

Barriers, Priorities and Lessons Learned in Achieving Electronic Health Records Interoperability in Low- and Middle-Income Countries: Workshop Findings

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Abstract. Electronic health records (EHR) interoperability is a complex topic that continues to gain traction in the digital health landscape. We facilitated a qualitative workshop consisting of domain experts in EHR implementation and health IT managers. The workshop aimed to identify critical barriers to achieving interoperability, priorities for new EHR implementations and lessons learned from managing existing implementations. The workshop highlighted that data modelling and interoperability standards are vital priorities for maternal and child health data services in low- and middle-income countries (LMICs).

Keywords. Electronic health records, interoperability, data sharing, workshop

1. Introduction

Electronic health records (EHR) interoperability is a complex topic that continues to gain traction in the digital health landscape. Recent studies note that the exchange of captured data via information systems in the health domain can be difficult due to the complex nature of health and social care processes [1,2]. Hence, this contribution reports and reflects on the findings of an expert-led workshop regarding EHR interoperability.

2. Methods

We facilitated a *90-minutes qualitative* workshop at the MedInfo2019 conference. The workshop comprised *EHR implementation findings, lead questions and expert discussions*. The workshop questions are: (1) What are the priorities or drivers for actual EHR implementation? What can we learn from high income countries (HICs) and the few LMICs that are leading in this respect? (2) What are the preconditions for the envisioned EHR implementation, and how can they be met?

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3. Findings

Twenty participants from various institutions attended the session. Below are summary findings from the group discussion: Participants noted many available models with differences in data element specifications, clinical concepts, relationships, and representation formats. For example, one contributor stated that *"there are no centralised data models for most EHR implementations"*. A recurring theme is summarised in the quotation: *"health institutions do not want to share their data models, especially in the US"*. Not only are people reluctant to share their data, but they are reluctant to share their data structures owing to perceived consequences in doing so.

There was a consensus that increased funding for infrastructure is required to assure successful EHR implementation and interoperability with other information systems in LMICs. Drivers for an interoperable EHR differ between LMICs and HICs. For example, LMICs focus mainly on aggregate data from the health information system for disease control, population health monitoring and health policy and planning.

We identified some preconditions for achieving interoperability across EHRs in LMICs: (1) National identifier for patients or citizens. (2) Incentives for EHRs from the government for health institutions. (3) Infrastructure – funding partners, vendors, insurance companies, pension funds (as investors) can support the government (e.g., the Ministry of Health). (4) Clearly defined, evidence-based use cases, such a transmission of laboratory results. These findings are consistent with how the theory of change (ToC) approach could be used to foster interoperability of EHRs, especially in LMICs [3].

4. Conclusion

The workshop highlighted that data modelling and interoperability standards are vital priorities for maternal and child health data services in LMICs. Hence, it is vital to ensure a robust standardisation to collect and share data at all levels. The following summary points were the reflections from the exploratory workshop: (1) Well designed, common data models are vital to realising effective data exchange between digital health systems by adopting the appropriate interoperability standards for MCH. (2) Drivers for an interoperable EHR differ between LMICs and HICs. (3) Adequate infrastructure and accountable funding are essential preconditions for any sustainable EHR implementation, which were not met in the related study [3].

References

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