

Chapter 1

Why Do We Need Multinational EHR Interoperability Strategies?

ABSTRACT

This chapter establishes the foundational rationale for multinational electronic health record (EHR) interoperability, emphasizing its role in cross-border disease surveillance, continuity of care for mobile populations, and global pandemic preparedness. Drawing on case studies from LMICs and high-income nations, it explores how fragmented data systems hinder timely diagnosis, outbreak response, and equitable access to care. The chapter argues for harmonized standards and governance frameworks that prioritize both technical feasibility and ethical inclusivity.

INTRODUCTION

Electronic Health Records (EHR) are Patient Health Information (PHI) documents in a digitized format. EHR systems are essential for modern health practices, allowing access to a patient's treatment history. EHRs reduce misinterpretations, prevent medical errors, and enable health systems to share health information across providers (Carter, 2024). EHR systems are used in over 80% of practices in the United States, a developed nation which spends 18% of its Gross Domestic Product (GDP) on healthcare expenditures or \$20,000 per capita. The United Kingdom, France, Germany, Russia, China, and other developed nations rely on EHR technology in their healthcare systems. However, EHR systems are not interoperable across international regions and nations and do not share life-saving data in real-time. The world has

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changed, and the threats are more significant than ever. The threat does not involve a major war breaking between the superpowers and escalating to a nuclear conflict; although possible, there are controls and human decisions that can prevent such a nightmare. The threat is not a significant climate shift, which does not mean that Climate Change is a myth; it is genuine. The danger is not an economic collapse; it is a possibility. The significant threat to human safety is health safety, specifically, the threat of a global disease outbreak.

EHR systems are robust tools that empower providers to work efficiently, reduce errors, and share PHI with other local providers to make decisions quickly and accurately, provided that the patient and provider are on the same network. However, when a patient travels abroad and falls ill, collapsing in Berlin, a limited local EHR system with the traveler's medical history, emergency contacts, and treatment history in Seattle is of little use. A more dangerous scenario occurred at a hospital in Dallas, TX, on September 13, 2014, when America experienced its first travel-associated case of Ebola (Sevilla, 2017). A sick man, returning from a trip to West Africa, was taken to a hospital displaying non-indigenous symptoms. The attending healthcare professionals were unaware of the patient's travel history, the health dangers in the area; only that the patient had recently traveled to West Africa. West Africa, particularly ECOWAS (Economic Community of West African States) nations have strong robust economies, thanks to their wealth of natural resources such as oil, diamonds, gold, cocoa, uranium, timber, and gas. The exponential growth of African economies, attract foreign investors and contribute to globalization.

Globalization opens opportunities for trade, travel, logistics, market expansion, education, and the sharing of human-made or natural resources between nations. It unites the international community and releases the power to share technology, culture, products and services, ideologies, and languages that, without it, are often inaccessible (Lincicome, 2023). Globalization has improved developing countries' living standards, reduced hunger, created multinational companies, and promoted global initiatives such as reducing climate change and preventing or ending wars. Globalization defends the weak, feeds the hungry, holds the guilty accountable, treats the sick, and evangelizes the lost. Globalization is a multinational force that facilitates collaboration among nations to address multinational initiatives. Globalization enhances negotiations between nations, both government organizations and non-government organizations. Globalization promotes cultural exchanges and tolerance. Through student exchanges, globalization educates and emancipates the international community from intellectual and economic poverty. Many well-known scientists, educators, innovators, authors, philosophers, change agents, and professionals in many verticals and the international community have benefited from globalization. However, globalization is a double-edged sword, cutting back and forth, as globalization is the mother of many multinational challenges. The

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