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ARTIFICIAL INTELLIGENCE (AI), DATA GOVERNANCE, AND DIGITAL INCLUSION

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POLICY BRIEF

ARTIFICIAL INTELLIGENCE (AI), DATA GOVERNANCE, AND DIGITAL INCLUSION: LESSONS FROM AI-ASSISTED TUBERCULOSIS (TB) DETECTION IN ZAMBIA

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KEY TAKEAWAYS

- AI can enhance healthcare and digital inclusion: AI-assisted diagnostics can extend high-quality care to underserved and rural populations.
- Current laws create a legal grey zone: Zambia's Data Protection Act (2021) was not designed for AI in healthcare, creating risks around consent, secondary data use, and cross-border data transfers.
- Legal Frameworks must adapt: Without reform, Zambia risks stifling lifesaving innovations or undermining privacy rights and trust in the legal system. AI deployment must align with modern data protection and ethical standards.

KEY RECOMMENDATIONS

- Enhanced protections for health data: Allow secondary use of anonymised health data for AI training under strict legal safeguards.
- Improved transparency and consent protocols: Ensure that patients are informed whenever AI is used in decision-making and that explicit informed consent is obtained.
- Updated cross-border data rules: Allow AI-relevant health data transfers abroad under internationally recognised safeguards.

INTRODUCTION

Artificial Intelligence (AI) is creating new opportunities for Zambia's social and economic development. But does the use of AI systems in Zambia's health sector breach the law?

In healthcare, AI tools such as TB diagnostic platforms can deliver faster, more accurate results and extend services to underserved populations. These innovations hold the promise of advancing digital inclusion, ensuring that all citizens, regardless of location or income, can benefit from technological innovations in modern medicine.

In Zambia, AI is being used in various pilot and research projects for TB detection (via chest X-rays,[1] cough sound,[2] ultrasound [3]). While this technology is not yet deployed in national TB screening programs, all indications point to the desire to eventually mainstream this technology.

[1] *CIDRZ, 'Centre for Infectious Disease Research in Zambia (CIDRZ) Partners with Qure.ai for TB Screening' (14 July 2022) <https://www.cidrz.org/2022/07/14/centre-for-infectious-disease-research-in-zambia-cidrz-partners-with-qure-ai-for-tb-screening> accessed 26 September 2025.*
[2] *Saboi Songiso, 'CIDRZ Partners with University of Sheffield to Develop AI-Based TB Screening Tool' cidrz.org (13 February 2025) <https://www.cidrz.org/2025/02/13/cidrz-partners-with-university-of-sheffield-to-develop-ai-based-tb-screening-tool/> accessed 27 September 2025*
[3] *Augustine Sichula, 'Govt Initiates Pulmonary Tuberculosis Diagnosis Study, Targets Application of Artificial Intelligence' Zambia Monitor (14 June 2025) <https://www.zambiamonitor.com/govt-initiates-pulmonary-tuberculosis-diagnosis-study-targets-application-of-artificial-intelligence/> accessed 27 September 2025.The initiative is being implemented in collaboration with Zambart, Kanyama Level One Hospital, and other stakeholders.*

Yet, the law lags behind. Zambia's Data Protection Act (2021) regulates the use, transfer, and disclosure of data[4]. However, this law was not written with AI-assisted healthcare in mind. Under the current legal framework, a hospital using an AI system to screen for TB may be in technical breach of the law, even if they act in good faith to improve care and outcomes.

When innovation outpaces the law, regulators face a difficult choice: either ignore breaches and expose citizens to privacy violations or strictly enforce existing laws and stifle innovations that could save lives. Both outcomes are harmful.

Opportunity for Reform

It is timely that the Zambian Cabinet has, in principle, approved the introduction of a Bill in Parliament to repeal the Data Protection Act[5]. The goal is to expand Zambia's legal framework on data management to address emerging technologies, including "artificial intelligence (AI), machine learning, and data analytics."[6] This represents an important opportunity to align legal frameworks with technological realities.

Purpose of Policy Brief

Using the deployment of AI in TB management as a case study, this policy brief highlights how innovation is rapidly outpacing regulation. It argues that while AI has the potential to transform healthcare and promote inclusion, law reform must move swiftly to keep pace. Since a review of the Data Protection Act is already in the pipeline, this brief offers practical policy recommendations for ensuring that reform aligns with global best practices in AI data protection.

The brief begins by highlighting the potential of AI to transform healthcare in Zambia. It then examines the legal grey zones in the current Data Protection Act, detailing risks around consent, secondary data use, and cross-border transfers, as well as the heightened vulnerability of marginalised communities who are used as data subjects. Building on this analysis, the brief outlines practical policy recommendations, including enhanced protections for health data, strengthened transparency and consent protocols, and updated cross-border data transfer rules.

AI IN HEALTHCARE: OPPORTUNITIES FOR INCLUSION

TB remains a leading cause of death in Zambia, and diagnosis depends on skilled radiologists.[7] Zambia's healthcare system struggles with limited capacity, poor geographic coverage, and specialist shortages.[8] Since only a few radiologists serve the population, delays in TB diagnosis are common, and cases are often missed. AI offers promising tools to help bridge these gaps, and the TB chest X-ray diagnostic tool is one example. The tool can analyse X-rays rapidly, flagging suspicious cases for medical review. This speeds up diagnosis, reduces workload, and ensures that patients in rural or resource-poor facilities have access to high-quality diagnostics.

Several AI-powered TB diagnostic projects have been piloted in Zambia in recent years and show the promise of AI in improving TB diagnosis. Between 2021 and 2023, a prospective validation study evaluating AI for TB detection in high TB/HIV burden settings was conducted in Lusaka (Chawama, Kanyama, and Chainda).[9] The study found, in part, that AI's performance in detecting TB "was comparable to that of radiologists across most subgroups." [10]

In 2022, the Centre for Infectious Disease Research in Zambia (CIDRZ) and Qure.ai partnered to deploy the qXR chest X-ray tool, an AI-assisted TB screening tool, across seven hospitals in 7 sites (Kanyama, Chawama, Matero, Choma, Kafue, Monze, and Livingstone).[11] The qXR tool is trained using thousands of chest X-rays and learns to spot the differences between healthy lungs and those showing signs of TB. Once trained, the system can analyse a new patient's digital X-ray in seconds, highlight suspicious areas, and generate an alert for possible TB. The tool does not make the final diagnosis, but instead assists clinicians to prioritise which images need closer human review.

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[4]Data Protection Act No 3 of 2021.
[5]Ibid
[6]Bumba Mulenga, 'Cabinet Approves Repeal of Data Protection Act to Broaden Legal Framework for AI, Analytics' (Zambia Monitor ,25 April 2025) <https://www.zambiamonitor.com/cabinet-approves-repeal-of-data-protection-act-to-broaden-legal-framework-for-ai-analytics/> accessed 27 September 2025.
[7]National Center for Biotechnology Information, 'PMC11182540' PubMed Central <https://pmc.ncbi.nlm.nih.gov/articles/PMC11182540> accessed 27 September 2025; see also Rebecca Sohn, 'AI Matches Doctors in Screening for Tuberculosis' (IEEE Spectrum ,24 September 2022) <https://spectrum.ieee.org/tuberculosis-screening-ai> accessed 27 September 2025.
[8]MDPI, 'International Journal of Environmental Research and Public Health, Volume 22, Issue 1' <https://www.mdpi.com/1660-4601/22/1> accessed 27
[9]National Center for Biotechnology Information, 'PMC11737584' PubMed Central <https://pmc.ncbi.nlm.nih.gov/articles/PMC11737584> accessed 27 September 2025.
[10]Ibid.
[11]CIDRZ, 'TB Screening Partnership with Qure.ai' (n 1).

The TB AI diagnostic tool, if mainstreamed, can advance digital inclusion in healthcare by extending access to quality diagnostic services into underserved communities. But while the benefits of AI-assisted TB detection are clear, it is important to examine whether Zambia's current legal framework adequately supports the use of such systems. If gaps exist, urgent reforms are required to ensure that when these technologies are ready for nationwide deployment, the law keeps pace. The next section of this brief evaluates whether the introduction of AI in TB screening is permissible under the existing laws.

THE LEGAL GREY ZONE

AI diagnostic tools like the TB detection system rely on data to function. Therefore, the rules that govern how data is collected, used, stored, and shared are central to determining how AI can lawfully be deployed in the healthcare sector. In Zambia, these rules are set out primarily in the *Bill of Rights*[12], *the Data Protection Act 2021*[13], *and the Health Professions Act 2024*[14] .

Article 32[15] of the Bill of Rights accords people the Right to Protection of privacy of person, home, property and communication. It states that; "A person has the right to privacy, which includes the right not to - (a) be searched; (b) have that person's home or property searched; (c) have that person's possessions seized; (d) have information relating to that person's family, health status or private affairs unlawfully required or revealed; or (e) have the privacy of that person's communications infringed. This constitutional protection is reinforced by the Data Protection Act, which provides specific regulations for the use and processing of personal data in Zambia.

The Act establishes several key safeguards, most notably the right to provide consent before personal data is collected or processed, clear limits on the purposes for which the data may be used, and protections governing the transfer of data across borders.

Specifically, the Act mandates the following:

- Consent must be obtained before collecting or processing personal data.[16]
- The right to withdraw consent must be clearly explained to the data subject.[17]
- Data processors must be able to demonstrate that the data subject has provided consent.[18]
- Consent can be withdrawn at any time by the data subject.[19]
- Where the data subject is incapable of giving consent (e.g., a child), consent must be provided by a lawfully authorised person, such as a parent or guardian.[20]
- Collected data may only be used for the specific purpose for which it was collected.[21]
- Cross-border transfers of sensitive data are prohibited.[22]

It is important to note that safeguards for processing medical data under the Act are even more stringent than for ordinary personal data. The Act classifies medical data as "sensitive data" and generally prohibits its processing.[23] An exception exists for processing medical data for diagnostic purposes and the provision of healthcare[24], but this only applies when the data is handled in accordance with obligations set by professional and regulatory bodies.[25] For medical data, the relevant authority is the Health Professions Council of Zambia (HPCZ), which is mandated to publish a binding code of ethics for all health practitioners.[26] This code requires that a patient's informed consent be obtained

[12] *Constitution of Zambia (Amendment) Act No 2 of 2016, Part III (Bill of Rights).*
[13] *Data Protection Act No 3 of 2021.*
[14] *Health Professions Act No 24 of 2024.*
[15] *Constitution of Zambia, art 32.*
[16] *Data Protection Act No 3 of 2021, s 15(1).*
[17] *Ibid, s 15(3).*
[18] *Ibid, s 15 (4).*
[19] *Ibid, s 15(6).*
[20] *Ibid, s 17(1).*
[21] *Ibid, s 51(1).*
[22] *Ibid, s 70(3).*
[23] *Ibid, s 2*
[24] *Ibid, s 14(1)(b).*
[25] *Ibid, s 14(2).*
[26] *Health Professions Act No 5 of 2024, s 65.*

before any treatment or intervention, and defines informed consent as "giving sufficient information in a way that patients can understand, to enable them to exercise their right to make informed decisions about their care."[27]

CASE STUDY

Some of the legal grey zones in AI-assisted healthcare are evident in the following scenario:
Patient A is a farmer living in a rural district far from Lusaka. After weeks of persistent coughing and fatigue, he visits the nearest health centre, which recently received an AI-assisted chest X-ray machine as part of a TB screening initiative. The nurse explains that an X-ray will help check his lungs. Patient A agrees, believing the image will be reviewed by a doctor. Instead, the digital X-ray is immediately uploaded to an AI system, which scans the image and flags a high likelihood of TB. A doctor later reviews the result and confirms the diagnosis.

From a medical perspective, the AI tool has helped Patient A receive a faster, more accurate (and potentially lifesaving) diagnosis than would have been possible otherwise. But from a legal standpoint, the following legal problems emerge:

- **Consent:** Patient A agreed to have an X-ray taken for review by a doctor, but did not also agree for that same image to be analysed by AI. Unless the nurse explained this clearly, informed consent is incomplete.[28]
- **Secondary data use:** Patient A's X-ray may later be used to train another AI system. Legally, this is a new purpose requiring additional consent that cannot realistically be obtained from Patient A.
- **Cross-border transfer:** Patient A's X-ray may be stored on a server outside Zambia. This is a cross-border flow of sensitive data that requires consent from the Data Commissioner. Without formal authorisation from the Data Commissioner, hospitals risk violating the Act simply by using the TB tool.

Beyond the legal issues raised in the scenario, using AI-enabled healthcare can also promote exploitation and deepen existing inequalities.

AI healthcare systems rely on sensitive medical data; which without strong safeguards can be misused, shared, or repurposed indefinitely. Vulnerable communities in Zambia (including rural populations, women, people living with HIV, and low-literacy groups), face heightened risks. Even when consent is obtained from these groups, many patients may not fully understand the terms and conditions under which their data will be processed. There is always the risk that research on data provided by vulnerable communities could benefit medical advancements abroad while offering limited advances to the local populations that provided the data.

While AI has the potential to bring high-quality care closer to all Zambians, and to promote digital inclusion and social development, its use in health centres under the current legal framework would constitute a breach of the law. Regulators thus face a dilemma: they can enforce the law strictly, potentially blocking lifesaving innovations, or they can turn a blind eye, undermining the law's credibility, violating patients' privacy rights, and creating risks of exploitation and discrimination. Neither outcome is desirable. The lesson is clear: without legal reform, the gap between AI innovation and existing law threatens both Zambia's capacity to innovate and the integrity of its legal system.

POLICY RECOMMENDATIONS: CLOSING LEGAL GAPS IN ZAMBIA'S DATA PROTECTION ACT

The World Health Organization (WHO) Global Strategy on Digital Health classifies health information as "sensitive personal data" requiring "a high standard of safety and security." As such, the strategy calls for states to adopt "strong legal and regulatory framework[s] to protect the privacy, confidentiality, integrity, availability and processing of personal health data".[29]

[27] *Health Professions Council of Zambia (HPCZ), Code of Ethics (2014) https://www.hpcz.org.zm/.*
[28] *Even if Patient A consents to the AI intervention, the Act empowers him to withdraw that consent at any time. If the patient's image is already being used for training by multiple AI systems, withdrawal is a practical impossibility.*
[29] *World Health Organization, 'Global Strategy on Digital Health' (WHO, 2021) <https://www.who.int/docs/default-source/documents/gs4dhdaa2a9f352b0445bafbc79ca799dce4d.pdf> accessed 27 September 2025.*

Zambia's Data Protection Act lays an important foundation for data privacy, but it was not written with AI in mind. To reduce the tension between health technology innovation and data protection rights, Zambia should update its data protection law to explicitly classify AI-driven processing of personal data as a distinct category of data use. In addition, the following three reforms should be considered.[30]

1. ENHANCED PROTECTIONS FOR HEALTH DATA

While international best practice on data protection permits the secondary use of health data for research, innovation, and public health purposes,[31] the law should be amended to include a framework for secondary use of health data by AI under strict safeguards.

- **Proposed Reform:** Permit secondary use of health data for AI training only under the following strict safeguards:
- Legal Basis: Processing must be grounded in Article 6(1) of the GDPR, with explicit authorisation under Article 9(2)(j) for special categories of data, including health information.
- Purpose Limitation: Data collected for one purpose can be further processed for scientific research if compatible, as per Article 5(1)(b), provided appropriate safeguards are in place.
- Safeguards: Implementations must include data minimisation, pseudonymisation, and secure processing environments to protect individual privacy.
- Transparency and Accountability: Data subjects should be informed about the use of their data, and organisations must maintain records of processing activities.

    * Organisations must disclose when personal data will be processed by AI and obtain specific consent for this purpose.
    * Data must be fully anonymised.
    * Ethical oversight must be in place for sensitive datasets.
    * Sensitive data must be securely stored with strict conditions on any transfer..
    * The use of health data for unrelated commercial purposes must be prohibited.

- **Example:** A TB research centre in Lusaka wants to improve an AI tool that diagnoses TB from chest X-rays. Under the proposed safeguards, patients have been informed that their data will be processed by AI, and specific consent has been obtained. Patients records are anonymised, stored securely in Zambia, and transferred only to an AI platform approved by ethical review.

2. IMPROVED TRANSPARENCY AND CONSENT PROTOCOLS

The Act should be clarified to extend patient rights into the AI context. Consent mechanisms should be tailored to AI use so that patients can make informed decisions about their care. Processing health data should require explicit consent from the data subject.[32] Patients should have the right to know when AI is used in decision-making, to receive a simple explanation of how AI contributed to the outcome, and to appeal any adverse decision to a human reviewer.

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[30]The reforms recommended in this policy brief reflect globally recognized best practices, guided by the standards set out in the EU General Data Protection Regulation (GDPR), widely regarded as the global gold standard for data protection, particularly in the age of AI, available at EU, General Data Protection Regulation (GDPR) (gdpr-info.eu, 2016) <https://gdpr-info.eu/> accessed 27 October 2025

[31]The GDPR permits the secondary use of health data for purposes such as research, innovation, and public health, provided certain conditions are met:

- *Legal Basis: Processing must be grounded in Article 6(1) of the GDPR, with explicit authorization under Article 9(2)(j) for special categories of data, including health information.*
- *Purpose Limitation: Data collected for one purpose can be further processed for scientific research if compatible, as per Article 5(1)(b), provided appropriate safeguards are in place.*
- *Safeguards: Implementations must include data minimization, pseudonymization, and secure processing environments to protect individual privacy.*
- *Transparency and Accountability: Data subjects should be informed about the use of their data, and organizations must maintain records of processing activities.*

[32]Processing health data under the GDPR, mandates obtaining explicit, informed, and unambiguous consent from the data subject. To comply with this standard, organisations must ensure that consent is freely given, specific, and can be withdrawn at any time: see GDPR, art 9).

- **Proposed Reform:** Enact provisions to ensure that patients can:
- Know when AI is used in decision-making.
- Receive a simple explanation of AI outcomes.
- Have the right to explicit informed consent.
- Appeal to a human reviewer if adversely affected.

- **Example:** Explicit, informed consent must be sought from a patient receiving an AI-assisted chest X-ray at Kanyama Hospital. The patient should be told clearly: "This image will be scanned by an AI system that helps detect TB." The patient must receive a basic explanation of the technology, and be assured that a doctor will review the results if the patient so wishes.

3. CROSS-BORDER DATA RULES FOR AI

Zambia's cross-border data rules must be updated to reflect the reality that many AI systems rely on cloud-based processing hosted abroad.

- **Proposed Reform:** Update cross-border provisions in the Act to allow health data transfers for AI purposes where internationally recognised safeguards are in place. Best practices[33] for safeguarding in this area include:
  * **Adequacy Decisions:** The data protection authority determines if another country's laws provide protections equivalent to Zambia's. A "safe country" list can guide where data can be sent.
  * **Secure Mirroring Abroad with Local Storage:** Original data stays in Zambia under Zambian law, while mirrored copies abroad are encrypted and protected, ensuring safety even if foreign systems are compromised.
- **Example:** Kitwe General Hospital uses a cloud-based AI system hosted in Johannesburg to diagnose TB. South Africa is on Zambia's safe list. Encrypted and anonymised mirrored copies of patient data are transferred to South Africa while all personally identifiable information remains protected under Zambian law.

CONCLUSION

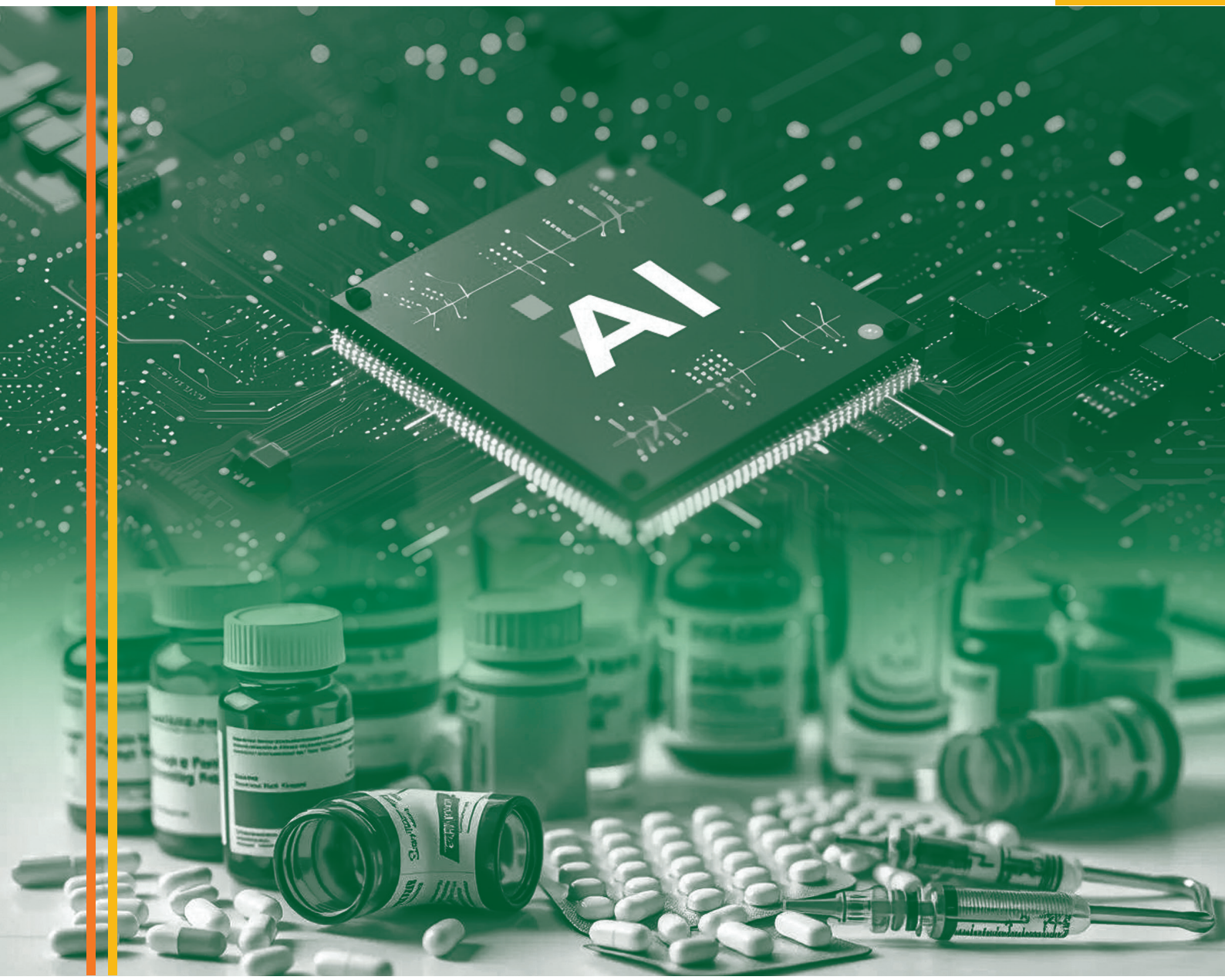
AI presents Zambia with an important opportunity to transform healthcare and expand digital inclusion. The TB AI case study demonstrates both the promise and the risks: technology can save lives, but it can also promote legal uncertainty and rights violations.

If left unaddressed, these risks threaten innovation, digital inclusion and the rule of law. Zambia must act quickly to update its Data Protection Act and build regulatory capacity. By doing so, it can ensure that AI strengthens healthcare access, protects privacy, and reinforces trust in both technology and the law.

With proactive reform, Zambia can position itself as a regional leader in ethical, inclusive, and lawful AI deployment, showing that innovation and the rule of law can advance together.

[33] *European Union's General Data Protection Regulations and data localization and cloud security practices.*

Lessons from AI-Assisted Tuberculosis (TB) Detection in Zambia



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