Medical Emergency Response in Islamic Community Collaboration with Network of Mosque leveraging the whole concept of Government and Quadruple Helix Model in Malaysia

Muhamad Hairulnizam Hasan, Gul Muhammad, Abdul Rahman Ahmad Dahlan

Abstract— **A medical emergency is a situation where injury or illness that will discriminate grows an instant risk to a person's long-term health or even life. Eliminating the medical emergency has become the more critical issue in developed countries especially in rural areas and urban areas. The issues that are normally raised within the matter are on the reachability to the incident and also the time taken to respond to the incident. In this paper we discussed how the Islamic Community with the help of the Whole of government concept (WoG) and Quadraple Helix Model (QHM) together with the concept of Network of Mosque (NoM) will help the congested area where ambulance or medical assistance hard to reach in case of accident, or health Emergency. The Authors intended a consolidative and cooperative mechanism of Mosque and Knowledge Management (KM) as to facilitate the emergency response to the victim. By leveraging the above concepts Writes empathize that the Medical Emergency can be further effaced in rural areas in Malaysia.**

Index Terms—Medical Emergency in congested areas, Quadruple Helix Model (QHM), Whole of Government (WoG), Network of Mosque (NoM)

I. INTRODUCTION

Many organizations are now focusing on continuously improving the quality of the services that they provide in order to attain patient satisfaction [1]. Knowledge Management (KM) is the aggregation of actions or process that regulate the creation, dissemination, and usage of knowledge, that is, as the word implicates the power to handle "knowledge" and right knowledge [2]. Mean while rapid advancements in science and technology have continually added new dimensions and knowledge to the practice of medicine and making it more complex. Thus, it has become increasingly difficult for physicians to keep pace with advancements in all areas of medicine and be an expert in all. The Ministry of Health is the main healthcare provider in the public sector, from primary healthcare in the health clinics

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and outpatient departments in hospitals; to basic inpatient, specialist and subspecialist medical care services in the hospitals.

In Islamic countries we have a huge network of Mosques everywhere and easily reachable from any location. Mostly, the mosques only subsist for the carrying out of Salah (prayer) and other religious offerings and no other actions are countenanced in it. The very nature of mosque is the central to the occasions of the Muslim Community [3]. Moreover, the Islamic Shari'ah has determined that the mosque is required to play essential as well important roles within the Muslim community, not just to become place for praying. Network of Mosque (NoM) conception intended in this paper in order to deliver the project effectively and the first priority of the project is to help the people who are facing lack of immediate medical response in Malaysia. With the integration of Quadruple Helix Model (QHM) and Whole of Government concept (WoG) [4], the proposed medical emergency response via Network of Mosque can be truly realized

Most of the core Emergency Medical Services (EMS) services are being provided province wide: emergency medical dispatch, emergency medical response and medical care, emergency medical transport and inter-facility medical transport. While challenges remain, and they are the focus of this review, a province wide dispatch system, with some exceptions, is operating effectively; the land ambulance system, while under continuing stress in part due to rapidly increasing call volumes [5]. In the context of developed countries, the size and population of big and congested cities is getting bigger and consequently the emergency response time is increased as medical team find difficult to reach the target place. The term "golden hours" refers to the situations that imply the importance of emergency response in medical all over the world. It is a well-accepted fact that a victim or patient who receives basic care earlier and is transported to the nearest healthcare facility within 15-20 minutes of an emergency has the greatest chance of survival ref. Blackwell and Kaufman have demonstrated a relation between response time less than five minutes and improved survival, achieving this objective for the majority of life-threatening calls [6].

In Malaysia, the Ministry of Health (MOH), St. John`s Ambulance, Red Crescent Society and Civil Defense are the first responder to the pre-hospital care and ambulance service [7]. However, the performance of the service is still under par satisfaction especially at the urban area. We can see the time interval for ambulance to arrive at the destination is still longer and this could possibly endanger victims` life.

II. RESEARCH OBJECTIVE

The aim of this paper is to intend an integrated and collaborative platform. The authors expect that the EMS in congested areas in Malaysia can be obscured through enhancing entrepreneurial program and training, establishing a good framework and governance for economic growth and transformation then improve the quality of life of the people who are having enough Medical resources. Besides that, the integration and coaction with Quadruple Helix Model (QHM), Whole of Government (WoG), Network of Mosque (NoM)

In order that raise the enterprising program and training, the writers leveraging on two key concepts, namely Quadruple Helix Model (QHM) concept where the helices of this concept are government, industries and community and Whole of Government (WoG) concept. Both concepts assist the reaching collaboration and consolidation. Beside these two important concepts, the use of Network of Mosque (NoM) concept in this project will be beneficial in improving the EMS system in Malaysian context.

Below are the few objectives of this paper:
1) To study the current practice of Emergency Medical Response world widely and locally.
2) Propose to develop cooperative relationships between Government Agencies and Mosque community.
3) Propose to integrate the goals and activities of EMS with those of network of Mosque. □
4) Propose to improve the utilization of infrastructure which facilitates communication to emergency assistance.

III. LITERATURE REVIEW

A. Emergency Response

Emergency Medical response is a situation where a team is required to arrive and act fast to tackle a critical situation. As the barriers exist in between the emergency response team and the victim, some of the method has been proposed by researchers to increase the level of effectiveness in emergency medical response. In Sanchez-Mangas et al. [8], the authors investigated and analyzed the relationship between the times interval of the emergency services to the crash scene is related to a lower probability of death. They proposed that reduction of time interval in medical response time could be statistically associated with an average decrease of the probability of death by one third, both on motorways and conventional roads. Billhardt et al. in [9] have proposed a complex event processing architecture to automatically identify and transmit incidents and changes in the operational states of ambulances. While it is true to have more effective guideline to ambulance routing plan.

B. Quadruple Helix Model

Helix model is a relation model between various organizations. Initially, Leydesdorff and Etzkowitz in [10] proposed the model of a Triple Helix (TH) of university–industry–government relations for explaining structural developments in knowledge-based economies. In Quadruple Helix Model, Society contribution is included as one of the helices to generate university–industry–government-Civil Society [11]. Creative

cities and knowledge regions are thus considered the true engines of economic growth [12]. Academic and industries are working together to explore on new technology and optimized infrastructure, with integrated solution so that the creative approach could rise. In turn, Government could support financially, even could come together from industries, and regulation to inspire innovation activities. Civil Society will contribute in the form of self-participation towards creative approach with accessibility to knowledge resources. Relationship and interaction between helices could become a useful framework of orientation for our proposed solution.

1) Networking; This is where everybody could communicate with each other .
2) Collaboration: involving partners, competitors, universities, and users; This is where al the participant could communicate at the same language
3) Corporate Entrepreneurship: enhancing corporate venturing, start-ups and spin-offs;
4) Proactive Intellectual Property Management: creating new markets for technology;
5) Research and Development (R&D): achieving competitive advantages in the market.

The innovation 2.0 talks about principles of integrated collaboration, co-created shared value, cultivated innovation ecosystems, unleashed exponential technologies, and extraordinarily rapid adoption. Malaysia government also does not escape from the self-centered working issue. To discover the knowledge based transformation solution for these problems, a framework has been developed to check the impact of performance determinant variables on economic competitiveness of Malaysia using Quadruple Helix ;university, industry, government and public/civil society research collaboration as mediators [12].

C. Whole of Government

The Whole of Government concept rise form the objective of the whole is greater that the sum of its parts. Christensen and Laegred in [13] identified that it is a kind of New Public Management (NPM) reform from structural devolution, disaggregation, and single-purpose organizations and toward a whole-of-government (WG) approach. It was initially know as joint-up government (JUG). The concept of JUG was first introduced by the Blair government in 1997 and a main aim was to get a better grip on the issues straddling the boundaries of public-sector organizations, administrative levels, and policy areas [13] Through this concept, a government hope to achieve several goals through connecting individual organizations by joining-up, such as to stop policies from undermining each other, to make better use of scarce resources, to create synergies of bringing different key shareholders in a particular policy field or network together and to offer seamless relationship rather than fragmented public services [14]. The reason why we include the WoG concept is that multiple government agencies need to be involved in this project, such as Ministry of Health (MoH), Ministry of Science and Technology Innovation (MOSTI), Jabatan Kemajuan Islam Malaysia (JAKIM) and Jabatan Islam Negeri (JAIN) and some other agencies. All relevant

agencies has to work together to avoid and duplication in doing works, wasting time, wasting energy and wasting money when every agencies are trying to work alone for the same issue [15].

D. Function of Mosque

The function of Mosque especially in Islamic countries has been in a big dilemma on how the mosque is supposed to run in total functionality. When the Prophet Muhammad S.A.W immigrated to Medina, the first action he did was building a mosque, the place to pray and the place to gather. Starting from smaller mosque, from a small mosque, the mosque became larger, following with the built of great civilization of mankind. The first mosque built by Prophet Muhammad S.A.W is Quba, followed by Nabawi mosque. Regardless of the differences of the mosque in ulamak perspective, it is obvious that a mosque was built on the basis of dedication of duty for the sake of Allah S.W.T.

IV. NETWORK OF MOSQUE (NoM) IN EMERGENCY RESPONSE

In Islamic Community, mosque is the main place for the muslim activities and ibadah. However the function of the mosque itself has been restricted to become place only for pray and reciting Al-Quran. Currently the function of mosque has been fully utilized by Tablighi Jemaat as a center of their dakwah [16]. Omer in [17] argued that the mosque institution was set to be introduced at once as a nucleus of the believers' existence and an epitome of the inexhaustible struggle between good and evil on the earth. Through the conceptual collaborative system explained by Hamid et al. in [18] based on the deployment of the (a) Quadruple Helix Model (QHM), where a country's economic structure lies on four actors namely: academia, industry, government, and citizen, and the economic growth are generated by the clustering and concentration of talented and productive actors; (b) "Whole-of-Govermnent" (WoG) implementation that demands for a collaborative and co-operative arrangement of open consultation, open data, shared knowledge and expertise, consolidation of shared services and enhanced horizontal application across govermnent agencies; and (c) citizen-centric Network-of-Mosques (NoM)"
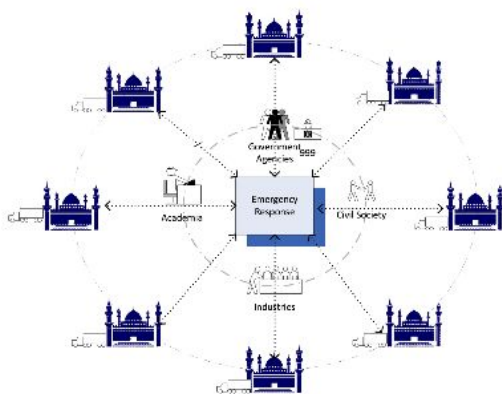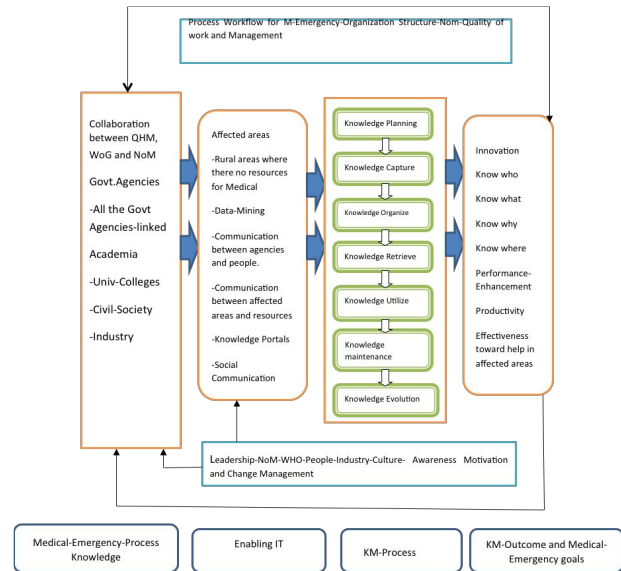

Figure 1 Collaboration between QHM, WoG and NoM

V. PROPOSED CONCEPTUAL SOLUTION

The leveraging of Quadruple Helix Model (QHM) and Whole of Government (WoG) are irremissible in accomplishing the goal of the project. The Quadruple Helix Model (QHM) used to underline the integration mechanism in terms of economic and entrepreneurial growth in Medical use of Quadruple Helix Model (QHM) in the project must be supported by the role played of the helices of Quadruple Helix Model (QHM) which are government, university; industry and community.

CONCLUSION

The Paper on Medical Emergency Response in Islamic Community Collaboration with the system which assumed the WoG and QHM concept to enhancing quality of life of the Medical Emergency in Rural areas in Malaysia. The Network of Mosque can give the effective service delivery directly to the Needy people because they know better the real situation. Through Government Agencies as one of the actors in QHM is able to share their knowledge especially the Knowledge Management and Islamic knowledge the need to develop and implement the medical devices regulation in this country is recognized by the Government. The aims of the regulation are to protect public health and ensure safety from the risks arising from the use of medical devices and to facilitate trade.

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