Promises and Realities of Electronic Health Information System in the Philippines

The foundational role of health information systems (HIS) in shaping decision-making dates back to the 19th century, driven by the pioneering efforts of John Snow and Florence Nightingale. In 1854, Snow meticulously mapped cholera cases in London, linking outbreaks to a contaminated water pump, which led to public health reforms and laid the foundation for modern epidemiology.[1] During the Crimean War (1853–1856), Nightingale[2] analyzed mortality data from field hospitals, using statistical methods and visualizations to present compelling evidence for sanitation reforms that drastically reduced death rates. These early examples underscore the transformative potential of systematically collected and aggregated data to drive health reforms and improve outcomes.

In 2007, the World Health Organization (WHO) recognized health information system (HIS) as a critical building block for improving health systems.[3] HIS serves as the backbone, supporting other essential components like service delivery, health workforce, access to essential medicines, health financing, and governance. In the Philippines, the promising benefits of electronic HIS began to take shape in the early 2000s with the implementation of the Department of Health's (DOH) Rural Health Unit Information System (RHUMIS) and UP Manila's Community Health Information Tracking System (CHITS). CHITS, in particular, has demonstrated the potential of electronic HIS—automating reports, improving data accuracy, and enabling public health facilities to track key indicators like vaccination rates and maternal health outcomes while integrating seamlessly into their workflows.[4] In 2013, the establishment of the National eHealth Governance and the launch of the eHealth Strategic Framework and Plan[5] marked a turning point, laying the groundwork for scaling electronic HIS nationwide. Progress was evident, with hundreds of PhilHealth-certified electronic medical record (EMR) providers now in place.[6] Despite these advances, the promise of electronic HIS remains elusive, as resource constraints, uneven adoption, and technical gaps continue to hinder its full realization.

The adoption of electronic HIS reflects a complex interplay of full digital transition, systemic barriers, and user engagement challenges. What Macabasag et al.[7] describe as an "ambivalent transition" characterizes the shift from paper-based to electronic systems, where both coexist due to resource constraints, institutional pressures, and competing priorities. This partial implementation often relegates electronic HIS tasks to technologically adept workers or designated data encoders. PhilHealth compliance, while a key driver of electronic HIS adoption, primarily ties usage to mandatory reporting for claims reimbursement. However, inconsistencies in reimbursement processes limit the perceived benefits of integration, and broader systemic challenges such as limited infrastructure, workforce readiness, and interoperability further fragment efforts toward digitization. The COVID-19 pandemic exacerbated these systemic barriers while also emphasizing the need for digital health solutions. As Acacio-Claro et al.[8] highlight, some facilities increased reliance on electronic HIS to manage operational demands, while others experienced reduced adoption as priorities shifted. Institutional gaps, such as the absence of strong governance frameworks and uneven technical infrastructure, combined with persistent interoperability challenges, have hindered the consistent use and utility of electronic HIS. User engagement, as De Mesa et al.[9] emphasize, hinges on self-efficacy and user-oriented design. High intent-to-use among healthcare workers is more likely when electronic HIS is tailored to reduce workload and integrate seamlessly into existing workflows. Yet, barriers such as inadequate infrastructure, reliance on paper-based systems, and fragmented service delivery networks persist, particularly in resource-limited settings. These inefficiencies limit the potential for coordinated care and data sharing, and present significant challenges to achieving the full integration envisioned under the Universal Health Care (UHC) Law.

Achieving an effective digital health ecosystem requires a concerted, multisectoral effort, as no single entity can address the inherent complexities of health systems alone. The Asia eHealth Information Network (AeHIN) introduced the Mind the GAPS (Governance, Architecture, Program Management, and Standards) Framework[10] as key pillars for building integrated and interoperable systems. Marcelo[11] emphasizes that through strategic governance, shared interoperability blueprints, and robust program management, governments can establish digital health infrastructures that meaningfully improve service delivery and public health outcomes. The DOH must take the lead in coordinating sectors such as Information Technology (IT), academe, finance, and development partners to ensure alignment and effectiveness. By harnessing the collective expertise of all sectors, the Philippines can turn the aspirations of the UHC Law into a reality—creating a digital health ecosystem that not only overcomes systemic barriers but also transforms healthcare delivery for generations to come.

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