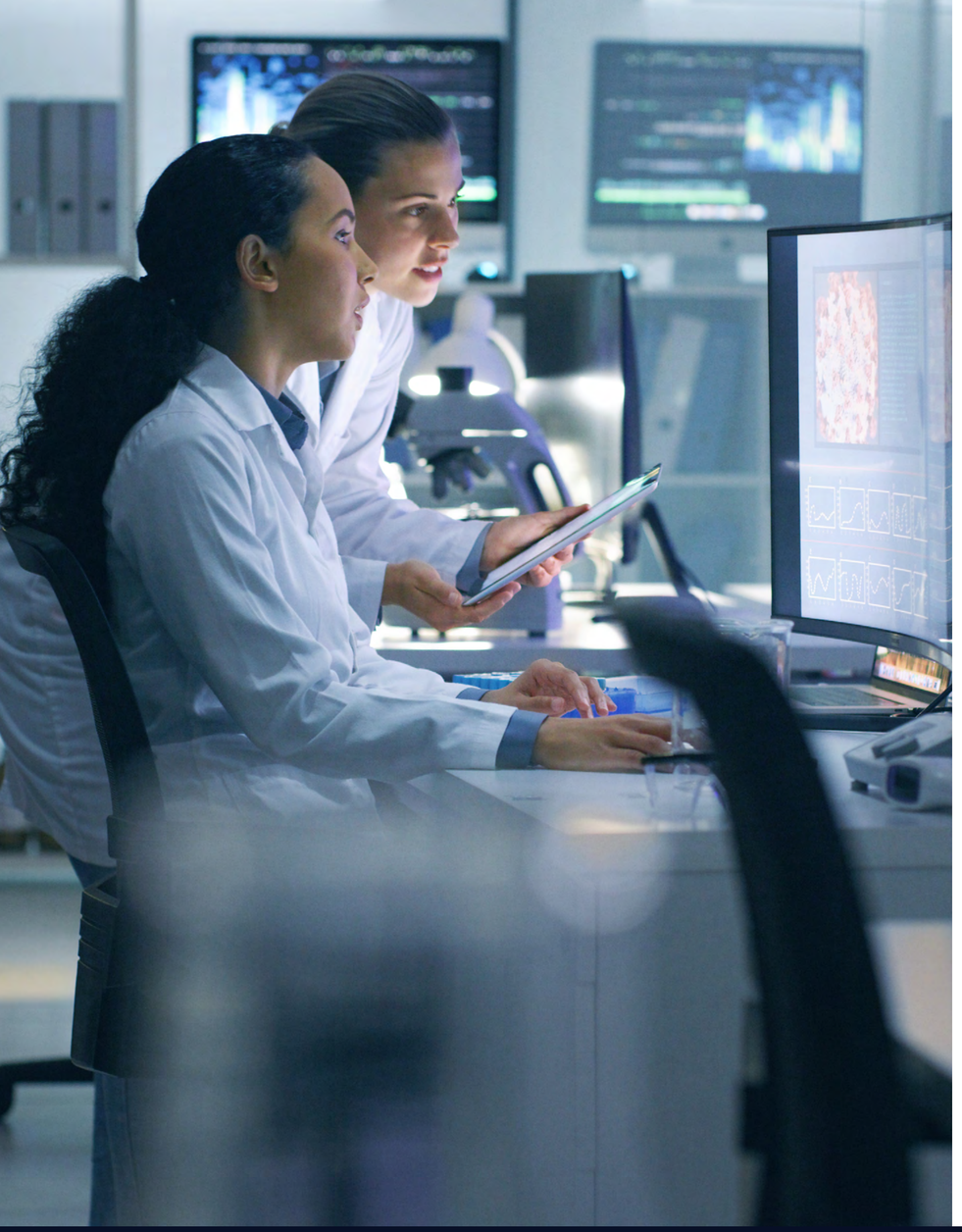
A key concern of healthcare professionals and medical practitioners is expressed succinctly in the Australian Government's legislative review on AI in healthcare:

> "We need to support the safe and responsible use of AI in health and care settings to ensure that all Australians realise the potential benefits."[4]

This review also recommends that Australia can learn from other countries' regulatory approaches to AI. These include:

- The European Union (EU) taking a risk-based approach to comprehensive AI regulation in its Artificial Intelligence Act (AI Act)
- The UK setting up an AI Security Institute to enable governance and ensure advanced AI is safe, secure and beneficial
- Canada working towards a more structured regulatory framework with its proposed Artificial Intelligence and Data Act[5]

[4,5]Australian Government, Department of Health, Disability and Ageing. Safe and Responsible Artificial Intelligence in Health Care — Legislation and Regulation Review: Final Report. July 2025.



Effectively, healthcare organisations need to trust AI.

Central to this trust is the explainability and transparency of AI systems. “If a patient or a clinician doesn’t trust what a system is showing them, if it feels like a black box, then the promise of efficiency disappears. The time saved by automation gets lost in second guessing the output.”[6]

Agentic AI holds incredible potential in resource-constrained industries like healthcare. In Australia, pressure on healthcare systems due to issues such as aged-care bed availability, hospital ramping and staffing shortages can be alleviated by agentic AI solutions that enhance clinician efficiency and significantly improve the quality of care and patient outcomes.

But, as healthcare researcher Nalan Karunanayake cautions: “The current developmental stage of agentic AI also brings challenges, particularly its ‘blackbox’ nature and unpredictable behaviors. Rigorous research is necessary to address these concerns, including robust validation, interpretability and transparency in AI decision-making.”[7]

In a report commissioned by NSW Health, CSIRO identified augmented care and AI as one of the six megatrends shaping the future of healthcare.

However, CSIRO emphasised that ensuring AI is safe, trustworthy, effective and responsible is a critical requirement of current and future applications in healthcare: “With only 44% of Australians feeling that the benefits of AI will outweigh the risks, AI applications in healthcare need to be implemented in a way that builds trust and acceptance among health consumers, carers and clinicians. A promising avenue to achieving this is by improving the explainability, transparency and interpretability of these models. To this end, there have been increasing efforts in using explainable AI for clinical applications to improve the transparency of AI outputs and clarify how decisions are made using these insights.”[8]

[6]Peter Birch, Founder and CEO of Talking HealthTech. 2025. LinkedIn post.
[7]Nalan Karunanayake. Next-generation agentic AI for transforming healthcare. Informatics and Health, Volume 2, Issue 2, 2025.
[8]CSIRO. Beyond tomorrow: Health megatrends anticipated to impact NSW and the healthcare workforce to 2040. August 2024.

Making security and transparency a priority

Making security and transparency a priority

With agentic AI, healthcare organisations can create integrated workflows that span multiple applications and systems while maintaining robust security. This enables AI agents to communicate securely without sharing metadata that could pose a risk.

Agentic AI can autonomously plan and execute complex tasks across tools and departments, boosting productivity without increasing costs. As the technology advances and more organisations start using agent-based systems, early adopters will benefit from faster decision-making, better patient and staff experiences, and future-ready operations.

Making AI systems secure, compliant and transparent is an organisational responsibility — one that's especially challenging in healthcare.

Because agentic AI systems operate autonomously, they introduce new security risks. These risks require tighter security measures, such as access control, encryption and monitoring, to prevent potential breaches or misuse.

Organisations must also establish clear governance policies to guide the development and deployment of agentic AI. Responsible innovation must take precedence over risky decisions.

Partnering with an accountable provider can ensure that all agentic AI work is observable and results are clearly measured.

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Agentic AI use cases in healthcare

Agentic AI use cases in healthcare

Automating documentation, scheduling and routine workflows

Benefits

The automation of routine tasks gives clinicians more time with patients, reducing staff burnout and increasing the quality of care and patient outcomes.

Use cases

- DeepScribe's AI agent generates clinical notes from conversations to save doctors as many as three hours a day on medical documentation alone.[9]
- Microsoft's Dragon Ambient eXperience (DAX) Copilot automatically and accurately documents patient encounters, communicates clinical information and completes clinical tasks, saving clinicians an average of five minutes per encounter.[10]
- AI agents manage reminders, rostering and patient monitoring with up to 89% automation.[11]

[9]DeepScribe. Medical scribe software gives doctors hours back in their day — here's how they're spending it.
[10]Microsoft survey of 879 clinicians across 340 healthcare organisations using Dragon Ambient eXperience (DAX) Copilot, March 2025.
[11]Lavender Awuor Okello, 21 Real-World AI Agent Examples and Use Cases Across Industries, 5 January 2026

Triage, diagnostics and resource allocation

Benefits

In high-pressure healthcare environments, faster decision-making, reduced wait times, and the more accurate prioritisation and treating of urgent cases can potentially prevent medical emergencies.

Use cases

- Autonomous triage agents prioritise patients and streamline emergency department workflows.
- AI agents analyse patterns in patient data to predict potential emergencies like sepsis or cardiac arrest.[12]

[12]Amber Talavera. EM360. 5 Agentic AI use cases in healthcare for 2025. 22 September 2025.

Proactive, predictive medicine

Benefits

By enhancing diagnostic precision and speed, enabling personalised care, and allowing doctors to intervene before a condition becomes life-threatening, agentic AI can help to improve patient outcomes and reduce the burden on Australian health departments that are already operating under resource constraints.

Use cases

- Virtual tumour boards and diagnostic agents support complex diagnoses, such as rare cancers.[13]
- Detecting abnormalities in CT scans, MRIs and X-rays with near-human precision, or flagging anomalies before symptoms fully appear by processing real-time patient information, including data from blood results, ECGs or wearable devices.[14]

[13] Healthcare Readers. Top 25 agentic AI innovations reshaping healthcare in 2025. 20 September 2025.
[14] Amber Talavera. EM360. 5 Agentic AI use cases in healthcare for 2025. 22 September 2025.

Analysing complex datasets

Benefits

By analysing complex datasets to surface important insights, agentic AI can enable healthcare authorities to allocate their limited resources more efficiently and with optimal effect, respond more proactively to avert or contain public health risks or incidents, and plan more effectively.

Use cases

- Proactively monitor chronic disease indicators from various data sources and autonomously flag potential health crises before they become acute.[15]
- Generate real-time analytics and population health data by integrating with My Health Record and other national systems and population data.

> “Agentic AI can be a powerful partner in transforming Australia’s healthcare system by analysing and deriving insights from complex and disparate sets of data.”

[15] Dr Paul Cooper. Pulse+IT. Agentic AI in Australian healthcare: Navigating the next frontier. 5 September 2025

NTT DATA's agentic AI capabilities

NTT DATA’s agentic AI capabilities

NTT DATA is a global leader in agentic AI products, tools and managed services. We have the expertise to build, deploy, secure, optimise and manage AI agents.

Our solutions

To help organisations implement agentic AI by using hyperscaler AI technologies, we offer a comprehensive suite of cloud-managed services through our Agentic AI Services for Hyperscaler AI Technologies. For example, by using Microsoft Azure AI Foundry Agent Service, we can build, manage and orchestrate multiagent workflows across platforms. This approach simplifies complex multiagent deployments.

Our Smart AI Agent™ Ecosystem covers infrastructure, orchestration, development and observability. It supports both pro-code and low-code development, with reusable components such as prompt generators, task planners, multiagent orchestration frameworks, compliance packs and observability probes.

Outcomes include efficiency gains of 30% to 50%, reduced downtime and improved customer satisfaction.

We are also making our tooling available across clients’ cloud platforms. This means that any agent we build can be easily transferred to your cloud environment.

Our partners

We work with expert partners to achieve this, including Microsoft, whose cutting-edge platforms like Azure OpenAI Service, Foundry, Copilot and Fabric are powering the next generation of intelligent agents.

Microsoft is also a part of our Smart AI Agent™ Ecosystem, which speeds up and simplifies your agentic AI adoption.

> “NTT DATA is named a Leader in the ISG Provider Lens® – Agentic AI Services 2025 – Global. The report highlights our depth of AI expertise, including comprehensive agentic AI consulting and implementation capabilities.”[16]

About ISG Provider Lens® Research
The ISG Provider Lens™ Quadrant research series is the only service provider evaluation of its kind to combine empirical, data-driven research and market analysis with the real-world experience and observations of ISG’s global advisory team. Enterprises will find a wealth of detailed data and market analysis to help guide their selection of appropriate sourcing partners, while ISG advisors use the reports to validate their own market knowledge and make recommendations to ISG’s enterprise clients.

[16]NTT DATA. NTT DATA named a Leader in agentic AI services by ISG. October 2025.

3 steps to high-impact use cases

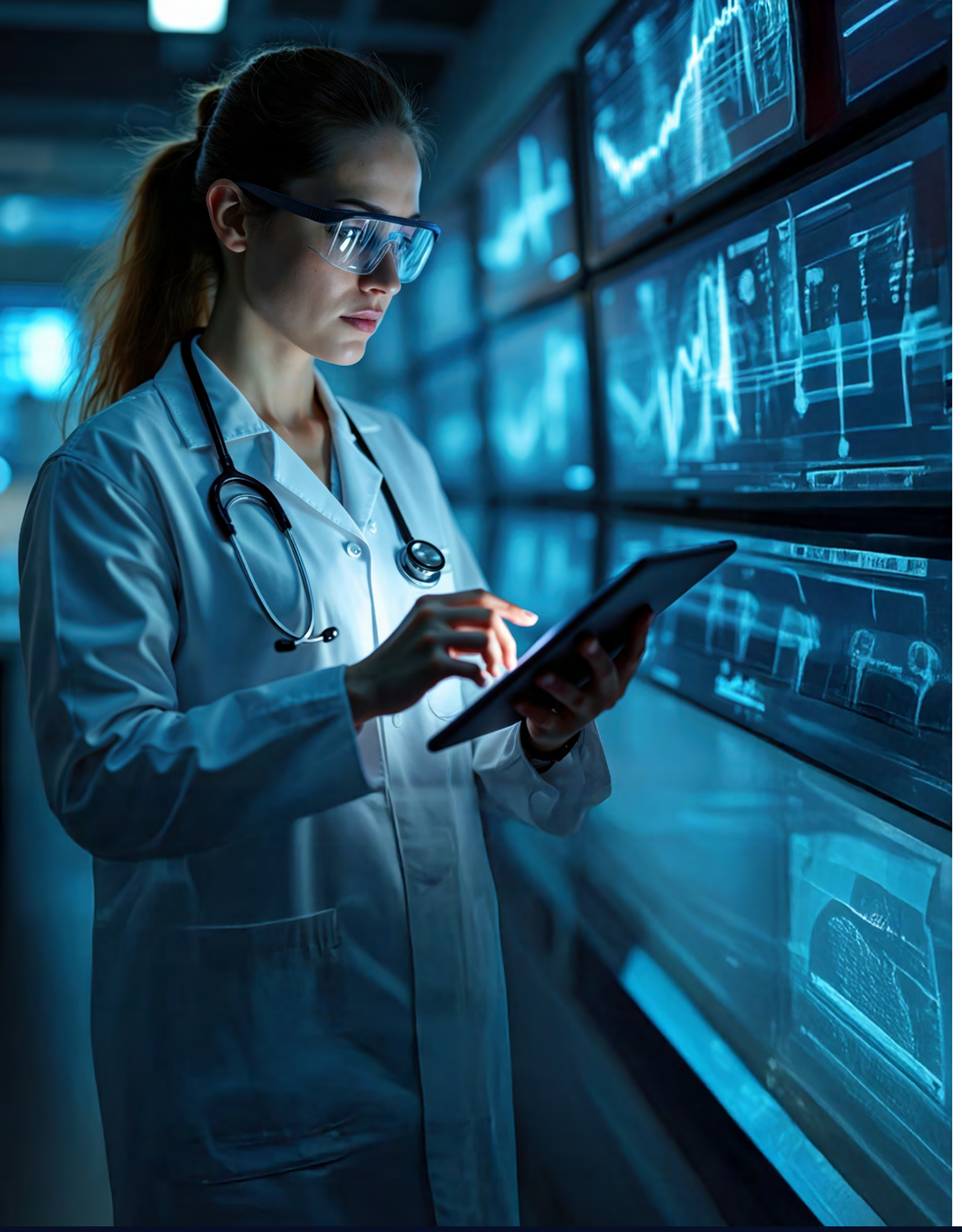
We work closely with your key stakeholders to showcase the value of agentic AI by identifying and testing high-impact use cases. Our structured approach provides actionable recommendations and a clear path from opportunity assessment to business transformation.

We follow a three-stage process:

1. **Identify the potential of agentic AI**
   We uncover where agentic AI can drive the most value for your business. We align your stakeholders, clarify strategic objectives and conduct high-level workshops to map out and prioritise relevant use cases.
2. **Assess and prioritise opportunities**
   We conduct an in-depth analysis of prioritised opportunities, evaluate technical and data readiness, map processes and develop detailed solution designs with refined business cases and ROI models.
3. **Prototype, validate and scale value**
   We rapidly prototype and pilot agentic AI solutions, define success metrics, validate impact through user testing, and deliver a scalable roadmap for organisation-wide adoption and measurable business results.

Most importantly, once the solution has been deployed into production, we hand over to operations and support for ongoing compliance, monitoring and performance SLAs. Our managed services also support continuous improvement through regular reviews for model and solution performance, and we gather feedback and retrain or optimise the solutions, looping new requests back to intake for further innovation.

Reshape your healthcare future



Reshape your healthcare future

Agentic AI is already reshaping healthcare. Starting now will keep you ahead of the transformation.

Agentic AI is changing the playing field for healthcare. Instead of rigid scripts and rule-based bots, AI agents can make decisions, adapt on the fly, work together and deliver outcomes without a human always needing to be involved. It's how we make the leap from automated tasks to intelligent workflows that can adjust to changing conditions.

In healthcare, of course, we need to be cautious about the adoption of agentic AI — healthcare professionals want solutions that are secure, safe, explainable and integrated into their existing workflows, with performance that is continuously improved.

The good news is that you don't need to jump in at the deep end.

In their 2025 Work Trend Index Annual Report, Microsoft views this journey to agentic AI as playing out in three phases: "First, AI acts as an assistant, removing the drudgery of work and helping people do the same work better and faster. In phase 2, agents join teams as 'digital colleagues,' taking on specific tasks at human direction. These agents equip employees with new skills that help scale their impact, freeing them to do new and more valuable work. In phase 3, humans set direction for agents that run entire business processes and workflows, checking in as needed."[17]

Agentic AI is a rapidly evolving technology that is changing industries and the way we work — but don't let the complexity of AI adoption hold you back. Waiting to adopt it is the real risk. Partner with us now to transform your agentic AI vision into tangible business results.

[17] Microsoft. Work Trend Index Annual Report 2025: The year the Frontier Firm is born. April 2025.

Partner with NTT DATA to start your agentic AI journey

Contact us at au.info@global.ntt for more information or visit our website for deeper insights into our Agentic AI Services, Smart AI Agent™ Ecosystem and Agentic AI Factory.

Contact us

NTT DATA is a global innovator of digital business and technology services, helping clients innovate, optimize and transform for success. As a Global Top Employer, we have experts in more than 70 countries and a robust partner ecosystem. NTT DATA is part of NTT Group.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