An Roinn Sláinte
Department of Health

AI for Care
The Artificial Intelligence (AI) Strategy for Healthcare in Ireland
2026-2030

Contents

1. Foreword

Ireland stands at a pivotal moment in the evolution of its health and social care system, as it seeks to harness the transformative potential of artificial intelligence (AI) while upholding its commitment to responsible, safe, and ethical innovation and person-centred care. The development of Ireland's AI Strategy for Healthcare "AI for Care", as set out in the Programme for Government 2025, reflects Ireland's ambition to promote and support the safe and responsible use of AI across health and social care services, ensuring that technological advancements are aligned with the highest standards of safety, quality, and public trust.

AI for Care is underpinned by Ireland's broader digital health vision, articulated in the Digital for Care 2030 framework. This framework sets out a roadmap for leveraging digital technologies – including AI – to empower patients, enable data-driven services, and foster a digitally connected health ecosystem. Its core principles focus on improving patient outcomes, enhancing access to care, ensuring data security, and supporting the health workforce through innovation and digital enablement. The Digital for Care approach recognises that technology alone is not sufficient; success depends on collaboration, education, and engagement across all stakeholders in the health system.

Ireland's health service faces significant challenges, including increasing demand, resource constraints, and the need to improve efficiency and patient experience. AI offers powerful tools to address these challenges, with ongoing trialling and use cases already demonstrating impact, particularly in medical imaging, diagnostics, and operational optimisation within the Irish Health Service. These early deployments have shown the value in how AI can support clinicians, streamline processes, and ultimately contribute to better patient care.

However, the adoption of AI in health must be guided by robust governance, transparency, and public engagement. Recent consultations, including a national citizens' jury hosted by the Irish Platform for Patients' Organisations, Science and Industry (IPPOSI), have highlighted the importance of human oversight, strong regulation, data protection, and the need for a statutory regulator to oversee AI use in healthcare.

Ethical considerations, such as data privacy, algorithmic bias, and the imperative that AI augments and supports rather than replaces clinical expertise, are central to building and maintaining public trust.

The forthcoming National Guidance for the Responsible and Safe Use of Artificial Intelligence in Health and Social Care, led by the Health Information and Quality Authority (HIQA), will provide clear guidance to support safe, effective, and equitable AI adoption. HIQA's Guidance will support compliance with the EU Artificial Intelligence Act and other relevant regulations, while fostering a culture of innovation that places patients and the public at its core.

In summary, AI for Care will chart a path toward a future where AI is used to enhance care, empower patients, and support the health workforce – always within a framework of responsibility, safety, and public trust. Through strong governance, stakeholder engagement, and alignment with national digital health priorities, Ireland aims to become a leader in the responsible and safe use of AI in health and social care.

Jennifer Carroll MacNeill, TD
Minister for Health

1. Foreword

This AI Strategy for Healthcare in Ireland 'AI for Care' outlines the vision for AI in the Health Service and the opportunities for AI deployment over the next number of years and is fully aligned with our overall Digital for Care roadmap.

As the population becomes increasingly familiar with digital healthcare technologies, their comfort and confidence in engaging with these solutions also grow. This growing familiarity leads to AI-driven improvements becoming a natural and expected progression in the advancement of healthcare services. The integration of AI into healthcare promises to enhance the quality of care, streamline operations, and provide more personalised and efficient patient experiences.

Through the Digital for Care framework, Ireland's health system is embarking on a significant journey of digital acceleration, laying the groundwork for the safe and effective adoption of AI. Digital for Care encompasses the implementation of several key digital health solutions, including Electronic Health Records (EHRs), the Health App, and the National Shared Care Record (NSCR). These foundational elements are crucial in driving the digital transformation of healthcare in Ireland.

The importance of good data cannot be overstated when it comes to the safe, responsible and effective use of AI in healthcare, and the role of the Chief Data and Analytics office will be a key support in this area. High-quality, secure, and interoperable data is essential for AI to function optimally and deliver accurate insights. Complementing our AI Strategy, the Health Service Executive's (HSE) forthcoming Data Strategy will also be a pivotal component of our national healthcare digital transformation. This strategy will ensure that all new AI solutions are built upon a robust foundation of high-quality data.

At the core of Ireland's healthcare transformation is the empowerment of people and patients to become the guardians of their own health data. This empowerment means that individuals will have the ability to understand, access, and actively engage with their own health information, becoming partners in their care.

Patients will also have the capability to manage who can access their data, ensuring privacy and control over their personal health information. This shift towards patient-centred data management is expected to foster greater trust in digital healthcare solutions and encourage more active participation in health management.

The adoption of AI in healthcare will bring numerous benefits, including improved diagnostic accuracy, personalised treatment plans, and more efficient resource allocation. AI can analyse vast amounts of data quickly and accurately, providing healthcare professionals with valuable insights that can lead to better patient outcomes. AI algorithms can identify patterns in patient data that may indicate the early onset of diseases, allowing for timely intervention and treatment.

Partnerships between healthcare providers, patient representative groups, AI vendors, regulatory bodies and academic institutions are key to the successful implementation of AI in healthcare. Educating our user community will foster transparency, trust, and informed decision-making and effective governance will be put in place to ensure the safe and effective utilisation of AI.

AI can help us in so many ways to improve how people access healthcare and the response they receive when they do. Much discourse can focus on the concern of AI replacing a workforce. In healthcare that is not the case, AI is complementary to the excellent and essential skills of healthcare professionals, and it is the combination of both is where we see the benefits.

This AI Strategy provides the opportunity to promote and use AI as a transformative tool to improve the quality of care for patients, drive increased efficiency and productivity, and enable better research and population health planning.

Bernard Gloster
HSE CEO

2. Executive Summary

Globally, AI is reshaping health and social care services, playing an increasingly pivotal role in addressing the challenges in the healthcare system including rising demand, workforce challenges, and evolving patient expectations. Health systems worldwide are actively investing in AI, from improving diagnostics to automating workflows, which has been shown to deliver measurable impacts at scale in enhancing patient care safety, quality, efficiency, and innovation.

Jointly commissioned by the Department of Health (DoH) and the HSE, Ireland's AI Strategy for Healthcare '*AI for Care*' provides a commitment from the DoH and the HSE to collectively achieve the vision for AI in healthcare and deliver on the strategic roadmap for AI deployment across the health service. In addition to *AI for Care*, the HSE has developed a corresponding **AI Implementation Framework** that outlines how to implement *AI for Care* and provides a toolkit for implementing AI projects across HSE. The intention of the framework is to ensure robust governance, regulatory adherence specifically to the European Union Artificial Intelligence Act (EU AI Act) [1], innovation, AI knowledge and enablement, and high-level project instruction to ensure the responsible and efficient AI deployment in healthcare.

AI for Care draws on the experiences of international jurisdictions where AI has enabled enhanced clinical decision support, improved the quality of clinical care, improved efficiency and productivity, and improved services for patients. It also responds to national drivers for AI including public expectations, healthcare service needs, resource capacity, healthcare digital transformation and the legislative requirements.

AI for Care aligns with key national healthcare strategic imperatives, including Sláintecare [2], the Digital for Care Framework [3], and the HSE Digital Health Strategic Implementation Roadmap [4]. These strategic imperatives are collectively driving Ireland's healthcare transformation, focusing on better health outcomes through digital transformation. AI is a core enabler of Ireland's national healthcare transformation journey, supporting strategic investments in national digital programmes that will advance healthcare delivery in response to the expectations of patients and providers in today's healthcare landscape. The need for high-quality, secure, and interoperable data underpins this transformation, and data is both a foundation for AI adoption as well as an asset AI itself can enhance by improving data collection and analysis, data accuracy, and data usability. As such, *AI for Care* and the AI Implementation Framework will align with and support the HSE's forthcoming Data Strategy.

The *AI for Care* vision is to harness AI safely and responsibly to transform how we deliver efficient and innovative healthcare for patients and the workforce.

AI for Care's guiding principles are essential to delivering on this vision. Across any AI effort, we will ensure the health service remains person-centric and transparent and trustworthy. We will ensure a human in the loop approach is taken to use AI to further enable – not replace – healthcare professionals in their work, and that we lean on lived experience to guide continuous learning. We will ensure that we enforce the appropriate governance and safety measures and realise proven benefit throughout the deployment of our AI Strategy.

Our vision will be realised through the deployment of AI solutions across four strategic pillars – Clinical Care, Operations, Research and Innovation, and Public Health. In the Clinical Care pillar, we will use AI to enhance the quality of clinical care, empowering clinicians so that patients receive faster treatment and care that meets their needs.

In the Operations pillar, we will use AI to improve system efficiencies and enhance productivity, helping to shorten wait times, streamline patient pathways, and ensure coordinated and responsive care.

In the Research and Innovation pillar, we will use AI to advance research and innovation and develop targeted insights; supporting the development of new treatments, diagnostics, and therapies that lead to better health outcomes. We will also leverage AI to provide insights to drive service improvements.

In the Public Health pillar, we will use AI to strengthen public health initiatives; helping to detect health risks earlier, support healthier lifestyles, and deliver more targeted prevention and health promotion efforts that improve health and wellbeing across communities.

2. Executive Summary

Opportunities for AI deployment were identified across our four strategic pillars, and our AI strategic roadmap was built based on the prioritisation of these AI opportunities. The strategic roadmap serves as directional guidance for implementation planning, ensuring AI solutions are deployed in the most impactful areas across the health service over the next five years. Due to the rapidly evolving nature of AI, the strategic roadmap will remain an agile, living guide that is continuously monitored and updated by the appropriate governance mechanisms outlined in the AI Implementation Framework, ensuring that AI deployment aligns with the evolving needs of the health service.

The successful execution of *AI for Care* will be driven by robust alignment to critical success factors and a commitment to continuous monitoring, learning, and refinement. Drawing on our experience in Ireland of deploying digital solutions and global best practices, we have identified six key factors that will enable the effective deployment of AI across the health service. As AI is deployed through the AI Implementation Framework, applications will be trialled, evaluated, scaled and iteratively improved to maximise their impact.

As the healthcare landscape evolves, this adaptive approach will ensure AI solutions remain effective, responsible, and aligned with national priorities. By continuously evaluating *AI for Care*, we will drive sustainable transformation, harnessing AI's full potential to enhance patient care, optimise operations, and strengthen Ireland's healthcare system for the future.

An Roinn Sláinte
Department of Health

3
AI for Care
Introduction

3. AI for Care Introduction

3.1 Introducing the AI Strategy for Healthcare in Ireland, "AI for Care"

The DoH and HSE have jointly commissioned and developed ***AI for Care*** to harness AI's transformational potential in healthcare. It is influenced by key national healthcare drivers such as public expectations and engagement, healthcare service needs, resource capacity and healthcare digital transformation. Our health service is facing ever increasing demands for healthcare as our population continues to grow, and the use of AI will be needed to foster innovation and tackle the challenges facing the system. Our AI Strategy also aims to enable compliance with national and European legislation, and global AI ethics and governance. Our intention, through this strategy, is to promote and use AI as a transformative tool within the health service to improve the quality of care for patients, drive increased efficiency and productivity within the health service, and enable better research and population health planning.

In addition to *AI for Care*, the HSE has developed a corresponding **AI Implementation Framework** that outlines how to implement *AI for Care* and provides a toolkit for implementing AI projects across the HSE. The intention of the framework is to ensure robust governance, regulatory adherence specifically to the EU AI Act, innovation, AI knowledge and enablement, and high-level project instruction to ensure responsible and efficient AI deployment in healthcare.

AI for Care **provides:**

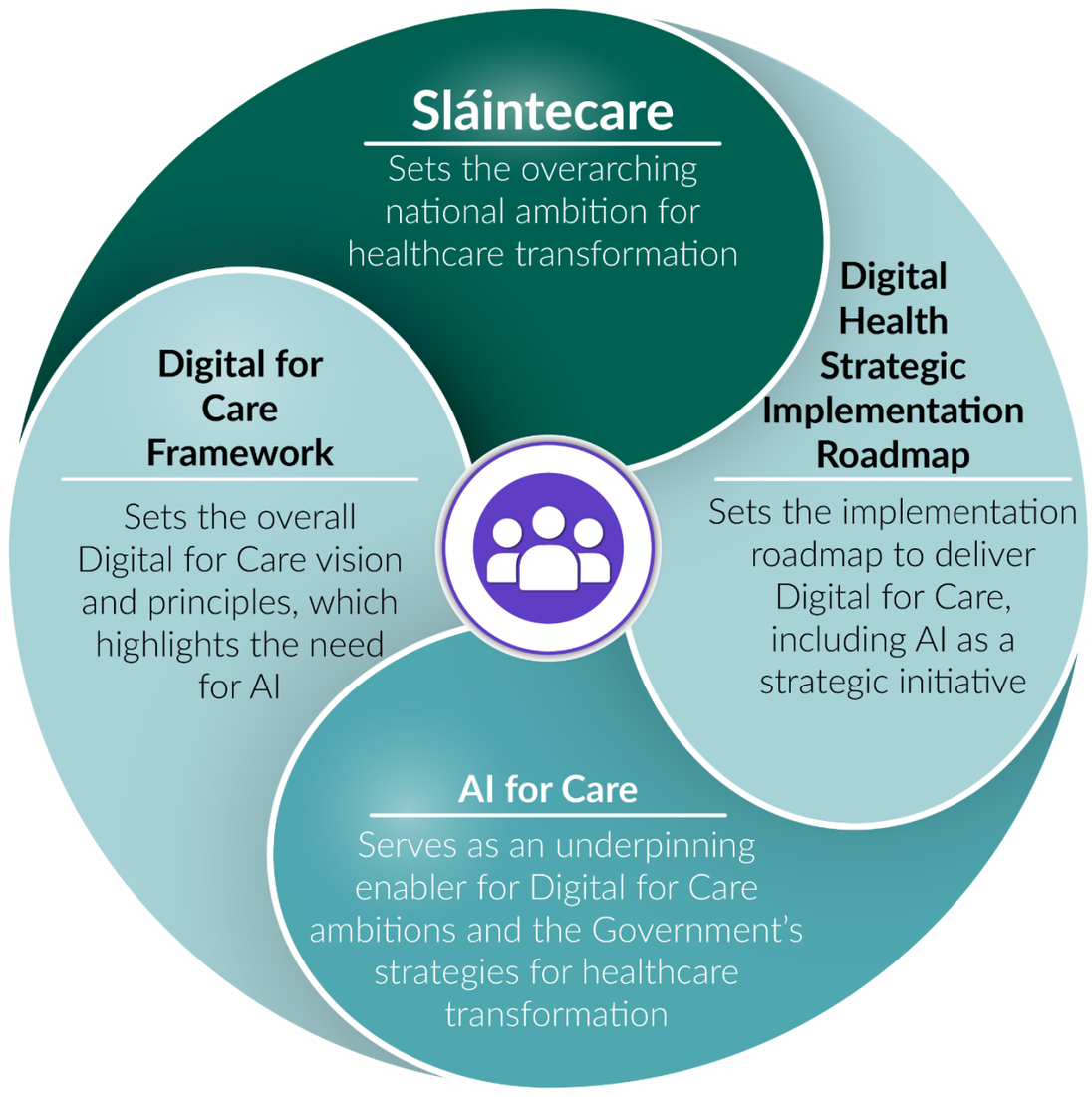
- *The commitment of the DoH and HSE to embed AI across the health service responsibly, safely, and transparently*
- *A vision for AI that will set the strategic priorities for the use of AI in healthcare in Ireland*
- *A strategic roadmap of opportunity areas for AI deployment across the health service*
- *Key critical success factors to execute and achieve our AI Strategy*

Stakeholder Engagement

A Working Group was established to provide leadership and guidance in the development of *AI for Care* and the AI Implementation Framework, with oversight by the Senior Leadership Team. The Working Group comprised of over 30 stakeholders across the DoH, the HSE, and other public sector bodies such as the Health Information and Quality Authority (HIQA), IPPOSI, Patient Advocacy, Department of Public Expenditure, Infrastructure, Public Service Reform and Digitalisation (DPER), HealthTech Ireland, and a diverse range of Subject Matter Expert (SME) representatives including clinicians, regional executive officers, academic partners, regulators, and support function leadership. In addition, international health and technology sector experience as well as international and national policy have helped to further build the AI Strategy.

Alignment to National Healthcare Strategic Imperatives

AI for Care is aligned to and builds upon Sláintecare, the Digital for Care 2030 Framework and the HSE Digital Health Strategic Implementation Roadmap, supporting the collective intention set out in these strategic objectives to leverage digital to enable better health outcomes for the country.



3. AI for Care Introduction

Sláintecare places a focus on enabling digital reform measures towards accessible, affordable, high-quality healthcare for the people of Ireland when they need it, where they need it. **Digital for Care** sets out our vision to provide 'seamless, safe, secure and connected digital health services' with a significant focus on the responsible and safe use of AI, and specifically calls for the responsible, human-centred, and ethical use of AI to enhance healthcare delivery.

The Programme for Government has made a clear commitment to develop an AI Strategy that aligns with Digital for Care, which calls for AI to be used as a tool to support—not replace—human decision-making, with strong emphasis on patient safety, regulatory compliance, transparency, and equitable access. *AI for Care* supports the vision and principles outlined in Digital for Care, and enhances the delivery of key Digital for Care initiatives such as the Electronic Health Record (EHR), the National Shared Care Record (NSCR), and the HSE Health App. By embedding AI across our health service, AI will enable enhanced clinical decision support, improve the quality of clinical care and research, improve efficiency and productivity, and improve services for patients.

Complementing our AI Strategy, HSE's forthcoming Data Strategy will be a key part of our national healthcare digital transformation. It will ensure that all new AI solutions are built on high-quality, secure, and interoperable data. Good data is essential for using AI safely and effectively in healthcare. The Data Strategy will aim to create a system where data is easy to access, understand, share, and reuse. This will be achieved by using common standards, trusted systems to identify data, and secure ways for systems to work together – supported by strong rules and protections for how data is used. Digital projects such as EHR, the NSCR, and the HSE Health App will provide the structured data needed to use AI in healthcare. In return, AI will help improve how data is handled by making it more accurate, easier to manage, and more useful for care teams and patients.

At the heart of Ireland's healthcare transformation, people and patients will become the guardians of their own health data – empowered to understand, access, and actively engage with their own data as partners in their care, while also having the ability to manage the access others can have to their data.

Alignment to the AI Implementation Framework

AI for Care outlines the vision for AI in the health service and opportunities for AI deployment over the next five years (2026-2030). AI for Care aligns to and supports the Digital for Care Framework and the national AI Strategy for Ireland, AI – Here for Good [5].

The HSE has developed a supporting **AI Implementation Framework** to outline how to execute AI for Care and provide a toolkit for implementing AI projects across the HSE. The intention of the framework is to ensure robust governance, regulatory adherence specifically to the EU AI Act, innovation, AI knowledge and enablement, and high-level project instruction to ensure responsible and efficient AI deployment in healthcare. HIQA AI Guidance and DPER AI Guidelines are supported by the AI Implementation Framework.

Given the rapid pace of advancements in AI, both documents will be reviewed regularly and refreshed as needed to ensure they remain current and effective.

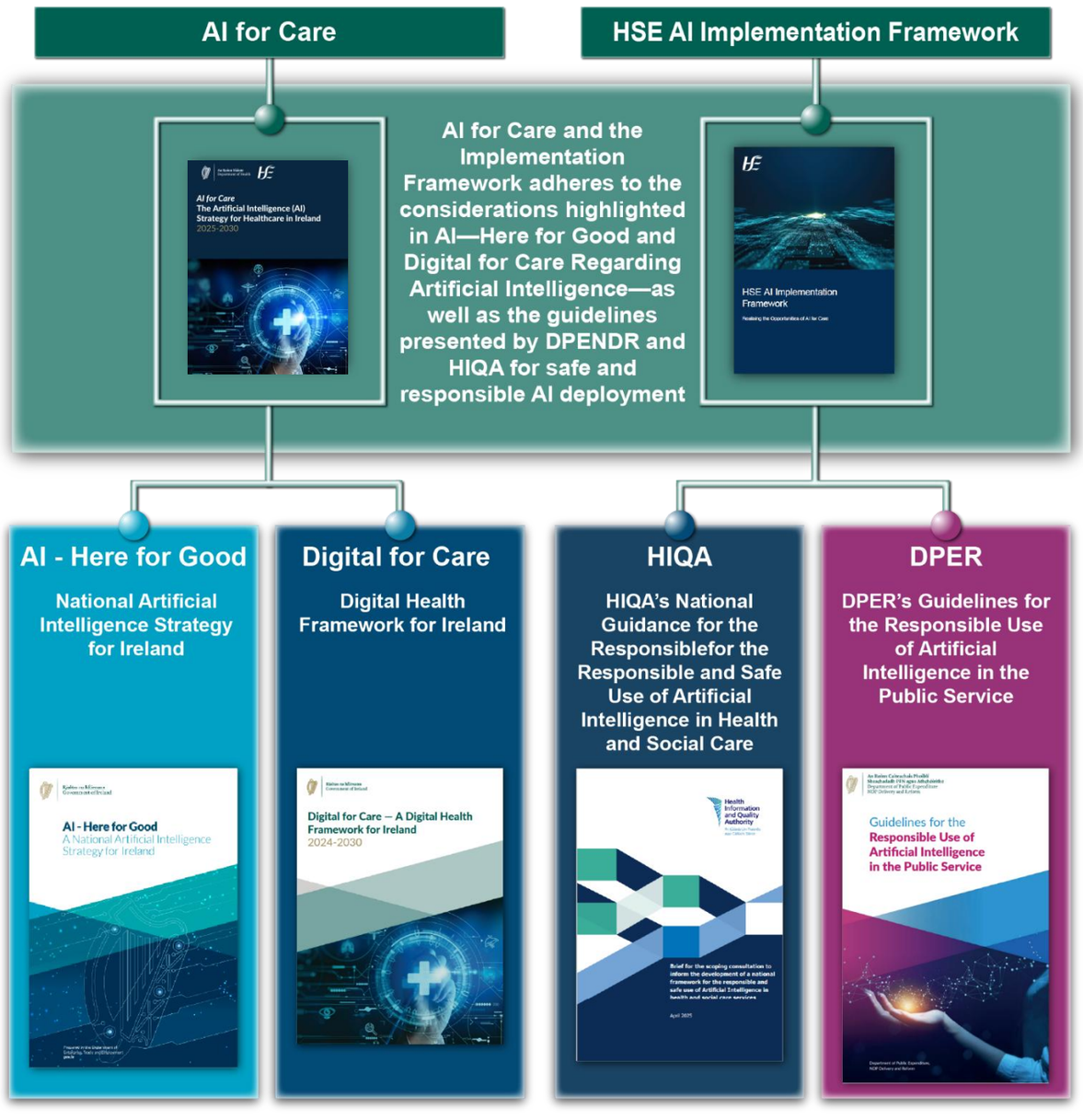


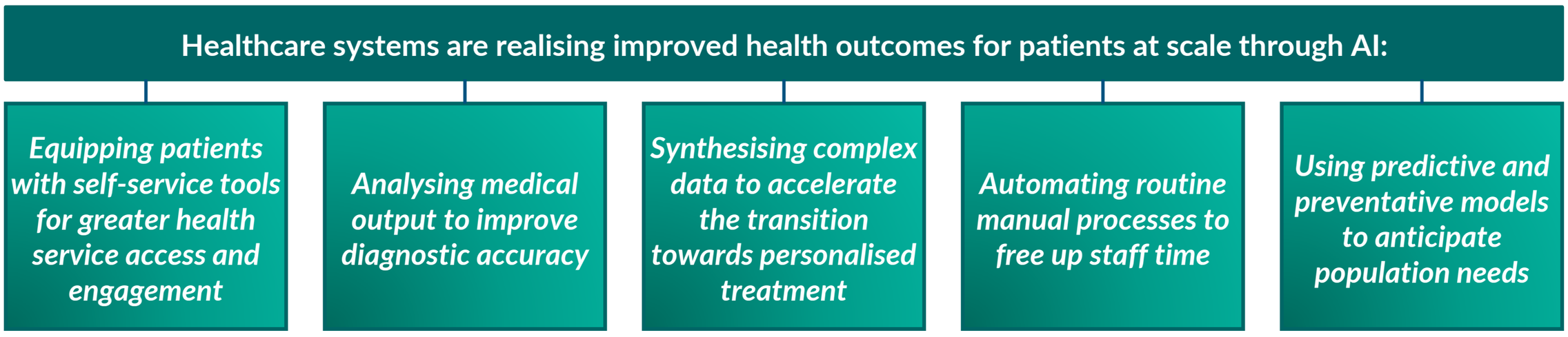
Figure: Overview of Relevant National AI Documentation for AI for Care and AI Implementation Framework

3. AI for Care Introduction

3.2 The Rise of AI in Healthcare

As per DPER *Guidelines for the Responsible Use of AI in the Public Service*, AI is defined as a machine-based system capable of operating autonomously and producing outputs like predictions, recommendations, or decisions based on input data. *AI for Care* encompasses all aspects of AI, including deep learning, machine learning, and generative AI, that will deliver value across the health service through the identified priority areas.

Global Healthcare Transformation Through AI



AI is reshaping health and social care worldwide, serving as a key emerging technology in transforming the efficiency and impact of healthcare delivery for patients and the healthcare workforce. Patients require convenient access to services and more personalised care, while the workforce needs real-time insights across interoperable systems to make informed decisions. Yet, healthcare systems globally have experienced similar mounting pressures of rising demand, due to a growing and aging population with complex care needs, driving significant wait times, clinician burnout, staff shortages, and administrative burdens, risking hindrances in the delivery of care.

Many international healthcare systems are well underway in their AI journeys, with global trends indicating that many health systems are investing in AI to alleviate these challenges [6]. Globally, organisations are viewing AI as a novel avenue to achieve the Quintuple Aim [7], which is a set of five global guiding principles for healthcare improvement – improved patient experience and quality of care, better staff experience, value for money, improved population health, and overall health equity.

From enhancing clinical care to optimising the workforce, AI can transform frontline and support function operations. As the AI opportunity in healthcare continues to accelerate, global and country regulators are focused on developing AI policy and regulation to ensure that patient safety and the responsible use of AI remains at the forefront of healthcare.

AI Benefits for the Patients / Service Users and the Healthcare Workforce

For Patients / Service Users:

- Improved patient outcomes
- More personalised care experience
- Improved patient experience
- Less duplication of care and advanced scheduling of appointments
- Easier access to healthcare in local communities and at home through virtual healthcare and monitoring

For the Workforce:

- Better decision-making
- Improved workflow efficiency
- More time for clinical staff to focus on clinical activities and patient care, and less time on administrative tasks
- Employee experience
- Increased operational efficiencies and staff productivity

3. AI for Care Introduction

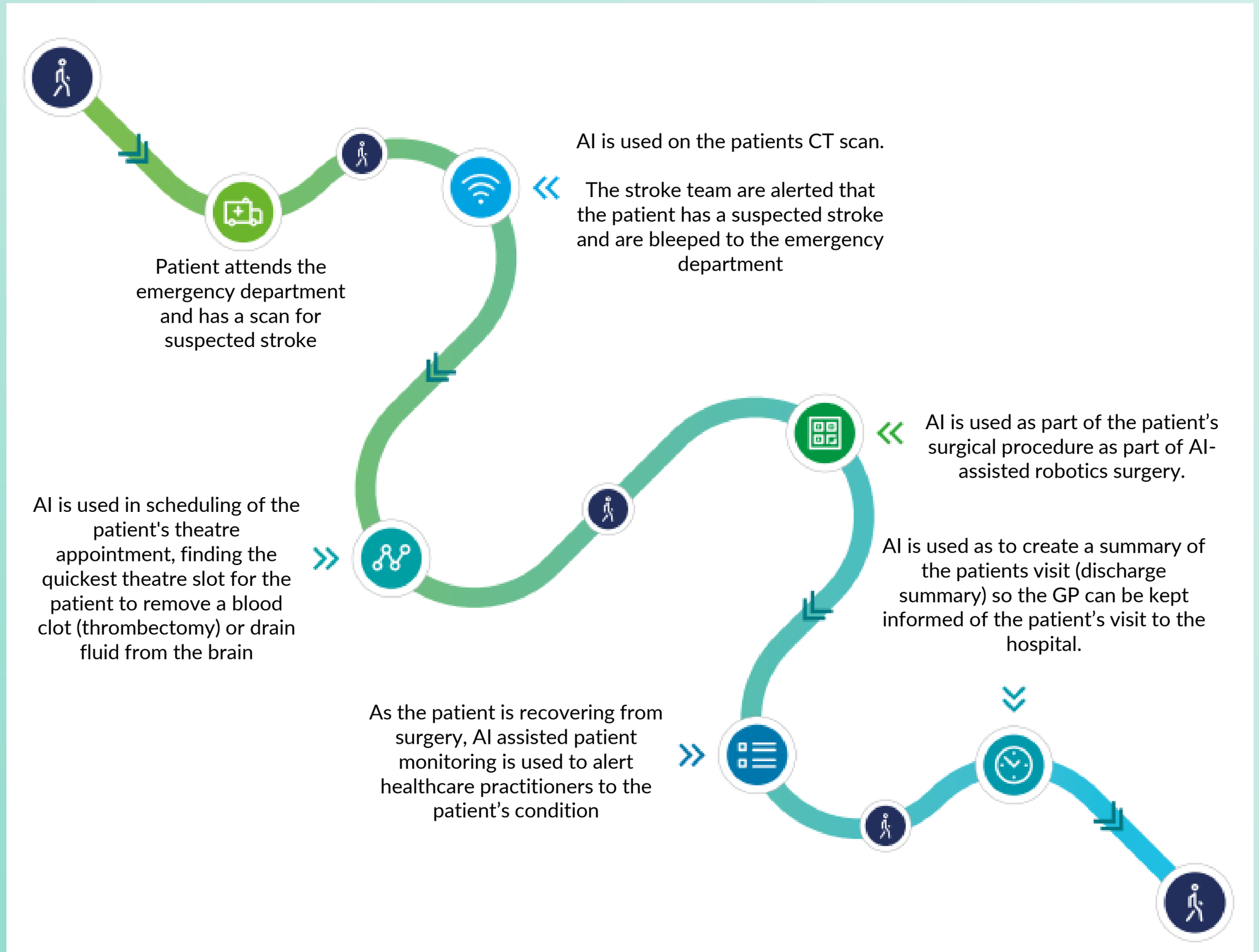
AI-Empowered Patient Journey Example: Improving the Efficiency and Effectiveness of Diagnosis for Stroke Patients

The National Office of Clinical Audit [8] found that:

- Stroke is the leading cause of acquired disability and the 3rd leading cause of death in Ireland.
- There are approximately 6,000 strokes admitted to Irish hospitals per year.
- To optimise patient outcomes, major trauma guidelines state that radiology reports of 3D imaging for chest trauma, haemorrhage and spinal injury should be available within one hour of the scan.

Example of AI innovation in patient care today:

AI is being used across a patient care journey for a patient who has had a stroke as highlighted in the figure below. Research has found that integrating AI into care for a stroke can save an average of about 22 minutes during the essential intervention period. Every minute saved can have a dramatic impact on a patient's recovery and reduce the overall impact of a stroke for patients for their lifetime. It is important to note that AI is being used here as a clinical decision support tool to facilitate clinician judgement but does not replace clinical oversight.



3. AI for Care Introduction

3.3 National Healthcare Drivers for AI for Care

Similar to its international counterparts, Ireland's healthcare system recognises AI as a revolutionary component in national healthcare transformation. As AI becomes more embedded and developed in national healthcare, Ireland can become a leader in AI, contributing to European and global efforts in developing AI technologies. *AI for Care* has been developed to avail of the transformation potential of AI in healthcare and in response to key national healthcare drivers:

Public Expectations and Engagement

Highlighting the need for a clear, five-year national strategy to guide the responsible adoption of AI in healthcare, the Citizens' Jury convened by IPPOSI [9] issued citizen recommendations on AI in Healthcare in Ireland have been considered in this AI Strategy. These recommendations issue a call to action for Ireland's healthcare policymakers to ensure that healthcare delivery in Ireland will: maintain a human in the loop approach with respect to oversight and diagnosis; abide by European and global regulatory frameworks; and be sustained by state investment in high-quality AI systems. The citizen-driven values for AI adoption (i.e., human-centricity, ethics, transparency, interoperability, safety, collaboration, and sustainability) that underpin these recommendations have contributed to the development of the principles for this AI Strategy.

Healthcare Service Needs

Ireland's expanding population is driving increased patient needs for healthcare services, and Ireland's current functioning health service is enabling our citizens to live longer, contributing to a rising proportion of older adults. As per the 2022 census [10], 15 percent of the population were over 65, which is a 22 percent increase from 2016 [11], with population growth forecasts predicting a further 30 percent rise [12]. As demand for healthcare rises due to increasing demographic pressures and a growing population with greater health support requirements, AI-driven solutions, such as predictive analytics for early disease detection and personalised treatment plans, are essential in meeting the evolving needs of patients, while supporting healthcare capacity.

Resource Capacity

As patient healthcare needs evolve, maximising the use of existing healthcare funding and resources will be critical to maintaining sufficient staffing across hospitals and community services to deliver safe and timely care, and moreover, a financially sustainable health service. However, Ireland's healthcare system is facing increasing workforce demands, with projections suggesting additional staffing of over 3,000 doctors and almost 9,000 nurses will be required by 2035 to support a growing and aging population [13]. This capacity need is further compounded by challenges in recruitment at scale and the retention of existing staff, such as heavy workloads, technological hindrances, and administrative inefficiencies.

AI can play a key role in this effort of scaling capacity by automating administrative tasks, streamlining workflows, and enhancing clinical diagnostic efficiency, enabling healthcare professionals to focus on patient care while optimising existing resources. In 2024, the Programme for Government **established the Productivity and Savings Taskforce**, which holds an overall goal to ensure the use of Health funding is maximised by delivering safe health services to as many people as possible in a timely way. To achieve this goal, the Taskforce identified savings and opportunities to improve productivity across the health service via the Productivity and Savings Taskforce Action Plan 2025 [14]. AI was identified as one of the key enablers for productivity improvements due to its transformative ability to support the health service to deliver a greater volume of care more efficiently within the capacity of current funding and resources, while maintaining high standards of care.

3. AI for Care Introduction

Healthcare Digital Transformation

Patients are becoming increasingly familiar with digital healthcare, and subsequently, their comfort in engaging with digital solutions is also increasing. Through programmes such as Digital for Care, Ireland's health system is on a path of digital acceleration. In addition to the implementation of EHR, HSE Health App, and NSCR, other digital solutions including telehealth, remote monitoring, and interoperable health systems also continue the momentum of digital transformation, creating the foundation for the safe adoption of AI.

Innovation Through AI

Recent advancements in AI, including generative models, deep learning, and natural language processing, are expanding the scope of possibilities for innovation in healthcare. For example, ambient listening technologies, powered by AI, can capture and analyse conversations between patients and healthcare providers, enabling real-time insights and more accurate documentation without interrupting the flow of care. AI-assisted robotics in surgery are improving precision, reducing recovery times, and enhancing patient outcomes, while AI-powered chatbots and virtual assistants are streamlining patient engagement through contact centres. As AI technologies continue to evolve, Ireland must ensure its healthcare system remains agile, integrating these innovations responsibly to enhance the efficiency, safety, and quality of care.

National AI Guidance

AI for Care is mobilised by the Programme for Government's commitment to championing the use of AI across public services including healthcare. Our AI Strategy is also guided by **AI - Here for Good**, which highlights the potential of AI to drive productivity, address societal challenges, and enhance public service delivery. Applications of AI in healthcare have the potential to unlock new efficiencies and enhance service accessibility, supporting in the translation of the broader ambitions of Ireland's AI Strategy into tangible health system-specific improvements.

HIQA's forthcoming **National Guidance for the Responsible and Safe Use of AI in Health and Social Care Services** will complement this AI Strategy as well as the HSE's AI Implementation Framework. HIQA's Guidance is designed to promote ethical, safe, fair, and equitable AI adoption to ensure AI is used responsibly in health and social care services. Collaboration amongst HIQA, the DoH and the HSE is critical to ensure there is alignment on synergies across these pieces of work, including the guiding principles in the AI Strategy and the AI project implementation lifecycle in the AI Implementation Framework.

European AI Legislation

The EU AI Act establishes a harmonised regulatory framework for AI systems developed or deployed in the EU. It is designed to provide a high level of protection to people's health, safety, and fundamental rights and to simultaneously promote the adoption of human-centric, trustworthy AI. The Irish Government's forthcoming legislation will provide for the full implementation and enforcement of the EU AI Act at national level. *AI for Care* highlights the importance and commitment to adhere to obligations under the EU AI Act through the AI Implementation Framework.

The European Union has also defined its strategic approach to AI, centring on excellence and trust and aiming to boost research and industrial capacity while ensuring safety and fundamental rights [15]. The EU AI Strategy aims at making the EU a world-class hub for AI. Ireland's AI Strategy aligns to the approach the EU has set to its strategy – to ensure that AI is human-centric and trustworthy.

Global AI Ethics and Governance

The rapid advancement of AI in healthcare presents opportunities and risks, making it critical that the health service adopts a clear, well-governed strategy. Loosely-governed adoption could undermine patient safety, ethical standards, and regulatory compliance. The Irish health service will align its adoption of AI with global best practice frameworks, such as the *World Health Organisation's (WHO) Ethics and Governance of Artificial Intelligence for Health* [16], which outlines the key principles of protecting human autonomy, promoting well-being and safety, ensuring transparency, fostering accountability, ensuring inclusiveness and equity, and supporting sustainable AI. Through the implementation of such safeguards, we protect the quality of care and public trust.

An Roinn Sláinte
Department of Health

4
AI for Care Vision

4. AI for Care Vision

4.1 AI for Care Vision Overview

Our **Vision** is to harness AI safely and responsibly to transform how we deliver efficient and innovative healthcare for patients and the workforce.

We have defined four '**Strategic Pillars**' as overarching areas to achieve our AI Vision. These Strategic Pillars set strategic objectives and focus areas with opportunities for AI deployment that build the AI Strategic Roadmap to guide all stakeholders.

We have also set **Guiding Principles** for our AI Strategy that must be referenced throughout all AI efforts. These principles recognise the importance of approaching and managing our AI Strategy in an intentional, considerate manner to protect and enable our health service.

4. AI for Care Vision

AI for Care is a living strategy that will evolve over time and is shaped by the needs of patients, healthcare providers, the public and other key stakeholders.

Digital for Care Framework Vision	Better health outcomes enabled by seamless, safe, secure, and connected digital health services and which support health and wellbeing for both our patients and providers
HSE Health Strategic Implementation Roadmap	To harness the power of digital to increasingly connect how health and social care services are delivered for our population

AI for Care Vision

An intentional statement for AI in Ireland's healthcare in alignment with the broader direction of Digital for Care Framework and Roadmap

To harness AI safely and responsibly to transform how we deliver efficient and innovative healthcare for patients and the workforce

AI for Care Strategic Pillars

A shared set of strategic objectives to achieve our AI Vision and focus areas of AI deployment opportunities that build the AI Strategic Roadmap to guide all stakeholders

AI for Clinical Care

We will use AI to enhance the quality of clinical care, empowering clinicians so that patients receive faster treatment, and care that meets their needs

AI for Operations

We will use AI to improve system efficiencies and boost productivity; helping to shorten wait times, streamline patient pathways, and ensure coordinated and responsive care

AI for Research & Innovation

We will use AI to advance research and innovation and develop targeted insights; supporting the development of new treatments, diagnostics, and therapies that lead to better health outcomes. We will also leverage AI to provide insights to drive service improvements

AI for Public Health

We will use AI to strengthen public health initiatives; helping to detect health risks earlier, support healthier lifestyles, and deliver more targeted prevention and health promotion efforts that improve health and wellbeing across communities

AI for Care Guiding Principles

Fundamental guardrails throughout the AI Strategy and any future AI initiatives

1. **Person-Centered**
2. **Transparent & Trustworthy**
3. **Human in the Loop**
4. **Lived Experience**
5. **Governance & Safety**
6. **Proven Benefits**

AI Strategic Outcomes

The best practice for healthcare improvement

- ✓ **Enhanced care experience**
- ✓ **Better staff experience**
- ✓ **Advanced health equity**
- ✓ **Improved population health**
- ✓ **Cost reduction**

4. AI for Care Vision

4.2 AI for Care Guiding Principles

Our Guiding Principles recognise the importance of approaching and managing our AI Strategy in an intentional, considerate manner to protect and enable patients, healthcare professionals, and our health service.

1. Person-Centred: We will ensure the health outcomes and diverse needs of the public are central to decisions about the adoption of AI technologies and the use of health data and health information upon which AI technologies rely. This will be supported by inclusive, meaningful, and sustained partnership with the patient and public.

2. Transparent and Trustworthy: We will ensure the public, healthcare professionals, and patients and their care givers are made aware of and trust in the role that AI is playing in Ireland's health system through transparent communication of how, when, and where AI technologies, methods and tools are used to support healthcare decisions, and what impact they might have, including the impacts on patient care, safety, security, and privacy.

3. Human in the Loop: We will keep the human in the loop, using AI to further enable healthcare workers in their work. We will ensure that AI supports clinicians in their clinical decision making while always keeping the clinician at the centre of patient care. We will also be dedicated to building AI literacy across our health service as well as among our patients and service users. AI literacy includes the ability to communicate, process, and understand AI. Literacy is improved through education and transparency appropriate to each group, so that people and populations are empowered to make informed health decisions. Simultaneously, decision-makers, healthcare professionals, researchers, and innovators are equipped to use AI technologies effectively and responsibly, support effective change management and align on the use of common terminology.

4. Lived Experience: We will ensure we adopt a continuous learning approach to the deployment of AI, maintaining agility in a rapidly evolving landscape to adapt responsibly to emerging technologies and dynamic requirements. We will learn from the lived experience of patients and clinicians, and we will involve them in continuous learning monitoring processes. By flexibly incorporating the latest capabilities, we ensure that we are implementing AI in a way that harnesses the greatest possible impact on patient care, safety, and efficiency.

5. Governance and Safety: We will ensure any AI effort in our health system will safely operate within the appropriate governance mechanisms to ensure AI adoption aligns with healthcare policies, regulations, and ethical standards. Mandatory compliance with national and international health laws, data protection requirements, and AI-specific legislation will be managed through clear implementation guidelines, ensuring AI is deployed legally, ethically, and safely.

6. Proven Benefit: We are committed to generating value from our investment in AI. For patients, we intend to realise through AI improved, more personalised patient care. For the healthcare workforce, we intend to realise through AI a better employee experience, improved productivity, and increased clinical decision support. In addition, AI will transform the way we conduct research, allowing us to synthesise large volumes of data. We will ensure that our AI Strategy delivers measurable high value outcomes through continuous monitoring and evaluation of our strategic outcomes as we deploy AI, involving patient and clinician voices in this process.

4. AI for Care Vision

4.3 AI for Care Strategic Outcomes

In line with the global industry best practice, we expect to realise high value outcomes through our AI Strategy by 2030 that will ultimately enable better health outcomes for the country. Over the next five years, we will measure these outcomes to evaluate the success of *AI for Care*.

Strategic Outcomes	Enhanced care experience	Better staff experience	Advanced health equity	Improved population health	Cost reduction
Example Success Metrics	☑ *Reduced wait times*	☑ *Reduced administrative hours*	☑ *Improved access to care*	☑ *Improved early detection and prevention*	☑ *Increased operational efficiencies*
	☑ *Improved accuracy in diagnosis*	☑ *Increased retention*	☑ *Language and communication support to underserved communities*	☑ *Improved health education and awareness*	☑ *Improved staff productivity*

An Roinn Sláinte
Department of Health

5
AI for Care Strategic Pillars

5. AI for Care Strategic Pillars

5.1 Strategic Pillar 1 – AI for Clinical Care

Objective:
We will use AI to enhance the quality of clinical care, empowering clinicians so that patients receive faster treatment and care that meets their needs.

Overview

Personalised treatment plans | *Early disease detection* | *Patient experience* | *Patient outcome prediction* | *Diagnostic accuracy* | *Clinician support*

A core purpose of the health service is the diagnosis and treatment of patients. AI can enhance the quality of clinical care for patients and empower clinicians by providing clinical decision support and patient personalisation.

AI is emerging as a key enabler in clinical transformation where it has proved to assist in diagnosing diseases, predict patient outcomes, and personalise treatment plans. Computer vision leverages image processing algorithms and deep learning techniques to analyse medical images like X-rays, CT scans, and MRIs, enhancing diagnostics and treatment planning. These advanced algorithms can detect abnormalities such as fractures, lesions, or tumours, providing detailed visualisations that assist clinicians in making accurate diagnoses and developing effective treatment plans. It also can improve tumour detection in radiology images and can analyse time-series MRI data to monitor disease progression, ultimately improving diagnostic precision and enabling timely medical interventions.

Generative AI can automate clinical documentation by leveraging large language models, providing clinicians with more capacity to focus on patient care instead of administration. Generative AI can generate clinical notes, discharge summaries, and patient reports, while Natural Language Processing (NLP) can analyse unstructured text data, such as clinical notes and patient surveys to extract valuable insights. These uses of AI reduce administrative burdens on healthcare staff, including using ambient scribing to reduce the time taken to document patient notes, ultimately improving the overall clinical care for the patient. AI also empowers patients by improving access to their health information and self-management tools, fostering a more engaged and informed healthcare experience.

Most importantly, AI is designed to assist, not replace, clinicians. A clinician-in-the-loop approach ensures that AI supplements medical expertise while maintaining the quality, empathy, and personal connection that underpin effective patient care. To ensure safety remains front and centre in clinical care, many clinical AI solutions are designated as “AI-as-a-medical-device” under Medical Device Regulation. As such, they are as treated as high risk under the EU AI Act, mandating additional risk management processes such as fundamental rights impact assessments and registering on AI registries, after clinical risk management review. These processes and controls are set out in the AI Implementation Framework.

5. AI for Care Strategic Pillars

Focus Areas

Patient Self-Management: We will focus on using AI to enhance patient health management by enabling continuous monitoring, early intervention, and personalised support for chronic and acute conditions. Self-service tools empower patients with access to tailored health information, education, and post-treatment guidance, enabling them to take control of their care.

Clinical Decision Support: We will focus on using AI to improve diagnostic accuracy and treatment effectiveness through decision support tools. These innovations integrate seamlessly with existing medical systems such as the National Integrated Medical Imaging System (NIMIS), aiding clinicians in making informed decisions and enhancing patient care.

Clinical Documentation: We will focus on using AI to enhance the efficiency and accuracy of documenting medical records by capturing and summarising clinical encounters; creating records, discharge summaries and letters; and translating medical language. These applications streamline and standardise the documentation process, ensuring comprehensive and clear communication within clinical care settings.

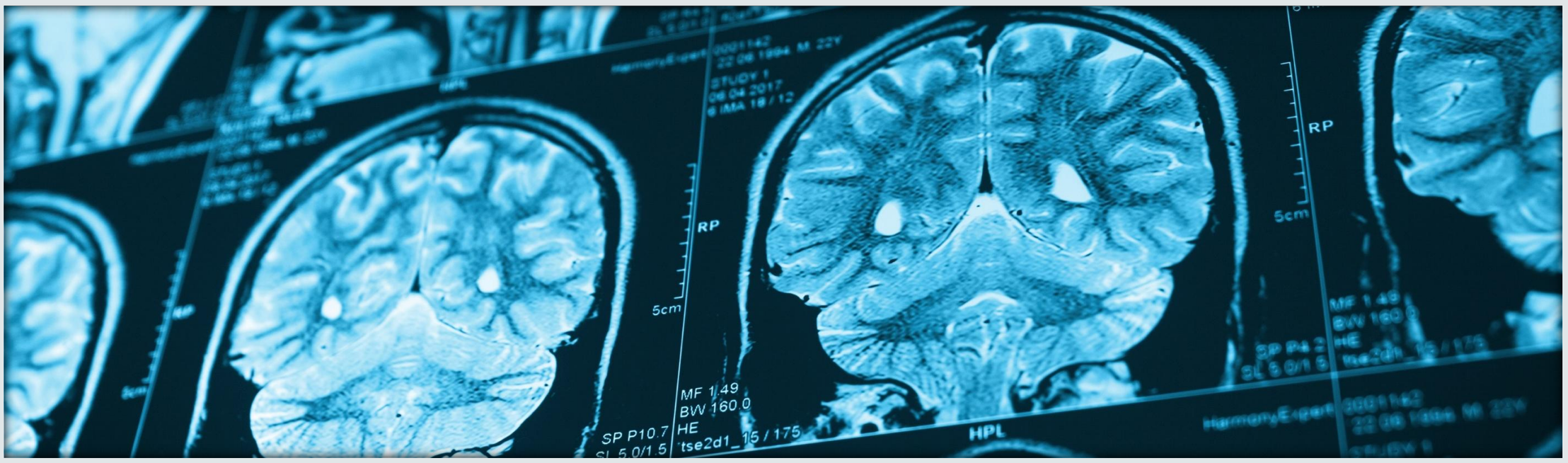
Case Study: AI Use in Radiology [17]

AI has broad applications within radiology for image analysis where it can support clinicians with image interpretation and diagnosis. AI has been effective across areas including fracture detection, stroke detection and tumour identification. One specific example of the use of AI in radiology in Ireland is described below.

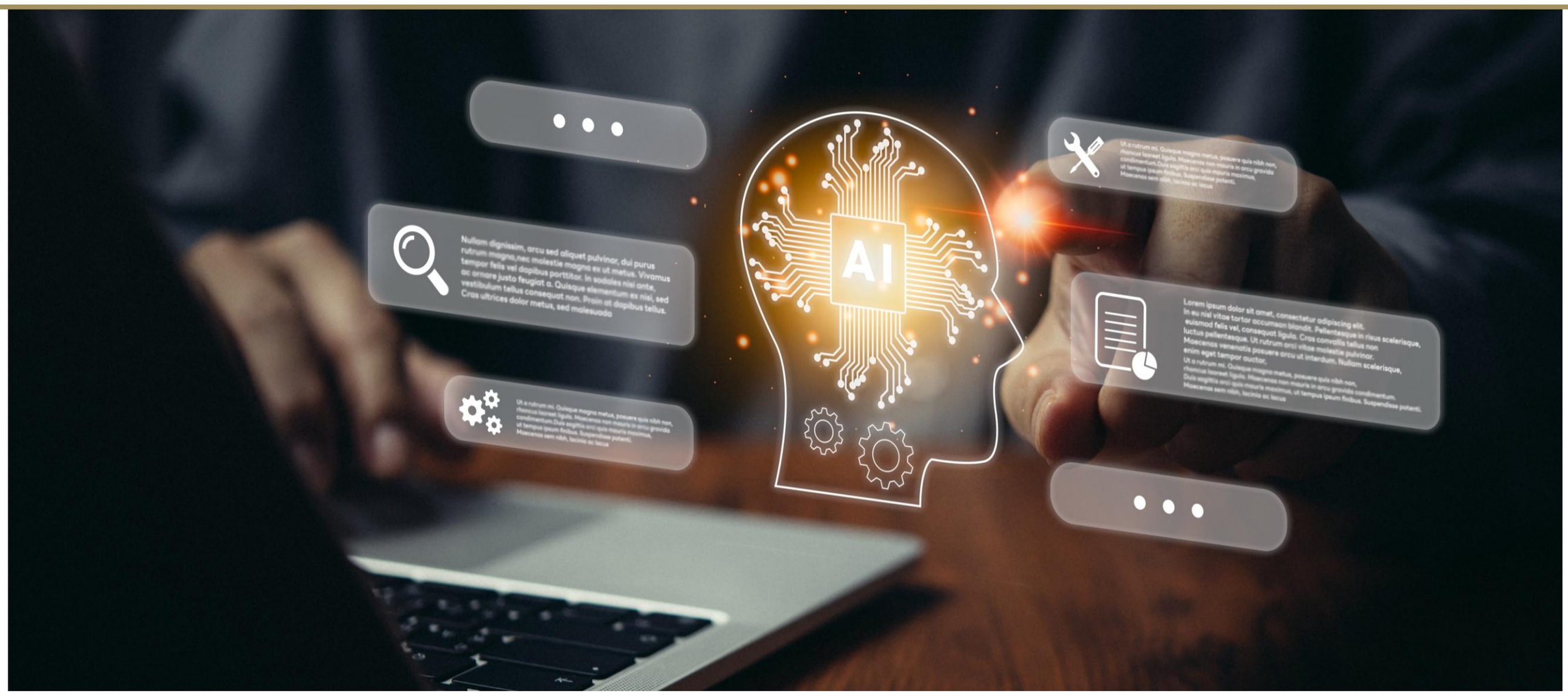
A large Irish University Hospital is using AI for continuous patient care enhancement, particularly in stroke management. When patients with potential acute stroke present at the Emergency Department (ED), clinicians must quickly differentiate between haemorrhagic and ischemic strokes.

Within two minutes of the scan, AI provides results to emergency physicians, detecting subtle blood traces and blood vessel blockages among up to 2,000 images. While the AI assists in decision-making, it does not operate autonomously. It supports the radiologist in forming an accurate prognosis, thereby speeding up the diagnostic process and facilitating timely decision-making.

By deploying the AI software on every patient scan continuously, the hospital has accelerated care delivery and increased clot detection rates by 100 percent, identifying clots that might be missed, in patients with conditions such as cancer for example. It also flags potential bone fractures in trauma patients, improving diagnostic accuracy and speed.



5. AI for Care Strategic Pillars



5.2 Strategic Pillar 2 – AI for Operations

Objective:
We will use AI to improve system efficiencies and boost productivity; helping to shorten wait times, streamline patient pathways, and ensure coordinated and responsive care.

Overview

Patient communications | *Patient flow* | *Demand management* | *Resource management* | *Quality improvement* | *Productivity*

By embedding AI throughout healthcare operations, we can improve service delivery to enhance the staff and patient experience. AI can drive efficiencies and productivity improvements from the support functions to the frontline, creating a more agile, proactive, and sustainable healthcare environment.

Efficient operations are the cornerstone of a well-functioning healthcare system, ensuring that services run seamlessly. Operations ensures that healthcare staff have the resources, support, and systems they need to provide timely and effective patient care, encompassing a broad range of critical functions including HR, finance, national schemes and services, communications, administrative services, legal and procurement, and facilities and service management.

An expanding population, the prevalence of chronic disease, and evolving patient expectations are driving demand beyond current capacity, causing resource limitations and inefficiencies to hinder system responsiveness. In parallel, digital transformation is reshaping healthcare operations, with self-service technologies and the scaling of EHRs to improve efficiencies and improve the end-to-end patient experience. These shifts require operational processes to evolve to keep pace with increased activity and the opportunities created by new technologies.

AI can enable healthcare operations to adapt to growing demand and digital transformation by further enhancing efficiency, reducing manual workloads, and supporting proactive system management. AI can alleviate administrative burdens, streamline scheduling, and improve financial and workforce planning. AI-driven forecasting can enable advanced preparation for fluctuations in patient demand. AI-driven predictive analytics can also be utilised to forecast bed demand ensuring optimal resource allocation and efficient patient management. By analysing historical data, such as patient arrival patterns, seasonal trends, and hospital admission rates, machine learning models can predict future bed occupancy levels.

5. AI for Care Strategic Pillars

Focus Areas

Clinical Operations: We will focus on using AI to transform clinical operations by enabling healthcare providers to predict patient flow with greater accuracy, improve scheduling, and better allocate resources. By automating routine clinical tasks and improving resource coordination, AI will support healthcare teams to respond more effectively to patient needs, reduce wait times, and improve overall care delivery, ensuring a more streamlined and efficient clinical environment.

Support Operations: We will focus on using AI to automate and streamline key operational functions such as HR and finance as well as across national schemes and services. As identified by the Productivity and Savings Taskforce, AI is one of the key enablers for productivity improvements in Support Operations due to its transformative ability to support the health service to deliver a greater volume of care more efficiently within the capacity of current funding and resources, while maintaining high standards of care. By using AI to automate operational processes, we will improve service responsiveness and ensure better coordination across the supply chain. With greater efficiency and effective operations across support functions, we ensure staff can focus on higher-value activities that enhance patient care.

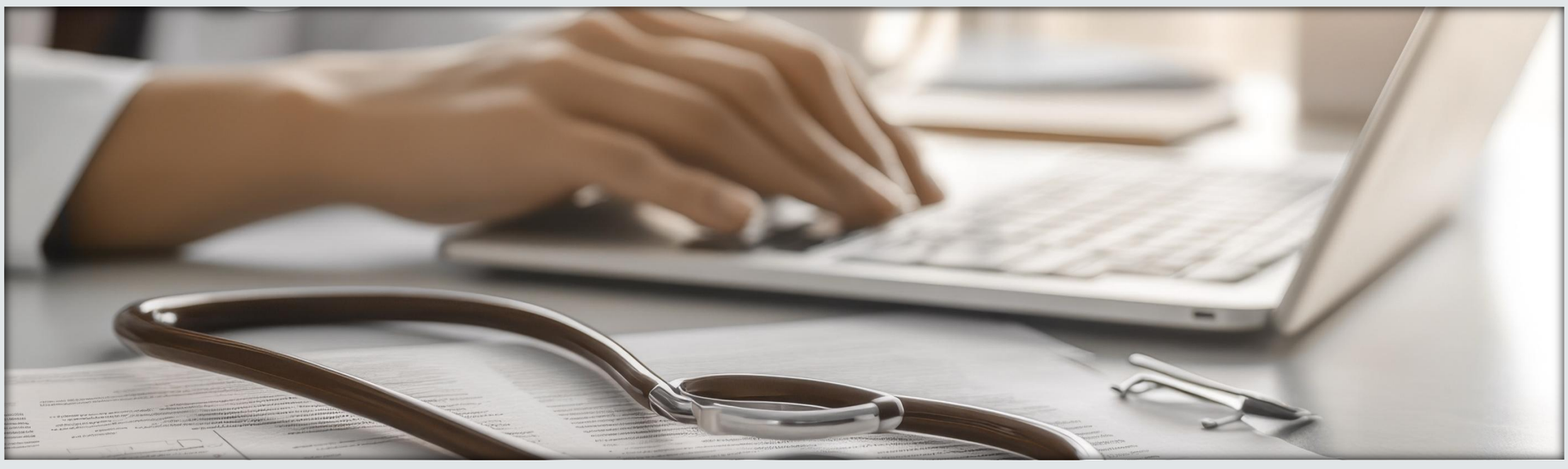
Digital Transformation: We will focus on using AI to accelerate the digital transformation of healthcare operations, including optimising the implementation and scaling of new and existing technologies. This includes advancing EHR programme adoption, where AI can play a role in improving data collection, structuring, and analysis, administrative automation, and enhancing system interoperability, which are key challenges that have historically hindered seamless integration and efficiency.

Case Study: AI to enhance healthcare supply chain [18]

Efficient inventory management is crucial in the healthcare industry to ensure the availability of essential medications and medical supplies while minimizing wastage and reducing costs.

Healthcare systems are using Artificial Intelligence (AI) to optimise inventory management and enhance supply chain resilience. By leveraging AI-driven solutions, healthcare organisations can improve demand forecasting, streamline supply chain operations, and minimize medication waste. Incorporating AI technologies, including machine learning and predictive analytics, allows for more precise demand forecasting, minimizes the chances of both overstocking and stockouts, and enhances overall operational efficiency.

For example, some hospitals have implemented AI systems that reduced inventory costs by up to 30% while ensuring the continuous availability of essential supplies.



5.3 Strategic Pillar 3 – AI for Research & Innovation

Objective:
We will use AI to advance research and innovation and develop targeted insights; supporting the development of new treatments, diagnostics, and therapies that lead to better health outcomes. We will also leverage AI to provide insights to drive service improvements.

Overview

Patient enrolment | *Real-time patient monitoring* | *Compliance assessments* | *Research summarisation & design* | *Quality improvement & clinical audit* | *Data analysis & interpretation*

Through advancing practices with AI, innovation, healthcare research and other evidence generating activities can become more agile, efficient, and impactful, driving continuous improvements in patient care and system-wide transformation.

Healthcare research is fundamental to advancing medical knowledge to develop effective treatments, ultimately enhancing patient care, and the HSE Action Plan for Health Research articulates a practical roadmap for embedding research into healthcare delivery [19]. For the purpose of AI for Care, research refers to activities under the Scope of the HSE National Framework for Governance, Management and Support of Health Research [20]. Such activities attempt to derive generalisable or transferrable new knowledge to answer or refine relevant questions with scientifically sound methods in areas of health and social care, which includes basic and applied biomedical research, new technologies, clinical, health services and population health research. It refers to all health and social care research that requires the recruitment of participants via the HSE or HSE funded services or the use of their data or biomaterial, regardless of whether the research is led by the HSE or an external organisation.

Research provides the foundation for understanding health and disease, shaping new diagnostic and therapeutic approaches, and improving healthcare system efficiency. Central to research is the ability to generate, analyse, and extract insights from vast and complex healthcare data. As the volume and complexity of health data continue to grow, so does the potential to revolutionise methodologies and healthcare delivery through pioneering technological advancements. Ethical considerations such as bias detection, equitable representation, and data privacy remain critical in ensuring that advancements in healthcare are responsible and inclusive. Streamlining data compliance processes, such as preparing Data Protection Impact Assessments (DPIAs) and submissions for research ethics committees, would provide valuable support to researchers, reducing administrative burdens and improving efficiency.

Within research, AI presents a powerful opportunity to optimise research operations and enhance clinical trials. AI can strengthen ethical oversight by identifying biases, reinforcing data security, and supporting transparent, evidence-based decision-making. AI can also assist in the generation of novel research questions or study designs, enabling researchers to adapt these to different contexts, conditions, or communities.

5. AI for Care Strategic Pillars

In addition, analysis and interpretation of data generated through other evidence generating activities, such as clinical audits and quality improvement projects, also has applications across the health service. AI can also be used to support clinicians in analysing large data sets identifying trends and auditing the efficacy of interventions in clinical care.

Focus Areas

Research, Strategy, Governance, Management and Support: AI presents an opportunity to enhance research operations by streamlining governance, refining methodology design, and strengthening data analysis. By streamlining the ethical approvals process, aligning on the strategic direction and research priorities, and automating evidence appraisal, we can drive greater efficiency and consistency across research initiatives, while AI-generated insights will support more cohesive and data-driven research, ultimately advancing novel discoveries and improving patient care.

Clinical Trials: There is an opportunity to leverage AI to optimise clinical trials by streamlining patient enrolment, improving data integrity, and assisting in real-time monitoring. By detecting biases, harmonising datasets, and automating quality audits, we will succeed in accelerating research trials while maintaining safety, accuracy, and efficiency.

Clinical Audit and Other Evidence Generating Activities: AI can be leveraged to support clinicians with clinical audit. AI tools can be deployed to analyse clinical data and to identify opportunities for quality improvement interventions. It can then be used to support with auditing the efficacy of interventions. AI can also be used to automate the clinical audit process.

Data Analysis and Interpretation: AI can automate the collection of clinical data from EHRs, imaging systems, and other sources. AI algorithms can identify patterns and trends in clinical data to help to pinpoint areas for improvement or to identify patient risks for early intervention. Analysis of large data sets can also identify improvement opportunities across operations and national services.

Case Study: AI-Driven Research to Revolutionise the Management of Preeclampsia [21]

A large Irish academic partner is leading an initiative that brings together a growing interdisciplinary community of researchers who are engaged in transformative and highly multidisciplinary, data-rich, healthcare-focused research projects. Their current focus is on personalised medicine, AI-driven diagnostics and predictive analytics to deliver better patient outcomes.

The flagship project addresses the global health challenge of preeclampsia, a life-threatening complication that can affect 1 in every 12 pregnancies and results in significant maternal and infant morbidities and mortalities worldwide. It has developed an AI-driven clinical decision support tool designed to aid clinicians in diagnosing and assessing the risk of preeclampsia, ultimately optimising health outcomes for both mother and baby.

The project is being developed in collaboration with three large maternity hospitals.

5. AI for Care Strategic Pillars

5.4 Strategic Pillar 4 – AI for Public Health

Objective:
We will use AI to strengthen public health initiatives; helping to detect health risks earlier, support healthier lifestyles, and deliver more targeted prevention and health promotion efforts that improve health and wellbeing across communities.

Overview

Health equity support | *Public health trends analysis* | *Health outcome prediction* | *Health monitoring* | *Population-based screening* | *Evidence-based policy creation*

By using AI to enhance public health promotion and protection, we can build a more equitable, preventative, and sustainable healthcare system.

In Ireland, public health refers to the health practices and policies implemented by the government, health service, and regional structures to ensure positive health outcomes for the various communities of the national public. It encompasses a broad range of responsibilities, including disease prevention, health promotion, and ensuring equitable healthcare access, which public health professionals achieve through epidemiology (i.e., the understanding of disease patterns and their causes). This enables professionals to take proactive measures to prevent illnesses, detect them early, and implement the most appropriate healthcare interventions.

The DoH and HSE address public health through two main approaches: health protection and health improvement. Health protection focuses on preventing epidemics, protecting people from biological, chemical, and radio-nuclear health threats, and responding effectively to incidents and disasters. Health improvement strategies aim to promote healthy behaviours, monitor the health status of the population, and mobilise community action to enhance public wellbeing. The ability to accurately forecast future health challenges is critical for preparedness, particularly in responding to emerging diseases. Ensuring that healthcare policies are both data-driven and socially sensitive is challenging, yet essential in creating a system that, at its core, serves the needs of all individuals effectively.

AI offers transformative opportunities to enhance current public health priorities. Predictive analytics can forecast future health outcomes using statistical techniques and machine learning models, enabling proactive healthcare interventions. Predictive models can estimate the likelihood of hospital readmissions, allowing healthcare providers to implement preventive measures and improve patient care continuity. To reach high-risk and hard-to-reach populations, AI in population-based screening has the potential to help identify individuals at risk and prioritise screening efforts. Furthermore, AI in population health surveillance can enable real-time health monitoring to support the development of evidence-based health policies, addressing emerging healthcare issues.

5. AI for Care Strategic Pillars

Focus Areas

Population Health Management: Population health management is a proactive, data-driven, and people-centred approach to improving the health and well-being of a specific population [22]. It considers variations within the population and the influence of social determinants of health. By leveraging predictive analytics and risk stratification, this approach assesses the current health status of a population, forecasts potential health outcomes, and anticipates the necessary resources to effectively address health risks before they escalate, enabling the provision of predictive, preventative, personalised, and participatory (4P) care.

Population Health Surveillance: NLP and predictive analytics can be leveraged in population health surveillance activities to monitor and detect emerging health trends throughout various data sources. This augmentation of foresight enables informed decision-making and early intervention in response to population health needs.

Knowledge Management: AI can be leveraged to automate the synthesis of research data from various publications, enabling accelerated evidence digestion for informed decision-making, curtailing the need for extensive manual review.

Population-Based Screening: AI can be embedded throughout our national screening programmes to analyse vast medical data and identify subtle abnormalities, thus improving accuracy, early detection, and efficiency. With the assistance of AI, screening programmes could ultimately evolve to become a more comprehensive at-risk based programme for the general population, facilitating a more targeted screening approach and leading to a more efficient use of healthcare resources.

Case Study: AI to Improve Population-Based Screening Programmes [23]

The HSE's National Screening Service have established a plan for implementing AI within the National Screening Service, encompassing BreastCheck, CervicalCheck, BowelScreen and Diabetic RetinaScreen.

A study in Sweden has found that AI can enhance breast cancer detection in mammography screening while significantly reducing the workload for radiologists. The trial, conducted within Sweden's national screening programme, involved 105,934 women across four screening sites. Participants were randomly assigned to either AI-supported screening or the conventional method of double reading by radiologists. The AI system was used to triage scans for single or double reading and highlight suspicious findings.

Results showed that AI-assisted screening identified 338 cases of cancer among 53,043 women, compared to 262 detected in the conventional group of 52,872 participants, representing a 29% increase in cancer detection. Notably, AI helped detect more invasive cancers and high-grade in situ cancers.

A key advantage of AI-assisted screening was a substantial reduction in radiologists' workload. The AI-supported approach resulted in 61,248 screen readings, compared to 109,692 in the standard group – a 44.2% reduction. This suggests AI could help alleviate pressure on healthcare professionals while maintaining or even improving detection rates.

An Roinn Sláinte
Department of Health

6
AI for Care Strategic Roadmap

6. AI for Care Strategic Roadmap

6.1 Strategic Roadmap Overview

Our AI Strategic Roadmap serves as directional guidance to commence implementation planning to ensure AI solutions are considered for deployment in the most opportunistic areas over the next five years. Based on the prioritisation assessment, the Strategic Roadmap outlines the commencement of the Priority Opportunities across the four Strategic Pillars in the defined 'Now', 'Next', and 'Future' time horizons.

The Strategic Roadmap horizons highlight the anticipated evolution of our AI journey in healthcare transformation over the next five years. **Given the ever-evolving fast pace of AI, this Strategic Roadmap will be an agile, living roadmap** that is continuously monitored and updated by the appropriate governance mechanisms set out in the AI Implementation Framework to ensure AI is deployed as needed across the health service.

1

Horizon 1: NOW

In Year 1, we will **commence AI deployment** in areas with the highest level of proven AI success that will set the groundwork to realise **high value over the duration of the roadmap, including:**

- ✓ Improving clinical diagnostics
- ✓ Alleviating administrative burden
- ✓ Improving operational cost efficiencies and productivity
- ✓ Improving health system efficiencies through demand and supply chain management
- ✓ Setting the foundation for faster research and innovation

2

Horizon 2: NEXT

In Year 2 and Year 3, we will **continue to scale AI initiatives from Horizon 1 as well as commence** AI deployment in new feasible areas that **leverage our evolved technology and digital landscape** to realise **foundational high value, including:**

- ✓ Improving end to end patient experience
- ✓ Advancing clinical diagnostics
- ✓ Optimising treatment pathways
- ✓ Advancing health system efficiencies
- ✓ Translating research into applications
- ✓ Applying AI in public health for prevention, detection and wellness through risk stratification
- ✓ Driving ROI from digital investments

3

Horizon 3: FUTURE

In Year 4 and Year 5, we **continue to scale AI initiatives** from Horizon 1 and 2.

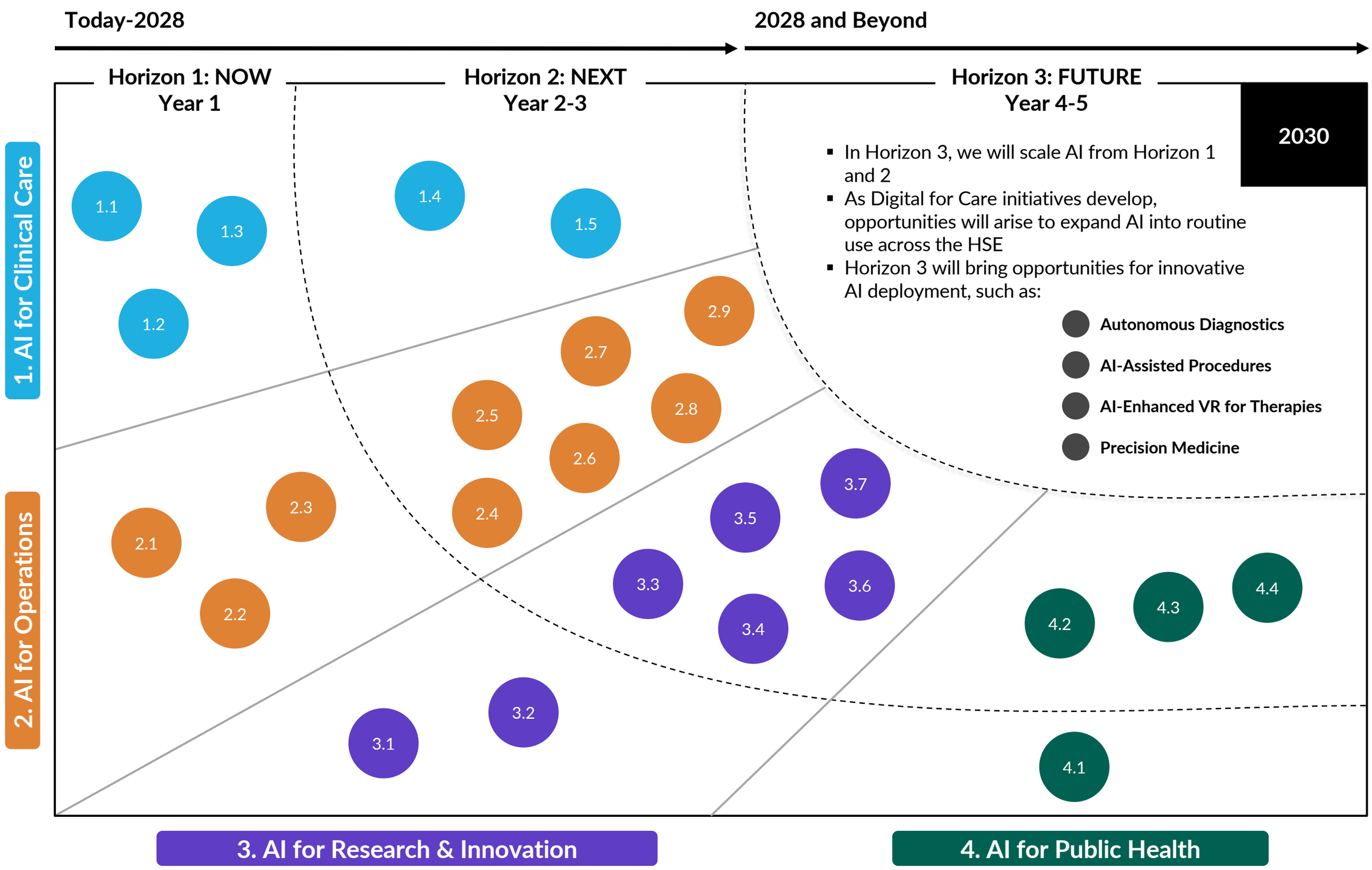
As Ireland continues to realise the benefit of Digital for Care initiatives, **significant opportunities will arise to expand AI into routine use** across the HSE.

With the advancements of AI in healthcare, we also expect Horizon 3 to include **new opportunities** for **innovative AI deployment.**

6. AI for Care Strategic Roadmap

6.2 Our AI Strategic Roadmap to 2030

The Strategic Roadmap proposed below is subject to implementation planning and approval.



Pillar	Opportunity	Horizon	ID
1	Imaging	Now	1.1
1	Clinical Decision Support	Now	1.2
1	Clinical Documentation Development and Summarisation	Now	1.3
1	Patient Navigation and Assistance	Next	1.4
1	Robotics for Surgery	Next	1.5
2	Demand and Capacity Management	Now	2.1
2	Contact Centre Automation	Now	2.2
2	Support Function Automation	Now	2.3
2	EHR Implementation Acceleration	Next	2.4
2	Hospital Simulation	Next	2.5
2	Supply Chain and Logistic Optimisation	Next	2.6

Pillar	Opportunity	Horizon	ID
2	Clinical Coding	Next	2.7
2	Patient Flow Management	Next	2.8
2	Quality Improvement	Next	2.9
3	Research Governance	Now	3.1
3	Data Analysis and Interpretation	Now	3.2
3	Research Data Platform with Data Sharing	Next	3.3
3	Methodology Design and Development	Next	3.4
3	Clinical Audit	Next	3.5
3	Clinical Trial Recruitment	Next	3.6
3	Clinical Trial Management	Next	3.7
4	Population Health Risk Prediction	Now	4.1
4	Policy Creation	Next	4.2
4	Evidence Synthesis	Next	4.3
4	Population Screening Programmes	Next	4.4

6. AI for Care Strategic Roadmap

AI Opportunity Areas

Pillar	ID	Opportunity	Summary	Horizon
Clinical Care	1.1	**Imaging**	Medical imaging analysis for the diagnosis and monitoring of conditions can be supported by AI to improve detection accuracy of abnormalities, expedite image interpretation, and facilitate triaging of cases for review in radiology, cardiology, dermatology, and endoscopy, AI can enable clinicians to make more timely and informed decisions, leading to better patient outcomes in terms of access, speed and quality of diagnostics and ultimately treatment. Image acquisition can be further improved by embedding AI in acquisition products to refine acquisition settings, ensuring higher-quality images, while in radiation oncology, AI can generate contours for CT scans to expedite the clinical contouring process leading to faster time to treatment for cancer patients. Overall, AI improves imaging accuracy and consistency, ultimately shortening the time from initial scanning to a patient's first treatment appointment.	Now
Clinical Care	1.2	**Clinical Decision Support**	Holistic clinical decision support is enhanced through AI-driven support in diagnostic ordering, clinical assessment, and medication management. Decision support tools assist clinicians in selecting the most appropriate tests, reducing the volume of unnecessary tests, optimising resources, and accelerating diagnoses. Large datasets, including behavioural patterns, speech, and facial expressions, can be analysed by AI to identify certain disorders, highlighting subtle indicators that might be overlooked. Medication management benefits from AI-assisted medicines reconciliation, which detects prescription discrepancies and ensures dosing accuracy, improving patient safety. By embedding AI into clinical workflows, healthcare providers can make more accurate, efficient, and patient-centred decisions.	Now
Clinical Care	1.3	**Clinical Documentation Development and Summarisation**	Clinical documentation processes can be enhanced through AI-driven standardisation, transcription, translation, and summarisation. AI supports the creation of standardised triage and assessment forms, improving data consistency and interoperability across healthcare systems. Real-time scribing tools capture and summarise interactions in the clinical setting, reducing administrative workload and allowing clinicians to focus more on patient care. AI-powered translation enables accurate real-time communication across multiple languages, reducing language barriers in clinical settings. Additionally, AI-enabled record summarisation streamlines the referral and discharge process by interpreting and extracting the most relevant patient-specific context, reducing administrative burden.	Now
Clinical Care	1.4	**Patient Navigation and Assistance**	Supporting patients in managing their care and health information involves providing education, coaching, and guidance both before and after treatment. AI-driven digital tools, such as Chatbots and Virtual Assistants, can deliver tailored discharge advice in native languages, using lay terms and incorporating special clinical instructions to improve patient understanding and outcomes. Additionally, in chronic disease management, patients can be empowered to maintain their autonomy by monitoring and self-managing their conditions at home with AI-driven solutions, enabling them to receive timely clinical intervention when complications are pre-empted, reducing the need for acute interventions.	Next
Clinical Care	1.5	**Robotics for Surgery**	Robotic-assisted surgical systems that use AI to support the decision-making of surgeons during procedures have a robust impact on surgical outcomes by enhancing precision, accuracy, and safety.	Next

6. AI for Care Strategic Roadmap

Pillar	ID	Opportunity	Summary	Horizon
Operations	2.1	**Demand and Capacity Management**	Effective health system demand and capacity management relies on accurate forecasting, strategic planning, and optimised scheduling of both staff and resources. AI enhances the forecasting of bed demand by predicting short-term capacity fluctuations, assisting operational staff in allocating beds efficiently, thereby minimising the wait time experienced by patients. Equipment utilisation is optimised through AI-driven analysis, ensuring resources are used efficiently and replaced strategically. In surge management, AI aids clinical planning by prioritising cases and optimising scheduling during periods of high demand. Operating theatre efficiency is improved through AI-supported scheduling, reducing cancellations and ensuring essential equipment availability. Workforce planning benefits from AI-driven predictive analytics, enabling proactive staffing adjustments to meet demand. Additionally, AI streamlines patient scheduling by balancing clinician availability, patient preferences, and historical trends, ensuring a more efficient and responsive healthcare system.	Now
Operations	2.2	**Contact Centre Automation**	Serving as the first point of contact for service user queries, the HSE Contact Centre can be supported by AI, equipping live agents during calls by providing real-time guidance to enhance response accuracy and efficiency to commonly asked questions across HSE Live, HR, and Finance.	Now
Operations	2.3	**Support Function Automation**	Healthcare support functions can be streamlined through AI-driven solutions, improving efficiency in financial management, workforce management, contract management, and procurement. In financial management, AI can support in the evaluation of overall spend and the identification of potential savings to deliver healthcare more efficiently and accurately, ultimately freeing up healthcare staff to focus on patient care. In workforce management, HR processes such as employee form processing, payroll, recruitment, and compliance training can be streamlined by AI to read manually completed HR and Occupational Health forms, extract key information, and generate outputs for greater efficiency. In contract management, effective management of contracts can be streamlined by AI to ensure that staff are aware of available agreements and using the correct contracts for procurement, improving compliance and alleviating administrative burden. In procurement, AI can support in the definition of requirements to ensure vendors receive accurate and comprehensive specification documents by generating detailed and standardised specifications, reducing manual effort, improving consistency, and streamlining procurement activities.	Now
Operations	2.4	**EHR Implementation Acceleration**	AI can significantly accelerate the implementation of EHR by automating and optimising various processes. AI algorithms can streamline data migration from legacy systems, ensuring accurate and efficient transfer of patient information. NLP can be used to extract and structure unstructured data from clinical notes, making it easier to integrate into EHR systems. Additionally, AI can assist in customising EHR interfaces to meet the specific needs of healthcare providers, enhancing usability and adoption. Holistically, EHR acceleration supports better patient care, streamlined workflows, and more informed clinical decision-making.	Next
Operations	2.5	**Hospital Simulation**	Hospital simulation can be enabled by AI-generated avatars, offering virtual exposure to future hospital environments. This aids medical device training through surgical simulations, supports staff recruitment, and facilitates layout planning by simulating infrastructure placement and its operational impact, ultimately reducing preventable harm and improving operational efficiency.	Next

6. AI for Care Strategic Roadmap

Pillar	ID	Opportunity	Summary	Horizon
Operations	2.6	**Supply Chain and Logistic Optimisation**	AI can enhance health logistics by optimising supply chain management, predicting demand for medical equipment, and ensuring prompt delivery, ultimately improving efficiency and patient care in critical areas.	Next
Operations	2.7	**Clinical Coding**	Assigning ICD-10 codes to a patient's chart upon discharge can be supported by AI, wherein a digitised patient chart can be examined and the relevant codes automatically input in the HIPE system, improving accuracy, efficiency, and reducing administrative burden.	Next
Operations	2.8	**Patient Flow Management**	Effective patient flow management ensures timely care, optimised resource use, and improved hospital efficiency. AI supports clinicians in worklist prioritisation by triaging patients based on a certain criteria and filtering non-critical or negative cases, allowing them to focus their capacity on high-risk patients. Patient movement through the healthcare system is enhanced through AI-driven analysis, identifying candidates for discharge and predicting estimated discharge dates, which improves bed availability and reduces wait times. Additionally, AI-powered clinical pathway mapping provides insights into historical condition and clinical presentation datasets, enabling earlier detection of patients at high risk of readmission to the ED. By improving visibility and decision-making, AI enables a more efficient and responsive healthcare system.	Next
Operations	2.9	**Quality Improvement**	Clinical improvement focuses on enhancing the quality, safety, and effectiveness of care through continuous evaluation and refinement of clinical practices. AI can support this by automating the analysis of clinical data to identify deviations from best practices, uncover patterns, and generate insights that drive quality improvement.	Next
Research & Innovation	3.1	**Research Governance**	Existing research governance processes can be streamlined by AI to assist researchers in preparing applications for research ethics approvals. Managing the assessments completed to determine the risk associated with a research project, such as DPIA, can be enhanced by AI to ensure patient safety and data protection.	Now
Research & Innovation	3.2	**Data Analysis and Interpretation**	With high-throughput data processing capabilities, AI can be used to support large health data analysis for innovative new processes and products and provide insight into the affordable gaps that exist within the healthcare system.	Now
Research & Innovation	3.3	**Research Data Platform with Data Sharing**	Creation of a platform where healthcare data from various regions is shared and analysed collectively to enhance research and innovation. AI can support in automatically harmonising datasets from different localised sources, identifying key patterns, and accelerating discoveries across broader populations.	Next
Research & Innovation	3.4	**Methodology Design and Development**	In designing and developing the methodology for a research project, AI can support in defining evidence, strategic direction, and in aligning research priorities across health service departments, consolidating knowledge gaps to ensure cohesive research across regions. It can leverage NLP to sift through vast amounts of scientific literature to identify, determine the relevance of, and critically evaluate academic articles, providing concise summaries, distilling key insights and trends, and helping prioritise the most compelling evidence for a particular audience to support healthcare decision-making. It can also help design experiments by predicting the best conditions for experiments based on historical data, reducing trial-and-error approaches. AI can be utilised in horizon scanning for the future requirements of the healthcare system, which would then inform the strategic priorities for testing innovation solutions in a sandbox environment.	Next

6. AI for Care Strategic Roadmap

Pillar	ID	Opportunity	Summary	Horizon
Research & Innovation	3.5	**Clinical Audit**	AI can be used in clinical audit to process vast amounts of patient and operational data which can be used to complete a clinical audit. In addition, it can summarise research articles to aid in the clinical auditing process.	Next
Research & Innovation	3.6	**Clinical Trial Recruitment**	AI algorithms can analyse vast amounts of patient data from digital health records, genetic information, and other diagnostic information to match individuals with specific trial criteria. This targeted approach reduces the time and cost associated with recruitment, ensuring a more diverse and representative participant pool. Additionally, AI can predict patient eligibility and potential outcomes, improving trial success rates. By leveraging AI, researchers can streamline the recruitment process, accelerate the development of new treatments, and ultimately bring innovations to market more swiftly.	Next
Research & Innovation	3.7	**Clinical Trial Management**	Clinical trial management involves overseeing the design, execution, and monitoring of clinical trials to ensure data accuracy, patient safety, and regulatory compliance. Management processes can be embedded with AI to enhance efficiency and reliability throughout bias detection, data linking, and risk analysis. Machine learning models can identify and flag biases within datasets used for clinical research and trials, improving fairness and validity. AI also enables the accurate linking of patient records from different sources to create a single, unified patient profile, ensuring that the right patient data is connected and reducing errors from duplicate or misidentified records. Additionally, AI-driven risk analysis monitors clinical trial data in real time to identify emerging risks and adverse trends that may threaten patient safety. By detecting potential issues early, AI enables proactive interventions to mitigate risks.	Next
Public Health	4.1	**Population Health Risk Prediction**	AI models analyse population health data to predict and mitigate health risks, leveraging risk stratification. By applying analytics to patient data, AI identifies at-risk individuals, and those eligible for benefits or services but are not utilising them, enabling interventional targeted outreach efforts and improving programme participation. It also informs public health campaigns through personalised content and impact monitoring.	Now
Public Health	4.2	**Policy Creation**	AI enables data-driven policy creation by analysing trends and predicting future health challenges, allowing policymakers to proactively address emerging healthcare issues through policy creation. By applying AI to surveillance datasets, early warning systems can be enhanced, supporting timely interventions for public health threats.	Next
Public Health	4.3	**Evidence Synthesis**	AI to research, identify, and synthesise data from various public health publications, enabling accelerated evidence digestion for informed decision-making.	Next
Public Health	4.4	**Population Screening Programmes**	Population screening programmes aim to detect health conditions before symptoms appear, potentially enabling earlier intervention that may improve patient outcomes. AI has the potential to enhance these programmes by assisting healthcare professionals with image analysis, helping to identify subtle abnormalities that might otherwise be missed, and thereby, improving accuracy and consistency of screening results to enhance overall programme efficiency.	Next

6. AI for Care Strategic Roadmap

6.3 Strategic Roadmap Prioritisation Approach

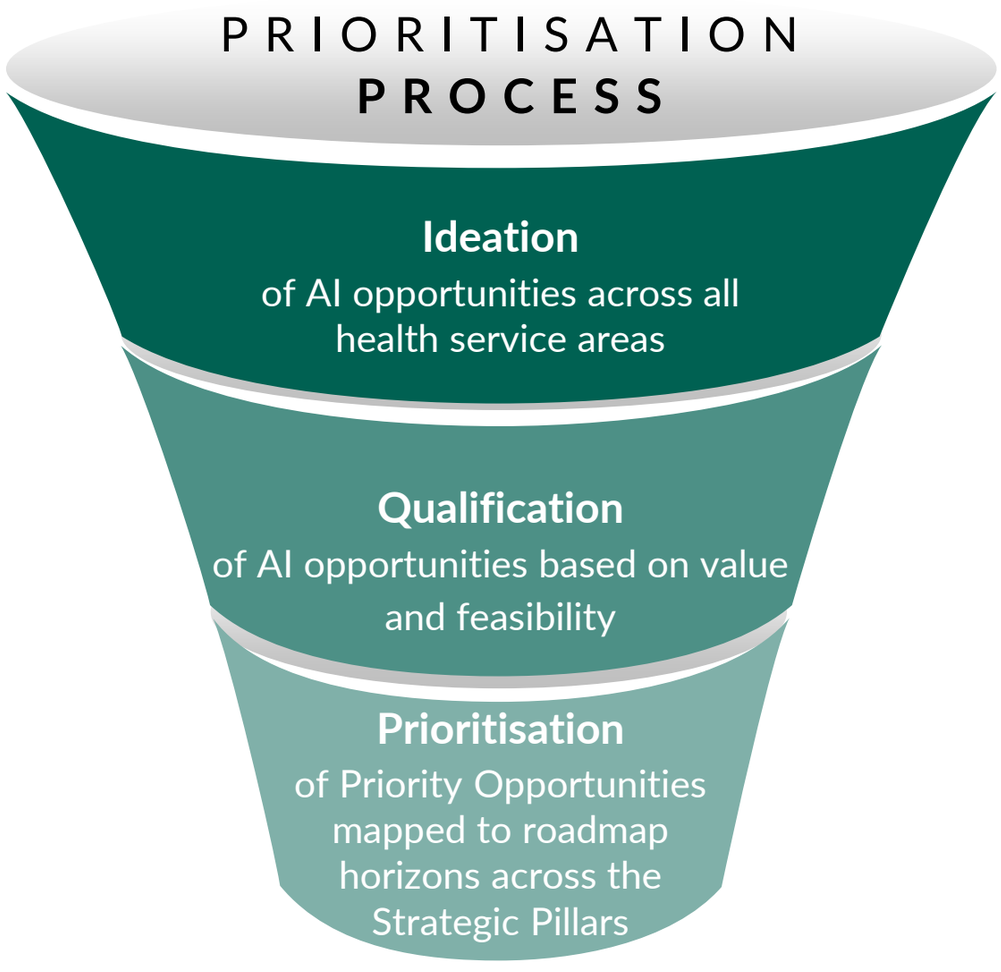
Priority Opportunities have been identified and prioritised using inputs and engagement from the Working Group and other stakeholders across the national health sector. Key steps involved in identifying the Priority Opportunities include:

- **Opportunity Ideation:** A broad set of opportunities were identified based on the AI Focus Areas within each Strategic Pillar. Ideation sources ranged from the Working Group, Regions and International SMEs on in-flight or proposed AI opportunities across the Health Service and best practice from other jurisdictions. The opportunities were tested with the Working Group to ensure that existing in-flight projects were captured appropriately within the opportunity list.

- **Alignment with the WHO Ethics and Governance of AI for Health:** The WHO outlines a set of key ethical principles for the responsible use of AI in healthcare to guide governments, developers, companies, civil society and inter-governmental organisations towards ethical implementation. Opportunities for the Strategic Roadmap were only considered if they aligned to the WHO's six principles emphasising human autonomy, safety, transparency, accountability, inclusivity and sustainability, to ensure that AI adoption enhances healthcare without compromising its safety or effectiveness.

- **Prioritisation Criteria:** A prioritisation exercise was undertaken using agreed criteria developed to qualify AI opportunities. The prioritisation criteria comprised of a high level, strategic assessment of value and feasibility for each opportunity. All opportunities assessed support the wider strategic alignment with DoH and HSE priorities e.g., Digital for Care principles. Prioritised opportunities were then mapped respectively to the roadmap 'horizons' to develop the AI Strategic Roadmap. An opportunity mapped to a roadmap horizon indicates when implementation exploration will commence for that opportunity, which is aligned to the approach taken for the development of the HSE Digital Health Strategic Implementation Roadmap.

Note: The prioritisation criteria was solely used building the AI Strategic Roadmap e.g., directional prioritisation that will require detailed prioritisation when implementation planning commences. Implementation prioritisation will follow the approach set out in the AI Implementation Framework.



PRIORITISATION CRITERIA

Value

1. **Patient:** Better patient outcomes and experience
2. **Staff:** Reduction in administrative burden and improved workforce productivity
3. **Organisation:** Health system efficiencies and risk reduction

Feasibility

1. **Adoptability:** Clinical and operational adoption, and leadership buy-in
2. **Capability:** Skills and capacity
3. **Availability:** Infrastructure, vendor, and data availability

6. AI for Care Strategic Roadmap

6.4 Key Considerations for the AI Strategic Roadmap

Roadmap scope

The AI Strategic Roadmap will guide the national rollout of AI across health and social care. National initiatives will be supported, where appropriate, through the HSE AI & Automation Centre of Excellence (CoE), in terms of practical implementation support and/or guidance. This Strategic Roadmap does not preclude rollout of AI initiatives locally. The HSE AI & Automation CoE will be an enabling function to scale AI initiatives which can be initiated outside of this roadmap. The CoE will register AI projects on the National AI Registry (mandated under the EU AI Act), offer practical implementation support (if required / capacity available) and guidance (if required / capacity available).

Future AI demand guidance

Our intake model will not be limited to the AI Strategic Roadmap. This roadmap serves as the national aspiration to deliver AI over the next five years, so will serve as one intake source referenced during AI planning forums. Other intake sources such as the HSE AI and Automation Centre of Excellence and Regional Executive Offices (REOs) will be leveraged to identify AI deployment opportunities on an ongoing basis.

Roadmap deployment process

When an opportunity commences in the identified roadmap 'Horizon', a phased approach to scale AI deployment over the duration of the roadmap will be followed, as outlined in the AI Implementation Framework. The AI opportunity will be further detailed in the accompanying implementation roadmap. The opportunity will be trialled through a proof of concept (PoC) to validate technical feasibility. Successful opportunities will the undergo pilots to test measurable benefits and operational feasibility. Proven successful solutions will then be scaled nationally and integrated into workflows, in tandem with a continuous evaluation process to refine the value they deliver. Note: where national systems are in place (e.g., HSE Live, NIMIS, etc.), nationally scaling may be possible following an initial pilot. Given the rapid rate of evolution of AI advancements, this system must remain agile and the roadmap dynamic, allowing for iterative adjustments to deployment timelines and ensuring AI adoption aligns with evolving healthcare needs.

Existing AI efforts

The HSE recognises the robust opportunities presented by AI in enhancing the quality of care, optimising operational efficiency, and improving overall service delivery. Across the organisation, various teams have already begun exploring the potential of AI through research initiatives, proof-of-concept projects, and deployment technologies. These early efforts have provided invaluable insights regarding how AI can be leveraged effectively, while ensuring patient safety remains a priority. Our AI Strategic Roadmap builds on this foundation by transitioning these initiatives from an exploratory phase to structured deployment. While innovation in these isolated initiatives has demonstrated proven value, a cohesive approach is now essential to scale successful use cases across the organisation.

An Roinn Sláinte
Department of Health

7

AI for Care Activation

7. AI for Care Activation

7.1 Critical Success Factors for AI for Care

For a strategy to be executed and met appropriately, critical success factors need to be identified and managed throughout the strategy timeframe. We have identified six key critical success factors that are essential to influence successful outcomes of the AI Strategy. These are based on our own experience in Ireland and evidence from successful AI strategies in other jurisdictions.

Implementation Framework

Delivery of AI in healthcare will be guided by our four strategic pillars and monitored through rolling multi-year action plans that aligns with the National Development Plan (NDP) and annual HSE National Service Plans (NSP). Implementation of these plans will lead to increased use of AI and digitisation of healthcare services at national, regional, and local levels.

Establishing a clear implementation framework is imperative to translating an organisation's AI strategy into execution. The AI Strategy outlines AI priority opportunities for deployment in the areas that it will deliver the greatest impact, while the AI Implementation Framework provides Strategy execution guidance through detailed implementation planning, a robust approvals process, and clearly defined pathways for solution design and vendor selection.

Governance and Leadership

Effective governance encompasses employing the structures, policies, and processes necessary to efficiently manage an organisation. The governance structure and project intake mechanism outlined throughout the AI Implementation Framework is critical to the success and sustainability of the AI Strategy, outlining the HSE's framework for evaluating, approving, and implementing AI solutions in line with national strategies and regulations. Without this robust governance mechanism, the adoption of the proposed roadmap is at risk of becoming fragmented, misaligned with the organisation's priorities, or hindered by compliance challenges. This mechanism ensures there is structured and risk-managed momentum in the phased implementation of AI solutions across the Strategic Roadmap. The measures established in the AI Implementation Framework will be reviewed on an annual basis to confirm we are on track and to make course corrections as required.

The governance structure establishes a decision-making authority to oversee proposed AI initiatives and ensure alignment with HIQA's Guidance, government policies, strategies, and good governance practices. This authority is comprised of the relevant stakeholders and leadership accountable for selecting AI projects based on their strategic importance, regional relevance, and potential for innovation. Initiating this decision-making process and accountability framework ensures AI projects are systematically assessed to prevent deployment delays due to regulatory, and risk challenges, ensures investment in efficient and high-impact solutions, and clarifies responsibility for monitoring risks, compliance, and value realisation.

The intake mechanism element of the governance model outlines the approval and prioritisation process for key strategic, regional, and ad hoc AI initiatives. At the steering group level, initiatives are selected based on their alignment to the organisation's priorities and long-term goals, ensuring they support the broader healthcare transformation objectives of our national strategies and regulations. Regional initiatives ensure deployment aligns with local healthcare needs, addressing challenges and opportunities unique to each region based on local demand, patient demographics, and existing healthcare infrastructure. By embedding this intake mechanism, we ensure AI initiatives are not only approved, but also further set up for operational success.

Recognising that risk management is critical to the success of the AI Strategy, the AI Implementation Framework expands on the HSE Enterprise Risk Management Policy [24] to support the HSE in adopting ethical guardrails to manage emerging risks and ensure the safe, ethical, and effective AI implementation in the Irish healthcare system. Trustworthy AI means establishing transparent, explainable, fair, reliable, and secure systems that patients and healthcare providers can confidently rely on and trust, enabling greater acceptance of its deployment.

7. AI for Care Activation

Public and Patient Partnership

Effective public and patient partnership enables the DoH to make informed decisions on policy matters that improve the delivery of health services. Timely and meaningful patient consultation is a key factor in the successful deployment of AI, ensuring that the use of AI aligns with patient needs and expectations. The IPPOSI Citizens' Jury recommendations have reinforced the values of human oversight, ethical safeguards, and adherence to regulatory frameworks. To uphold these values, ongoing and active partnership with patients, carers and staff to inform decision-making around the use of AI in healthcare will be essential to the AI Strategy's implementation. This will support to ensure that AI-driven healthcare solutions are implemented to help build patient confidence and meet patient needs.

Change Management and People Capabilities

The deployment of AI throughout the Irish healthcare system will cause a significant transformation in the provision of services by the healthcare workforce. A robust change management process acts as a pre-requisite to support staff through this transition, ensuring AI adoption is effective and sustainable. Without structured change management, resistance, uncertainty, and skill gaps can hinder successful implementation.

The HSE Health Services Change Guide [25] referenced in the AI Implementation Framework provides structured guidance to navigate the effective implementation of this AI transformation, emphasising a person-centred approach that aligns with the Health Services People Strategy 2025–2027 [26]. It offers practical guidance and tools for engaging service users, staff, and communities in shaping and sustaining change, with the intent to address workforce concerns, enhance trust and ensure a smooth integration.

As outlined in the AI Implementation Framework, the healthcare workforce, both clinical and non-clinical, must have the right sills and capabilities to deliver on AI. Knowledge transfer plays a pivotal role in preparing the workforce to navigate AI. Workforce readiness should include structured training, hands-on workshops, and mentorship, supporting the workforce to adapt to new technologies with confidence and seamlessly embed AI into ongoing practice.

With the future of healthcare being transformed by the use of AI, new learning opportunities will be required to ensure that staff can use AI to re-image patient pathways with AI as a key enabler to these pathways.

Digital and Data Infrastructure

Good data is essential for AI. The appropriate underpinning digital and data infrastructure with the right level of maturity must be in place to deploy AI at scale. There is existing work underway as part of the HSE Health Strategic Implementation Roadmap to deliver on Digital for Care's key initiatives to mature the Health Service's digital infrastructure, such as the EHR programme, Shared Care Record, and the HSE Health App. Data is especially critical for the effective development, assessment and ongoing improvement of AI, and access to that data needs to be safe, ethical, secure and supported by the right governance models. To ensure robust infrastructure is in place to deliver the AI Strategy, the HSE's forthcoming Data Strategy will be referenced for overarching data considerations.

Legislation

Legislative compliance underpins the responsible deployment of AI in healthcare, ensuring that solutions and data usage meet ethical, safety, and regulatory standards. A clear regulatory framework is required to define the obligations of healthcare providers and professionals in guiding the safe integration of AI into clinical practice. A key component of this framework is the EU AI Act, which outlines clear requirements to ensure AI solutions uphold transparency, ethics, and effectiveness. Aligning with this regulation safeguards patients and healthcare professionals while reinforcing the trust of the population in AI-driven care. In adhering to this legislation and others, Ireland's Health Service can ensure the successful and sustainable deployment of AI by providing a clear pathway for compliance in AI adoption. Moving forward, we must remain agile in responding to evolving legislative acts, policies, and directives that progress alongside the advancements of AI to consistently uphold these standards.

7. AI for Care Activation

7.2 Next Steps

The HSE's AI Implementation Framework will drive the activation of *AI for Care*. An implementation plan has been developed based on use cases identified from the AI opportunities in our AI Strategic Roadmap. This implementation plan will need to be approved by the Senior Leadership Team along with the necessary funding. Strategic partnerships will be sought for AI configuration projects, and where best of breed solutions are available, they will be sought and implemented.

We will immediately prioritise building AI literacy across our workforce, patients and service users as educational initiatives are crucial for building a knowledgeable workforce that can effectively engage with AI technologies. A bottom-up approach will be essential, where leadership has foundational AI proficiency to build a culture of understanding that supports AI adoption. Public education initiatives will also be crucial to ensure the Irish public has a baseline AI literacy.

As we activate our strategic roadmap, we will continue to collaborate with stakeholders on the development and finalisation of key strategic imperatives that are interdependent with the AI Strategy. Given that *AI for Care* and the AI Implementation Framework are living documents, AI projects will be continuously monitored and evaluated to ensure AI is appropriately implemented across the health service. As we continue to learn through each AI project, we will continue to assess and refine our AI Strategy as needed.

An Roinn Sláinte
Department of Health

8
Appendix

8. Appendix

8.1 Glossary of Terms

Term	Description
Artificial Intelligence (AI)	AI is a machine-based system capable of operating autonomously and producing outputs like predictions, recommendations, or decisions based on input data
Algorithm	An algorithm is a set of step-by-step instructions that a computer follows to solve a problem or complete a task.
Bias	In AI, bias means that the AI system has a preference or unfair tendency in its decisions or predictions. This could happen if the data used to train the AI is not balanced or representative, leading the AI to favour certain outcomes over others.
Chatbot	A chatbot is a computer program designed to talk with people. It can answer questions, provide information, or help with tasks by having a conversation, just like chatting with a real person.
Community Services	Community care that is provided within the community rather than in a hospital or institution.
Critical Success Factors	The key elements or factors that significantly contribute to the success of any programme, national strategy, or organisation.
Deep Learning	Deep Learning (DL), an advanced paradigm within ML, leverages neural network models to enhance performance without the need for feature engineering.
Diagnostics	Diagnostic equipment, methods, or systems are used for discovering what is wrong with people who are ill.
Digital Health	Digital health is the field of knowledge and practice associated with the development and use of digital technologies to improve health.
Electronic Health Record	An enterprise electronic care record (EHR) provides for both a complete digital health record of a patient's journey recorded by healthcare professionals, throughout their life, across all health and social care settings, for every citizen while automating the patient pathway in the setting that care is being provided. EHRs replace traditional paper based health and social care records with a comprehensive medical record in electronic form that captures care encounters for an individual across different healthcare providers. In this strategic framework, we refer to this as the single digital patient care record. Our vision to realise digitally enabled and connected care within our health service is through the creation of a nationally integrated digital patient care record.
EU AI Act	The EU AI Act is a set of rules created by the European Union to regulate artificial intelligence (AI). It aims to ensure that AI systems are safe, trustworthy, and respect people's rights.
Forecasting	Forecasting is the process of predicting what will happen in the future based on current data and trends. It's like making an educated guess about future events by looking at what is happening now and what has happened in the past.
Gen AI	Generative AI (Gen AI) is a highly sophisticated subset of AI that employs large parameter models to create data across various modalities, including text, images, audio, and video.
Human Oversight	Human oversight in AI means that people are involved in monitoring and guiding AI systems to ensure they work correctly and ethically.

8. Appendix

Term	Description
Machine Learning	Machine Learning (ML) is a subset of AI that trains models to identify and predict patterns based on human-processed data, rather than relying on hard-coded rules.
Natural Language Processing (NLP)	Natural Language Processing (NLP) is a field of AI that helps computers understand and work with human language. It enables computers to read, write, and interpret text or speech in a way that makes sense to people.
Pathology	Pathology is the study of diseases, including their causes, development, and effects on the body. It helps doctors understand how diseases work and how to diagnose and treat them.
Predictive Modelling	Predictive modelling is a technique used to predict future outcomes based on current and historical data. It involves creating a model that can make forecasts or decisions by analysing patterns and trends in the data.
Radiology	Radiology is a medical field that uses imaging techniques, like X-rays, MRIs, and CT scans, to see inside the body. It helps doctors diagnose and treat diseases by providing detailed pictures of bones, organs, and tissues.
Virtual Assistant	A virtual assistant is a computer program that uses artificial intelligence to help people with tasks through voice or text commands. It can answer questions, manage schedules, control smart devices, and perform various other tasks to make life easier.

8. Appendix

8.2 References

1. European Commission (2025) *AI Act*. Available at: https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai (Accessed: 25 March 2025)
2. Department of Health (2023) *Sláintecare Action Plan 2023*, Dublin. Available at: https://www.gov.ie/en/publication/0d2d60-slaintecare-publications/#slaintecare-action-plan-2023 (Accessed 12 March 2025)
3. Department of Health (2024) *Digital for Care – A Digital Health Framework for Ireland 2024-2030*. Dublin. Available at: https://www.gov.ie/pdf/?file=https://assets.gov.ie/293780/5c6e1632-10ed-4bdc-8a98-51954a8da2d0.pdf#page=null (Accessed: 11 March 2025)
4. HSE (2024) *Digital Health Strategic Implementation Roadmap*. Available at: https://about.hse.ie/publications/digital-for-care/ (Accessed: 11 March 2025)
5. Department of Enterprise, Trade, and Employment (2021) *AI - Here for Good*: National AI Strategy. Dublin. Available at: https://enterprise.gov.ie/en/publications/publication-files/national-ai-strategy.pdf (Accessed: 11 March 2025)
6. McKinsey (2024) *Digital transformation: Health systems' investment priorities.* Available at: https://www.mckinsey.com/industries/healthcare/our-insights/digital-transformation-health-systems-investment-priorities (Accessed: 25 March 2025)
7. Institute for Healthcare Improvement (2022) *The Quintuple Aim for Health Care Improvement: A New Imperative to Advance Health Equity*. Available at: https://www.ihi.org/resources/publications/quintuple-aim-health-care-improvement-new-imperative-advance-health-equity (Accessed: 11 March 2025)
8. National Office of Clinical Audit (2020) *Irish National Audit of Stroke National Report 2020*. Available at: https://www.noca.ie/documents/irish-national-audit-of-stroke-national-report-2020/ (Accessed: 11 March 2025)
9. IPPOSI (2025) *Citizens' Jury Artificial Intelligence in Healthcare in Ireland.* Dublin. Available at: https://ipposi.ie/wp-content/uploads/2025/02/Citizens-Jury-Verdict-Report-21.02.25.pdf (Accessed: 11 March 2025)
10. Central Statistics Office (2023) Census of Population 2022 - Summary Results. Available at: https://www.cso.ie/en/releasesandpublications/ep/p-cpsr/censusofpopulation2022-summaryresults/keyfindings/ (Accessed: 25 March 2025)
11. Central Statistics Office (2017) *Census 2016 Summary Results - Part 1*. Available at: https://www.cso.ie/en/csolatestnews/presspages/2017/census2016summaryresults-part1/ (Accessed: 25 March 2025)
12. Central Statistics Office (2024) *Population and Labour Force Projections 2023-2057*. Available at: https://www.cso.ie/en/releasesandpublications/ep/p-plfp/populationandlabourforceprojections2023-2057/ (Accessed: 25 March 2025)
13. ESRI (2022) *Public acute hospital workforce requirements set to increase across all geographic regions as the population grows and ages*, ESRI Research Series 147, Dublin. Available at: https://www.esri.ie/news/public-acute-hospital-workforce-requirements-set-to-increase-across-all-geographic-regions-as (Accessed: 25 March 2025)

8. Appendix

14. Department of Health (2025) *Productivity and Savings Taskforce Action Plan 2025*. Available at: https://www.gov.ie/en/department-of-health/publications/productivity-and-savings-taskforce-action-plan-2025/ (Accessed: 24 April 2025)

15. European Commission (2025) *European approach to artificial intelligence*. Available at: https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence (Accessed: 24 April 2025)

16. World Health Organization (2021) *Ethics and governance of artificial intelligence for health.* Available at: https://www.who.int/publications/i/item/9789240029200 (Accessed: 25 March 2025)

17. University College Dublin (2024) *Generative AI in the ED – Developing tools to predict the future.* Available at: https://www.ucd.ie/discovery/aihealthcarehub/hhitseries/petermacmahon/ (Accessed: 11 March 2025)

18. Ugwu et al (2024) *Artificial Intelligence in Healthcare Supply Chains: Enhancing Resilience and Reducing Waste.* Available at: https://www.researchgate.net/publication/381728757_Artificial_Intelligence_in_Healthcare_Supply_Chains_Enhancing_Resilience_and_Reducing_Waste (Accessed: 06 June 2025)

19. HSE (2019) *HSE Action Plan for Health Research 2019–2029*. Available at: https://hseresearch.ie/wp-content/uploads/2020/02/10-Year-Action-Plan-V2P1-2.pdf (Accessed: 3 March 2025)

20. HSE (2021). *HSE National Framework for Governance, Management, and Support of Health Research.* Available at https://hseresearch.ie/wp-content/uploads/2021/09/HSE-Framework-for-the-Governance-Web-Optimised.pdf (Accessed 2 October 2025)

21. businessnews.ie (2024) *AI Healthcare Hub launches to foster AI-driven Irish healthcare solutions.* Available at: https://www.businessnews.ie/ai-digital-transformation/ai-healthcare-hub-launches-to-foster-ai-driven-irish-healthcare-solutions/ (Accessed: 3 March 2025)

22. World Health Organization (2023) *Population health management in primary health care: a proactive approach to improve health and well-being: primary health care policy paper series*. Available at: https://www.who.int/europe/publications/i/item/WHO-EURO-2023-7497-47264-69316 (Accessed: 3 March 2025)

23. European Medical Journal (2025) *AI Boosts Cancer Detection in Swedish Mammography Trial*. Available at: https://www.emjreviews.com/radiology/news/ai-boosts-cancer-detection-in-swedish-mammography-trial/ (Accessed: 3 March 2025)

24. HSE (2023) *HSE Enterprise Risk Management Policy and Procedures.* Available at: https://www2.healthservice.hse.ie/organisation/national-pppgs/hse-enterprise-risk-management-policy/ (Accessed: 25 March 2025)

25. HSE (2023) *People's Needs Defining Change Health Services Change Guide.* Available at: https://www.hse.ie/eng/staff/resources/changeguide/resources/change-guide.pdf (Accessed: 25 March 2025)

26. HSE (2025) *HSE People Strategy 2025–2027*. Available at: https://healthservice.hse.ie/staff/news/staff-news-listing-page/hse-people-strategy-2025-to-2027/ (Accessed: 15 December 2025)