

Utilization and Outcome of Emergency and Non-Urgent Medical Transfer Using Commercial Aircraft and Helicopter in Sabah. A Retrospective Analysis of New Service Introduced in Sabah.



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Introduction

Air medical transfer also known as MEDEVAC is a new service introduced in Sabah in 2015 to improve healthcare services. The objective of this study is to describe the characteristic of patient that used Sabah Medevac air transfer service, pattern of Medevac service and its outcome.

Methods

A retrospective study done from 1st January 2018 until 31st December 2018. from Sabah MEDEVAC data registry using descriptive analysis. Age of population were divided into neonates (less than 1 month), paediatric age group, (1 month to 16 years old), adult (16 – 64 years old) and geriatric (more than 65 years old). The principal study area located in Sabah state, Malaysia where emergency department in 13 hospitals were involved in this study. Data registry includes demographic data of the patients; name, identification number, and age, as well as location of pick up, destined hospital, diagnosis, reason for transfer, medical discipline who accept the case, cancellation, reason of air medical service cancellation and outcome of the patient.

Discussion

A key finding of this report is that discipline that has highest demand on emergency air transfer service came from neurosurgical (n=42, 28%) and cardiology (n=30, 20%). Due to Sabah geographical condition, ground transfer from east Sabah will take a longer time to arrive in tertiary center as the tertiary hospital centers are located only in west coast Sabah. Urgent cases such as complicated myocardial infarction, urgent craniotomy, urgent surgical intervention which requires subspecialty expertise need to be transported by air to reduce travel time. On the other hand, for non-urgent cases, the service is dominated by neurosurgical (n=29, 21%) and surgical (n=22, 16%). This type of transfer request is made either for subspecialty consultation and admission, advance procedure or imaging or elective surgical procedure.

In our region, Hospital Sandakan (n=117, 40%) and Hospital Tawau (n=93, 32%) made the highest request for air transfer service as this are the busiest hospital in east Sabah. Although majority of the patient that used Medevac service were adults age group (n=171, 59%), there were also large number of patients from pediatric (n=55, 19%) and neonates age group (n=28, 10%). Most of the transport in neonates age group requires either expert consultation and management from neonatologist, Neonatal Intensive Care Unit admission or urgent surgical intervention of birth defect by pediatric surgical team. Whereas for pediatric age group, many of the transfer were non-urgent case as they were transported for subspecialty consultation and expertise.

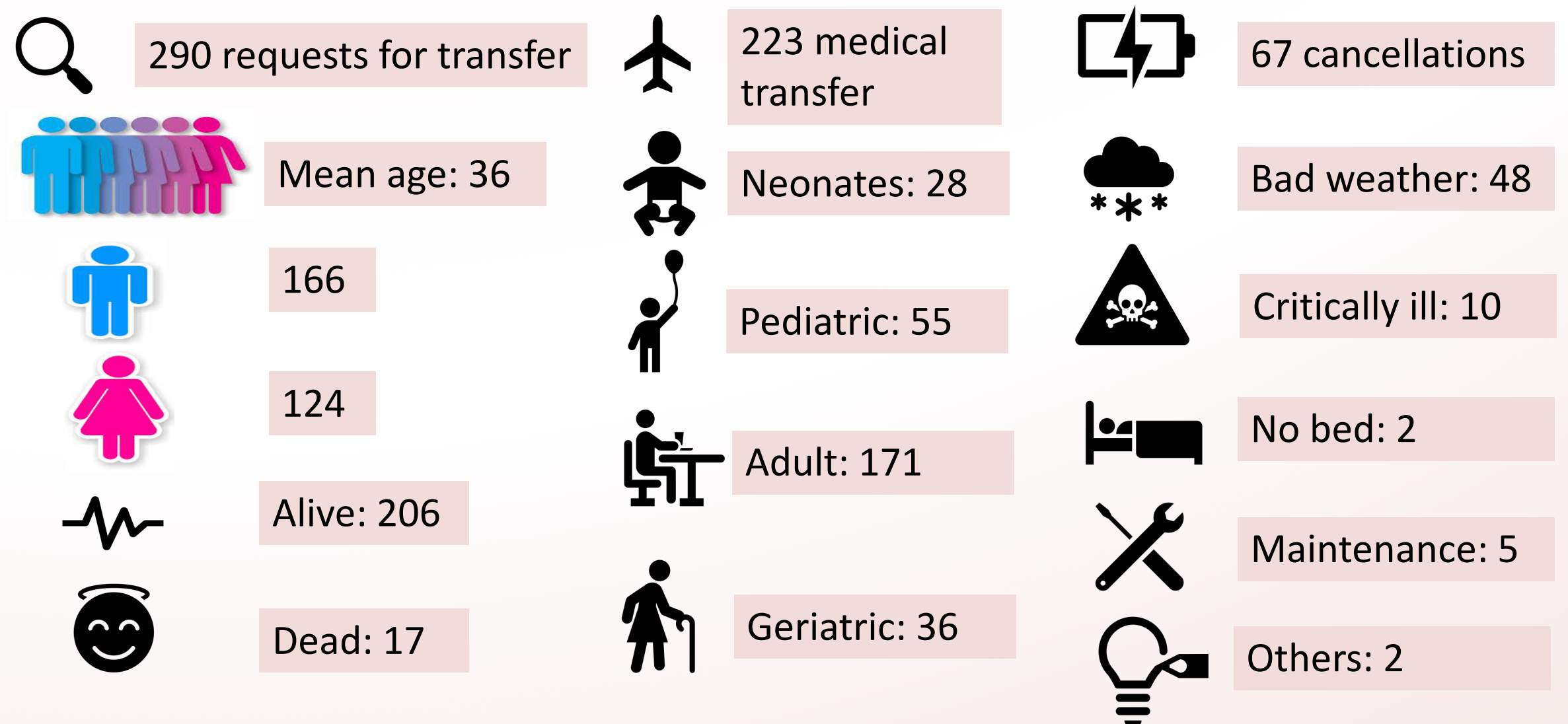
Conclusion

Medevac air transfer service is proven beneficial in improving healthcare service in Sabah. However, it should be noted that there is a need of subspecialty centers especially in Cardiology, cardiothoracic, neonatology, neurosurgery, and pediatric surgical in east Sabah, and Interior to improve the outcome of patients especially in emergency setting.

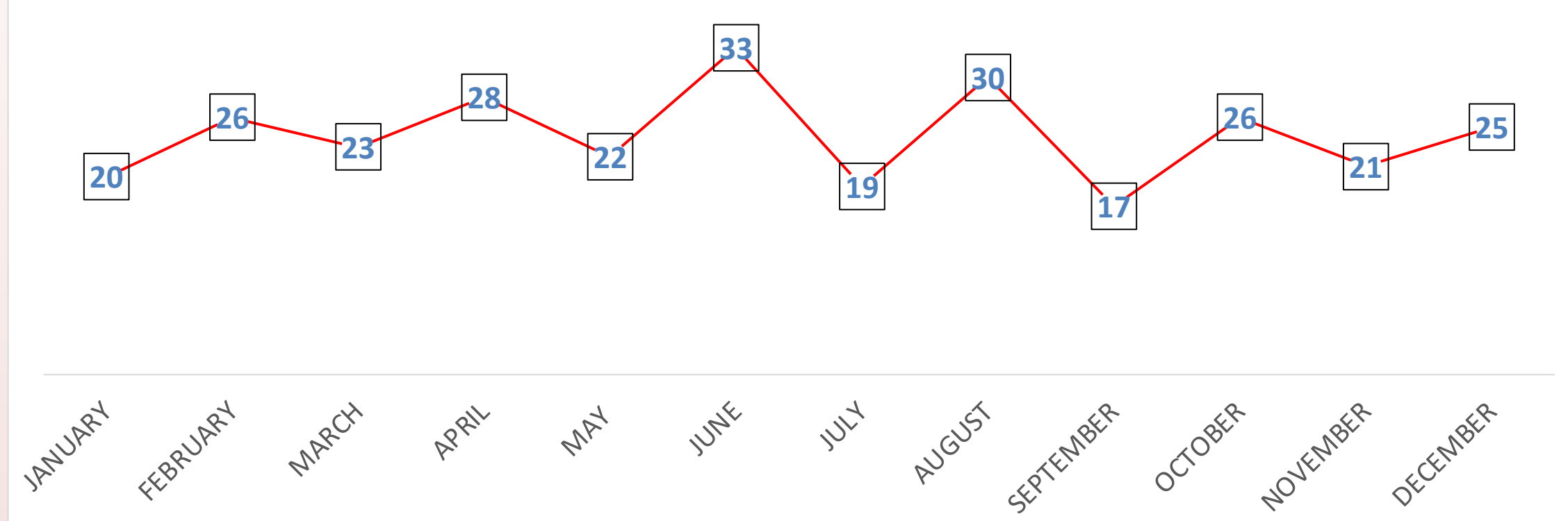
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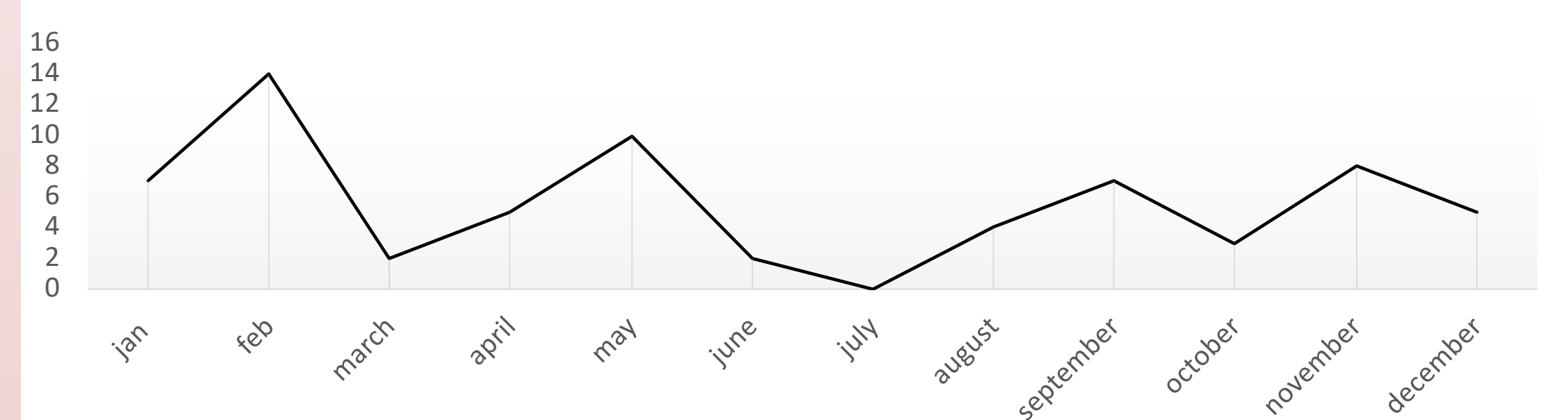
Results



GRAPH 1: PATTERN OF SABAH MEDEVAC REQUEST IN YEAR 2018



Graph 2: Pattern of cancellation of Medevac service in year 2018



	Total	Emergency Transfer	(%)	Non Urgent Transfer	(%)
Requesting Hospital					
District	21	13	9	8	6
Hospital Ranau	1	1	0.6	0	0
Hospital Kota Marudu	1	0	0	1	0.7
Hospital Keningau	5	1	0.6	4	2.8
Hospital Kinabatangan	1	1	0.6	0	0
Hospital Kudat	4	2	1.3	2	1.4
Hospital Labuan	16	13	8.9	3	2.1
Hospital Lahad Datu	22	12	8	10	7
Hospital Pitas	6	6	4	0	0
Hospital Sandakan	117	52	34	65	47
Hospital Tawau	93	50	33	43	31
Hospital Queen Elizabeth 1	1	0	0	1	0.7
Hospital Queen Elizabeth 2	1	0	0	1	0.7
Hospital Wanita & Knanak2 Likas	1	0	0	1	0.7
Requesting speciality					
Cardiology	37	30	20	7	5
Cardiothoracic	13	9	6	4	2.8
Ent	5	2	1.4	3	2.2
Hematology	22	1	0.6	21	15.1
Medical	15	6	4	9	6.5
Neonatology	9	8	5.2	1	0.7
Neurosurgery	71	42	28	29	21
Ong	10	4	2.6	6	4.3
Ophthalmology	4	1	0.6	3	2.2
Orthopedic	15	5	3.4	10	7.2
Paediatric	12	6	4	6	4.3
Paeds Surgical	15	10	6.6	5	3.6
Plastic Surgery	2	0	0	2	1.4
Surgical	42	20	13	22	16
Urology	7	3	2	4	2.8
Vascular Surgery	11	4	2.6	7	5