

Assessing stakeholders' perspectives on commercial e-pharmacy systems in Malaysia: an ideal framework development

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ABSTRACT

Introduction: The swift growth of commercial e-pharmacies has revolutionised medication access in Malaysia, offering unprecedented convenience while exposing critical regulatory vulnerabilities. Despite enhancing affordability and accessibility, this digital transformation has enabled concerning practices, including counterfeit drug distribution, prescription circumvention, and unauthorised medication sales. This study analyses stakeholder perceptions of e-pharmacy through the lenses of regulatory adequacy, enforcement efficacy, technological solutions, patient safety considerations, and ultimately proposes a framework requirement for a national e-pharmacy verification system. **Materials and Methods:** A qualitative approach was employed, utilising in-depth interviews and focus group discussions with regulators, e-pharmacy operators, and healthcare practitioners. Supplementary data were collected through observational analysis of Verified Internet Pharmacy Practice Sites (VIPPS) as a benchmark and document analysis of government guidelines. **Results:** Thematic analysis revealed four critical challenges in Malaysia's e-pharmacy sector: (1) Regulatory gaps stemming from outdated guidelines by government, inconsistent enforcement, and weak non-compliance penalties; (2) Consumer protection risks, including unauthorised access and absence of standardised prescription validation; (3) Stakeholder misalignment between public and social actors led to compliance confusion and hindered a unified policy development; (4) Implementation barriers, including technological limitation, industry resistance, and inadequate audits. Despite these challenges, stakeholders proposed viable solutions; a national e-pharmacy registry, AI monitoring and blockchain tracking while acknowledging cost and feasibility constraints. **Conclusion:** These findings highlight the urgent need for coordinated policy reform and technological integration, proposing an e-pharmacy verification model aligned with international norms to strengthen oversight and enhance patient safety in Malaysia.