

# Comment on: Implementation of a formalized evaluation and planning tool to improve pediatric oncology outcomes in Kenya

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August 24, 2024

**Article type:** Letter – To the editor

**Title:** Comment on: Implementation of a formalized evaluation and planning tool to improve pediatric oncology outcomes in Kenya

**Subtitle:** Bridging Gaps: AI-Driven Healthcare Equity for Low and Middle-Income Countries

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0009-0009-5913-7064 Word count: 499

Figure: 01

**Key words:** Artificial Intelligence, Low and Middle-Income Countries, Virtual Tumor Board, Pediatric Cancer, Equity.

**Author Contribution:** AK: Conceptualization, writing, editing AT: Writing, draft the original manuscript.**Consent to participate:** NA

**Consent for publication:** NA

**Ethical approval:** NA

**Conflict of interest :** The authors declare no conflict of interest

**Funding :** NA

List of Abbreviation

Abbreviation	Definition
AI	Artificial Intelligence
Low and middle-income countries	LMIC
Pediatric Oncology Facility Integrated Local Evaluation Tool's	PrOFIE
Virtual tumor boards	VTB
Virtual tumor board meeting	VTBM

Letter to the editor,

Childhood cancer in sub-Saharan Africa remains significantly underdiagnosed, contributing to the alarmingly low survival rates.<sup>1</sup> In low and middle-income countries (LMICs), where 90% of these cases occur, the five-year survival rate is below 20%. Furthermore, treatment-related deaths in these regions occur at a concerning rate of approximately 1 in 15 cases.<sup>2</sup> These statistics highlight a critical need for targeted interventions. The article "Implementation of a formalized evaluation and planning tool to improve pediatric oncology outcomes in Kenya" Mutua et al, underscores this urgency by the use of the Pediatric Oncology Facility Integrated Local Evaluation Tool's (PrOFIE) role in enhancing pediatric Oncology care through the hybrid workshops in Kenya.<sup>3</sup> While commendable, further advancements by integrating artificial intelligence (AI) and Virtual tumor boards (VTBs) could potentially enhance these efforts and improve outcomes.

AI could transform how we diagnose and treat pediatric cancer patients, advancing pediatric oncology care in LMICs. Firstly, establishing collaborations with international AI research institutions can help in adapting existing AI models to the local context. Furthermore, integrating AI tools for image processing and analysis can be piloted, ensuring that data privacy and ethical considerations are strictly followed. Training local healthcare professionals on the use of AI technologies and creating a robust data-sharing framework across institutions will also be crucial. These steps can help harness AI to improve pediatric cancer care in Kenya, aligning with global advancements in this field.

According to a study, AI has shown the potential to accelerate image acquisition, improve image quality, and reduce radiation exposure for children undergoing cancer treatment.<sup>4</sup> By leveraging AI for image reconstruction, segmentation, and treatment response monitoring, clinicians can achieve more accurate and timely diagnosis, leading to better treatment planning and outcomes.

Moreover, AI's ability to analyze large datasets with high precision helps in the early detection of cancers, identifying patterns and anomalies in medical images and genomic data that might be missed by human analysis. This capability is crucial for early intervention and personalized treatment plans tailored to the specific genetic makeup of each patient, thereby enhancing treatment efficacy and minimizing side effects.<sup>5</sup> AI also streamlines clinical workflows by automating routine tasks, which allows healthcare professionals to dedicate more time to patient care. This efficiency ensures that administrative and diagnostic procedures are managed effectively, optimizing the use of resources and improving overall healthcare delivery. Additionally, AI accelerates the research and development of new treatment protocols by swiftly analyzing complex biological data, resulting in quicker and more accurate discoveries. The incorporation of AI enhances clinical precision and promotes continuous innovation in treatment approaches, leading to better patient outcomes.

Furthermore, integrating virtual tumor board meetings (VTBMs) into pediatric oncology in Kenya can significantly improve patient outcomes by enabling multidisciplinary collaboration and decision-making. Research demonstrates that VTBMs enhance access to specialized oncology care and facilitate the sharing of expertise across institutions, particularly benefiting underserved populations.<sup>6</sup> In Kenya, this would involve regular video conference sessions where local and international specialists discuss complex cases, ensuring that patients receive comprehensive and timely care. (Figure 1)

Figure 1: Application strategy and benefits of AI and VTBM in Kenya

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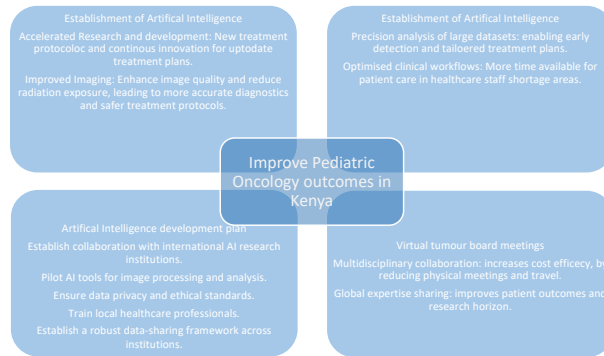


Figure 1: Application strategy and benefits of AI and VTBM in Kenya