
Artificial Intelligence for Global Health: Learning From a Decade of Digital Transformation in Health Care

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Introduction

What are necessary considerations for deploying AI/ML in the context of resource-poor health systems?

- Low-and-Middle Income Countries (LMICs) have already been undergoing a digital transformation of their own in health care over the last decade, due to adoption of of mobile health (mHealth)
 - Identifying key case examples in order to derive insights and best practices
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Complexities of Capacity

The Potential of of AI/ML to address unmet health needs

- Large proportion of DL/CV research motivated by the need to address “shortage of experts”, or to “shorten the gap between doctors at different levels”
 - Narratives around AI-systems “beating” physicians, or which heavily focus on AUC reporting are unhelpful in LMIC context
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Human-machine partnership with artificial intelligence for chest radiograph diagnosis

Bhavik N. Patel [✉](#), Louis Rosenberg, Gregg Willcox, David Baltaxe, Mimi Lyons, Jeremy Irvin, Pranav Rajpurkar, Timothy Amrhein, Rajan Gupta, Safwan Halabi, Curtis Langlotz, Edward Lo, Joseph Mammarrappallil, A. J. Mariano, Geoffrey Riley, Jayne Seekins, Luyao Shen, Evan Zucker & Matthew P. Lungren

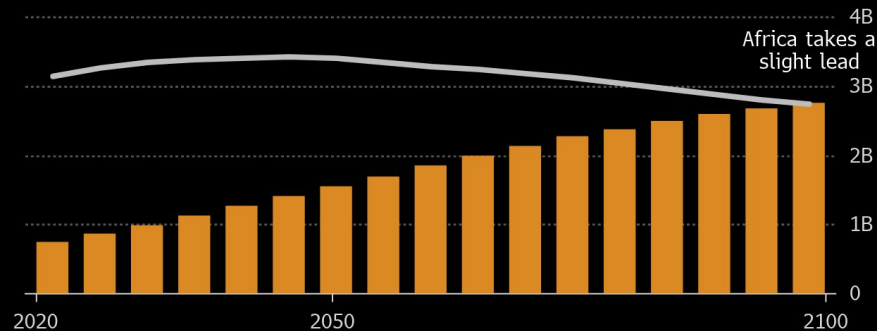
npj Digital Medicine 2, Article number: 111 (2019) | [Cite this article](#)

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Swap

Africa's working age population will overtake Asia's by the end of the century

■ Africa / ✂ Asia



Note: Projected population of 15 to 64 year olds
Source: United Nations

Bloomberg

Appl Clin Inform 2017; 08(03): 826-831
DOI: 10.4338/ACI-2017-03-CR-0046



Case Report

Schattauer GmbH

Barriers to Achieving Economies of Scale in Analysis of EHR Data

A Cautionary Tale

Mark P. Sendak, Suresh Balu, Kevin A. Schulman

Further Considerations and Challenges

Poor or Fragmented Infrastructure is a highly contextual problem to solve

- Many patients may be treated at different hospital systems and at different times, resulting in fragmented and duplicate records
 - Data privacy concerns for platforms in heavy use for patient communities (i.e Facebook Groups)
 - Lack of clear and uniform clinical guidelines for specific diseases and care management
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Positive Impact Examples: OpenMRS and DHIS2

Strong open source roots in the development of software tools contribute to success of deployment

- OpenMRS - an open source medical record system - adoption in hundreds of health systems, developed in tandem with health care workers
 - DHIS2 - a health management information system to store and retrieve medical data - utilized in South Africa, Ghana, Uganda, Rwanda, etc., training for system use embedded within larger educational pipelines
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Ongoing Work

Focus on capacity-building, not replacing lack expertise

- Incorporate AI/ML specific challenges of data collection, labeling, model training and deployment within larger context of integration in resource-poor settings
 - **Creating a Design Framework:** Understanding utility of participatory design, value-sensitive design approaches to larger recommendations for developing/deploying viable AI/ML solutions
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Thank you!

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