

# FROM INTENTION TO CLICK: UNLOCKING THE ACTUAL USE OF TELEPHARMACY IN MALAYSIA

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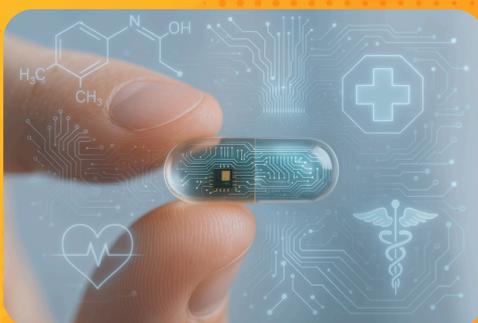
## TELEPHARMACY SERVICES IN MALAYSIA

Telepharmacy services offered by the public healthcare system in Malaysia include value added services (VAS) and postal medication delivery services, while pharmacy chains have their own dedicated digital health platforms, e.g. DOC2US, Esyms, Rhazes Telepharmacy, and DoctorOnCall.

## TELEPHARMACY AS AN EMERGING HEALTHCARE INNOVATION

The global healthcare landscape, accelerated by the COVID-19 pandemic, has positioned telepharmacy as a critical innovation to enhance medication access, management, and pharmaceutical care (Saeed, 2024). Telepharmacy services, which include medication order review, medication dispensing, patient consultation and evaluation, therapeutic drug monitoring, and medication therapy management, as well as virtual consultations, home medicine delivery, and patient education, have been among the most frequently observed telepharmacy initiatives (Muflih *et al.*, 2021; Unni, 2021).

## CHALLENGES IN MALAYSIA



Existing Malaysian studies have focused predominantly on healthcare providers, revealing that community pharmacists, despite recognising telepharmacy's benefits, have identified significant challenges such as implementation costs, insufficient training, and poor inter-facility coordination (Ng & Sze, 2022).

In Malaysia, research indicates a paradox: while digital readiness is high, willingness and acceptance of telepharmacy are low. While benefits are documented for both patients and healthcare providers, including reduced disease exposure, increased accessibility, more efficient use of resources, and improved health and behavioural outcomes (Choukou *et al*, 2021), fewer than half of respondents accepted the service (Ahmad, 2024). Adoption is also hindered by regional infrastructure disparities and low digital literacy among the ageing population (Mohamed Nazar *et al*, 2025). One study examined intention, but none have analytically tracked the path from intention to adoption (Alfian *et al*, 2025).



## AN INTEGRATED TAM AND UTAUT-2 APPROACH

The transition from potential to practice is not automatic; it is governed by the complex interplay of human behaviour, technology, and the systemic environment. The foundation for studying any new technology's uptake lies in models that predict behavioural intention. This study utilises an integrated theoretical framework combining the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology-2 (UTAUT-2).

TAM is composed of four basic elements: (1) user behaviour (the actual usage behaviour of users in relation to new technology); (2) behavioural intention (the willingness of users to try new technologies); (3) perceived usefulness (the degree to which a person believes the system will improve outcomes); and (4) perceived ease of use (the degree of ease associated with the system's use) (Schorr, 2023).

The UTAUT-2 extends this by additional constructs: performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit, which are vital in a consumer context (Zhu *et al*, 2023). By integrating these models, we comprehensively examine the journey from intention to actual use of telepharmacy services.

## STAKEHOLDER PERSPECTIVES ON TELEPHARMACY USE

In the Malaysian telepharmacy context, for the patient, perceived usefulness is linked to concrete benefits: saving time and travel costs to distant clinics, gaining easier access to specialist medication reviews, and receiving continuous care for chronic conditions such as diabetes or hypertension. Perceived ease of use, however, is dependent on digital literacy, the intuitiveness of the telepharmacy platform, and the stability of internet connectivity, which varies significantly across the country. Social influence, trust (a critical factor in traditional face-to-face interaction), concerns regarding data privacy, and the credibility of remote advice can nullify intention before it translates into actual use (Schorr, 2023; Zhu et al, 2023).

For pharmacists, adoption is influenced by professional and practical concerns. Perceived usefulness translates to the ability to expand patient reach, optimise workflow, and provide higher-value cognitive services such as comprehensive medication reviews. Perceived ease of use involves the integration of telepharmacy software with existing dispensing systems, minimal disruption to pharmacy operations, and clear technical protocols. Facilitating conditions, such as the availability of affordable and user-friendly platforms, are vital for sustainability (Sulistyaningrum et al, 2023).

## UNDERSTANDING TELEPHARMACY ADOPTION

Another significant facilitating condition is the regulatory framework. The establishment of clear standards for e-prescriptions, data security, and professional conduct can reduce uncertainty for pharmacists and build public trust, influencing intention across the system (Kee & Bastrygina, 2024).

This study aims to address this gap by employing UTAUT-2 and TAM models to identify determinants of intention and actual use of telepharmacy through a mixed-methods approach, using surveys and interviews with the public, pharmacists, and healthcare regulators, thereby providing a holistic, multi-stakeholder analysis. This will facilitate the design of targeted interventions and policies to enhance telepharmacy uptake based on identified behavioural determinants.

The public, especially in rural areas, will gain more equitable access to healthcare through telepharmacy, while the government can design evidence-based strategies and policies for supportive regulations, public education campaigns, and targeted infrastructure investments. Technology developers may use the results to develop platforms that align with user expectations regarding ease of use and data security.



## CONCLUSION

In conclusion, the intention to use and adopt telepharmacy in Malaysia is a multidimensional challenge. It is influenced by individual perceptions of usefulness and ease of use, shaped by societal trust and digital readiness, and ultimately constrained or enabled by economic and regulatory structures. While the technological capability exists, the human and systemic elements require careful, socially adapted navigation.

By strategically addressing the digital divide, empowering pharmacists with clear guidelines and sustainable models, and developing a supportive policy environment, Malaysia can harness telepharmacy not merely as a digital convenience but as a powerful force for achieving equitable pharmaceutical care for all its citizens. The journey involves moving the nation from digital readiness to digital health integration, one teleconsultation at a time.

This research is supported by FRGS/1/2024/SKK16/UITM/02/3. The study analyses the determinants of intention to use and the subsequent adoption of telepharmacy in Malaysia, examining the perspectives of three primary stakeholder groups, namely patients, pharmacists, and healthcare regulators, through the lenses of established technology acceptance theories and local contextual realities.

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