

# Role of Telemedicine in Improving access and equity of asthma care: A narrative review

Yin Nwe Aung<sup>1,2</sup>, Syed Aljunid<sup>2,3</sup>

<sup>1</sup> Faculty of Medicine and Health Sciences, UCSI University, Malaysia

<sup>2</sup> International Center for Casemix (ITCC), Universiti Kebangsaan Malaysia

<sup>3</sup> Department of Community Medicine, International Medical University, Malaysia

## Introduction

Regular monitoring of asthma patients reduces the risk of severe complications. When COVID-19 pandemic forced in-person consultations to be unfavourable, telemedicine services gained a role in bridging the gap.

This study aims to assess the role of telemedicine in improving access and equity in asthma care by reviewing the existing literature.

## Method

Articles were searched from PubMed database (January 2020 to February 2023), using the terms **(((telemedicine) OR (telehealth)) AND (asthma))**.

We screened the titles of 272 published papers, then reviewed the abstract and full-texts of 43 articles. We included 23 original articles for the narrative review.

## Results

Approximately 57-88% of telemedicine patients reported high level of satisfaction, yet deemed telemedicine to be inferior to face-to-face consultations. Willingness to use telemedicine improved during pandemic but slightly dropped after the pandemic. Patients opted to wait for physical visits unless there was no specialist in their local area.

Patients' concerns included technology gaps, not getting full attention, lack of physical examination, and self-measuring. Physicians were concerned with technology quality, effectiveness of communication, and doctor-patient relationship.

Findings on asthma control outcome of telemedicine and physical visits were inconsistent. Adding telehealth follow-up to physical visits improved asthma outcomes. Despite improved accessibility, patients reported not having social support and difficulty in obtaining medicine.

## Discussion and Conclusion

Clinical outcomes varied by type of available telemedicine. Telemedicine has the potential to address barriers in access to care, with the improvement of support services, training on asthma monitoring, provision of handheld spirometry. Synchronized telemedicine is crucial. Not only clinical services, improvement in digital service availability among the underserved population is essential.

Telemedicine for asthma is yet to be a replacement but a complementary in improving access and equity.

Acknowledgement: Authors would like to thank UCSI University for kind support to conduct this study

## References

- Alexandre L, Pereira AM, Amaral R, Alves-Correia M, Almeida R, Almeida Fonseca J, Jácome C: **Patients' Satisfaction with Remote Asthma Medical Follow-Up Before and During the COVID-19 Pandemic.** *Telemed J E Health* 2023.
- Bukstein DA, Eghrari-Sabet J, Hart M, Hill T, Parikh P, Winders TA: **COVID-19 pandemic impact on telehealth use and perceptions for atopic and respiratory disease: Survey results.** *Allergy Asthma Proc* 2022, **43**(3):194-201.
- Cvietusa PJ, Goodrich GK, Steiner JF, Shoup JA, King DK, Ritzwoller DP, Shetterly SM, Bender BG: **Transition to Virtual Asthma Care During the COVID-19 Pandemic: An Observational Study.** *J Allergy Clin Immunol Pract* 2022, **10**(6):1569-1576.
- Edgerley S, Zhu R, Quidwai A, Kim H, Jeimy S: **Telemedicine in allergy/immunology in the era of COVID-19: a Canadian perspective.** *Allergy Asthma Clin Immunol* 2022, **18**(1):16.
- Gilkey MB, Kong WY, Kennedy KL, Heisler-MacKinnon J, Faugno E, Gwinn B, Wu AC, Loughlin CE, Galbraith AA: **Leveraging Telemedicine to Reduce the Financial Burden of Asthma Care.** *J Allergy Clin Immunol Pract* 2022, **10**(10):2536-2542.
- Guarnieri G, Caminati M, Achille A, Vaia R, Chieco Bianchi F, Senna G, Vianello A: **Severe Asthma, Telemedicine, and Self-Administered Therapy: Listening First to the Patient.** *J Clin Med* 2022, **11**(4).
- Justvig SP, Haynes L, Karpowicz K, Unsworth F, Petrosino S, Peltz A, Jones BL, Hickingbotham M, Cox J, Wu AC *et al*: **The Role of Social Determinants of Health in the Use of Telemedicine for Asthma in Children.** *J Allergy Clin Immunol Pract* 2022, **10**(10):2543-2549.
- Radhakrishnan D, Higginson A, Thipse M, Tessier M, Radhakrishnan A: **Optimizing pediatric asthma education using virtual platforms during the COVID-19 pandemic.** *Allergy Asthma Clin Immunol* 2022, **18**(1):72.
- Ramsey A, Mustafa SS, Portnoy JM: **Patient and Clinician Attitudes Toward Telemedicine for Allergy and Immunology.** *J Allergy Clin Immunol Pract* 2022, **10**(10):2493-2499.
- Silva TM, Pinto BS, Cunha I, Roque F, Figueiras A, Fonseca J, Herdeiro MT, Gomes ER: **Impact of the COVID-19 Pandemic on the Prescribing of Antiasthmatic Treatments in Portugal: A Nationwide Study.** *Clin Ther* 2023, **45**(2):e89-e99.e82.
- Sitthikarnkha P, Uppala R, Mairiang D, Suebsarakam P, Sirikarn P, Techasatian L: **Pediatric asthma control in tertiary care setting using telemedicine during COVID-19 era.** *Transl Pediatr* 2022, **11**(12):1892-1898.