

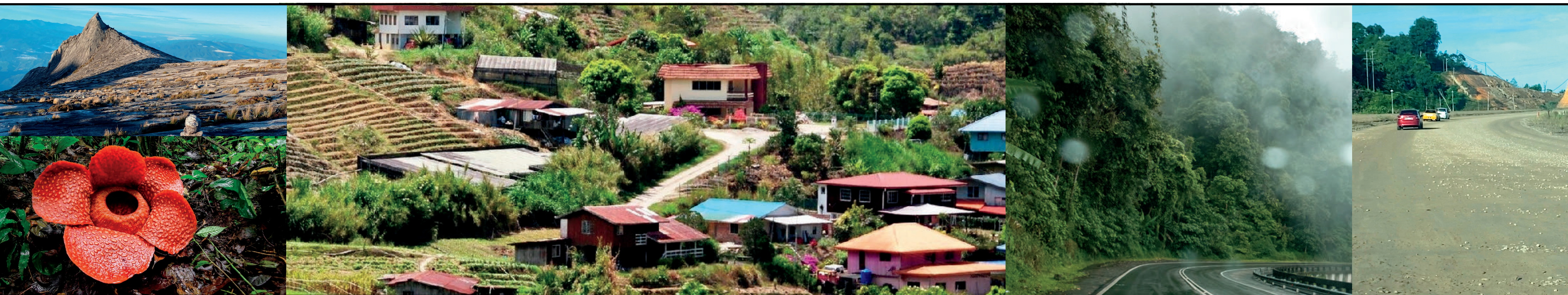


# BRIDGING THE GAP THROUGH TELEMEDICINE: IMPROVING SURGICAL ACCESS IN UNDERSERVED DISTRICTS IN SABAH

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## Introduction

- Sabah is still behind in economic development and infrastructures limiting mobility and access of its people.
- Telemedicine is a powerful tool that allows medical care to reach the underserved portions of the populations living in rural areas.<sup>1</sup>

## Objective

- We describe the advantages of utilizing telemedicine in Breast and Endocrine surgical patients coming from remote districts in Sabah.

## Methods

- *Virtual clinic* was initiated in 2021 to cater for Breast and Endocrine patients who are living in remote districts in Sabah for post-operative follow-up.
- 17 district hospital were selected to be part of the *Virtual clinic* and 1 medical officer from each of the hospital was appointment as the liaison officer.
- Patient's case summaries were shared via 'cloud drive'.
- Appointment dates were scheduled via online calendar.
- On the day of follow-up, patients were seen by Breast and Endocrine specialist via an online meeting platform (*real-time*) in the company of respective liaison officers.
- We analyse the travelling costs and journey time required by patients from different districts to come for follow-up.

### Advantages of Virtual Clinic



Cost-saving



Reachability



Patient compliance



Shared knowledge

### Disadvantages of Virtual Clinic



Limited physical exam

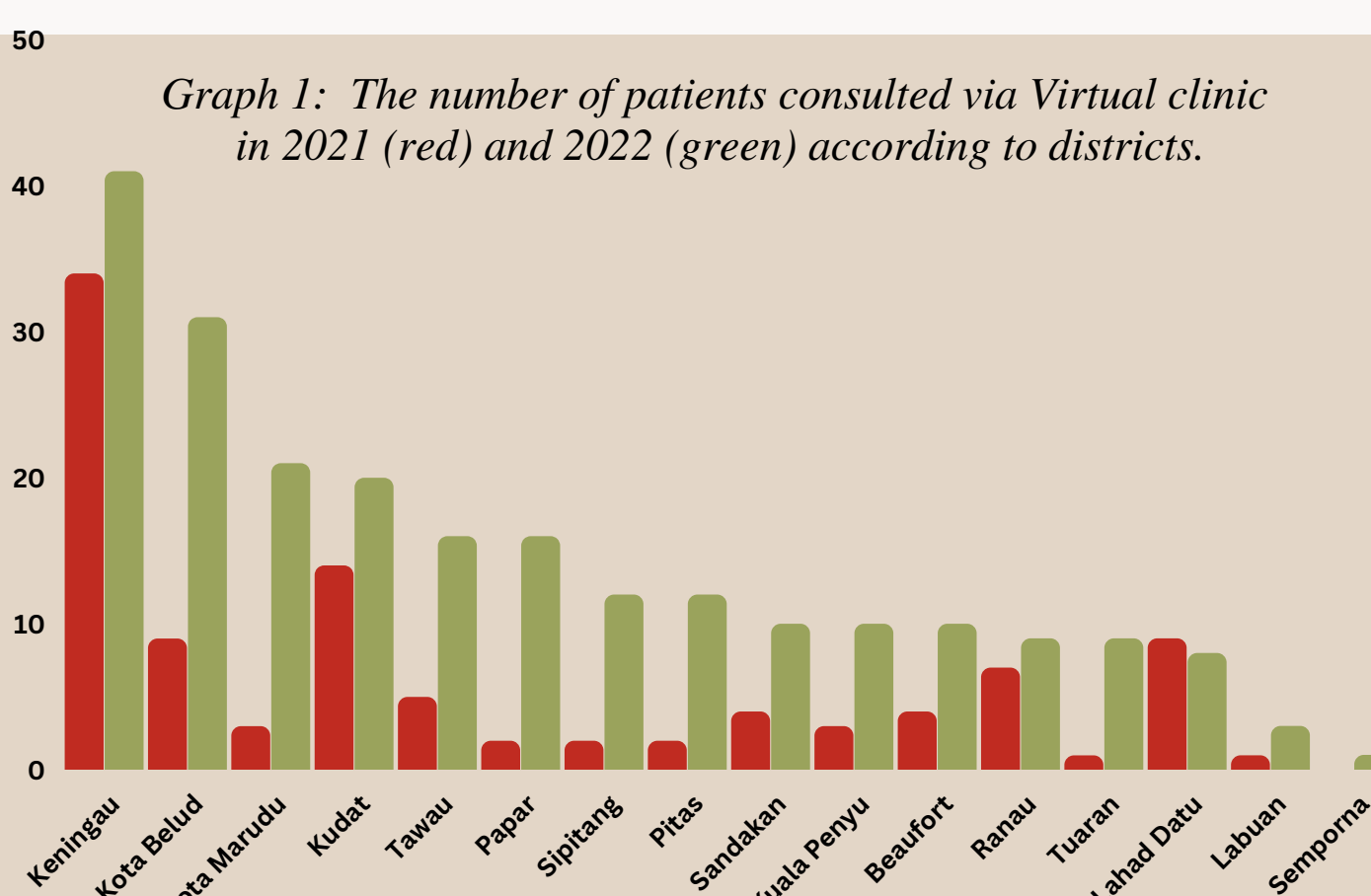


Technical glitch

## Result

- With *Virtual clinic*, patients were able to save on an average of RM 250 on transportation expenses and an average of 3.5 hours of travel time.
- A total of 100 and 229 patients were seen via virtual clinic in 2021 and 2022 respectively.

Graph 1: The number of patients consulted via Virtual clinic in 2021 (red) and 2022 (green) according to districts.

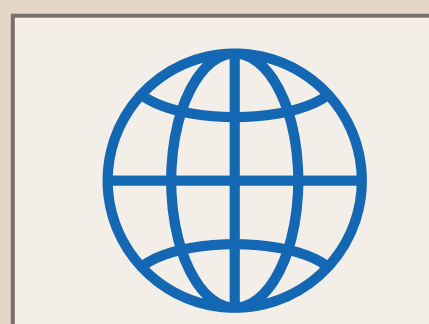


## Conclusion

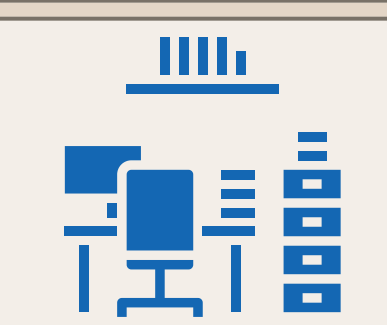
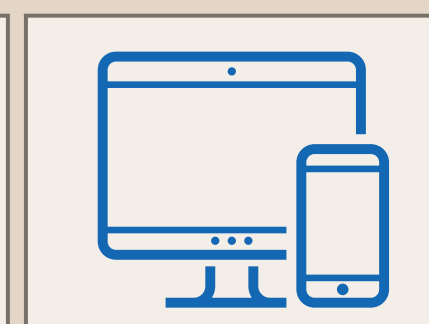
- Telemedicine enables continuation of specialist care, irrespective of location.<sup>2</sup>
- Due to its cost-effectiveness, telemedicine remains significant in Sabah even in the post-pandemic period.
- Steps need to be taken in order to establish competence in telemedicine, which are mainly contributed by lack of hardware and internet access.

### Challenges of Telemedicine

Internet access



Lack of Hardware



Lack of facility



Lack of Human Resources

### Recommendations & Next steps

- Integrated medical record system
- Improvement in the challenges of telemedicine

Districts	Estimated distance / time to HQE II by car	Estimated single-trip Taxi fares to Kota Kinabalu (Based on the rate by LPKP in 2017)
Papar	39 km (60 mins)	RM 53
Tuaran	40 km (60 mins)	RM 55
Kota Belud	72 km (93 mins)	RM 93
Tambunan	72 km (100 mins)	RM 93
Beaufort	98 km (120 mins)	RM 124
Kuala Penyu	108 km (120 mins)	RM 136
Ranau	110 km (160 mins)	RM 140
Keningau	111 km (120 mins)	RM 140
Sipitang	139 km (160 mins)	RM 173
Kota Marudu	149 km (145 mins)	RM 185
Labuan	170 km (240 mins)	RM 210
Pitas	174 km (205 mins)	RM 215
Kudat	184 km (191 mins)	RM 227
Sandakan	352 km (420 mins)	RM 430
Lahad Datu	423 km (470 mins)	RM 524
Tawau	452 km (461 mins)	RM 548
Semporna	555 km (550 mins)	RM 672

Table 1: Estimated distance, time and taxi fares from each district to KK

## References

- <sup>1</sup>Loane, M., and R. Wootton. 2001. "A Review of Telehealth." *Medical Principles and Practice* 10 (4): 163–70.<sup>2</sup> Vassallo, D J. 1999. "Twelve Months' Experience with Telemedicine for the British Armed Forces." *Journal of Telemedicine and Telecare* 5 (1\_suppl): 117–18.