Utilizing Artificial Intelligence for the Future of Pediatrics

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TO THE EDITOR

Artificial Intelligence (AI) is a revolutionary technology in medicine, and its use in pediatrics shows immense promise. AI in India and the world has already started to influence pediatric practice, especially in diagnosis, risk estimation, and personalized treatment. Nevertheless, the technology also brings along some specific challenges and ethical issues that need to be thoroughly examined and adopted into practice with caution

Artificial intelligence-enhanced diagnostic systems have been highly successful in pediatric radiology, particularly in chest X-ray interpretation for tuberculosis and pneumonia and neuroimaging for the detection of child brain tumors [1]. AI systems have the potential to improve diagnostic results and minimize inter-observer variation—particularly useful in resource-poor areas where pediatric radiology experts may be in short supply.

Moreover, risk prediction models based on artificial intelligence are being built for neonatal sepsis, congenital malformations, and adverse effects of drugs [2]. These will aid in early treatment and improved clinical outcomes. For India, where infant and newborn mortality remain a public health issue, AI can become an even more effective means of community-based newborn care since it would be compatible with digital health records as well as telemonitoring platforms.

Aside from such developments, massive hurdles remain. One of these is the availability of pediatric datasets on which algorithms can be trained for AI leading to biased low-performing models when deployed over large populations [3]. Ethical data privacy is another issue in pediatric groups where informed consent is complicated and long-term impacts of data unknown.

Also critical is the necessity to provide equitable access to AI-driven technologies across India's pluralistic healthcare ecosystem. Urban tertiary care facilities would be more inclined to adopt these innovations, and rural and disadvantaged communities would lag behind—enlarging the health equity gap [4].

To achieve its full potential in pediatrics, a multidisciplinary effort that includes clinicians, data scientists, ethicists, and policy-makers is required. Revisions in medical curricula must be considered to include digital health tools and AI ethics in pediatricians-in-training. At the same time, regulatory systems must be adapted to enable making AI tools safe, intelligible, and child-specific [5].

In summary, AI is not an all-in-one solution but a powerful ally to clinical judgement. Sensitive utilisation, contextualization, and firm ethical regulation will be crucial to making sure that AI enhances rather than complicates pediatrics in India.