

# ARTERIOVENOUS FISTULA (AVF) SERVICES IN NEGERI SEMBILAN SINCE 2019-2022 , A SALIENT THRUST TO ACHIEVE AIM OF GLOBAL SURGERY INITIATIVES.



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## Introduction

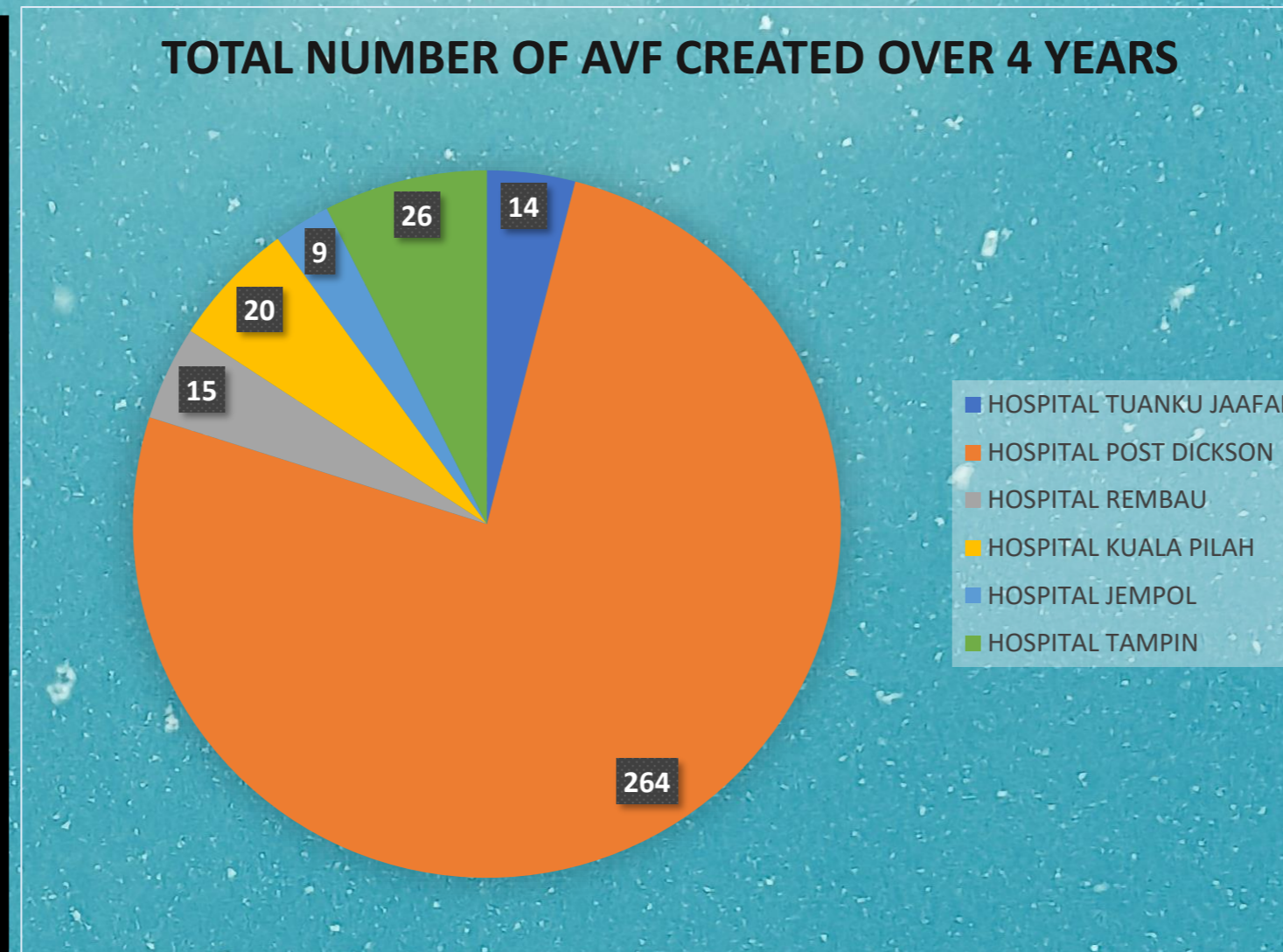
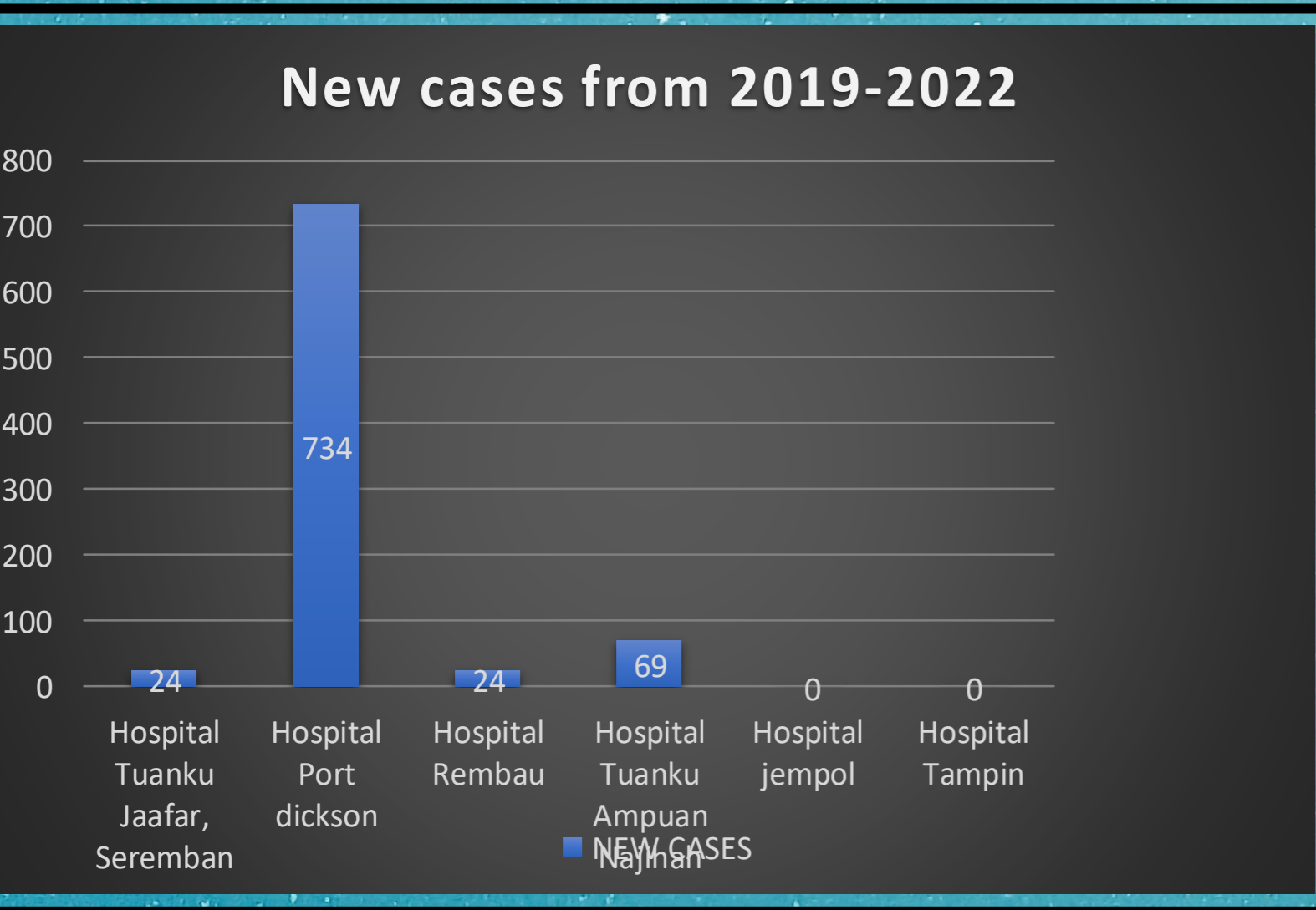
The renal burden of our country through the number of new dialysis patients have continued to increase over the last 10 years from 6,045 in 2011 to 9,123 in 2021. In 2021, there were 43,968 prevalent hemodialysis(HD) patients. The best vascular access for hemodialysis is indefinitely Arteriovenous fistula (AVF). In the previous years, patients needing AVF creation were referred to vascular centers located 60-100km away. We present our experience and data in providing arteriovenous fistula service through-out the state of Negeri Sembilan (NS) as an initiative of cluster hospital programme and global surgery initiative. Global surgery ensures timely access as well as safe and affordable surgical treatment for all.

## Methods

Descriptive data analysis was done based on collection of data from clinic and operative records from the cluster programme participants which are Cluster NS1 (Hospital Tuanku Ampuan Najihah (HTAN), Hospital Tampin and Hospital Jempol) and Cluster NS2 (Hospital Tuanku Jaafar Seremban (HTJS), Hospital Port Dickson and Hospital Rembau). Data collected from 2019 until 2022.

## Result

AVF service in Negeri Sembilan was started in 2019. Service started from Hospital Port Dickson in cluster NS2 in 2019 followed by HTAN in clusters NS1 in 2020. Now, the service has expanded to provide outpatient clinic and operative services to other cluster hospitals in NS2 which are Hospital Rembau and HTJS. While in cluster NS1 all patients will be seen in out patient clinic in HTAN but operative services will be carried out depending on patients geographical demography and nearest hospital catering AVF creation in the cluster. From the year 2019 until 2022, 851 patients were seen in outpatient with 348 AVF created



## Discussion

Global surgery, ensures timely access, safe and affordable surgical treatment for all.<sup>1</sup> A surgical attempt in the state of Negeri Sembilan under the initiative of cluster hospital programme to provide easy accessibility and faster approach of surgical intervention to improve the outcomes of the patients with renal burden. Arteriovenous fistulas are abnormal connection between an artery and vein acquired surgically to create a platform for easy and safe accessible port for haemodialysis.<sup>2</sup> National Kidney foundation has created a guideline in Vascular access since 1996 with recent updates in 2019 creating ESKD life Plan. ESKD life plan is a strategy in predialysis period on continuum care modal for CKD patient approaching ESKD with maximizing ESKD modality choices to ascertain patient lifespan considering patient current situation, social support, functional status, logistic and practical feasibility. ESKD life plan discusses on attainment of right access to the right patient at the right time. KDOQI suggests an AV access (AVF or AVG) in preference to a CVC in most incident and prevalent HD patients due to the lower infection risk associated with AV access use.<sup>2</sup> AVF makes a more favourable and approachable way for haemodialysis patients. Dialysis prevalence rate increased over the last 10 years. Negeri Sembilan surpassed an acceptance rate (AR) of 402pmp between 2011-2021 which was the highest in Malaysia. Prior to the start of AVF creation facility in the state of Negeri Sembilan, cases would be referred to Hospital Kuala Lumpur for creation of access inhibiting the easy accessibility and timely access due to logistic issues and longer waiting time. This in turn causes reduction of lifespan and increases default rate. Patient benefit and global surgery aim were taken into account to start an initiative in AVF creation in state of Negeri Sembilan. Under the initiation of the Cluster Hospital programme in which hospitals in the state of Negeri Sembilan were grouped into NS1 and NS2. NS1 group hospitals are: Hospital Tuanku Ampuan Najihah (HTAN), Hospital Tampin and Hospital Jempol whereas Cluster NS2 hospitals are: Hospital Tuanku Jaafar Seremban (HTJS), Hospital Port Dickson, Hospital Rembau and Hospital Jebebu. Hospital Port Dickson pioneered the AVF creation in 2019 followed by the start of service in Hospital Kuala Pilah (HTAN) in 2020 from which other hospitals in respective clusters started providing AVF creation. In NS 2 cluster, patients are segregated and referred to the nearest hospital which provide AVF creation where outpatient and operative services are provided whereas in NS1 cluster hospitals, all patients are seen at HTAN and operated at hospital located at the nearest vicinity of the patients. Patients from Jebebu-district are referred to NS2 cluster hospitals and operating theatres are provided in each cluster hospitals. The vascular instruments are readily available in Hospital Port Dickson, HTJS And HTAN only. Operating vascular instruments are mobilized from HTJS and HTAN to respective cluster hospitals with no available instruments. A total of 851 patients were seen at the hospitals mentioned and a total of 348 patient were operated upon. Patients both in urban and suburban areas benefit from this initiation. The date shown shows increasing amount of patient in hospital facilities around NS state. Hospital Port Dickson started out with 109 cases with number of new case increasing to 197 followed by 248. There was slight reduction in patients in 2022 in view of other cluster hospital openings for AVF creations but there was steady increase of patients. Since service was started in 2022, both HTJS and Hospital Rembau have seen 24 patients respectively. HTAN also saw an increasing number of patients from 5 to 38 to 26. 40% of the patients who were seen have been successfully operated on. More AVF services are to be established in other district hospitals to provide more timely access and easy accessibility for patients. Our strategy in early identification of patients and successful AVF creation has increased the load of patients and benefited more patients.

## Conclusion

AVF service is carried out as part of Cluster hospital programme in NS advocating and fulfilling global surgery initiative on ensuring accessible service for all patient. Global surgery aims are achieved with timely access and easy accessibility achievements by increasing patients numbers. These findings thrust us to provide more AVF centres for easy accessibility and timely access for creation of AVF to increase the lifespan and benefit of patients.

## References:

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