**////Title: Telemedicine in South East Asia: Current Guidelines and Future Directions**

**////Stand-first**: Telemedicine is increasing in utility and demand, not least due to the pressure of the COVID-19 pandemic on the provision of healthcare. With this in mind, Dr Intan Sabrina (at Hospital Tuanku Ampuan Najihah, Hospital Jempol and Tung Shin Hospital, all in Malaysia) and Dr Irma Ruslina Defi (at Hasan Sadikin General Hospital in Indonesia) have collaborated to publish an important review on current telemedicine guidelines in South East Asia, from which they make considered recommendations for its further development.

**////Body text:**

In the era of the COVID-19 pandemic, the potential of telemedicine within the delivery of healthcare services has risen to the fore. While information and communication technology can be used to deliver care across acute, chronic, primary and speciality fields efficiently and cost-effectively, uptake of telemedicine before the pandemic was perhaps less vigorous than might have been expected.

However, increased pressures and demands in the delivery of healthcare have led to policy changes, meaning that many previous barriers to telemedicine have now been removed and advances in digital technology have dramatically expanded its horizons. From its humble beginnings as an approach primarily adopted for delivering healthcare to remote communities, telemedicine is now the go-to option in various situations where traditional face-to-face consultation is unfeasible due to safety and/or practical reasons.

In South East Asia, the use of telemedicine has boomed in recent years and the pandemic has driven the development of a diverse and varied range of applications dedicated to this purpose. This rich diversity in telemedicine practice across countries, however, means that we now need uniformity in guidelines and standards.

To meet this need, Dr Intan Sabrina (at Hospital Tuanku Ampuan Najihah, Hospital Jempol and Tung Shin Hospital, all in Malaysia) and Dr Irma Ruslina Defi (at Hasan Sadikin General Hospital in Indonesia) conducted a scoping review to compare telemedicine guidelines in South East Asia, a region that shares many common social and economic conditions.

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The researchers conducted a review of the existing literature, obtaining additional sources through advisories and guidelines issued by the Ministry of Health and Medical Councils of Malaysia, Indonesia, Singapore, Vietnam, and Thailand during the COVID-19 pandemic. Medical device and multimedia acts were identified by searching PubMed, Cochrane Review and Google search engines.

Inclusion criteria were full-text articles and grey materials (which are policy statements, advisories, blueprints, executive summaries and circulars) related to telemedicine guidelines. This process resulted in the identification of 62,300 articles and six telemedicine and information technology laws. Following thorough screening and eligibility assessment of sources, 24 articles were identified for inclusion in the review.

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Starting with definitions, Dr Sabrina and Dr Defi noted that several terminologies are currently used to define telemedicine, including ‘remote (or virtual) consultation’, ‘e-Health and digital technologies’ and ‘distant medicine’. They also noted that telehealth products are broadly defined as any instrument, appliance, software, and such that is intended for application in diagnosis, prevention, monitoring, treatment, anatomical or physiological processes in healthcare. On closely reviewing these definitions, the researchers proposed that terminologies, restrictions, applications, legislation, and billing of telemedicine all require standardisation.

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Almost all the guidelines reviewed by the researchers outlined the wide range and scope of how telemedicine can be applied, citing examples including tele-consultation, tele-rehabilitation, tele-pathology and tele-education. The researchers further noted that the scope of telemedicine services depends on the existing needs and policies of the organisation and medical councils, and most guidelines published by medical councils sought to regulate healthcare professionals rather than the technologies, platforms, or type of telemedicine services utilised to deliver the service. With the exception of Malaysia, no South East Asian countries have specific laws on telemedicine, other than regulations for the registration of medical institution and/or products intended for telemedicine services.

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While most telemedicine guidelines have policies to protect the privacy of patient information, details on data handling and stewardship, information-sharing and record-keeping vary from one country to another. Noting that telemedicine creates significant opportunities for international collaborations, data-sharing and technology transfer among healthcare providers, Dr Sabrina and Dr Defi offered the caution here that, as a result, issues such as privacy, confidentiality, data security and ownership need to be refined, particularly in the context of international data sharing.

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Increasingly, telemedicine is becoming a critical component in the delivery of effective healthcare. However, the success of this depends upon an adequate information communication technology infrastructure as well as technical expertise. For each country, factors such as population size, geographical landscape and income bracket likely contribute to the extent to which fully embracing telemedicine is possible. Some countries, such as Indonesia and Vietnam, face challenges in ensuring suitably high internet and smartphone penetration.

Despite these inherent challenges, Dr Sabrina and Dr Defi observed that South East Asian countries invest in digital health solutions due to their potential in the digital economy and demonstrated usefulness during the COVID-19 pandemic. The lack of information communication technology infrastructure has been overcome by using existing resources and telemedicine Apps offering affordable consultation fees.

Currently, telemedicine is provided for free in public hospitals in Malaysia, Vietnam, and Thailand. In other countries, the costs vary considerably and uniformity in telemedicine guidelines will facilitate insurers and policymakers to reimburse telemedicine services fairly within and across countries.

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On the basis of their review, Dr Sabrina and Dr Defi propose that universal and generic guidelines outlining the minimum standard for telemedicine should be set by the World Health Organization to be adapted and applied to the local context. In addition, they argue, transregional telemedicine legislation would facilitate international cooperation in the scientific, legal and ethical aspects of telemedicine.

Looking to the future, Dr Sabrina and Dr Defi suggest that further research should focus more closely on specific services such as tele-therapy and tele-diagnostics as well as the related outcome measures to improve the implementation of telemedicine.

In a short space of time, the COVID-19 pandemic had forced us to evaluate and adapt our existing healthcare systems. With proper guidance and management as described by Dr Sabrina and Dr Defi, these changes bring exciting opportunities for the implementation of telemedicine as a standard in the delivery of healthcare across South East Asia.

This SciPod is a summary of the paper ‘[Telemedicine Guidelines in South East Asia—A Scoping Review](https://www.frontiersin.org/articles/10.3389/fneur.2020.581649/full)’, published in the open access journal *Frontiers in Neurology*. https://doi.org/10.3389/fneur.2020.581649.

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