**CONCEPT PAPER**

# Implementing Uberization in Malaysian Healthcare Services

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## ABSTRACT

Getting appropriate healthcare is a challenge to the citizens in Malaysia due to the limited facilities, healthcare providers, and cost of healthcare. Uberization of healthcare will help fill this gap. Uberization helps modify the market or economic model with the introduction of a cheaper and more effective alternative service by introducing a different way of buying or using it, with the use of mobile technology. With powerful artificial intelligence engines operating on cloud servers, mobile apps can provide a better healthcare experience for patients. With uberization application, the patient need not come to the hospital to see a doctor before a treatment can be planned. Once a request is made by the patient, the healthcare providers can come to see the patient at an agreed place. This article aims to explore the possible uberization of healthcare in Malaysia.

## INTRODUCTION

Uber is a ridesharing system which was made possible by the development of GPS, smartphone technology and electronic payment[1]. Uber, which was founded in 2009, initially started in San Francisco, and now operates in more than 300 cities around the world[2]. This software will connect the drivers and vehicles with the consumers who want rides at an agreed price. This phone application also provides information on the location of the driver and the waiting time. A payment system, either with cash or credit card, will be used to complete the transaction.

Incidentally, the term Uberization was coined from this growing industry. Uberization means to modify the market or economic model by the introduction of a cheaper and more effective alternative[3] or to change the market for service by introducing a different way of buying or using it, with the help of mobile technology[4]. The idea behind uberization is providing on-demand services for as many needs as possible, such as food, transportation and other services.

## Challenges with Our Current Healthcare System

The Malaysian healthcare system is a dichotomous public-private system[5], both striving with their objectives. The public sector provides about 82% of inpatient care and 35% of ambulatory care, but the private sector provides about 18% of inpatient care and 62% of ambulatory care[6]. However, due to the limited facilities, healthcare providers, and cost of healthcare, getting appropriate healthcare has been a challenge to the average citizens in Malaysia.

The Ministry of Health has a healthcare facility within 5 km radius, which caters to all including the rural population. However, not all are fully equipped with well-trained healthcare providers or with adequate facilities[7]. Tertiary hospitals too were expanded but were troubled by understaffing. The population growth in any country has always outbalanced healthcare planning, and this has become a big concern.

In this current age, the life expectancy of men and women all around the world has increased, and along with it, chronic diseases. In Malaysia, the life expectancy at birth in 1957 was 55.8 years for men, and 58.2 years for women[8]. In 2018, it increased to 72.7 and 77.6 years respectively[9]. However, the cost of medical healthcare became expensive. Many countries depend heavily on patients' out-of-pocket payments to providers to pay for their healthcare. This prevents some people from seeking care. Several surveys in eighty-nine countries covering 89 per cent of the world's population suggest that 150 million people globally suffer financial catastrophe annually because they have to pay for the health services[10].

The main disease burden in Malaysia has shifted in recent years from communicable to non-communicable diseases (NCDs). In 2015, the prevalence for adults with hypertension was 30.3%, hyper-cholesterolaemia 47.7%, diabetes 17.5%, overweight and obesity 47.7%, tobacco use in men 43%, physical inactivity 33.5% and mental health problems 29.2%[11]. The rising healthcare cost has made it difficult for patients to physically present themselves to clinics or hospitals to be seen and evaluated by healthcare providers.

We believe uberization of healthcare will certainly help overcome this situation.

## Possible Implementation of Uberization of Healthcare

Healthcare services can be broadly divided into emergency services and non-emergency services. Emergency services can include patients with loss of consciousness, chest pain or difficulty breathing. These sorts of cases require immediate medical care, and best be assisted with ambulance services or an urgent visit to the Emergency Department. Non-emergency cases, unlike emergency cases, do not need immediate attention from healthcare providers. These include follow-up cases, immunization and routine blood investigations.

For uberization of healthcare to be successful, a clear definition must be understood by the patients. This is because the flow of request is different, and the response by healthcare providers is also very much different.

The first step in Healthcare Uber request is to identify either it is an emergency case or not. For that to happen, the healthcare provider managing the application must set in clear options, for patients to decide on. After the emergency or non-emergency case has been classified, then the appropriate response can be implemented.

In an emergency case, the application will notify the ambulance to be dispatched immediately to attend to the patient. While en-route, the healthcare providers will prepare appropriate medications and equipment, which will help them provide immediate treatment when seeing the patient.

In a non-emergency case, the ambulance will be dispatched, but at a scheduled time agreed both by the patient and the healthcare provider. For example, if the patient would request routine blood taking to check his blood sugar, he can set a time after he has fasted appropriately, and the healthcare provider will be there at the agreed time and place. The results will be then sent to the patient via WhatsApp or email, without the patient ever needing to come to the hospital. This result will be validated by the doctor, and appropriate advice given. If needed, the patient will be advised to come to the hospital for further consultation and appropriate physical examination.
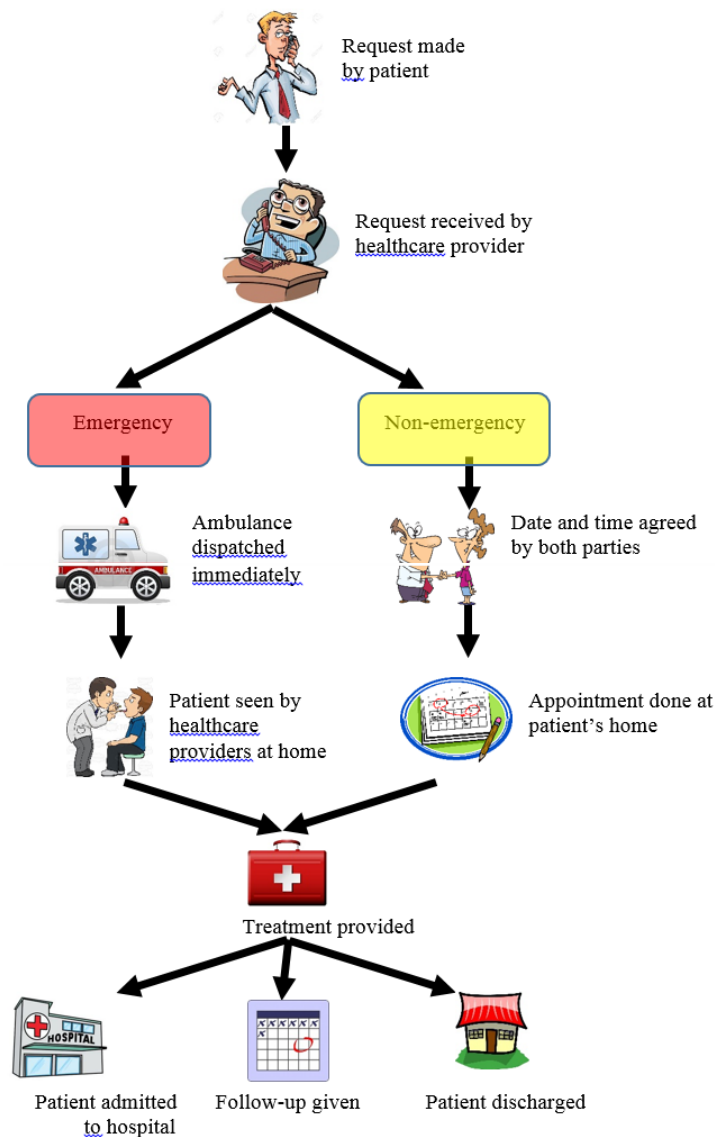


**Figure 1** Flow of Uberization process **How can Uberization be Practiced in Malaysia?**

In Malaysia, the percentage of internet users continues to rise year after year. The percentage of internet users rose from 76.9% in 2016 to 87.4% in 2018. In 2018, urban users made up for 70% of internet users, while rural users accounted for 30%[12]. This is a very good indicator to start uberization in Malaysia.

To have a healthcare service which practices the uber concept, a platform of a mobile application is needed. That application must be ideally be loaded on both the IOS and Android platform and should be free to download. The application must be user friendly, and registration of basic information such as identification data, location of residence and emergency contact number must be done prior to use. It would be better if the application is linked to a nearby hospital database, where healthcare data like known medical problems and medications are easily available especially to the healthcare uber provider. This is of utmost importance, especially for doctors and nurses to identify the possible cause of the patients' medical problem. For example, if a diabetic patient requested a uber for dizziness, the attending doctor would suspect hypo or hyperglycaemia, and prepare accordingly while attending the patient.

The application must also be able to accept multiple moods of payment. This includes credit cards, online banking as well as cash.

The application must also have a good navigation system, to enable the patient to pinpoint his or her exact location. Now, applications like Waze and GoogleMaps are excellent. Instead of creating a new navigation system, the Healthcare App should be affiliated with one of these navigation applications. The app must also be able to lock and save the patients address for fast and accurate location identification, especially during an emergency.

The healthcare app must have room for both patients and healthcare providers to provide feedback on each other. The patient's feedback will be valuable to improve the services of the ambulance and attending healthcare providers. Feedback from the attending healthcare providers will be important for us to be better prepared if the patient requests again in the near future.

**Benefits from the Uberization of Healthcare**

Any nation's healthcare aim is to provide high quality, accessible, and low-cost healthcare[13]. It is the decisions, plans and actions undertaken to achieve specific healthcare goals within the society and it plays an essential role in defining the country's vision, priorities, budgetary decisions and course of action for improving and maintaining the health of its people[14].

The diagnostics and treatment abilities of physicians could be amplified by mobile medical apps. With powerful artificial intelligence engines operating on cloud servers, mobile apps can provide a better healthcare experience for patients. With uberization application, the patient need not come to the hospital to see a doctor before a treatment can be planned. Once a request is made by the patient, the healthcare providers can come to see the patient at an agreed place. The uber request could also bypass the referral process usually done in our current system, and therefore eliminates the time process for a patient to see the relevant medical expert after a problem has been mentioned in the application. The mobile healthcare can be used to eliminate preventable human errors, thus promoting evidence-based decision making. This would ensure high-quality healthcare.

The difference in our current healthcare services and uberization of healthcare is compared in Table 1.

**Table 1** The difference between the current healthcare and the uberization of healthcare

| Aspect | Current healthcare | Uberization of healthcare |
|---|---|---|
| Waiting time | Long waiting time for services | Service on demand |
| Logistics | Transport needed to seek services | Services will come to the patient |
| Need for referral | Referral needed | Self-referral |
| Time of decision for treatment | Decisions can only be made on arrival at the hospital | Initial decisions can be made before the patient arrives at the hospital |

It is believed that with the uberization of healthcare, the people will benefit the most.

## CONCLUSION

The uberization of healthcare in Malaysia is an uphill task. The success of it will require teamwork of healthcare providers, the application developers and the willingness of patients to try a new method of healthcare service. At the present rate of technology growth in the world, uberization of healthcare will eventually be a reality. It's just a matter of when and where.

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