



Leveraging Artificial Intelligence (AI) to Strengthen Health Systems in Nigeria



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ScienceforAfricaFoundation

About the project

Nigeria has witnessed a growing interest and investment in AI-driven solutions across sectors, including healthcare. Recent initiatives such as the [National Centre for Artificial Intelligence and Robotics \(NCAIR\)](#), the [National Information Technology Development Agency \(NITDA\)](#), AI Innovation Hub, the [Artificial Intelligence Research Scheme](#), and the [National Artificial Intelligence Strategy Workshop](#) reflect the government's commitment to fostering AI innovation and development in the country.

According to the [Nigeria Artificial Intelligence \(AI\) in Healthcare Market Analysis](#), AI in the healthcare market is expected to witness significant growth, surging from \$0.01 billion in 2022 to \$0.13 billion by 2030, reflecting a notable compound annual growth rate (CAGR) of 46.22%.

Despite progress, challenges such as a shortage of skilled AI professionals, limited access to quality healthcare data and inadequate infrastructure remain. However, Nigeria's

large population, digitalisation trends, and increasing focus on AI for economic growth present significant opportunities for AI applications in healthcare.

In March 2024, Science for Africa Foundation (SFA Foundation), mDoc, and Nigeria Health Watch hosted a hybrid stakeholder convening, "The Nigerian AI Healthcare Horizon: Policy Strategies and Gaps." The event explored the current landscape of AI adoption in Nigerian healthcare, including benefits, challenges, and policy recommendations to guide AI's ethical and responsible use in healthcare.

This policy brief discusses key focus areas emerging from the convening, including regulatory frameworks, data governance, capacity building, research and innovation and international collaboration, to maximise AI's benefits in healthcare while mitigating risks.



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Vivianne Ihekweazu, Managing Director, Nigeria Health Watch speaks at the stakeholder convening, *The Nigerian AI Healthcare Horizon: Policy Strategies and Gaps* held in Abuja, Nigeria from 21-22 March 2024. PHOTO | Nigeria Health Watch



Participants at the stakeholder convening, *The Nigerian AI Healthcare Horizon: Policy Strategies and Gaps*, organised by the SFA Foundation, mDoc, and Nigeria Health Watch held in Abuja, Nigeria from 21-22 March 2024. PHOTO | Nigeria Health Watch

Policy and Political Environment for AI in Healthcare in Africa, with focus on Nigeria



The policy and political environment for AI in healthcare in Nigeria recognises the potential of Artificial Intelligence (AI) in transforming healthcare within the region and across Africa:



1 The AU Agenda 2063 identifies Science, Technology and Innovation (STI), including AI, as a crucial tool for achieving continental development goals.



2 The AU's Development Agency (AUDA-NEPAD) and the High-Level Panel on Emerging Technologies (APET) are promoting responsible AI adoption, ensuring its ethical, transparent and accountable use.



3 In Nigeria, stakeholders have identified the potential for AI to help strengthen key health systems such as Health Financing, Human Resources for Health, Infrastructure and Equipment, Governance & Regulations and Standards.



4 Challenges include inadequate funding, limited quality human resources for health, unreliable data collection, limited healthcare infrastructure, complex supply chains, procurement inefficiencies and fragmentation across the government.



5 AI can address these challenges through focused policies and data-driven decision-making, fostering improved collaboration among stakeholders by automated information sharing and coordination to enhance accountability and transparency in healthcare management.

Alignment with Health System Strategic Agenda

Nigeria's strategic [4-point agenda](#) for the health system, focusing on effective governance, improved population health outcomes, an enhanced healthcare value chain and health security, provides a road-map for AI integration. AI solutions can bridge healthcare gaps, optimise resources, and empower decision-making that is aligned with healthcare objectives.

The integration of Artificial Intelligence (AI) in Nigerian healthcare could prove transformational because it has the potential to achieve:



Improved Patient Outcomes:

AI can enable accurate diagnoses, digitalisation of treatments and better disease management, enhancing health outcomes.



Operational Efficiency:

Automation and digitalisation of tasks streamline workflows, reduce administrative burden and increase overall efficiency in healthcare delivery.



Data-Driven Decision-Making:

AI can provide actionable insights from data analysis, empowering informed decision-making and proactive interventions.



Technological Advancement:

AI adoption promotes innovation, keeping Nigerian healthcare at the forefront of digital transformation.



Cost Savings and Resource Optimisation:

Improved efficiency leads to cost savings, better resource mobilisation and financial sustainability.



Interconnected Healthcare Ecosystem:

AI fosters collaboration, data sharing and coordination among stakeholders, enhancing patient experiences and holistic healthcare delivery.

Gender Equity and Inclusivity: Fostering inclusivity to create an ecosystem that ensures that Nigeria is an AI superpower in health.

There was consensus that gender gaps in AI is a result of the exclusion of women at every stage of the AI life cycle, which risks creating an inequitable economic and technological system. Several factors contribute to this inequity:



Lack of Specific AI Policies:

There is no specific policy or strategy for AI on the African continent. This lack of direction can hinder the development and implementation of AI technologies.



Limited Gender and Youth References:

Policy documents make very limited reference to gender, women and youth. When these groups are mentioned, they are often just statements of intent without detailed plans for implementation.



Lack of Gender Consideration in and Integration of ICT Ministry Policies:

Most AI policy documents are housed in the Ministries of ICT, with no reference to gender, finance or education ministries. This suggests a lack of interdisciplinary collaboration in the formulation of AI policies.

Challenges and Opportunities in AI Adoption

Challenges to adoption of AI are significant, and include a shortage of skilled AI professionals, limited data access, and infrastructure gaps for capacity building, data infrastructure enhancement and technological advancements to enhance healthcare delivery and outcomes.

In Nigeria, leveraging artificial intelligence (AI) in healthcare is promising but challenging; several obstacles must be addressed for successful integration and impact:

Key areas to address



Limited healthcare data access:
Challenges in obtaining quality data for AI algorithms.



Infrastructure gaps, especially in rural areas:
Hindrances in real-time data processing.



Shortage of skilled AI professionals:
Lack of expertise in developing AI solutions.



Absence of clear regulatory frameworks:
Concerns about data privacy and accountability.



Key Policy Recommendations

A strategic roadmap must be charted to navigate the complexities of integrating AI into Nigeria's healthcare landscape. This journey requires concerted effort from the government, healthcare institutions, and STI stakeholders to ensure that AI adoption aligns with ethical standards, regulatory compliance and patient-centric care.

To achieve this, there was consensus that the following recommendations must be implemented to position the country to successfully integrate and utilise AI technologies in Nigerian healthcare:

1

Policy Alignment:

Develop and implement AI policies aligned with Nigeria's healthcare objectives, emphasising ethical governance, data privacy, transparency and accountability.

2

Capacity Building:

Invest in training programmes to equip healthcare professionals with AI skills, ensuring a skilled workforce capable of leveraging AI technologies effectively.

3

Data Privacy:

Ensure AI systems handling personal data comply with data protection regulations such as the Nigeria Data Protection Regulation.

4

Transparency:

To maintain informed consent and trust, transparency must be integrated throughout AI-driven processes, especially in diagnostics and treatment plans.

5

Regulatory Compliance:

Ensure AI systems meet legal requirements and undergo regulatory approval, consistent with existing healthcare regulations and standards.



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