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 mobile health (mHealth)
- Identifying key case examples in order to derive insights and best practices
Complexities of Capacity

The Potential 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
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
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
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
Thank you!

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