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Innovative Health

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Questions based on: WHO (2021) report *Ethics and Governance of Artificial Intelligence for Health* (available at https://www.who.int/publications/i/item/9789240029200Links to an external site.).

Question 1: *The WHO identifies six ethical principles for the governance of AI in health. Which one do you believe is the most difficult to implement in practice, and why? Use a real or hypothetical example to support your answer.*

Among the six ethical principles outlined by the WHO (2021), ensuring transparency, explainability, and intelligently is particularly challenging to implement in practice. AI systems, especially those using complex algorithms like deep learning, often operate as "black boxes," making it difficult for healthcare providers and patients to understand how decisions are reached. This can undermine trust and complicate accountability, as users may not be able to verify or contest AI-generated health recommendations.

For example, in a South African public hospital, an AI tool might prioritise patients based on data patterns that are not clear to clinicians or patients, potentially leading to mistrust or perceived unfairness. This challenge is heightened in contexts with limited technical expertise to interpret AI outputs or to audit algorithms for bias or errors. The WHO report emphasises that without transparency, human autonomy is at risk because patients and providers cannot meaningfully engage with or challenge AI decisions (WHO, 2021, p. 6).

Question 2: *Reflecting on South Africa's health system, what are the greatest risks posed by the adoption of AI in healthcare? How might these risks disproportionately affect vulnerable or underserved populations?*

The WHO (2021) report highlights several risks associated with AI adoption in healthcare, many of which are acute in low- and middle-income countries like South Africa. Key risks include bias

and inequality, where AI trained on data that does not represent diverse populations may perpetuate or worsen existing health disparities. Vulnerable groups, such as rural communities or those with limited access to digital infrastructure, may receive suboptimal care if AI systems fail to account for their specific health profiles. Additionally, data privacy and security concerns are significant, as weak governance could lead to misuse of sensitive health information. The report also warns about accountability gaps, where unclear responsibility for AI-driven decisions could leave patients without recourse in cases of harm (WHO, 2021). These risks disproportionately affect underserved populations by exacerbating barriers to quality care and eroding trust in health services.

Question 3: *The WHO calls for inclusiveness and participatory design in the development of AI systems. What might meaningful participation look like in the South African context? Who needs to be involved, and what barriers might prevent their involvement?*

The WHO calls for inclusiveness and participatory design to ensure AI systems serve all populations equitably (WHO, 2021). In the South African context, meaningful participation would involve engaging a broad range of stakeholders, including patients from marginalised communities, frontline healthcare workers, community leaders, ethicists, policymakers, and local technologists. Participation could take the form of community consultations, co-design workshops, and ongoing feedback mechanisms to ensure AI tools address real health needs and cultural contexts. But, barriers such as limited digital literacy, language diversity, socio-economic disparities, and power imbalances may worsen effective involvement of vulnerable groups. Overcoming these barriers requires deliberate efforts to build capacity, foster trust, and create accessible platforms for dialogue, ensuring that AI development is responsive to the needs and rights of all South Africans (WHO, 2021).