

Standard Operational Procedure In Health Quality For Hajj Pilgrims By Lembaga Tabung Haji

Liza Marziana Mohammad Noh¹, Norazlinda Hj Mohammad²,
Norena Abdul Karim Zamri², Rozman Mohd Yusof³, Harniyati
Hussin³ and Zaridah Abdullah⁴

¹Faculty of Art & Design, Universiti Teknologi MARA Melaka, Malaysia,

²Faculty of Communication & Media Studies, Universiti Teknologi MARA Melaka, Malaysia,

³Faculty of Business & Management, Universiti Teknologi MARA Melaka, Malaysia, ⁴Faculty
of Communication & Media Studies, Universiti Teknologi MARA Shah Alam, Malaysia

Email: lizamarziana@ymail.com

To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v10-i9/7707> DOI:10.6007/IJARBSS/v10-i9/7707

Published Date: 13 September 2020

Abstract

The Hajj season saw thousands of Muslim pilgrims performing one of the five pillars of Islam, congregating in the holy city of Mecca, Saudi Arabia for the annual pilgrimage – the Hajj. The Islamic practice is compulsory for all Muslims who have the physical and financial resources to undertake the journey. It is an obligation for all Muslims to carry out at least once in their lifetime. Thus, having good health is paramount as it not only helps smoothen the flow of the whole pilgrimage process but also ensures a safe journey of devotion towards Allah the Almighty. Hence, this research paper aims to improve the standard operational procedure set by Lembaga Tabung Haji (The Hajj Pilgrims Fund Board) for the pilgrims. This paper also seeks to evaluate the content design of the standard operational procedure by Lembaga Tabung Haji for the pilgrims under their care. This study will adopt Value Management System (VMS) framework to improve the standard operational procedure set by Lembaga Tabung Haji. The methodology to be used is by qualitative approach through information gathered from interviews to be conducted among the pilgrims who have performed the Hajj for the past 2 years and also the first timers. The interviews will be conducted with approximately 50 Hajj pilgrims using open-ended questions. Data analysing will be gathered using thematic analysis. The significance of this research paper is it will hopefully encourage Lembaga Tabung Haji provide better health care services for all hajj pilgrims under its organization. It is also hoped the research would increase the level of consciousness among the hajj pilgrims on the importance of health quality as stipulated by the pilgrimage board.

Keywords: Awareness, Health, Prevention, Medicines, Hajj and Pilgrims.

Introduction

The Hajj is the annual pilgrimage made by Muslims to the Kaaba, the “House of Allah”, in the sacred city of Mecca in Saudi Arabia. Stipulated as the fifth of the Five Pillars of Islam the practice attracts over 2.5 million pilgrims from more than 180 countries to perform the Hajj in the holy city every year. In order to fulfil this command of Allah the Almighty, the pilgrims must not only be financially able but they must also be physically and mentally fit to perform the mandatory rituals of the Hajj. The Hajj gathers millions of pilgrims from different nationalities of different colours of eyes, customs, gender and ethnicity where it creates unity while avoiding differences or disparities. The whole Hajj process takes from five to six days to perform and is conducted between the 8th and the 13th day in the month of Dhul-Hijjah, the twelfth month in the Muslim calendar. The Hajj is conducted under the Islamic lunar calendar or known as the Hijri calendar. In Mecca, the weather changes from one season to another and the climate change could be the cause to several types of diseases depending on the weather. During hot weather, heat-related illnesses such as fever, eczema, heat stroke were common health problems during the Hajj season (Abdelmoety et al., 2018). Exhaustion and dehydration were common occurrences and the lack of health awareness, health symptoms and medicines also contribute to health problems among the hajj pilgrims. Transmission of diseases usually occur during intense congestion of humans and when they were experiencing physical fatigue and extreme climatic conditions which only increase the need for the pilgrims to not only be more aware and concern on health precautions but to also take care of their daily cleanliness regimes. Hence, the Malaysian government need to not only provide quality health care services but to also address this issue seriously so as to create a high level of awareness on the importance of health quality among the Hajj pilgrims. This is vital as the pilgrims’ length of stay in the holy land last for about six weeks. They need to be physically healthy to perform the Hajj rituals which among others require them to stand for a long time, move long distances from one place to another and running between the hills of Safa and Marwa for seven times to fulfil the mandatory pilgrimage rituals based on the requirements of the Hajj process. This is pivotal so as to achieve a ‘mabroor’ Hajj. Harsh weather and the amount of energy needed to perform the whole pilgrimage rituals were factors which could contribute to several health problems to the pilgrims performing the Hajj. The simultaneous movement of a very large group of people during Hajj season may give rise to numerous health risks in the form of communicable as well as the non-communicable diseases. Communicable diseases could be transmitted easily in large gatherings. The large crowds, insufficient basic facilities and close contact during Hajj would make the transmission of contagious diseases easier, such as respiratory diseases (Salmon-Rousseau et al., 2016). Several studies have reported that respiratory infections were the most common illnesses among the pilgrims. Other health problems include cardiovascular diseases, cholera, pneumonia, gastrointestinal problems and others. Cough, runny nose and fever were illnesses frequently suffered by the pilgrims which affected their performance and diminishing the rapid flow of their pilgrimage journey. Transmission of infectious diseases were also much easier. Staying together in crowded conditions exposed the pilgrims and the local population to a range of infectious diseases such as skin infections. Respiratory and gastrointestinal tract bacterial and viral infections could also spread rapidly and affect the health of the hajj pilgrims. Lethal infectious disease outbreaks such as the Middle East respiratory syndrome coronavirus (MERS-CoV), the Ebola virus and the Zika virus were

common during the Hajj seasons in the 19th and 20th centuries although they have now been controlled to an extent by the huge investments made by the government of Saudi Arabia under the public health prevention and surveillance programs. Therefore not only the Kingdom of Saudi Arabia needs to address this prevailing issue but it also requires the help and guidance of the Hajj travel agencies and health regulations from the international public health agencies such as the WHO and the Centers for Disease Control and Prevention. During the entire performance of the Hajj rites, quality health care services and medical facilities should be provided extensively in the cities of Makkah and Mina to ensure the risks of ill health as well as cleanliness issues could be reduced and curbed effectively. The Tabung Haji Agency has always recommended flu vaccinations for all Hajj pilgrimages before their departure to the holy city but most of the pilgrims failed to adhere to these recommendations. Since the year 2005 vaccines for influenza have been recommended to all pilgrims, especially for those considered under high risk groups, which include those who are above 65 years of age and those with pre-existing medical or immune-compromising conditions. Despite all the recommendations, the acceptance rate on the vaccine among the Hajj pilgrims varies by country and year. Many pilgrims simply refused to take the vaccines. The main reasons identified for their refusal were reliance on “natural immunity,” lack of awareness or knowledge and lack of access to such vaccines. Many people were found to have misperceptions about vaccines, such as they contain toxic preservatives and are the actual cause of the disease. As such, serious health awareness as well as knowledge on health care and medicines should be provided in order to prevent, minimise and curb the rise of health problems among the Hajj pilgrims, as the saying goes “prevention is better than cure.” To improve the standard operations procedures conducted by Tabung Haji, Value Management System (VMS) will be implemented. Based on the VMS model, it will act as guidelines in helping Tabung Haji in achieving effective good values and improving their implementation within their organizations’ system.

Problem of Statement

It is important for every pilgrim who is going to perform the Hajj to undergo a health checkup. To ensure the physical and mental health of all pilgrims Tabung Haji Agency (TH) has made health screenings as one of the requirements for all pilgrims. All information on the health status of the pilgrims were recorded in their Health Record Book as reference for the medical team whilst in Mecca. However there were many pilgrims who made light of the importance of good health before departing for the Holy Land and whilst they were there. Newspaper articles as well as reports from Tabung Haji quoted a significant number of Malaysian pilgrims with poor health conditions whilst performing the Hajj (Haji, 2014). There were even cases where some hajj pilgrims had the symptoms of infectious diseases. Hashim et al. (2016) reported that 61.1% of the pilgrims suffered from influenza due to the fact that they refused to take the influenza vaccine with only the remaining 38.9% of the pilgrims vaccinated. There were also a number of pilgrims who failed to comply with the instructions and advice given by the Tabung Haji agency to undergo a preliminary health checkup at least six months prior to their departure. Issues such as falsification of medical records to evade the mandatory vaccination requirement by the Saudi government were also rampant among the Hajj pilgrims. The gaps and literature review show that problems exist within the management system and the wellness inventory model. Therefore, this research paper aims to improve

the existing standard operational procedure by the Tabung Haji agency for better health quality among the hajj pilgrims.

Research Objectives

1. To improve the standard operational procedure conducted by Lembaga Tabung Haji for the Hajj pilgrims.
2. To evaluate the content design of the standard operational procedure drawn by Lembaga Tabung Haji for the Hajj pilgrims.

Research Questions

1. What are the ways to improve the standard operational procedure by Lembaga Tabung Haji for the Hajj pilgrims?
2. How could the content design of the standard operational procedure be better developed by Lembaga Tabung Haji for the Hajj pilgrims?

Significance

The significance of this research is not only to create awareness but to also evaluate the effectiveness of health implementation brought about by the Tabung Haji Agency. This study also serves to not only improve the quality and efficiency of health management by the governmental bodies such as the Tabung Haji agency but also the policies which were imposed with regards to the health issues on the Malaysian Hajj pilgrims. The research is also hoped to help in the upgrading of procedures and enhancing good health management, services and standard operating procedures (SOP) in reducing negligence. Most importantly the pilgrims themselves should be made aware and be concerned on these issues as the practice of good health would facilitate their journey of Hajj in order to achieve a mabroor Hajj. This study may also provide inputs which could provide benefits in health care and help the Hajj management authority to increase their efficiency and quality for the Malaysian pilgrims in future.

Literature Review

Management System for health quality

Tariq (2017) discovered that the existing management system for health quality merely emphasizes on treatment and focuses more on physical, physiological and medical history. It is too general and is not specific for any particular event or religious rituals even though several instruments and models related to wellness have been developed. Tariq (2017) added that there is a need to develop instruments, models, prescriptions and better management information system which are more specific for the health and wellness of the Hajj pilgrims. Thus, from the findings of his research, a web based system was developed and the usability of the developed system was measured using Isometrics questions. The findings showed that the instruments fit the model in terms of construct validity, items and person reliability, rating scale, dimensional and item fit. Therefore it is recommended that the Ministry of Health and the Tabung Haji agency make use of this instrument and help promote awareness among the Hajj pilgrims by referring to the model to ensure better Hajj practices. There were several studies conducted by the Saudi Ministry of Health which investigated the health services for all pilgrims during the Hajj season. However they are mostly limited to hospital

settings. The Saudi Ministry of Health took a serious view in the welfare of the pilgrims during the Hajj season. To enhance the public health systems in the pilgrims' host countries, the Saudi Ministry of Health made sure that the Hajj health regulations were adhered to. For example, each pilgrim should be able to provide a valid vaccination certificate before obtaining a Hajj visa. But it was quite a task to verify that the certificate was valid. Studies have shown that 44–46.5% of the pilgrims did not take the required meningitis vaccine during the recommended period (which was between 10 days to 3 years before departure) and that could be a potential cause for the spread of infectious diseases. Collecting feedback from local and international agencies and publishing annual public health regulations and recommendations are much encouraged as one of the means to prevent and control health threats during the Hajj seasons. Outreach training programme for public health professionals, health care providers and health system research projects which are part of what is now known as global health diplomacy are also needed to be implemented (Aldosarri et al., 2019).

Health Quality

The government of most Islamic countries had already taken steps to curb the plague which had spread among the Hajj pilgrims or those performing the umrah and more in enhancing measures related to prevention and control of infections. The Saudi government for example had in May 2001 mandated that the quadrivalent meningococcal vaccine be administered ever since the occurrence of a two-year outbreak of the world's most concentrated disease which had affected 16 countries after the Hajj season for that year (Shibl et al., 2013). It was reported that the outbreak has led to death and serious illness among the pilgrims and the people around them. The risk of spreading the infection among the pilgrims during the hajj & umrah season was high due to the large number of people from different countries gathering in one place at the same time. The pilgrims could have also passed the disease and infected their family members upon returning home. The outbreak had gained worldwide attention including from the World Health Organization (WHO). Razavi et al., (2016) added that the obligation to get vaccinated was one of the best precautions to prevent outbreaks effectively. It is of the utmost important to be of good health to enable one to perform the Hajj rituals effectively in order to obtain a *mabroor* Hajj. Throughout the years the hajj and umrah pilgrims had suffered from various health issues arising from unhygienic conditions due to the mismanagement by the authorities and from congested gatherings. Pilgrims were often advised to follow wide-ranging hygiene measures such as regular hand washing, using disposable materials and the use of masks (Hoang et al., 2019). It could be inferred therefore that knowledge and application of basic hygiene principles and measures in such an environment are paramount so as to reduce the risk of health threats among the hajj and umrah pilgrims.

Health Awareness and Prevention of Disease

A number of health awareness and prevention of disease campaigns were carried out with the aim of minimizing the spread of diseases and all associated risk factors around the world. Such campaigns would hopefully create awareness especially among the hajj and umrah pilgrims on the importance of being in the best of health when performing their *Ibadah*. Public service announcements, health fairs, mass media campaigns and newsletters are good examples of activities carried out in raising awareness on healthy practices for the

general public. According to Amani, Kerrie, Tashani, et al. (2016) many studies have explored the knowledge, attitude and beliefs in relation to preventive measures taken by the Hajj pilgrims. A French study has revealed that not many pilgrims were aware of the importance of social distancing and the use of facemasks as precaution against respiratory infections. And there were also misconceptions about preventive measures and the risks of respiratory infections among Australian pilgrims. These situations reflect the lack of awareness among pilgrims around the world with regards to sustainable healthcare. Amani et al. (2016) added that their research conducted in Australia on the Hajj pilgrims showed that there were significant opportunities to improve awareness among the Hajj pilgrims on the importance of taking preventive health measures and which indicated the need for better dissemination of official health information from the Saudi Ministry of Health to a broader international audience.

Vaccine

Vaccination against serious bacterial infections was recommended for all Hajj pilgrims (Yezli et al., 2018). Although the uptake of mandatory vaccines among the Hajj pilgrims was acceptable, the uptake of other recommended vaccines remained suboptimal. Two studies conducted in 2009 and 2013 reported a high prevalence of respiratory illness symptoms among the Malaysian pilgrims at 90% and 93.4% respectively and the majority of the pilgrims reportedly contracted the infections at Arafat (Deris et al., 2010). The proportion of respiratory tract infections was lower (38.9%) among those with influenza vaccine uptake when compared to unvaccinated pilgrims (61.1%) (Hashim et al., 2016). In Malaysia, meningococcal quadrivalent (ACYW-135) polysaccharide vaccine was made compulsory for all intending Hajj pilgrims in line with the requirement made by the Saudi Arabia Government. The vaccines were to be administered at least 2 weeks before departure to the Holy Land. However, this vaccine provided immunity to an individual for a period of two years (MCPG, 2010; Hajj T, n.d). The Malaysian Government bears the responsibility of providing the meningococcal vaccine free of charge to the pilgrims. In addition, the Malaysian Health authorities recommended intending Hajj pilgrims to take influenza and pneumococcal vaccines to augment their body immunity system. Both vaccines were strongly encouraged to be taken by pilgrims aged 50 years and above and by those with underlying medical conditions like asthma, diabetics, lung or kidney diseases. The vaccine should be administered at least a month before the departure date to the Holy Land where it could provide immunity against influenza and pneumococcal infections for 1 and 5 years, respectively (Tabung Haji, n.d). However, many studies have found varying figures in the uptake of the recommended vaccines ranging from 0.7% up to 100% among the hajj and umrah pilgrims despite the recommendations by health authorities. This was mainly due to the misconception by many that the vaccines could revert to cause disease, reliance on natural immunity and insufficient awareness (Haridi et al., 2017). However, the belief in alternative medicine during Hajj through the consumption of dates, honey, olive, pomegranates and other foods and fruits considered blessed in Islam were common resulting in vaccine hesitancy among the pilgrims. These misconceptions and misperceptions were common and rampant in Malaysia and which affect the uptake of the recommended vaccines.

Methodology

While quantitative studies allow us to test specific hypotheses and facilitate comparison, they leave the underlying reasons for the behaviour that we observe poorly understood. Qualitative methodology allows researchers to gain a comprehensive understanding of human behaviour by improving our understanding of the 'life experience' of others, as well as by elucidating underlying reasons and motivations. Hence, a descriptive qualitative research design will be used in this study to delve into the consciousness of the hajj pilgrims on health issues. The data will be analysed using thematic analysis (Braun & Clarke, 2006). Thematic analysis was chosen as an independent qualitative descriptive approach to be the method for identifying, analyzing, and reporting patterns (themes) within data.

Participants

Purposive sampling will be used to reach potential participants and provide rich data pertinent to the research questions (Tong, Sainsbury & Craig, 2007). Eligible participants will be needed to fulfil few criteria (refer Table 1.1). 50 participants will be recruited and they will be divided into two groups. 25 participants will be categorized into Group 1 and the remaining 25 will be in Group 2.

Table 1.1 Criteria for Interviewing Participants

Criteria for Participants		
	Group 1	Group 2
1	First Time going for the Hajj	Have gone to perform the Hajj for few times
2	Aged 30 and above	Aged 30 and above
3	Have attended basic Hajj course	Have attended basic Hajj course
4	Must have passed the medical examination and undergo mandatory vaccination. <ul style="list-style-type: none"> * <i>Meningococcal Quadrivalent (ACYW-135) Vaccine</i> * <i>Influenza Vaccine</i> * <i>Pneumokokus Vaccine</i> 	Must have passed the medical examination and undergo mandatory vaccination. <ul style="list-style-type: none"> * <i>Meningococcal Quadrivalent (ACYW-135) Vaccine</i> * <i>Influenza Vaccine</i> * <i>Pneumokokus Vaccine</i>

Interview

Data shall be collected through one-to-one interviews (n = 50) and all participants must adhere to the criteria given. Relationship between researcher and participants was not established prior to study commencement (Tong et al., 2007). A semi structured interview is a flexible method allowing free expression of thoughts without exact form or order. An interview guide with predetermined questions based on existing literature was used to focus the conversation on desired themes (Parahoo, 2014). The pilot test (the interview guide) will be tested before the data collection. The interviews will be audio-recorded and all participants need to fill-up the consent letter before the interview session.

Data Analysis

Thematic analysis will be conducted using Braun and Clarke (2006) six phases. Transcribed texts were read thoroughly and preliminary notes were taken. Initial codes were generated and grouped meaningfully using separate computer files by the first author. The codes were sorted according to their content into potential themes using tables and thematic maps. Themes were identified at semantic level. The authors discussed the preliminary themes, which were reviewed at the level of coded data extracts under each theme and in relation to the entire data set. At this point, some themes were collapsed while some others were formed. The themes were then refined with accompanying narrative in order to find the essence of each theme. In the final analysis, the themes were named and the analysis was reported (Braun & Clarke, 2006).

Trustworthiness

We use credibility, dependability and transferability to describe the trustworthiness in this study (Granaheim, Lindgren & Lundman, 2004). Credibility was supported by following systematically the guidelines of Braun and Clarke (2006) during the coding sessions and ensuring that all authors accepted the final themes (Polit & Beck, 2017). The analysis was conducted at semantic level avoiding interpretation to make sure that the results correspond with the informants' experiences. The research questions were constantly asked from the data to differentiate actual expectations from general experiences. The quotations in reporting confirmed that themes have emerged from the participants' interviews and not from the mind of the researcher. Participants' profound experience on the subject support credibility of the research (Granaheim, Lindgren & Lundman, 2017). Rigorous literature search was conducted only after the data analysis to avoid the influence of previous research. The sample size was considered sufficient to reach the saturation. Dependability was supported by using the same interview guide for all participants (Polit & Beck, 2017) and by conducting the data collection and analysis over a relatively short period.

Conclusion

This study will be conducted through interviews with the pilgrims who have been to the Holy Land and also those who are going to the Holy Land. The findings of this study are expected to answer the first research question on improving the standard operational procedure of the Tabung Haji agency for the hajj pilgrims. The second research question is to evaluate the content design of the standard operational procedure of Tabung Haji agency for the hajj pilgrims. The Tabung Haji agency has always taken the pilgrims' health conditions seriously as they are responsible for them. These questions are helpful in evaluating the effectiveness in the standard operational procedures which have been implemented on the pilgrims. It is hoped that the pilgrims will be more aware on the importance of getting preliminary health checkups before departing for the Holy Land. Performing the ibadah without having good health will definitely affect the performance quality in their worship. It also has an impact on the effectiveness of the health programs provided for them.

Relevance to Government Policy (if any)

It is hoped that this research could provide benefits to the management of the Lembaga Tabung Haji system in improving the standard operational procedures (SOP). This study is

also hoped to help the agency obtain information regarding the pilgrims' wellness level and allow them to provide exposure to the pilgrims on the importance of health and wellness.

References

- Amani, S. A., Kerrie, E. W., Tashani, M., Harold, W. W., Anita E. H., Nasser F. B., Robert, B., Harunor, R. (2016). Exploring barriers to and facilitators of preventive measures against infectious diseases among Australian hajj pilgrims: Cross-sectional studies before and after hajj. *International Journal of Infectious Disease*, 47, pp. 53-59.
- Aldosarry, M., Aljourdy, A., & Celentano, D. (2019). Health issue in the pilgrimage: A literature review. *Eastern Mediterranean Health Journal*, Volume 25 Issue 10.
- Deris, Z. Z., Hasan, H., Sulaiman, S. A., Wahab, M. S. A., Naing, N. N., & Othman, N. H. (2010). The prevalence of acute respiratory symptoms and role of protective measures among Malaysian hajj pilgrims. *Journal of travel medicine*, 17(2), 82-88.
- Granaheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Educ. Today* 24, 105–112. <https://doi.org/10.1016/j.nedt.2003.10.001>.
- Granaheim, U. H., Lindgren, B.-M., & Lundman, B. (2017). Methodological challenges in qualitative content analysis: a discussion paper. *Nurse Educ. Today* 56, 29–34. <https://doi.org/10.1016/j.nedt.2017.06.002>.
- Hashim, S., Ayub, Z. N., Mohamed, Z., Hasan, H., Harun, A., Ismail, N., & Aziz, A. A. (2016). The Prevalence And Preventive Measures Of The Respiratory Illness Among Malaysian Pilgrims In 2013 Hajj Season. *Journal of travel medicine*, 23(2).
- Haridi, H. K., Salman, K. A., Basaif, E. A., & Al-Skaibi, D. K. (2017). Influenza vaccine uptake, determinants, motivators, and barriers of the vaccine receipt among health care workers in a tertiary care hospital in Saudi Arabia. *Journal of Hospital Infection*, 96(3), 268-275.
- Malaysian Clinical Practical Guidelines AoMoM. (2010). *Clinical Practice Guidelines, Adult Vaccination*. Kuala Lumpur: Academy of Medicine of Malaysia
- Tariq, I. M. (2017). *Management information system for hajj pilgrim's total wellness*. (Unpublished doctoral dissertation). Universiti Teknologi Malaysia, Skudai, Malaysia.
- Parahoo, K. (2014). *Nursing research. Principles, process and issues. Third ed.* United Kingdom: Red GlobePress.
- Polit, D., and Beck, C. (2017). *Nursing Research: Generating and assessing evidence for nursing practice. Tenth ed.* United States: Wolters Kluwer Health
- Razavi, S. M., Saeednejad & M., & Salamati, P. (2016). Vaccination in hajj: An overview of the recent findings. *International Journal of Preventive Medicine*, 7(1), 129.
- Shibl, A., Tufenkeji, H., Khalil, M., & Memish, Z. (2013). Consensus recommendation for meningococcal disease prevention for hajj and umra pilgrimage/travel medicine. *Eastern Mediterranean Health Journal*, 19(04), 389-392.
- Tong, A., Sainsbury, P., Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int. J. Qual. Health Care* 19, 349–357. <https://doi.org/10.1093/intqhc/mzm042>.
- Abdelmoety, D. A., El-Bakri, N. K., Almowalld, W. O., Turkistani, Z. A., Bugis, B. H., Baseif, E. A., Melbari, M. H., AlHarbi, K., & Amani, Abu-S. (2018). Characteristics of heat illness

- during hajj: A cross-sectional study. *BioMed Research International*, 2018, 1-6.
Retrieved from: <https://doi.org/10.1155/2018/5629474>
- Hajj, T. (n.d) *Immunization information: Tabung hajj*. Available online
at: <https://www.tabunghaji.gov.my/en/immunization-information>
- Hoang, V., Meftaha, M., Anh., L. T. D., Dralia, T., Yezlic. S., Alotaibic, B., Raoulta, D., Parolaa, P., Pommier, V., & Gautret, P. (2019). Bacterial respiratory carriage in French hajj pilgrims and the effect of pneumococcal vaccine and other individual preventive measures: A prospective cohort survey. *Travel medicine and infectious disease*, 31, 1477-8939. <https://doi.org/10.1016/j.tmaid.2018.10.021>
- Salmon-Rousseau, A., Piednoir, E., Cattoir, V. & De La Blanchardièrea, A. (2016). Hajj-associated infections. *Medecine et Maladise infectieuses*, 46, 346-354. Retrieved from: <http://dx.doi.org/10.1016/j.medmal.2016.04.002>
- Haji, T. (n.d). *Pendaftaran haji*. Retrieved April 23, 2014, from <http://www.tabunghaji.gov.my/>
- Hajj, T. (n.d) . *Hajj quota*. Available online
at: <https://www.tabunghaji.gov.my/en/hajj/general-info/hajj-quota>.
- Yezli, S., Gautret, P., Assiri, A. M., & Gess, B. D. (2018). Prevention of meningococcal disease at mass gatherings: Lessons from the hajj and umrah. *Vaccine*, 36 (31), 4603-4609.