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Jungle Doc: Providing Rural Health Clinic Services in Sarawak

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ABSTRACT

This article is to share the experience and challenges of serving in a rural health clinic and to inspire healthcare workers to take up the challenge to serve in interior regions. The article shares the author's experiences encountered while serving at Mulu National Park Health Clinic. Mulu is a UNESCO World Heritage Site, located in Sarawak, Malaysia. It holds many natural wonders and the settlement there consist of the nomadic Penan tribe and the Berawan mainly. With a population up to around 1000 it is a settlement surrounded by jungle. Medical services are provided from a government clinic since the early 90s, with an in-house medical officer post established since 2010. Serving at rural areas is an opportunity to gain valuable medical experience and provide medical and public health services to the community.

Keywords*:* Mulu clinic, Sarawak, Rural Health Services, rural clinic, Mulu.

INTRODUCTION

Sarawak, Malaysia has a population of 2.9 million (Sarawak Government, 2024) and approximately 43% live in interior regions, The highest proportions are in Sabah and Sarawak states (Ching S.Y et al., 2020; Population Statistic*s*, 2023) . With the huge geographical land mass, Sarawak has more widely dispersed rural communities consisting of various ethnic minorities. Living in longhouses, these communities are surrounded jungles and hence, exposed to its hazards which lowers the quality of living as compared to urban living (Kiyu et al., 2006).

Before the Alma Ata Declaration in 1978, Sarawak has already initiated, initiatives to enhance the health status of their rural populations. The rural health services in Sarawak initially, consisted of dispensaries, sub-dispensaries, travelling dispensaries and maternal and child health

(MCH) clinics. All the services were administered by the Health Department, except MCH services including their staff were managed by the Local Councils (Faizul Mansoor, 2018). By 1980s, all the facilities which bore those names inherited from the colonial government, were replaced as health centers, sub-health centers and village health team respectively, except for MCH. Those components provided curative services. By 1990s all clinics would have both curative and MCH services (Faizul Mansoor, 2018).

Taman Negara Mulu Health Clinic is one of the 247 health clinics in Sarawak (Ministry of Health Malaysia, 2024) (Figure 1) currently, can only be reached through two ways; river and air, either from Marudi town or Miri city respectively. Marudi has a district hospital whereas Miri has the main referral tertiary hospital. The distance between Mulu and Miri is about approximately 30 minutes by commercial plane and approximately an hour by helicopter. The commercial air service operates with two flights a day to Miri. The river transportation by boat from Mulu to Marudi is approximately six hours subject to water level. From the Marudi jetty to Marudi Hospital its less than 5 minutes by road. Marudi Hospital being a district hospital can manage majority of mild to moderate severity of cases. In the event Marudi Hospital would like to refer patients to a tertiary center in Miri Hospital, inter-facility transfer using ambulance is then made. The journey from Marudi Hospital to Miri Hospital is by land which takes approximately 1.5 hours at a safe pace.

The next available clinic close to Mulu is Long Panai Health Clinic which is about two and half hours by boat on the way to Marudi town only serves minor cases just like Mulu clinic. This clinic is however connected to Marudi through an off-road route taking approximately around three hours.

Based on the general survey made in 2012, the residents of Mulu located within the 5 km operational area of Mulu Clinic are around 973 people (Mulu Health Clinic, 2014). This number covers five settlements in Mulu including the two resorts. The clinic also covers one settlement by its village health team (VHT) outside its operational area but within the VHT operational radius of 12km (Kiyu et al., 2006). This settlement is reachable by boat, 30 minutes upstream. The locals of Mulu are from the Penan and Berawan ethnics followed by other Orang Ulu ethnicities. Others residing here are workers at the resort, researchers and other government officers including from the clinic (Kuok Ho, 2020). Tourist population fluctuates according to holiday seasons with many Caucasians during their summer.

The main source of income for the residents in Mulu is tourism (Ibrahim et al., 2023; UNESCO, 2000). The residents work with the travel agencies and hotel companies such as the Mulu National Park (Mulu National Park, 2023) and a private run resort (Mulu Marriott, 2024). Agriculture is also widely practiced but much of its produce is for local consumption and trade. Other activities carried out are fishing and hunting (not for economic purpose). Many other food and daily supplies are brought in mainly by river from Marudi town or by flight making the prices costlier.

There is one road stretching four kilometers with the airport (and associated service buildings) at the center. Along this road there is a primary school and health clinic at one end, two resorts and several homestays, chalets, lodges and restaurants, besides scattered local houses all along to the other end.

This article reports the personnel experience and sharing of a doctor who served at rural Mulu National Park Health Clinic, to inspire others to serve at the interior regions of Sarawak. This article has been registered with the National Medical Research Registry of Malaysia ID: 24-02636-AW3.

DISCUSSION

Mulu Health Clinic

Mulu quickly became world known once its cavern systems were discovered to be the largest and longest in the world (Faizul Mansoor, 2018). The National Park administration felt the pressing need of a clinic there due to the increasing influx of tourist and local migration as workers in addition to the establishment of the Penan Resettlement Village. The Mulu Health Clinic then, started operating from the Mulu National Park Headquarters on October 26, 1992. On January 1998, a full-fledged government built clinic and quarters was completed and began operations (Faizul Mansoor, 2018; Mulu Health Clinic, 2014).

The health clinic is situated about 1.2km from the airport and it neighbors the Batu Bungan primary school which is next to the Penan Resettlement Village. It is a two-block wooden structure built on stilts, not only securing it from wild animals but mainly from flooding. The Melinau river is just around 20 meters in front of the clinic.

The main block consists of the outpatient and maternal child health clinics, pharmacy, nurses, medical assistant and doctor's examination rooms. The other block has the delivery room, kitchen and an observation ward with three beds. Besides the clinic buildings, the clinic grounds also have nine quarters for staff. All built out of wood on stilts too. Rainwater was originally the main water supply for the clinic and quarters, later upgraded, sourcing filtered water from the river. Electricity is supplied by a generator but its operation time is not 24 hours due to limited fuel supply. Internet is however available via satellite 24 hours using solar power. A jetty is also available to receive patients coming by boat and as well as a badminton court for staff and public recreation.

When the clinic first started, it only had one medical assistant. As the population and public health needs grew, more staff were sent and a residing doctor post was created from 2010 onwards. The clinic at the time of the authors tenure was manned by one doctor, two medical assistants, one staff nurse, two community nurse, one health assistant and one general worker. A total of eight staff.

The clinic provides health services and programs just as any other clinic at the urban and semi-urban areas. Services begin like any other health clinic from 8 am to 5 pm with 24 hour on-call services too. Other additional activities carried out and participated by the clinic staff include the Village Health Program (Kiyu et al., 2006), Flying Doctor Services (Hee et al., 2024) and Medical Evacuation by Air (Andrew Kiyu, 1986). This clinic also hosts and services the first rural continuous ambulatory peritoneal dialysis patient (Gregory X & Sakura Doris, 2018) (Figures 2).

Challenges in Providing Health Service

It is challenging serving as the only doctor in a rural clinic. The comfort and facilities for service in a rural clinic is unlike urban clinics. Nevertheless, over time this clinic has developed and kept well managed.

There is less air and water pollution around. Rainwater is the main source of water for domestic and drinking use by the residents here as well, besides the river water. Later, a filtering pump was installed to source water from the river for the clinic (filtered but untreated). The people here are educated to boil water before consumption and also not pollute the river and not to build sewage outlets into it. Monitoring is jointly carried out by the clinic, health office and park authorities. Acute gastro-enteritis surveillance is hence, carried out by the clinic, monitoring diarrheal and vomiting cases. Important, because the water sources are not treated. Fortunately, during the authors course of service here there were no outbreaks of any food and waterborne diseases.

Electricity is generated but not over 24 hours. This is due to the rationed supply of fuel. Usage is controlled to ensure sustainable supply throughout the year. Mulu does experience periods of drought were water levels become low, delaying fuel supply by boat from Marudi that can go for weeks. The generator run mostly during clinic (9am to 3pm) hours and from 6pm to 10pm. If there are night or overnight cases, the generator is restarted and the consumption is recalculated and rationed accordingly cutting from the usual hours.

There are also periods of heavy rains which instead causes flooding, cutting access to the clinic but usually the water subsides within a few hours. Unfortunately, it leaves behind a lot of organic rubbish and mud that all the staff gets together to clean up.

Providing healthcare services in rural areas are challenging. Accessibility to Mulu is most efficiently by air. Boat ride to the nearest town Marudi is long and hazardous. Accidents such as boat overturning (Bernama, 2024) and crocodile attacks (Borneo Post, 2024) has been reported. Its cost, is high and not fixed. Besides the flight to Miri city, there are also flights to Kuching city and temporarily to Brunei and Kota Kinabalu. Miri Hospital is the clinic's main referral point. Emergency cases are medevec there, (Hee et al., 2024) either by calling for a helicopter or using the commercial flight. Successful and quick medevec depends on weather and limited to before 4 pm. Commercial medevec can only be made by those who can afford whereas helicopter transfer is paid by the government. The medical escort can claim their airfares but the patient needs to have their own means to pay or claim (commercial plane). The cases for medevec are not only for emergencies but also for those patients who require admission or further follow up for treatment (maternal child health cases).

In addition to emergency cases needed to be flown out, contacting for referral and help is not as easy. Telecommunication signals is sparse. Sometimes one has to go search around the clinic premise for a good line.

The clinic ward is mainly for observation and transit before medevec. Cases seen besides the non-communicable chronic diseases are as reported by Kiyu et.al (Andrew Kiyu, 1986). Most of the tourist the author has encountered presented with allergies mainly, followed by injuries such

as cuts and fractures. Other emergencies seen were like pelvic inflammatory disease, acute cholecystitis, acute appendicitis, upper gastrointestinal bleed, severe contact dermatitis (Gregory X et al., 2016), stroke and many more.

Despite being a rural clinic, the author takes pride for it to be just well enough equipped clinic. The clinic has trained staff able to resuscitate, observe any critical patients overnight, conduct deliveries, carry out dressings, toilet and suturing and even minor incisions and drainage. The most challenging patients the clinic had was a case of severe allergic dermatitis (Gregory X et al., 2016) and conducting CAPD (Gregory X & Sakura Doris, 2018). A variety of antibiotics and resuscitation drugs were available.

Beside clinical management challenges, public health activities are carried out too. Such activities include vaccination provision via the school health program, vector control and surveillance especially for malaria and tuberculosis. Health education and promotional activities are also carried out. Environmental health surveys are also carried out to ensure water and sanitation are preserved. The doctor here was then known as the Medical Officer in Charge (MOIC) and is responsible for ensuring all these programs are run and reported in a timely manner. Key Performance Index are monitored and monthly reports are sent.

In addition to clinical and public health duties, the MOIC also overseas and supervisors the clerical administration of the clinic. Drug stock, staff leave, claims and managing resources. Financial management and procurement support are carried out from the Miri Divisional Health Office. Technical supervision of clinical and public health services is carried out by the respective profession heads and program heads based from the divisional health office too. The MOIC also has the responsibility to ensure the wellbeing of other staff and the upkeep of the whole clinic. It was during the author's tenure paperwork for a new jetty, generator house, refurbishment of the badminton court, rewiring of solar panel for 24-hour internet service, water supply from river started.

Besides work related to the clinic, as a sole medical officer in Mulu, networking with other agencies are important. Inter-agency programs with the school, airport authorities, resort staff are crucial in ensuring good relationship. This helps in the positive reciprocation and acceptance and support towards health provisions from the health clinic. Together with these agencies, the clinic led in the organization of community sports and events promoting healthy living under the Mulu Smoke Free program (Borneo Post, 2012).

Preparation of Rural Service

Any doctor who wishes to serve in a rural area or who is transferred there, must be firstly prepared in mindset. What is an expected concern should be recognized and planned accordingly to manage subsequent survival there. Keeping cash money is important since there are no banks and prices of essentials are expensive. Ability to cook is an advantage.

Water for cooking and drinking must be filtered and boiled. Activities requiring electricity should be managed to match its time ration.

Establishing good network with the local populace and other agency personnel is another added advantage. One can be well taken care off when in need of assistance and even cooperation to carry out both clinical and public health activities.

There were many communal activities (Figure 3) organized in this small settlement such as the school sports day, family days at the national parks, research group fellowships (include foreign groups too) and even the clinic is expected to carry out community programs of its own. Some of them include gotong-royong, sporting events promoting healthy lifestyle, health screening days and health talks.

Serving in rural areas should be viewed opportunistically. Any successful activity is already a great achievement. Service in rural areas is also an exclusive experience. An opportunistic window to become noticeable or selected for greater opportunities in career.

The support from the ministry is good and apt (Figure 4). Healthcare staff working in rural areas are given special rural allowances, allowed claims, opportunities for further training and courses, guidance and support from superiors. It is important for organizational support to staff providing services in these kinds of areas. Even for staff mobility around Mulu, a motorcycle was provided. There is even a boat.

CONCLUSION

Serving a rural area is a great opportunity not everyone will get a chance to do it. It is only rightful to make the most of the time to carry out one's duty the best one can responsibly.

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