



सत्यमेव जयते

# STRATEGY FOR ARTIFICIAL INTELLIGENCE IN HEALTHCARE FOR INDIA (SAHI)



Ministry of Health and Family Welfare  
Government of India

February 2026





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**Ministry of Health and Family Welfare  
Government of India**

**February 2026**





**जगत प्रकाश नड्डा**  
**JAGAT PRAKASH NADDA**



### **MESSAGE**

**मंत्री**  
**स्वास्थ्य एवं परिवार कल्याण**  
**व रसायन एवं उर्वरक**  
**भारत सरकार**

**Minister**  
**Health & Family Welfare**  
**and Chemicals & Fertilizers**  
**Government of India**

The Government of India has placed Artificial Intelligence at the centre of its strategy for technological leadership and inclusive development through the India AI Mission. Recognising AI as a transformative force across sectors, the Government is committed to ensuring that its development and deployment remain human-centric, ethical, and aligned with national priorities. Within this broader national vision, the Ministry of Health and Family Welfare has been strengthening healthcare delivery through digital enablement, programme strengthening, and institutional capacity-building. AI presents a significant opportunity to further advance timely, high-quality, and affordable healthcare for all, while ensuring safety, accountability, and public trust.

Hon'ble Prime Minister Shri Narendra Modi has consistently articulated that India's approach to AI must be inclusive, human-centric, and development-oriented. AI must augment human capability, expand access to opportunity, and remain anchored in ethics, accountability, and public trust. Guided by this vision, India aspires to emerge as a global leader and a Responsible AI Power, demonstrating how innovation at scale can be aligned with democratic values and social good. In the health sector, this responsibility assumes even greater importance given the direct impact on human lives.

The Ministry has undertaken multiple initiatives to promote the responsible adoption of AI in healthcare. Centres of Excellence for AI have been designated in leading medical institutions to advance research and clinical validation. Capacity-building initiatives are being rolled out to familiarise healthcare professionals with emerging AI applications. The digital public infrastructure established under the Ayushman Bharat Digital Mission has laid the foundation for interoperable health data systems, which are essential for safe and accountable AI development. Together, these efforts reflect a clear recognition that AI is being integrated thoughtfully within India's broader health system strengthening agenda.

The Strategy for Artificial Intelligence in Healthcare in India (SAHI) has been developed to provide a coherent and structured pathway for the safe, ethical, and effective adoption of AI across the health ecosystem. The Strategy outlines guiding principles and enabling measures under five pillars and adopts a risk-proportionate approach that supports innovation while ensuring accountability. It recognises India's diversity in health needs, institutional capacities, and federal governance structure, and emphasises contextualisation of AI solutions to local realities.

**Contd../-**

**कार्यालय:** कमरा नं. 12107, द्वितीय तल, 'सी' विंग, कर्तव्य भवन-1, नई दिल्ली-110001  
**Office:** Room No. 12107, 2<sup>nd</sup> Floor, 'C' Wing, Kartavya Bhawan-1, New Delhi-110001  
**Tele.:** (O): +91-11-24013301, 24013302, 24013303 • **E-mail:** min-hfm@gov.in

The Ministry will continue to facilitate coordination, promote standards and interoperability, support evaluation and validation mechanisms, and strengthen workforce readiness to ensure that AI adoption translates into tangible health benefits.

I place on record my appreciation for the Chairperson and members of the Committee, and for all stakeholders who contributed their expertise during the consultative process. I also acknowledge the dedication of our healthcare workforce, whose service and experience remain central to the responsible integration of new technologies.

Through SAHI, we reaffirm our commitment to harnessing innovation in the service of public health. Every step towards a healthier India is a step towards the realisation of Viksit Bharat 2047. With careful stewardship and collective effort, Artificial Intelligence can become a trusted enabler of quality, equity, and resilience in India's health system, contributing meaningfully to our national development journey.

A handwritten signature in blue ink, appearing to read 'Jagat Prakash Nadda', is written over a horizontal line.

**(Jagat Prakash Nadda)**



पुण्य सलिला श्रीवास्तव, भा.प्र.से.  
सचिव

**PUNYA SALILA SRIVASTAVA, IAS**  
Secretary



भारत सरकार  
स्वास्थ्य एवं परिवार कल्याण विभाग  
स्वास्थ्य एवं परिवार कल्याण मंत्रालय  
Government of India  
Department of Health and Family Welfare  
Ministry of Health and Family Welfare



### Foreword

Artificial Intelligence presents a significant opportunity to strengthen India's health system. It can improve clinical decision-making, expand access to quality care, enhance disease surveillance, and enable more efficient system management. With the maturing of India's Digital Public Infrastructure in healthcare, including interoperable health records, national registries, and consent-based data exchange frameworks under the Ayushman Bharat Digital Mission, the enabling foundations for responsible AI adoption are now firmly in place.

2. The Ministry of Health and Family Welfare has initiated the deployment of AI-enabled solutions in health screening. Applications such as MadhuNetr for diabetic retinopathy screening and AI-supported chest X-ray interpretation for tuberculosis detection have demonstrated measurable value in early identification and improved outreach, particularly in resource-constrained settings. These solutions reinforce the importance of clinical validation, contextual adaptation, and structured oversight.

3. AI also holds substantial promise beyond direct clinical care. Advanced analytics and emerging agentic systems can improve hospital operations, optimise supply chains, strengthen claims and financial management, and enhance programme monitoring. When deployed responsibly, such tools can reduce administrative burden, support data-driven decision-making, and improve overall system efficiency.

4. The Strategy for Artificial Intelligence in Healthcare for India (SAHI) provides a clear and risk-proportionate framework to guide this next phase. Structured around five reinforcing pillars, it addresses governance, evidence generation, digital and data infrastructure, workforce readiness, and ecosystem enablement. The Strategy emphasises accountability, interoperable and secure data systems, standardised evaluation mechanisms, and equity as a foundational principle.

5. SAHI has been shaped through extensive consultation with States and Union Territories, public and private providers, academic institutions, professional bodies, industry partners, and civil society. I place on record my appreciation for their contributions and shared commitment. The effective operationalisation of this Strategy will require sustained collaboration, institutional capacity-building, and transparent monitoring mechanisms.

*Punya Salila*  
(Punya Salila Srivastava)

#StopObesity

टीबी हारेगा देश जीतेगा / TB Harega Desh Jeetega

Room No. 11102, 'C' Wing, Kartavya Bhawan-1, New Delhi-110001  
Tele.: (O) 011-24013601, 24013602, E-mail: secyhw@nic.in





## Preface

Harnessing Artificial Intelligence effectively will be central to the next phase of India's health system transformation. As health data ecosystems mature and digital platforms achieve scale, the ability to convert data into actionable intelligence presents a decisive opportunity. AI can enable earlier detection of disease, more precise clinical support, improved targeting of public health interventions, streamlined claims and fraud management, and real-time system analytics.

India's digital health architecture, particularly the interoperable frameworks and registries developed under the Ayushman Bharat Digital Mission, provides a unique foundation for this effort. With a scalable design, openness, portability, and consent at its core, this architecture creates the conditions necessary not only for innovation, but for responsible innovation. AI systems can be developed, tested, validated, and deployed within structured governance frameworks.

AI systems that influence diagnosis, treatment pathways, eligibility decisions, insurance claims, or public health responses must be accurate, explainable, and equitable. They must function reliably across geographies, languages, and care settings. Responsible adoption therefore requires strong evaluation mechanisms, clear delineation of risk categories, capacity-building within institutions, and mechanisms for continuous monitoring and course correction.

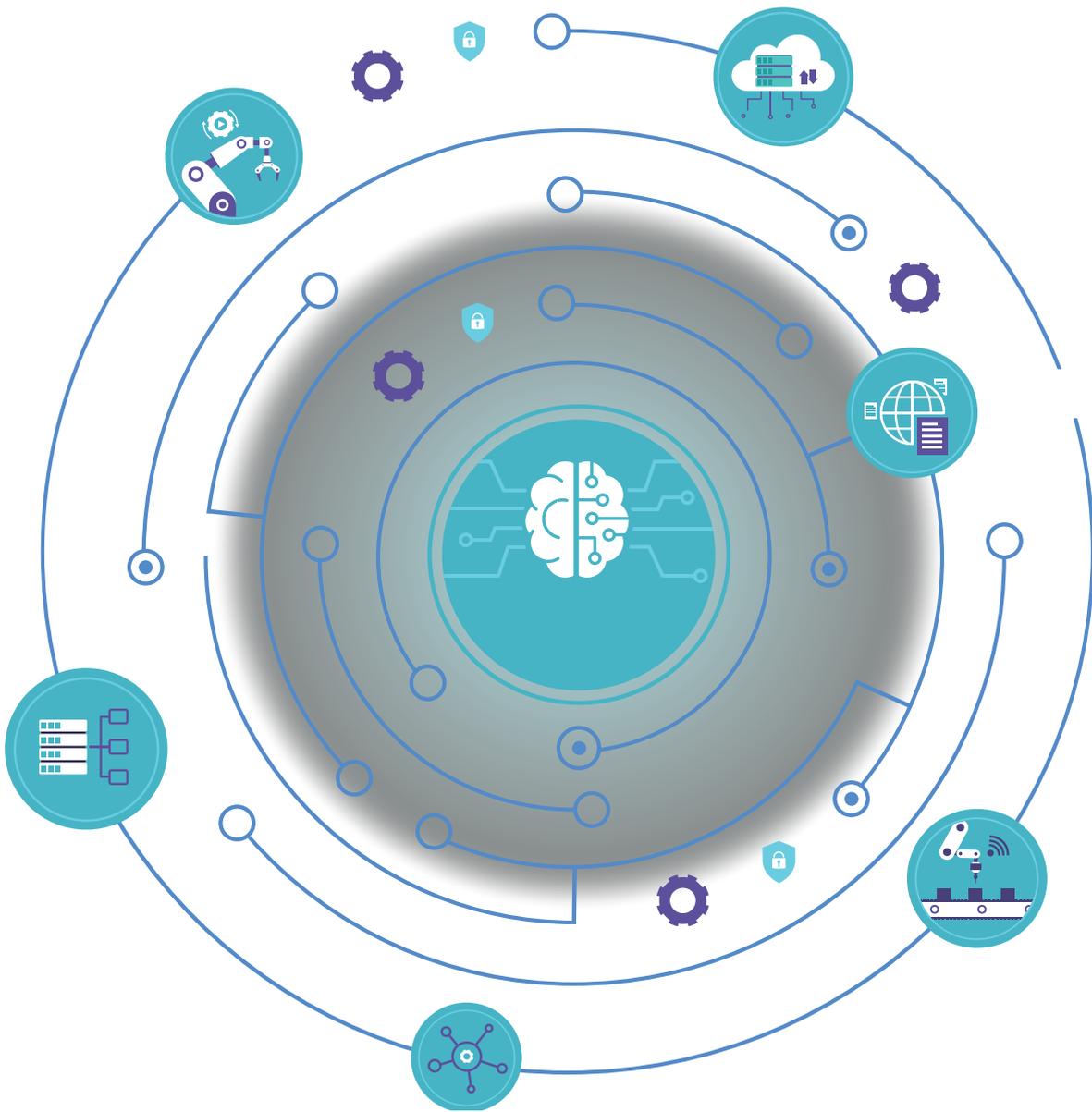
It is in this context that the Ministry of Health and Family Welfare constituted this Committee to develop the Strategy for Artificial Intelligence in Healthcare for India (SAHI). The Strategy seeks to catalyse innovation-led and inclusive use of AI across the health system, while ensuring appropriate safeguards for patient safety, data protection, and public trust. It builds upon India's broader AI initiatives and digital health foundations and aligns AI development and deployment with national health priorities.

The Committee undertook a comprehensive consultative process, engaging with central and state government representatives, clinicians, researchers, academic institutions, industry leaders, start-ups, civil society organisations, and global experts. The consultations underscored the need for a balanced approach, one that promotes innovation across both high-risk and low-risk use cases, strengthens institutional capacity, and adopts risk-proportionate oversight mechanisms tailored to healthcare contexts.

This Strategy is not conceived as a rigid or prescriptive document. Rather, it is intended to serve as a guiding and enabling framework, articulating a shared vision, outlining strategic pillars, and identifying priority actions to support coordinated and responsible AI adoption across India's federal and mixed-delivery health system. Given the pace of technological evolution, SAHI should be regarded as a living document, to be refined as experience grows, technologies mature, and new evidence emerges.

The Committee has greatly benefited from the insights and constructive inputs received during the consultation process. Many of the recommendations have been strengthened and refined as a result. I express my sincere appreciation to all members of the Committee, domain experts, institutions, and stakeholders who contributed their time and expertise.

**Dr. Sunil Kumar Barnwal, IAS**  
(Chairperson of the Committee)  
CEO, National Health Authority



# Acknowledgements

The development of the Strategy for Artificial Intelligence in Healthcare for India (SAHI) has been enriched by the contributions of a wide range of institutions and experts across the healthcare, research, technology, and policy ecosystem. The process benefited from extensive consultations and technical deliberations that strengthened the conceptualisation, scope, and practical orientation of the Strategy.

This Strategy document was closely supported by the National Health Authority (NHA), the WHO South-East Asia Regional Office (SEARO), the ICMR-National Institute for Research in Digital Health and Data Science (NIRDHDS), the Koita Foundation and the Gates Foundation. The substantive technical inputs and sustained institutional engagement provided by these organisations significantly strengthened overall direction of the Strategy.

The process was further strengthened through consultations hosted with the support of the Government of Andhra Pradesh, the Government of Meghalaya, Ashoka University and IIT Bombay, which enabled diverse stakeholder participation and valuable regional perspectives.

This Strategy document was supported by the contributions of Shri Himanshu Burad & Ms. Yukti Sharma of National Health Authority and Dr. Mayank Garg & Ms. Resham Sethi of Ashoka University, whose work in background research, evidence synthesis, facilitating committee meetings and stakeholder consultations, and coordination helped the drafting process. Valuable inputs were also provided by Shri Vikram Pagaria, Director (ABDM) at NHA.

The collective expertise, insights, and collaborative spirit of all contributing institutions and stakeholders have been instrumental in shaping this Strategy document.

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The infographic features a central teal circle with a white brain icon and the text "AI in Healthcare". This is surrounded by three concentric rings of light blue lines with small circles at the intersections. Various icons are placed around these rings, including gears, shields, a cloud with server racks, a globe with charts, a robotic arm, a server rack, a robotic arm with a Wi-Fi symbol, and a network diagram. The background is a dark blue gradient with faint gear patterns.

# AI in Healthcare



# Executive Summary

Artificial Intelligence (AI) presents a strategic opportunity to strengthen India's health system by improving access, quality, and efficiency. With the establishment of a robust Digital Public Infrastructure (DPI) for health, which includes national registries, standards-based health records, and consent-based data exchange frameworks under the Ayushman Bharat Digital Mission, India has taken the right steps towards developing the foundational architecture necessary to deploy AI solutions at scale.

AI can enhance clinical decision-making, enable early disease detection, optimise hospital and supply chain operations, improve claims and fraud analytics, and support evidence-based public health interventions. When deployed responsibly, AI can function as a force multiplier in addressing systemic gaps, particularly in underserved and resource-constrained settings.

The Strategy for Artificial Intelligence in Healthcare for India (SAHI) sets out a national framework to guide the responsible integration of AI into India's health system. It recognises AI as a strategic enabler of health system strengthening, while affirming that its adoption must be anchored in public interest, trust, and long-term system resilience.

SAHI advances a balanced approach. It affirms that innovation in healthcare should be enabled with proportionate safeguards. It establishes that AI must augment human judgment, not displace it. It emphasises that trust, equity, and transparency are prerequisites for adoption. It also reinforces that accountability must remain clearly defined across the ecosystem. In doing so, SAHI positions AI not as a standalone technological intervention, but as an integrated component of health system reform.

The Strategy provides a structured direction grounded in risk-based governance and lifecycle thinking. AI applications vary in impact and complexity, therefore, oversight must be calibrated accordingly. Thus, it encourages coordinated implementation across institutions while maintaining coherence at the state and national levels.

It also recognises that technology adoption depends on readiness. Strong digital foundations, capable institutions, skilled personnel, research alignment, ecosystem enablement, and predictable pathways from innovation to implementation are essential to ensure that AI delivers measurable and positive value. It therefore integrates governance, infrastructure, capacity, innovation, and ecosystem development into a unified framework.

The intended outcome of SAHI is system-level improvement. It should reinforce public confidence by demonstrating that technological advancement is guided by ethical standards and accountable institutions. Equally important is ecosystem enablement through coordinated action by public and private sector to unlock innovation.

By articulating a coherent and principled direction for AI in healthcare, SAHI positions India to adopt AI in a manner that is responsible, inclusive, aligned with national priorities and strengthens the country's position in the Global AI Health Ecosystem.

In doing so, the Strategy affirms a clear direction-AI in healthcare must serve people, strengthen institutions, and advance public health.

# 01 |

# Introduction

## 1.1. The Opportunity for AI in Health for India

India stands at a defining moment in the advancement of its health system. With one of the world's largest and most diverse populations, a rapidly expanding digital health ecosystem, and strong scientific, technological, and institutional capabilities, India is uniquely positioned to harness Artificial Intelligence (AI) to advance health outcomes at population scale.

AI presents a significant opportunity to strengthen healthcare delivery, public health functions, and health system management across prevention, diagnosis, treatment, surveillance, and operations. A critical opportunity lies in augmenting the productivity of the health workforce by reducing administrative burden and enabling clinicians and frontline workers to spend more time on patient care. AI-enabled tools can support documentation, triage, scheduling, and decision support, helping address the workforce constraints without substituting human judgment.

At the system level, AI can improve efficiency and responsiveness through workflow optimisation, resource planning, and programme management. Advanced and agentic AI systems can assist in demand forecasting, supply chain management, and dynamic allocation of infrastructure and personnel, supporting large-scale public health programmes and improving operational effectiveness across facilities and states.



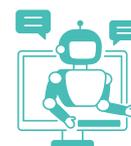
AI matters in this context because it enables the analysis and use of health data at a scale and speed beyond traditional approaches.



AI also offers the potential to narrow the gaps in access to specialised care and quality of health services between urban and rural areas. By enabling remote decision support, screening, and triage, AI can extend specialist expertise to underserved settings and promote greater consistency in clinical and public health decision-making.

Beyond health service delivery, AI can accelerate research and innovation across the life sciences ecosystem. Applications in drug discovery, clinical trial design and recruitment, and real-world evidence generation can reduce timelines, improve efficiency, and strengthen India's position as a global hub for pharmaceutical and biomedical innovation.

At scale, AI enables a shift from mere digitised record-keeping to intelligent, learning health systems that continuously translate data into actionable insights for care delivery, public health, and system governance. In order to realise these opportunities, AI systems must be purposefully designed, rigorously validated, and thoughtfully integrated into health system workflows. When aligned with public health priorities and embedded within existing institutional and digital foundations, AI can serve as a powerful enabler of access, quality, and affordability while significantly improving the resilience of India's healthcare system.



*Within the Indian health system, AI presents a significant opportunity to strengthen care delivery, public health functions, and system governance across prevention, diagnosis, treatment, surveillance, and health system operations, while improving access and affordability of healthcare services for last-mile communities.*

## 1.2. Current State of AI Adoption in the Indian Healthcare Ecosystem

India's AI healthcare ecosystem comprises a diverse set of actors, including public institutions that provide policy and strategy direction as well as digital infrastructure providers, regulators and ethics bodies, programme implementers, academic and research institutions, healthcare providers, citizens, insurers, pharma industry and other allied actors. Together, these stakeholders influence the development, deployment, and scaling of AI-enabled solutions across the health system.

In the public sector, AI adoption is increasingly being embedded within large public health platforms. The integration of clinical decision support systems (CDSS) in the eSanjeevani programme has enhanced the quality and consistency of tele-consultations, so much so that more than 28.2 crore consultations have used AI-generated differential diagnosis recommendations since April 2023. Government-led AI-based media disease surveillance and decision-support tools illustrate how AI is being incorporated into core public health infrastructure to strengthen early detection, monitoring, and response capabilities for communicable diseases.

In particular, AI adoption has achieved traction in disease screening and diagnostics, where technology can augment limited specialist capacity. Public-private collaborations have further supported targeted AI deployments to address priority health challenges, including tuberculosis and diabetic retinopathy. The Cough Against TB (CATB) AI solution has been used to screen over 1.6 lakh individuals for pulmonary tuberculosis, improving case detection rates by 12–16 percent. The MadhuNetrAI solution enables non-specialist health workers to conduct diabetic retinopathy screening using retinal fundus images. Further, the academic and research institutions continue to advance AI capabilities through the development of diagnostic and analytical models suited to diverse clinical contexts, including work on MRI spinal pathology and multi-pathology chest X-ray detection. Beyond clinical deployment, India is also using AI in fraud analytics in its public funded health assurance scheme, the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY).

Alongside public sector initiatives, AI adoption in India's private healthcare ecosystem has accelerated across hospitals, diagnostics, digital health platforms, pharmaceutical companies, and health insurers. Large private hospital networks and diagnostic chains are increasingly deploying AI-enabled solutions for radiology reporting, pathology workflows, clinical triage, and hospital operations to improve efficiency, reduce turnaround times, and support clinical decision-making. Digital health startups are leveraging AI for symptom assessment, remote monitoring, personalised care pathways, and virtual care delivery, expanding



access to specialist services beyond physical facilities. In the pharmaceutical and life sciences sector, AI is being applied to drug discovery, clinical trial optimisation, pharmacovigilance, and supply chain management. Private health insurers are adopting AI-driven analytics for claims processing, fraud detection, risk assessment, and customer engagement. Collectively, these developments reflect a maturing private-sector AI ecosystem that is driving innovation, investment, and early adoption at scale, while also underscoring the need and importance of interoperability, data governance, and alignment with national digital health frameworks.

### 1.3 Policy Foundations for AI in Health

India's approach to AI in healthcare is anchored in a progressively evolving set of health-sector policies, digital public infrastructure, legal safeguards, and cross-sectoral AI initiatives that together provide a strong foundation for responsible adoption.

The National Health Policy (2017) articulated a vision for an integrated health information system across the continuum of care, recognising digital technologies as key enablers of access, quality, efficiency, and accountability. Building on this vision, the National Health Stack (2018) proposed a shared digital architecture based on reusable building blocks to support scale, interoperability, and innovation across the health system.



**The National Health Policy (2017) articulated a vision for an integrated health information system across the continuum of care, recognising digital technologies as key enablers of access, quality, efficiency, and accountability.**

This architecture was detailed in the National Digital Health Blueprint (2019), which outlined the core components required to build the nationwide digital health ecosystem, including technological principles, standards, and an institutional framework for its implementation. The National Digital Health Mission (NDHM) Strategy Overview (2020) outlined mechanisms for operationalising this ecosystem at scale, laying the groundwork for interoperable health records, consent-based data exchange, and federated data access.

In parallel, India has advanced sector-agnostic AI strategies that provide horizontal capabilities essential for AI adoption across domains. In the first place, the Digital Personal Data Protection Act, 2023, establishes a rights-based framework for the use of personal data, including health data that is the foundation for the development, validation and deployment of AI systems. NITI Aayog's National Strategy for Artificial Intelligence (2018), guided by the vision of "AI for All," identified healthcare as a priority sector and highlighted AI's potential to improve access, affordability, and quality of care. These foundations have been significantly strengthened through the IndiaAI Mission (2024), which seeks to position India as a global hub through "Making AI in India and Making AI Work for India." Its focus on AI compute infrastructure, high-quality datasets (AIKosh), future skills, safe and trusted AI, innovation ecosystems, application development and startup financing provides critical enabling capacity for scaling AI solutions in healthcare.

Together, these health-sector and cross-sectoral initiatives create a strong foundation for sector-specific governance and coordinated action on AI in healthcare.

## 1.4 Why Healthcare Requires a Sector-Specific AI Strategy

India's healthcare system operates within a federal structure where health is a State subject, service delivery is predominantly private, and financing and stewardship are increasingly public. This distribution of roles creates inherent challenges for governance, coordination, and accountability, which are further amplified in the adoption and use of AI.

AI applications in healthcare span a wide spectrum, ranging from low and moderate-risk uses that improve operational efficiency, claims management, programme monitoring and service delivery, to high-impact applications that influence clinical decision-making, diagnosis, treatment, and patient triage. A sector-specific strategy is therefore required not only to manage risks in high-stakes use cases, but also to actively promote innovation and adoption in low-risk and high-volume applications.

The adaptive nature of AI systems necessitates lifecycle-based and proportionate governance that enables experimentation, learning, and scale, while ensuring appropriate safeguards where risks are higher. While national AI initiatives provide horizontal capabilities and enabling infrastructure, they do not sufficiently guide how healthcare AI efforts should be channelled towards national health priorities. A dedicated AI strategy for healthcare is therefore essential to align innovation with public health needs, support the development of AI solutions across the risk spectrum, and enable coordinated, safe, and equitable adoption across India's federal and mixed-delivery health system.



## 1.5 Vision for the Strategy for AI in Healthcare for India (SAHI)

### Our Vision

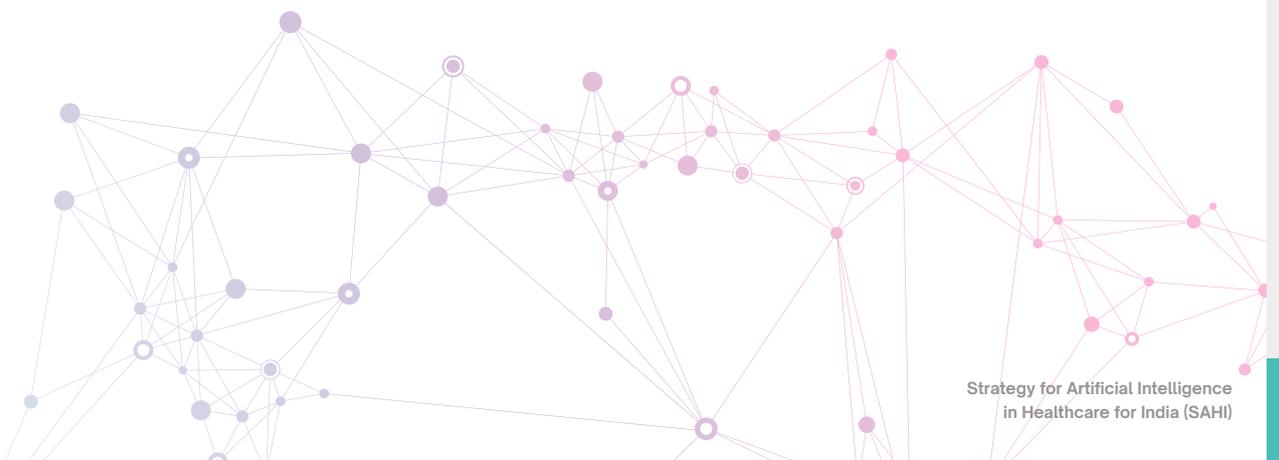
**“To enable the safe, ethical, evidence-based, and inclusive use of artificial intelligence across India’s healthcare system, leveraging digital public infrastructure and institutional strengths to drive responsible innovation, expand access to high quality affordable care, improve health outcomes, and position India as a global leader in responsible AI for healthcare.”**

This vision places population-scale innovation at the centre of AI adoption, enabled by strong governance and interoperable systems, while remaining fully grounded in ethics, patient safety, and public trust.

## 1.6 Objective and Scope of SAHI

The Strategy for Artificial Intelligence in Healthcare for India (SAHI) aims to catalyse innovation-led adoption of AI to strengthen India’s health system. Its objectives are to promote responsible, evidence-based AI innovation in healthcare that improves health outcomes, access, and system efficiency. It seeks to establish trusted, risk-proportionate governance and robust digital and data foundations to ensure the safe, ethical, and accountable use of AI at scale. It also aims to build a future-ready health workforce and institutions, while fostering a sustainable and inclusive AI-for-health ecosystem that advances equity, quality, efficiency, and public trust.

SAHI functions as a guiding and enabling framework rather than a prescriptive or centralised mandate. It is intended to support state governments, healthcare regulators, public health programmes, academic and research institutions, non-profit organisations, the private sector, and other ecosystem stakeholders by providing shared principles, strategic direction, and reference guidance for context-specific planning and implementation. The Strategy recognises the diversity of institutional capacities and health system needs across India and is designed to facilitate coordination and consistency while allowing flexibility for local adaptation and innovation.



# 02 | Enabling AI in Healthcare



Countries are actively designing frameworks to both promote innovation and ensure safety in AI.

## 2.1 Global Approaches to Enabling AI in Healthcare

Countries are actively designing frameworks to both promote innovation and ensure safety in AI. These approaches represent the different ways in which they are looking to balance the need to enable adoption while still managing risks:

- ➔ **Legislation with risk-based oversight:** Some regions, such as the EU through its AI Act and countries such as South Korea via national legislation, combine legal safeguards with proportionate requirements based on risk and impact, with increased safeguards for high risk AI applications.
- ➔ **Flexible regulatory guidance:** Some countries provide flexible guidance rather than comprehensive legislation. In the United States, health regulators have issued guidance on AI-enabled medical software.
- ➔ **Principles-based frameworks:** Few countries have set out high-level ethical and governance principles to guide AI use. Singapore and Canada follow a principles-based approach to promote fairness, accountability, transparency, and responsible use of AI.
- ➔ **Infrastructure centric approach:** Some countries, like France, have released their national Strategy for AI prioritising an infrastructure first approach, with data sovereignty through centralised gateways, serving as ready rails for AI deployment.

Each of these models reflects a distinct approach to AI governance, placing different emphases on risk, reward and innovation. Articulation of a policy for AI in Healthcare in India therefore requires consideration and contextualisation of these approaches in light of the country's unique health landscape.



## 2.2 India's AI Enablement Landscape for Healthcare

India has, over the past decade, developed a set of digital, and institutional foundations that together create a conducive environment for the adoption of AI in healthcare. These foundations have emerged through broader health system digitisation efforts, national AI initiatives, and sectoral frameworks, rather than through a single, healthcare-specific AI programme. Their presence has enabled early experimentation, deployment, and scaling of AI solutions across both public and private healthcare settings.

### Data & Digital Foundations

India's health sector has undergone rapid digitisation, supported by the creation of population-scale DPI. Initiatives such as Ayushman Bharat Digital Mission (ABDM) have established systems for standardised digital health identifiers, interoperable health records, and consent-based data-sharing mechanisms. These systems have laid the groundwork for creation of structured, longitudinal health data that is essential for the development and deployment of AI applications.

In terms of governance, India has adopted a pragmatic and enabling approach to AI in healthcare. The IndiaAI Governance Guidelines (2025) recognise that existing sectoral laws and institutional mechanisms are currently sufficient to address most AI-related risks, with no immediate need for a standalone AI law. The Digital Personal Data Protection Act (DPDP Act) provides the overarching legal basis for the use of personal data, while sector-specific guidance for healthcare is provided in the NHA's Health Data Management Policy (HDMP) under ABDM and the ICMR's Ethical Guidelines for AI in Biomedical Research



*Initiatives such as Ayushman Bharat Digital Mission (ABDM) have established systems for standardised digital health identifiers, interoperable health records, and consent-based data-sharing mechanisms.*

and Healthcare (2023). Collectively, these instruments define consent, purpose limitation, data access, and accountability across healthcare actors, enabling responsible use of health data for innovation and service delivery.

## Workforce and Institutional Capacity

India's healthcare system comprises a large and diverse workforce, spanning physicians, nurses, allied health professionals, Community Health Officers (CHOs), Accredited Social Health Activists (ASHAs), programme managers etc. Digital health and AI exposure is increasingly being integrated into training and capacity-building initiatives across these cadres, reflecting a growing recognition of AI as a cross-cutting capability rather than a niche technical skill. The National Board of Examinations in Medical Sciences (NBEMS) launched an online training programme on AI in Medical Education in January 2026, aimed at providing foundational exposure to AI applications in clinical practice, diagnostics, research, and medical education.

At the institutional level, several initiatives are underway to strengthen AI-related capacity in healthcare. The Ministry of Health and Family Welfare has designated All India Institute of Medical Sciences (AIIMS), New Delhi; Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh; and AIIMS, Rishikesh as Centres of Excellence for AI, with a focus on supporting research, development, and adoption of AI-based healthcare solutions. Additionally, the Ministry of Education has also created a Centre of Excellence for AI in Healthcare at IISc, Bengaluru. Together, these initiatives reflect an evolving institutional ecosystem for building AI-related capabilities within India's healthcare system.





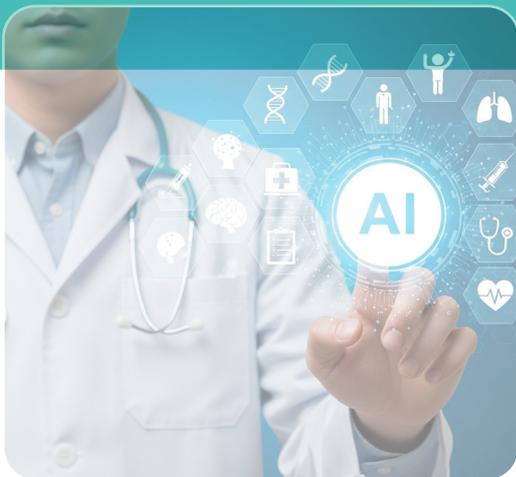
## 2.3 A Unifying Governance Framework for AI in Health

Taken together, India’s healthcare ecosystem possesses strong foundational elements for AI adoption, including evolving regulatory mechanisms, a maturing talent pool, and a clear policy vision. However, these components currently operate in a partially fragmented manner, and the pathway from innovation to routine deployment remains uneven. Advancing AI in healthcare therefore requires greater orchestration through Health AI-specific guidelines and a unifying governance framework that aligns certification, monitoring, cybersecurity, and procurement processes. The following chapters outline the approach proposed under this Strategy to provide such coherence and enable the safe, effective, and system-aligned integration of AI across India’s healthcare system.



*Advancing AI in healthcare therefore requires greater orchestration through Health AI-specific guidelines and a unifying governance framework that aligns certification, monitoring, cybersecurity, and procurement processes.*

# 03 Governing Principles for AI in Healthcare



The Ministry of Electronics & Information Technology (MeitY), through the IndiaAI Governance Guidelines, has articulated a set of cross-sectoral principles or “sutras” for the responsible development and use of AI in India. These principles provide a foundational framework applicable across sectors and also have been referenced, for instance, in the Reserve Bank of India’s FREE AI Committee Report.

## Seven Guiding Principles: India AI Governance Guidelines

- ➔ **Trust is the foundation:** Without trust, innovation and adoption will stagnate
- ➔ **People first:** Human-centric design, human oversight, and human empowerment
- ➔ **Innovation over Restraint:** All other things being equal, responsible innovation should be prioritised over cautionary restraint
- ➔ **Fairness & Equity:** Promote inclusive development and avoid discrimination
- ➔ **Accountability:** Clear allocation of responsibility and enforcement of regulations
- ➔ **Understandable by design:** Provide disclosures and explanations that can be understood by the intended user and regulators
- ➔ **Safety, Resilience & Sustainability:** Safe, secure, and robust systems that are able to withstand systemic shocks and are environmentally sustainable

SAHI builds on these 7 sutras and translates them into health-specific principles. These principles incorporate the ethical, operational, and clinical realities of healthcare, while remaining aligned with the broader national AI governance vision, providing a consistent and actionable framework for safe, equitable, and effective adoption of AI across India’s health ecosystem.

# Governing Principles - 7 Sutras

## 01

### Trust is the Foundation

Trust is essential to both support innovation and adoption of AI in the healthcare sector, as well as to mitigate risks. It must be embedded across the entire value chain.



## 02

### People First

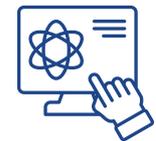
AI should strengthen human judgment in healthcare. While AI may be used to assist and augment healthcare, humans must always remain in control.



## 03

### Innovation over Restraint

AI innovation in healthcare should aim to maximise overall benefit while reducing the potential of harm. All other things being equal, responsible innovation should be prioritised over cautionary restraint.



## 04

### Fairness and Equity

AI adoption must aim to reduce health inequities and earn the trust of the patient community through fairness and transparency.



## 05

### Accountability

AI may be used to inform healthcare decisions, but the accountability for actions and outputs of AI must be with the people, based on the function they perform.



## 06

### Understandable by Design

AI systems must, by default, be designed to be understandable by those who use them, with clear explanations and disclosures.

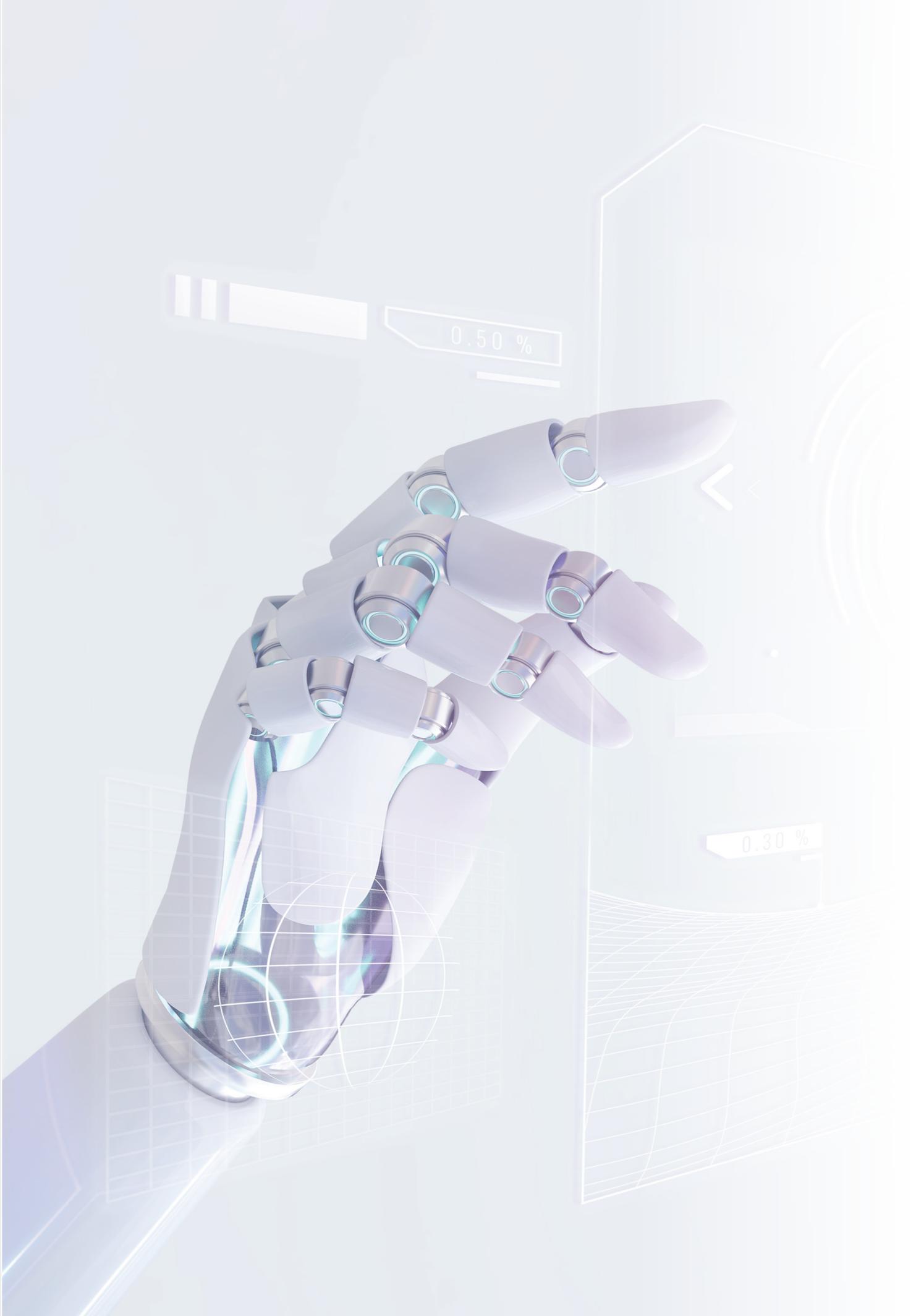


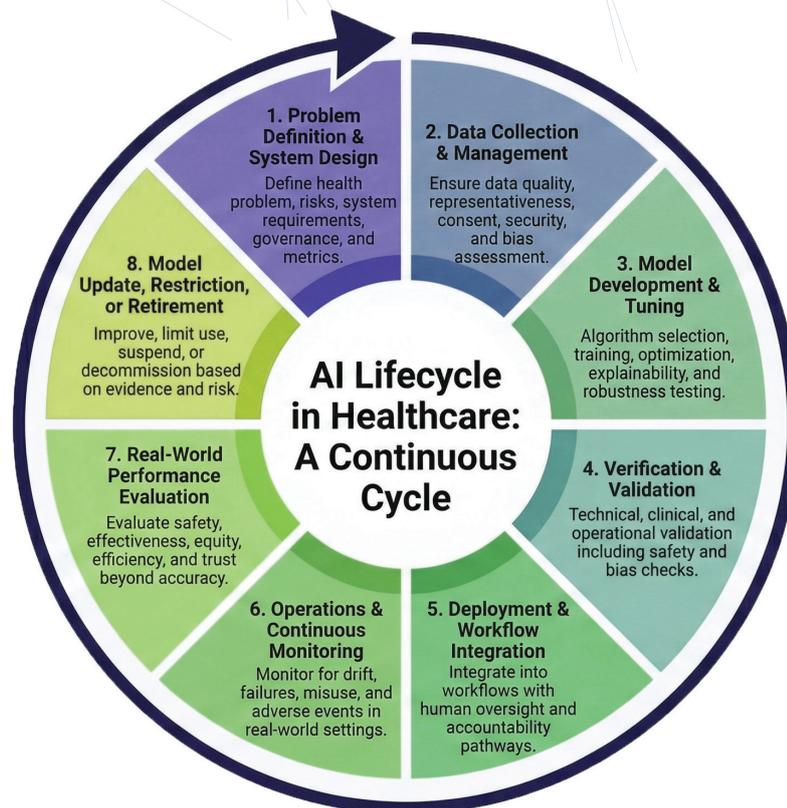
## 07

### Safety, Resilience and Sustainability

AI in healthcare should be safe, scientifically sound and dependable under real world conditions.





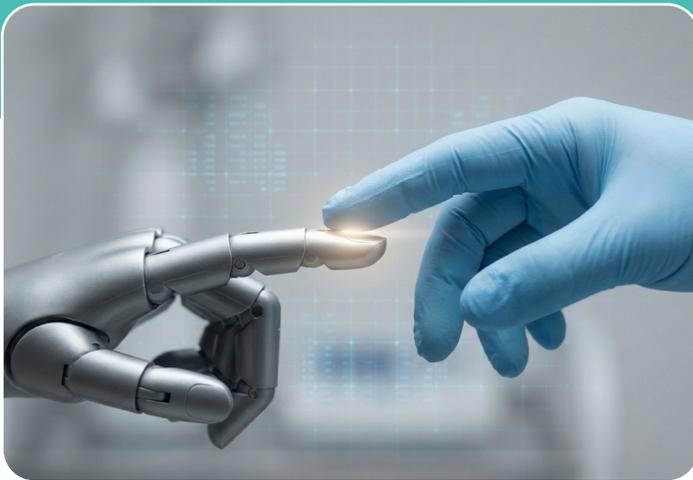


## Core AI Lifecycle for Healthcare

AI systems in healthcare differ fundamentally from conventional digital tools: they influence clinical judgment, shape care pathways, and inform population-level decisions, often evolving through updates or learning mechanisms. As a result, AI adoption in healthcare cannot be treated as a one-time approval or deployment event. Instead, it must be understood as a lifecycle, an end-to-end process that spans from the initial decision to apply AI to a health problem, through data selection and model development, to deployment, ongoing monitoring, adaptation, and eventual retirement. Viewing AI through a lifecycle lens helps policymakers and system leaders recognise that risks, responsibilities, and public impact arise at different stages, and that early design and data choices can have long-term consequences for safety, fairness, and trust.

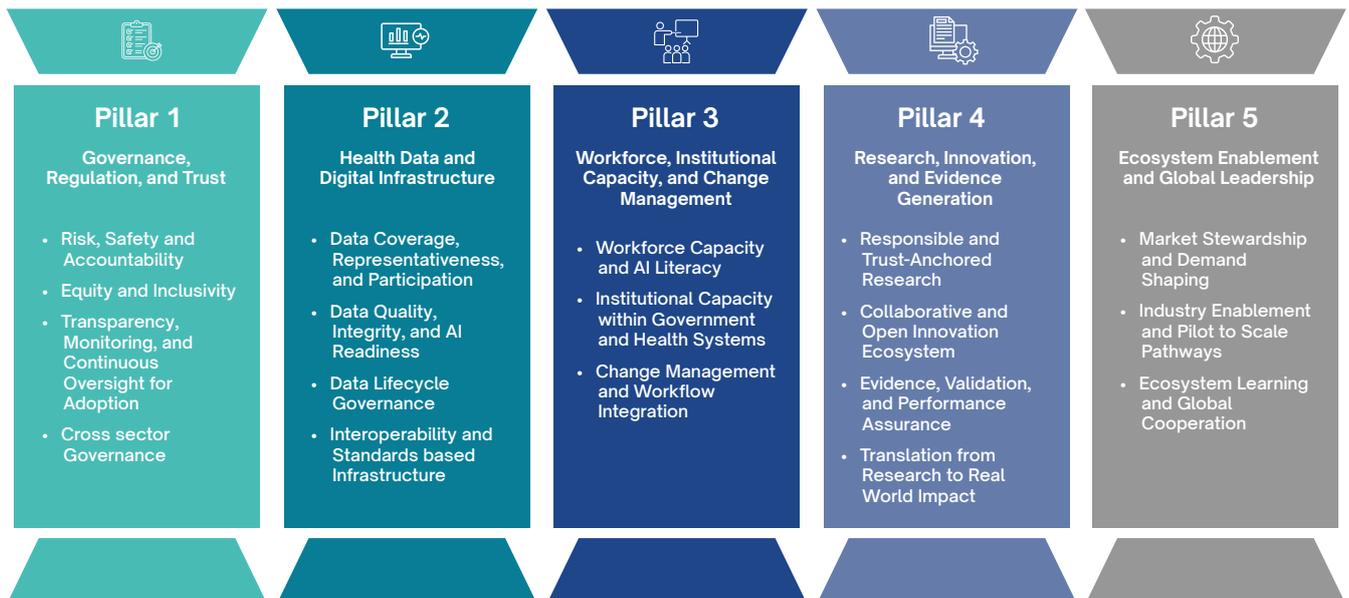
From a national governance perspective, a lifecycle approach underscores why oversight cannot be confined to a single regulatory checkpoint. Decisions at the problem-definition stage determine whether AI use is appropriate and proportionate; choices around data sourcing, consent, and representativeness shape downstream performance and equity; and real-world deployment may surface risks not evident during validation. Accordingly, governance must extend across stages, from use-case selection and data governance, to validation, deployment, post-market monitoring, system updates, and responsible decommissioning. Importantly, this does not imply regulation at every step, but a risk-proportionate and adaptive approach, enabling innovation where risks are low and applying stronger oversight where potential harm is greater, while providing a shared framework for coordination across regulators, health systems, and innovators.

# 04 | Strategic Pillars of SAHI



Together, the five pillars of SAHI follow a deliberate sequence: establishing governance and safety foundations, strengthening data and digital infrastructure, building workforce and institutional capacity, enabling responsible innovation and evidence generation, and supporting ecosystem-level adoption and scale, to ensure a sustained health system and societal impact.

## Core Pillars of the AI in Healthcare Strategy



To ensure strategic clarity, institutional alignment, effective implementation, and responsible scale-up, the strategy is structured around five core pillars.

## 4.1 Pillar I: Governance, Regulation, and Trust

*This pillar establishes the governance, regulation, guardrails, and accountability measures to ensure that AI deployment within India's healthcare is safe, ethical, and in public interest. Safe and fair development requires effective governance, spanning the lifecycle of an AI application in an integrated manner. This pillar serves as the anchor for the subsequent pillars of the strategy by establishing trust as the cornerstone of this ecosystem.*

This strategy advocates for a governance framework that is risk based and graded. For instance, through this approach, high risk clinical tools, such as CDSS, could receive stringent oversight, while administrative tools could face minimal compliance. This will ensure safety does not become an unintended hurdle to innovation.

### 4.1.1 Risk, Safety, and Accountability

To enable safe and responsible use of AI in healthcare settings, SAHI emphasises a **risk-based governance approach** that links system risk to appropriate oversight, safeguards, and accountability across the AI lifecycle.

- SAHI recommends that AI solutions deployed in healthcare be classified based on their potential to cause harm, taking into account both technical characteristics and contextual factors such as clinical use, degree of autonomy, scale of deployment, and impact on patient outcomes. This risk classification should inform risk tiering, and may result in differentiated requirements for evidence and validation, human-in-the-loop oversight, audit and assurance mechanisms, conditions for deployment or scale-up, and ongoing monitoring and re-evaluation across the lifecycle.
- SAHI recommends that safety be embedded into all stages of the product development process. In healthcare, this will also involve rigorous evaluation and validation within the intended real world settings where it is deployed. AI applications should adhere to domain-specific standards to ensure clinical relevance, robustness, and safety. Metrics for assessing safety, bias mitigation, interoperability, and alignment with public health priorities should be developed and adopted. Compliance with these standards should determine whether AI applications are permitted to enter or continue operating within healthcare systems, consistent with the classification and tiering approach described above.
- SAHI recommends the adoption of appropriate measures to make it possible to ascertain the accountability of different actors in the AI ecosystem for the actions performed by a given AI solution deployed in a healthcare context. Liability should be appropriately allocated depending on whether the harm was caused by the developer, deployer, application service provider or



user of the AI application. In all circumstances, liability should be ascertained based on technical and clinical considerations, assessed on a case-by-case basis. Compliance with established standards of safety, security, and transparency should form the basis for assigning accountability and determining liability.

## Key Recommendations



1. AI Solutions in healthcare must be classified based on their likelihood to cause harm and made subject to appropriate regulatory and operational obligations commensurate to the level of risk they pose.
2. Measures should be put in place to ascertain the accountability of different actors in the AI healthcare ecosystem so that liability for harms caused can be appropriately allocated.
3. Safety should be embedded across all stages of the AI lifecycle, with clear metrics developed and adopted to assess safety, bias, interoperability, and real world use.

### 4.1.2 Equity and Inclusivity

Disparities in access to healthcare services and variations in data availability across regions and population groups can result in skewed training and validation datasets. These gaps can, in turn, lead to uneven or inequitable outcomes when AI systems are deployed. To address this, it is necessary to implement deliberate measures that promote equity and inclusivity in the adoption of AI within the healthcare sector.

- SAHI recommends that adequate measures be implemented to ensure that training and validation data are appropriately representative of India's diverse populations, disease profiles, and care settings, particularly in the case of historically underserved and marginalised groups. Failure to do so can lead to the introduction of bias into the models, which in turn can directly influence access to care and health outcomes. This may lead to systematic under-prioritisation of certain groups, reinforcement of structural disparities, and the erosion of public trust. Protective safeguards should be put in place for vulnerable populations and contextualised through participatory governance.



## Key Recommendations



4. Training and validation data for healthcare AI systems should be representative of the population and settings in which they are intended to be used to ensure fairness across context.
5. High-impact AI applications should assess and address potential inequity impact as part of design, evaluation, and deployment decisions.

### 4.1.3 Transparency, Monitoring, and Continuous Oversight for adoption

Trust is foundational to the adoption of AI in healthcare and depends on the extent to which clinicians, institutions, and citizens understand how AI systems are intended to be used, how they perform, and how risks are identified and addressed over time. Given the potential for AI systems to experience performance degradation, bias amplification, or unintended effects in real-world settings, transparency and continuous post-deployment oversight are essential to prevent silent harm and to maintain confidence in AI-enabled care.

- SAHI recommends that AI applications in healthcare should adopt clear transparency and disclosure practices, including communication of intended use, limitations, evaluation methods, and associated risk levels. Where feasible, information that supports the understanding of system behaviour by clinicians and administrators should be provided in accessible and usable forms.
- SAHI recommends continuous post-deployment monitoring, particularly for AI systems used in higher-risk contexts. Such oversight should be capable of identifying performance degradation, model drift, bias, erroneous outputs, misuse, or other unintended consequences over time, and should inform decisions related to system updates, re-validation, or withdrawal.





## Key Recommendations



6. AI applications should be transparent and explicitly communicate use, limitations, and risk in a form that intended users can understand.
7. AI applications should be monitored post deployment for performance changes, model drift, bias, and other unintended consequences.

### 4.1.4 Cross Sector Governance

To promote AI innovations in healthcare we need a governance framework that reduces uncertainty and eases adoption. AI in healthcare demands predictable and coherent rules that enable responsible procurement and deployment, while accommodating the adaptive nature of these technologies. Furthermore, as AI applications are often built on public datasets, safeguarding public interests is complex but essential.

- SAHI recommends a formal coordination mechanism between health authorities, technology regulators, self-regulatory organisations and legal bodies to prevent regulatory and governance fragmentation. These measures should also take into account the need to ensure centre-state coordination as necessary.

## Key Recommendations



8. Formal cross-sector and centre–state coordination mechanisms should be enabled across health, technology, legal, and regulatory authorities to reduce duplication, support smaller states/facilities, and promote coherent governance across the health AI lifecycle.



## 4.2. Pillar II: Health Data and Digital Infrastructure

*This pillar focuses on strengthening India's health data and digital infrastructure to make it fit for responsible and scalable use of AI. Health data is the foundational input for AI systems, and its availability, quality, representativeness, and governance directly shape the safety, fairness, and usefulness of AI-enabled health interventions. Building an AI-ready data ecosystem therefore requires coordinated action across the full data lifecycle, from digitisation and data generation to interoperability, quality assurance, access governance, and long-term stewardship.*

*The strategy adopts a differentiated approach to data readiness by recognising three categories of gaps: AI-critical gaps, where lack of data directly constrains priority use cases; AI-limiting gaps, where fragmentation or poor continuity reduces system-level intelligence; and AI-enhancing datasets, where high-quality data can improve model performance, planning, and population health insights. Addressing these gaps through targeted public investment, standards-based infrastructure, and structured public-private participation is essential to enable safe and equitable AI adoption downstream.*

### 4.2.1 Data Coverage, Representativeness, and Participation

A robust Health AI ecosystem depends on the breadth, continuity, and representativeness of underlying health data. Data coverage architecture determines whether AI systems can be developed and deployed at scale and whether they reflect India's diverse populations, disease profiles, and care settings. Persistent gaps in data coverage risk systematically excluding regions, population groups, and levels of care, thereby limiting both effectiveness and equity.

- ➔ SAHI recommends systematic mapping of data sources across public and private facilities, laboratories, programmes, and research institutions to assess digitisation levels, interoperability readiness, and population and geographic gaps. Subsequently, a purpose-driven approach should be adopted, combining targeted public investment in under-represented settings with structured public-private collaboration to improve data completeness and diversity. National digital health infrastructure such as ABDM should be paired with clear operational adoption targets, minimum dataset expectations, and calibrated incentives for participation.
- ➔ SAHI recommends that national health data should reflect population-scale realities rather than being concentrated in high-resource facilities. This requires integrating data across public health programmes and the private sector, recognising their complementary roles as major data generators. In addition to point-in-time clinical data, coverage architecture should support longitudinal and continuity-of-care data across settings, as well as relevant social, behavioural, and environmental determinants of health.

## Key Recommendations



9. Public & private sector participation in the national data ecosystem should be enabled by publishing minimum datasets specifications, interoperability obligations, and providing incentives for high-value contributors.
10. Measures should be taken to ensure that the datasets represent population scale realities across diverse care settings rather than limited to few high resource facilities.

### 4.2.2 Data Quality, Integrity, and AI readiness

For Health AI to be safe, reliable, and clinically useful, data quality, and integrity are critical. Inconsistent documentation, missing fields, variable structures, and weak provenance undermine AI performance, increase bias, and erode trust among clinicians and health system administrators.

Data quality for Health AI encompasses attributes such as accuracy, completeness, timeliness, consistency, and use case relevance. In the absence of minimum quality benchmarks, AI systems risk learning from artefacts, noise, or systemic data gaps that may only become visible after deployment. Data integrity is equally critical and relates to the reliability, traceability, and provenance of data as it is collected, processed, and shared.

AI readiness goes a step further by assessing whether datasets are suitable for specific AI use cases. This includes the availability of appropriate labels or reference standards, sufficient coverage across relevant clinical or non clinical contexts, and documentation that enables responsible interpretation and reuse. Clear dataset documentation, including metadata, provenance information, and known limitations, is essential to support safe AI development, validation, and reuse across institutions.

- SAHI recommends a fitness-for-use approach, recognising that data adequate for administrative or planning purposes may be insufficient for clinical AI applications. To operationalise this, a Health Data Quality Framework should be established, supported by standardised, machine-readable quality indicators, metadata, and coverage metrics. Provenance and lineage mechanisms should enable traceability to originating sources and support periodic audits linked to corrective action.

## Key Recommendations



11. A Health Data Quality Framework should be defined and implemented, specifying minimum standards for data completeness, consistency, and fitness-for-use in AI development and deployment.

### 4.2.3 Data Lifecycle Governance

Data lifecycle governance refers to the set of rules, processes, and institutional responsibilities that govern how health data is generated, accessed, reused, retained, and retired over time. In the context of Health AI, data lifecycle governance focuses on ensuring that data use remains lawful, proportionate, transparent, and aligned with public interest objectives throughout its lifecycle, including for secondary use and the creation of derived datasets.

- SAHI recommends the development of appropriate privacy-preserving access standards (de-identification, anonymisation etc.) that enable the use of non-personal data for secondary use in public health, research, and innovation. Care should be taken to ensure no such use of non-personal data results in any compromise to the privacy of patients.
- SAHI recommends setting up appropriate cybersecurity practices, incident reporting, and continuity planning for the health data used in AI applications.

#### Key Recommendations



12. Privacy-preserving access standards (de-identification/anonymisation proportional to risk and rarity) should be developed to enable the use of non-personal data for secondary use.
13. Appropriate cybersecurity standards, incident response protocols, and continuity planning for health data should be defined.

### 4.2.4 Interoperability and Standards based Infrastructure

Data Interoperability can transform isolated datasets into a functional national health data ecosystem. Obligations to ensure interoperability must, therefore, extend across formats, ontologies, and organisational policies.

- SAHI recommends the adoption of ABDM-aligned interoperability standards as a foundational DPI layer, enabling secure, bidirectional data exchange across levels of care and between public and private entities. This should support both technical interoperability and semantic interoperability, ensuring that data retains consistent clinical meaning across systems. They should be aligned with globally accepted standards such as HL7 FHIR, SNOMED CT, LOINC, and DICOM, supported with India-specific profiles. Standards should be designed for evolution, supporting multi-modality and extensibility to accommodate emerging data sources such as imaging, wearables, and advanced diagnostics.
- SAHI recommends that a few defined categories of data sharing for public health purposes may be mandated under a clear legal basis, with strict purpose limitation, and robust safeguards for privacy, security, and trust, ensuring that interoperability serves both individual care and collective health system objectives.

## Key Recommendations



14. ABDM-aligned interoperability standards should be adopted in the public and private sector.
15. The categories of data for sharing should be defined under clear legal basis to serve collective health system objectives.





### 4.3 Pillar III: Workforce, Institutional Capacity, and Change Management

*The Workforce, Institutional Capacity, and Change Management pillar focuses on building the human, institutional, and organisational capacity required to safely adopt, govern, and sustain the use of AI in healthcare. Digital infrastructure and enabling policies alone cannot translate into meaningful health outcomes unless healthcare workers/professionals, administrators, and institutions have the competence, confidence, and organisational support required to use AI safely and effectively. This Pillar therefore emphasises workforce readiness, institutional operational capacity, and structured change management, enabling the health system to implement AI responsibly and consistently at scale.*

#### 4.3.1 Workforce Capacity and AI Literacy

Responsible use of AI in healthcare requires role-appropriate understanding across a diverse health workforce, including frontline health workers, clinicians, administrators, public health managers, and system leaders.

- ➔ SAHI recommends a FRAC (Framework of Roles, Activities and Competencies) based approach to AI competence rather than uniform or tool-specific training. Foundational awareness should be widespread, while progressively advanced competencies should be developed among those exercising greater decision-making authority. This ensures that all health workers can safely interact with AI-enabled systems, while ethical, legal, and accountability-related competencies are deliberately strengthened at higher levels of responsibility.
- ➔ SAHI emphasises integration of AI and digital health competencies into existing education and skilling systems to ensure institutionalisation of AI capacity within formal education and professional development pathways, thereby ensuring sustainability and reducing reliance on post-hoc training.
- ➔ SAHI recommends leveraging existing national platforms such as iGOT Karmayogi for auditors, regulators, administrators and other supervisory authorities to strengthen their capacity when it comes to AI applications in healthcare. These platforms should support continuous learning through accredited courses, certifications, and learning credits, aligned with the national competency framework.

## Key Recommendations



16. A role-based AI competency framework for the health sector should be promoted, defining expected levels of AI understanding and responsibility across clinical, administrative, frontline, and leadership roles.
17. AI and digital health competencies should be integrated into relevant formal education and skilling pathways (including medical, technical, and public administration education)
18. AI capacity among regulators, auditors, and supervisory authorities should be strengthened to enable effective evaluation, monitoring, audit, and enforcement across the AI lifecycle in healthcare.

### 4.3.2 Institutional Capacity within Government and Health Systems

Beyond individual skills, responsible AI adoption requires institutional capacity within government and health systems to identify appropriate use cases, assess solutions, oversee deployment, and sustain AI-enabled systems in alignment with public health objectives.

Given variations in capacity across States and districts, shared support mechanisms, including access to technical, legal, and ethical expertise, common guidance tools, and peer coordination platforms are essential to promote consistency while allowing contextual flexibility.

- SAHI recommends strengthening institutional readiness through designated AI units within health departments and institutions, with clear mandates for AI strategy, use-case prioritisation, procurement, deployment oversight, and lifecycle management. These units should operate within existing governance, planning, and regulatory structures to ensure continuity and avoid parallel systems.
- SAHI recommends institutionalised collaboration across government, academia, professional bodies, and technology developers to support continuous learning and adaptation. This includes communities of practice, structured documentation of implementation experiences (including challenges and failures), and regular peer-learning forums across programmes and jurisdictions. Insights from implementation should feed back into workforce training, institutional processes, and change management strategies.

## Key Recommendations



19. Designated AI units or nodal cells should be created within health departments and health institutions to lead AI strategy, use-case prioritisation, tool assessment, deployment oversight, and lifecycle management.
20. Structured collaboration and knowledge-exchange mechanisms should be established to enable continuous learning, research, and cross-jurisdictional sharing in support of ethical, context-appropriate AI adoption in healthcare.

### 4.3.3 Change Management and Workflow Integration

AI adoption in healthcare represents a significant organisational and behavioural change. Even well-designed AI tools can fail to deliver value or introduce risk if they are deployed without deliberate attention to how health workers interact with them in daily practice. Effective change management is therefore essential to ensure that AI-enabled systems are integrated into routine clinical and public health workflows in ways that support usability, continuity of care, and professional accountability.

- ➔ SAHI emphasises a workflow-first approach, embedding AI tools within existing clinical and public health processes. Clear articulation of human–AI roles, responsibilities, and accountability is essential to maintain professional judgement and patient trust. Supportive supervision, mentoring, and on-the-job assistance are particularly important in under-resourced settings.

Change management should be treated as a continuous process rather than a one-time activity. Feedback from frontline users should inform iterative refinement of tools, workflows, and training approaches, supporting safe, acceptable, and sustained adoption over time.

#### Key Recommendations



21. AI tools should be embedded within existing clinical and public health workflows to support decision-making without increasing burden or fragmentation.
22. Roles and responsibilities for human and AI in workflows should be clearly defined, including oversight and escalation mechanisms, to ensure safe and trustworthy use.





## 4.4. Pillar IV: Research, Innovation, and Evidence Generation

*This pillar focuses on strengthening India's research and innovation ecosystem to enable the responsible development, evaluation, and scaling of AI in healthcare. Given the scale and diversity of India's health system, a robust research and innovation ecosystem is essential to ensure that AI adoption contributes meaningfully to Universal Health Coverage (UHC), improved quality of care, and health outcomes. This pillar also emphasises self-reliance in indigenous AI solutions while ensuring that innovation remains clinically credible, socially legitimate, and aligned with public health priorities.*

### 4.4.1 Responsible and Trust-Anchored Research

Trust is foundational to AI adoption in healthcare and must be embedded at the research and innovation stage. AI research should be ethically grounded, clinically credible, and socially legitimate with safeguards embedded early in the research and development lifecycle. Weak oversight at the research stage can result in biased models, inappropriate use cases, or safety risks that only become visible after deployment.

- ➔ SAHI recommends enhancing the capacity of Institutional Ethics Committees (IECs) to assess AI-specific considerations, including suitability for real-world workflows and operational contexts. While IECs already play a central role in clinical and biomedical research, many are not currently equipped to assess AI-specific considerations such as data lineage and representativeness, suitability of evaluation methodologies, risks of algorithmic bias or drift, and the implications of deploying adaptive systems in real-world care settings. A framework needs to be developed to strengthen these committees and make them 'AI-ready'.
- ➔ SAHI recommends aligning AI research and innovation incentives with clearly articulated national and state health priorities. AI innovation should be directed toward use cases that demonstrably strengthen access, quality, efficiency, and public health functions, particularly in underserved and high-impact areas.

## Key Recommendations



23. Institutional Ethics Committees should be strengthened so that they become AI-ready in order to ethically review AI research and deployment.
24. Research incentives, approvals, and funding mechanisms should be aligned with national and state health priorities.

### 4.4.2 Collaborative and Open Innovation Ecosystem

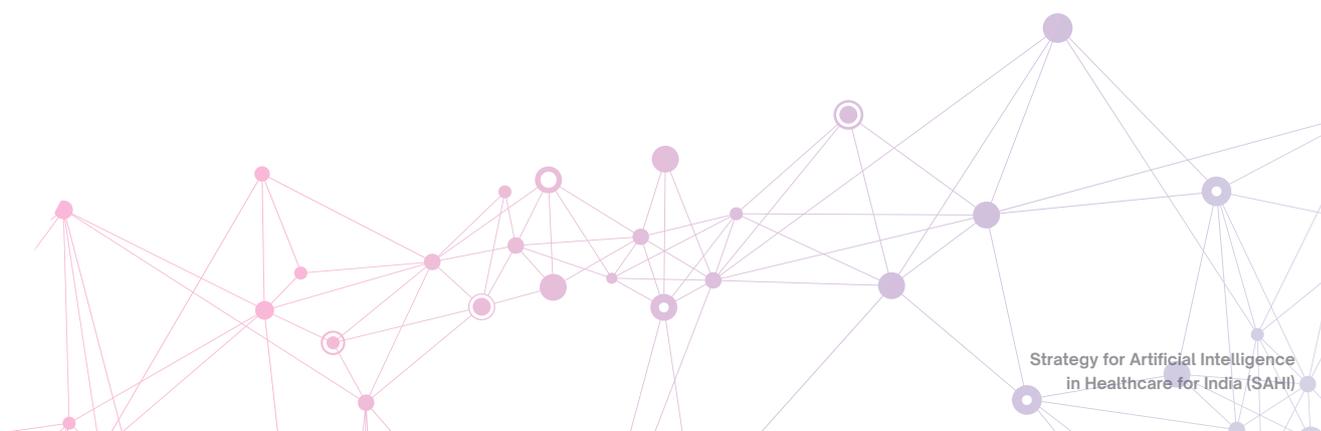
Given the complexity of health systems and the diversity of care contexts in India, no single institution or sector can develop effective AI solutions in isolation. Multi-sectoral collaboration across government, academia, healthcare providers, start-ups, industry and civil society is therefore essential to improve the relevance, and impact of AI research. Such collaboration brings together complementary strengths: research institutions contribute research depth, methodological rigour, and talent development; public health systems provide contextual insight, scale, and real-world implementation environments; and the private sector contributes technical expertise, innovation capacity, and go to market capabilities. When effectively structured, these collaborations can accelerate translation from research to practice while ensuring relevance, safety, and public value. For example, through collaboration with public, private, and development partners, TANUH (Translational AI for Networked Universal Healthcare), a dedicated AI Centre of Excellence in Healthcare established at Indian Institute of Science (IISc), seeks to develop affordable, scalable, and accessible solutions that respond to population health needs.

- SAHI supports open and collaborative innovation models that encourage shared learning, responsible data use, and participation across stakeholders. Such collaboration can advance research in emerging areas, including clinical decision support systems, drug discovery and repurposing, multi-omics integration, and One Health research linking human, animal, and environmental health.

## Key Recommendations



25. Open and collaborative innovation models across stakeholders should be encouraged to advance AI research in emerging areas and needs of healthcare.



### 4.4.3 Evidence, Validation, and Performance Assurance

User protection and clinical confidence in AI systems depend on strong, context-appropriate evidence. Evaluation must extend beyond technical accuracy to include clinical relevance, safety, fairness, usability, and alignment with real-world workflows.

- SAHI emphasises that evaluation requirements should be explicitly linked to the risk classification of AI systems, as outlined under Pillar I. Higher-risk AI systems should be subject to more rigorous and prospective validation, while lower-risk applications may follow lighter evaluation pathways. Evaluation should require benchmarking against appropriate reference standards or current best practices, sensitivity and specificity assessment aligned to the intended use, and subgroup analysis to detect bias across populations and care settings. Given the adaptive nature of AI systems, evaluation should also assess risks related to data shift and model drift prior to deployment.

#### Key Recommendations



26. Standardised, risk-proportionate evaluation frameworks should be developed for health AI covering safety, fairness, usability, relevance, and accuracy

### 4.4.4 Translation from Research to Real World Impact

Despite the rapid growth in AI research, translation into routine healthcare remains limited. Clear pathways are needed to support AI solutions as they move from research and prototyping to piloting, deployment, and scale within health systems.

- SAHI emphasises the need for adaptive funding mechanisms that support different stages of the innovation lifecycle, as well as evaluation and learning models suited to the iterative and evolving nature of AI systems. Traditional clinical trials may not always be appropriate; instead, trial designs and post-deployment learning mechanisms should reflect the adaptive characteristics of AI.

#### Key Recommendations



27. Stage appropriate funding mechanisms that support health AI from research to testing, and pilots within public health systems should be encouraged.
28. Trial designs suited to evolving AI systems should be enabled and should integrate post-market monitoring, drift detection and feedback loops to support continuous learning and improvement.



## 4.5. Pillar V: Ecosystem Enablement and Global Leadership

*This pillar focuses on strengthening the institutional, collaborative, and knowledge-sharing environment required for the responsible adoption and scaling of AI in healthcare. It recognises that effective and sustainable AI adoption cannot be driven by government action alone, and requires coordinated engagement across public institutions, the private sector, academia, research organisations, civil society, and development partners. Through this pillar, SAHI aims to ensure that AI adoption is coherent, context-appropriate, and aligned with public health priorities, while enabling India to share scalable and equitable models with the global community. This will position India as a meaningful contributor to global knowledge and practice on AI for healthcare.*

### 4.5.1 Market Stewardship and Demand Shaping

Public health systems play a critical role in shaping the health AI market through procurement, adoption decisions, and standard-setting. In a safety-critical and equity-sensitive sector such as healthcare, market signals must extend beyond cost and technical features to reflect outcomes, interoperability, accountability, and alignment with public health priorities. Public procurement and adoption decisions exert significant influence on the direction and maturity of the health AI ecosystem. When procurement is fragmented, opaque, or narrowly cost-driven, it can incentivise stop gap solutions, vendor lock-in, and misalignment with health system needs.

- SAHI recommends strengthening the role of the State as a steward of the health AI market through outcome-oriented procurement approaches that prioritise innovation, needs, system safety and interoperability with existing digital health infrastructure, and integration with health system workflows. Efforts should be made to reduce procedural and informational barriers to adoption in a transparent and proportionate manner.

### Key Recommendations



29. Public procurement frameworks for health AI should be redefined to prioritise innovation, intended outcomes, existing needs, system safety and interoperability.

## 4.5.2 Industry Enablement and Pilot-to-Scale Pathways

Many AI solutions fail to progress beyond the pilot stage due to unclear adoption pathways, risk aversion within public institutions, and lack of defined criteria for continuation or exit. Treating pilots as isolated experiments undermines learning and wastes public resources. Clear, predictable pilot-to-scale pathways are essential to translate innovation into sustained system impact while managing operational and reputational risk.

Startups, MSMEs, and industry actors are critical partners in the design, validation, deployment, and scaling of AI-enabled solutions across the health sector. These actors contribute innovation, technical capability, and implementation capacity across priority domains such as diagnostics, clinical decision support, population health analytics, workflow optimisation, and health system management, and play a vital role in strengthening India's health AI ecosystem.

- SAHI recommends institutionalising structured pilot-to-scale adoption pathways, in line with redefined procurement frameworks, within public health systems, where pilots are explicitly linked to defined criteria for progression, modification, or discontinuation based on safety, performance, usability, and system readiness. Governed testbeds and real-world validation environments within public health systems are encouraged to support safe experimentation and evidence generation prior to scale.
- SAHI recommends enabling inclusive industry participation through cluster-based AI-for-health ecosystems anchored in public institutions such as medical colleges, public hospitals, and research centres. The Strategy supports mechanisms that lower entry barriers, promote co-development with health systems, and enable responsible risk-sharing, including the use of incentive-based approaches and non-traditional financing mechanisms such as blended finance, and alignment with impact investment for solutions addressing priority public health needs.

### Key Recommendations



30. Clear pilot-to-scale pathways for health AI adoption within public health systems should be defined, institutionalised and supported by testbeds, sandboxes, and real-world validation environments to encourage safe experimentation, evaluation, and transition to scale.
31. Cluster based AI-for-health ecosystems anchored in public institutions (medical colleges, public hospitals, research centres) should be promoted to reduce entry barriers for startups and MSMEs and align innovation with real system needs.



### 4.5.3 Ecosystem Learning and Global Cooperation

As AI is adopted across diverse programmes, facilities, and States, systematic learning from implementation experience is essential to improve quality, reduce risk, and guide future decisions. Beyond domestic learning, India's population-scale deployments and public digital infrastructure position it to contribute meaningfully to global knowledge and norm-setting on responsible AI for healthcare.

- SAHI recommends establishing institutionalised platforms for ecosystem-level learning and knowledge exchange that capture and disseminate implementation experience across jurisdictions, including challenges and failures as well as successes. The Strategy encourages cross-programme learning forums, and strengthens India's engagement in global cooperation through South-South and multilateral cooperation, knowledge sharing, and participation in international norm-setting and standards development, enabling two-way learning and contribution to global public goods.

#### Key Recommendations



32. Institutionalised platforms for ecosystem-level learning and knowledge exchange should be established to strengthen India's engagement in global cooperation and norm-setting for responsible AI in healthcare.



# 05 | System-Level Outcomes and Impact



SAHI as a framework for the Safe, Accountable, Holistic and Inclusive use of AI to strengthen India's Healthcare System

SAHI is intended to deliver measurable, system-level improvements in the performance, equity, safety, and sustainability of India's health system. AI adoption under SAHI is oriented toward public value and health outcomes, rather than technology deployment as an end in itself.

At the system level, SAHI aims to strengthen the effectiveness and resilience of health service delivery by enabling more timely, consistent, and evidence-informed decision-making across clinical care, public health programmes, and health system administration. AI-enabled systems are expected to improve operational efficiency, optimise resource use, enhance preparedness for public health risks, and support continuity of care across levels of the health system.

SAHI seeks to improve the quality and safety of healthcare delivery by embedding AI within clear governance, accountability, and oversight frameworks. AI systems are positioned as decision-support tools that augment professional judgment, strengthen adherence to evidence-based practices, enable early identification of risk and variation, and support continuous monitoring of performance and safety.

Equity and inclusion are central to the intended impact of SAHI. The Strategy aims to ensure that AI adoption contributes to improved access, quality, and outcomes across diverse populations and geographies, particularly in underserved and resource-constrained settings. System-level impact will be assessed not only in aggregate



terms, but also through the distribution of benefits and risks across population groups, with mechanisms for identifying and addressing bias or exclusion.

The Strategy is expected to catalyse responsible innovation by creating a predictable, trusted, and enabling environment for research, development, and deployment. By providing clear governance principles, shared standards, and system-level guidance, SAHI lowers the uncertainty for innovators while steering innovation towards public health priorities and real-world health system needs. This approach encourages the development of context-appropriate, scalable, and evidence-driven AI solutions, including those emerging from academia, start-ups, and public sector institutions. In doing so, the Strategy seeks to shift innovation from isolated pilots towards sustainable solutions that strengthen health system performance, support frontline workers, and deliver measurable public value.

The Strategy promotes the development of health systems in which AI-enabled tools and processes are continuously assessed, refined, and improved based on real-world evidence. Institutional mechanisms for monitoring performance, managing risk, learning from deployment experience, and adapting policy and practice are integral to achieving sustained impact.

Public trust and transparency are foundational outcomes of SAHI. The Strategy seeks to strengthen confidence among patients, health workers, administrators, and the wider public through clear communication, responsible data use, accountability mechanisms, and alignment of AI deployment with public interest and ethical principles.

Collectively, these outcomes position SAHI as a framework for the Safe, Accountable, Holistic and Inclusive use of AI to strengthen India's healthcare system, while contributing to global learning and leadership in population-scale AI adoption in healthcare.



***The Strategy is expected to catalyse responsible innovation by creating a predictable, trusted, and enabling environment for research, development, and deployment.”***

# 06 | Recommendations

The recommendations set out below provide a framework to support the responsible, safe, and effective use of AI in healthcare. They are intended to guide coordinated action across relevant stakeholders and institutions, strengthen system readiness, and ensure that the adoption of AI remains aligned with public interest, health system priorities, and long-term sustainability.

Pillar	Thematic Area	Recommendation
 <p><b>Governance, Regulation, and Trust</b></p>	<p><b>Risk, Safety, and Accountability</b></p>	1. AI Solutions in healthcare must be classified based on their likelihood to cause harm and made subject to appropriate regulatory and operational obligations commensurate to the level of risk they pose.
		2. Measures should be put in place to ascertain the accountability of different actors in the AI healthcare ecosystem so that liability for harms caused can be appropriately allocated.
		3. Safety should be embedded across all stages of the AI lifecycle, with clear metrics developed and adopted to assess safety, bias, interoperability, and real world use.
	<p><b>Equity and Inclusivity</b></p>	4. Training and validation data for healthcare AI systems should be representative of the population and settings in which they are intended to be used to ensure fairness across context.
		5. High-impact AI applications should assess and address potential inequity impact as part of design, evaluation, and deployment decisions.
	<p><b>Transparency, Monitoring, and Continuous Oversight for adoption</b></p>	6. AI applications should be transparent and explicitly communicate use, limitations, and risk in a form that intended users can understand.
		7. AI applications should be monitored post deployment for performance changes, model drift, bias, and other unintended consequences.
	<p><b>Cross Sector Governance</b></p>	8. Formal cross-sector and centre–state coordination mechanisms should be enabled across health, technology, legal, and regulatory authorities to reduce duplication, support smaller states/facilities, and promote coherent governance across the health AI lifecycle.

Pillar	Thematic Area	Recommendation
 <p><b>Health Data and Digital Infrastructure</b></p>	<b>Data Coverage, Representativeness, and Participation</b>	<p>9. Public &amp; private sector participation in the national data ecosystem should be enabled by publishing minimum datasets specifications, interoperability obligations, and providing incentives for high-value contributors.</p> <p>10. Measures should be taken to ensure that the datasets represent population scale realities across diverse care settings rather than limited to few high resource facilities.</p>
	<b>Data quality, Integrity, and AI Readiness</b>	<p>11. A Health Data Quality Framework should be defined and implemented, specifying minimum standards for data completeness, consistency, and fitness-for-use in AI development and deployment.</p>
	<b>Data Lifecycle Governance</b>	<p>12. Privacy-preserving access standards (de-identification/ anonymisation proportional to risk and rarity) should be developed to enable the use of non-personal data for secondary use.</p> <p>13. Appropriate cybersecurity standards, incident response protocols, and continuity planning for health data should be defined.</p>
	<b>Interoperability and Standards based Infrastructure</b>	<p>14. ABDM-aligned interoperability standards should be in the public and private sector.</p>
		<p>15. The categories of data for sharing should be defined under clear legal basis to serve collective health system objectives.</p>
	 <p><b>Workforce, Institutional Capacity, and Change Management</b></p>	<b>Workforce Capacity and AI Literacy</b>
<b>Institutional Capacity within Government and Health Systems</b>		<p>19. Designated AI units or nodal cells should be created within health departments and health institutions to lead AI strategy, use-case prioritisation, tool assessment, deployment oversight, and lifecycle management.</p>
		<p>20. Structured collaboration and knowledge-exchange mechanisms should be established to enable continuous learning, research, and cross-jurisdictional sharing in support of ethical, context-appropriate AI adoption in healthcare.</p>
<b>Change Management and Workflow Integration</b>		<p>21. AI tools should be embedded within existing clinical and public health workflows to support decision-making without increasing burden or fragmentation.</p>
		<p>22. Roles and responsibilities for human and AI in workflows should be clearly defined, including oversight and escalation mechanisms, to ensure safe and trustworthy use.</p>

Pillar	Thematic Area	Recommendation
 <p><b>Research, Innovation, and Evidence Generation</b></p>	<b>Responsible and Trust-Anchored Research</b>	<p>23. Institutional Ethics Committees should be strengthened so that they become AI-ready in order to ethically review AI research and deployment.</p> <p>24. Research incentives, approvals, and funding mechanisms should be aligned with national and state health priorities.</p>
	<b>Collaborative and Open Innovation Ecosystem</b>	<p>25. Open and collaborative innovation models across stakeholders should be encouraged to advance AI research in emerging areas and needs of healthcare.</p>
	<b>Evidence, Validation, and Performance Assurance</b>	<p>26. Standardised, risk-proportionate evaluation frameworks should be developed for health AI covering safety, fairness, usability, relevance, and accuracy.</p>
	<b>Translation from Research to Real World Impact</b>	<p>27. Stage appropriate funding mechanisms that support health AI from research to testing, and pilots within public health systems should be encouraged.</p>
		<p>28. Trial designs suited to evolving AI systems should be enabled and should integrate post-market monitoring, drift detection and feedback loops to support continuous learning and improvement.</p>
	<b>Market Stewardship and Demand Shaping</b>	<p>29. Public procurement frameworks for health AI should be redefined to prioritise innovation, intended outcomes, existing needs, system safety and interoperability.</p>
 <p><b>Ecosystem Enablement and Global Leadership</b></p>	<b>Industry Enablement and Pilot-to-Scale Pathways</b>	<p>30. Clear pilot-to-scale pathways for health AI adoption within public health systems, should be defined, institutionalised and supported by testbeds, sandboxes, and real-world validation environments to encourage safe experimentation, evaluation, and transition to scale.</p>
		<p>31. Cluster based AI-for-health ecosystems anchored in public institutions (medical colleges, public hospitals, research centres) should be promoted to reduce entry barriers for startups and MSMEs and align innovation with real system needs.</p>
	<b>Ecosystem Learning and Global Cooperation</b>	<p>32. Institutionalised platforms for ecosystem-level learning and knowledge exchange should be established to strengthen India's engagement in global cooperation and norm-setting for responsible AI in healthcare.</p>

# Annexures



## Annexure - I

### Composition of the Committee for Strategy for AI in Healthcare for India

The Ministry of Health & Family Welfare, through its Office Memorandum S-12021/472/2025-ABDM(Coord) dated 8th January 2026, constituted a Committee for creating the Strategy for AI in Healthcare for India, with the following composition:

#### Chairman of the Committee

Dr. Sunil Kumar Barnwal, CEO, National Health Authority

#### Members

Ms. Aradhana Patnaik, AS & MD (NHM), Ministry of Health & Family Welfare

Shri Madhukar Kumar Bhagat, Joint Secretary (eHealth), Ministry of Health & Family Welfare

Shri Kiran Gopal Vaska, Joint Secretary & Mission Director (ABDM), NHA [Member Secretary]

Dr. Rajeev Raghuvanshi, Drug Controller General of India

Prof Balaraman Ravindran, Head, CeRAI and Professor, IIT Madras

Dr. Karthik Adapa, Regional Adviser, Digital Health, WHO SEARO

Dr. Mona Duggal, Director, ICMR - National Institute for Research in Digital Health and Data Science

Ms. Ameera Shah, President, NATHEALTH, Promoter & Executive Chairperson, Metropolis Healthcare Ltd

Shri Rahul Matthan, Partner, TriLegal

Prof. Rajeev Kumar, AIIMS Delhi

Shri Harsh Dhand, APAC Lead, GenAI, Research, Labs & Core Partnerships, Google

Shri Varun Singh, Senior Consultant, National Institution for Transforming India (NITI) Aayog

## Annexure - II

### List of Abbreviations

#### A

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- ABDM: Ayushman Bharat Digital Mission
- AB PM-JAY: Ayushman Bharat Pradhan Mantri Jan Arogya Yojana
- AI: Artificial Intelligence
- AIIMS: All India Institute of Medical Sciences
- ASHA: Accredited Social Health Activist

#### C

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- CATB: Cough Against Tuberculosis
- CDSS: Clinical Decision Support System
- CHO: Community Health Officer

#### D

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- DICOM: Digital Imaging and Communications in Medicine
- DPDP Act: The Digital Personal Data Protection Act, 2023
- DPI: Digital Public Infrastructure

#### F

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- FRAC: Framework of Roles, Activities and Competencies
- FREE AI: Framework for Responsible and Ethical Enablement of Artificial Intelligence

#### H

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- HDMP: Health Data Management Policy
- HL7 FHIR: Health Level 7 Fast Health Interoperability Resources

#### I

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- ICMR: Indian Council for Medical Research
- IEC: Institutional Ethics Committee
- iGOT: Integrated Government Online Training
- IISc: Indian Institute of Science

#### L

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- LOINC: Logical Observation Identifiers Names and Codes

## **M**

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- MeitY: Ministry of Electronics and Information Technology
- MRI: Magnetic Resonance Imaging
- MSMEs: Micro, Small and Medium Enterprises

## **N**

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- NBEMS: National Board of Examinations in Medical Sciences
- NDHM : National Digital Health Mission
- NHA: National Health Authority

## **P**

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- PGIMER: Postgraduate Institute of Medical Education and Research

## **R**

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- RBI: Reserve Bank of India

## **S**

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- SAHI: Strategy for Artificial Intelligence in Healthcare for India
- SNOMED CT: Systematized Nomenclature of Medicine – Clinical Terms

## **T**

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- TANUH: Translational AI for Networked Universal Healthcare

## **U**

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- UHC: Universal Health Coverage

## Annexure - III

### Glossary

Term	Meaning	Source
Accountability	Obligation of an individual or organization to account for its activities, for completion of a deliverable or task, accept responsibility for those activities, deliverables or tasks, and to disclose the results in a transparent manner	ISO/TS 21089:2018
Agentic AI	Highly autonomous system that senses and responds to its environment and takes actions to achieve its goals.	India AI Governance Guidelines
AI-ready data	High-quality, accessible and trusted information that organizations can confidently use for artificial intelligence (AI) training and initiatives.	IBM
Algorithmic bias	Algorithmic bias occurs when systematic errors in machine learning algorithms produce unfair or discriminatory outcomes.	IBM
Artificial Intelligence	An AI system is a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment.	India AI Governance Guidelines
Benchmarking	Activity of comparing objects or practices of interest to each other or against a reference point to evaluate criteria (or characteristic)	ISO 17258:2015
Bias	Systematic difference in treatment of certain objects, people or groups in comparison to others	India AI Governance Guidelines
(Data) Stewardship	Collection of data management practices designed to help ensure high data quality and accessibility	IBM
De-identification Process	Process of removing the association between a set of identifying attributes and the data principal	ISO/IEC 20889:2018
Digital Public Infrastructure (DPI)	Shared digital systems built on principles of openness, scalability, interoperability, and public purpose that serve as foundational platforms for innovation.	National Digital Health Blueprint (2019)
Human-in-the-Loop	Involving human expertise in the AI lifecycle particularly during training and deployment to actively improve system performance & reliability.	India AI Governance Guidelines
Interoperability	Ability of systems to provide services to and accept services from other systems and to use the services so exchanged to enable them to operate effectively together	ISO 37100:2016

Term	Meaning	Source
Market Stewardship	Efforts to address market deficiencies, such as thin markets, market gaps or other market failures, and is also known as market shaping.	Carey et al (2018), Research Market Stewardship Actions for the NDIS
Model Bias	Systematic errors in a model arising from erroneous assumptions during the modelling process, that cause it to consistently make incorrect or skewed predictions.	India AI Governance Guidelines
Model Drift	Model Performance decline due to data or relationship changes.	IBM
Model Validation	Validation- confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled [ISO/IEC 22989]  Model Validation- Verifying model accuracy and reliability post-training, to ensure the trained AI model performs as per the intended purpose	FREE AI Committee Report, RBI
Multomics	Multomics data broadly cover the data generated from genome, proteome, transcriptome, metabolome, and epigenome	Subramanian et al (2020). Multi-omics Data Integration, Interpretation, and Its Application
Provenance (Data)	Record of the ultimate derivation and passage of a piece of data through its various owners or custodians	ISO ISO 8472-1:2024-2:2022
Risk Classification	The assignment of AI systems to specific categories based on their potential for harm to the health, safety or fundamental rights of persons	

## Annexure - IV

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