

**RESTRICTED**

JMHI/01/20

**READINESS OF DISASTER MANAGEMENT CENTER (DMC) FOR RESPONDING TO AN  
OUTBREAK OF EPIDEMIC**

*“The faster we detect diseases, the easier it is to control and the less the economic impact. Also, to sustain the health system, we need a sustained commitment from the government”<sup>1</sup>.*

Dr. Christopher Lee

**INTRODUCTION**

1. Disaster Management Center (DMC) was established after the tsunami, the catastrophic and worst ever natural disaster that had occurred in December of 2004, which had caused huge damage to the Island nation. Nearly 35000 people had lost their lives and approximately millions of people displaced, while damaging many of infrastructure along the coastal belt (Paul Steele; Kanchana wickramasinghe, 2007). As a result of that, necessity of a Disaster Management Center was raised and under the provision of the Sri Lanka Disaster Management Act no 13 of 2005, the DMC was established in July 2005.
  
2. According to the Act no 13 of 2005 the main objectives of the Disaster Management Center are as follows.

---

<sup>1</sup> Dr. Christopher Lee is the senior technical advisor for the PreventEpidemicNaija. This was told by him at the round table discussion on how media can leverage in order to influence the epidemic preparedness

**RESTRICTED**

- a. Research and development
  - b. Mitigation
  - c. Planning Preparedness
  - d. Dissemination Early warning for vulnerable people
  - e. Emergency respond
  - f. Coordination of relief and post disaster activities
3. To ensure the smooth and proper function as well as the coordination of the Disaster management activities, following districts and regional committees were established under the provision of the act.
- a. Districts Disaster Management Coordination Unit (DDMU)
  - b. District
  - c. Divisional
  - d. Grama Niladari Wasam
4. The Vision, Mission and the objective of the Disaster Management Center is as follows.
- a. **Vision**  
Safe communities and sustainable development in Sri Lanka.
  - b. **Mission**  
To create a culture of safety among communities and the nation at large through systematic management of natural, technological, and manmade disaster risks.
  - c. **Objective**  
Protection of the community from disaster
5. In December of year 2005, the Ministry of Disaster Management was established and subsequently in 2006, the National Disaster Management Council, Disaster Management Centre and Department of Meteorology were placed within the purview of Ministry of Disaster

**RESTRICTED**

Management and Human Right (M/DM&HR). In 2010 National relief services Center was amalgamated with the Ministry of Disaster Management and Ministry was named as the Ministry of Disaster Management. The Disaster Management functions which are to be implemented through the DMC according to gazette notification are as follows:

- a. Initiate and coordinate foreign aided projects for disaster mitigation, response and recovery.
  - b. Liaising with Ministries, Government authorities and agencies, private sector agencies, NGOs and INGOs and all other relevant agencies to ensure timely execution of such responsibility.
  - c. Coordination and Management of relief activities pertaining to natural and man-made disasters.
  - d. Coordinating awareness programs on natural disasters and man-made disasters.
  - e. Early warning systems.
  - f. Supervision of the activities of non-governmental organizations and social welfare voluntary agencies in relation to disaster management, provisions of relief and promotion of human rights.
  - g. Facilitation of and assistance to non-governmental organizations and social welfare voluntary agencies, in the fields of disaster management and human rights through countrywide Ministries, Departments and Public Corporations, Provincial Council, Local Authority Administration; and District, Division and Grama Niladhari administration; to enforce coordinate and monitor activities related to.
6. According to the Act No 13 of 2005, the following disasters are come under the DMC
- a. Floods
  - b. Landslides

**RESTRICTED**

- c. Industrial Hazards
- d. Tsunami (Seismic Wave)
- e. Earthquakes
- f. Air Hazards
- g. Fire
- h. Epidemics
- i. Explosions
- j. Air Raids
- k. Civil or Internal Strife
- l. Chemical Accidents
- m. Radiological Emergency
- n. Oil Spills
- o. Nuclear Disaster
- p. Urban and Forest Fire
- q. Coastal Erosion

**AIM**

7. The aim of this paper is to discuss the readiness of Disaster Management Center (DMC) for responding to an outbreak of epidemic.

**RESTRICTED**

**DISCUSSION**

8. According to Oxford Dictionary, the meaning of the epidemic is “a large number of cases of a particular disease happening at the same time in a particular community”. In order to confine, contain and the control of the epidemic, every country should have a proper mechanism in place, since epidemic has the ability to put down any country in many ways irrespective of its economic stability. For instance, outbreak of the Corona Virus in Wuhan has been causing multiple drawback to China in many ways and now it has become a pandemic.

9. According to the journal article, which was published on “Asian Economic Papers”, during the peak of the outbreak of severe acute respiratory syndrome (SARS) in March 2003, the tourism sector was hit the hardest. Even though they estimated that the amount to be hit about 50-60 percent (amounting to about US\$10.8 billion) compared with the tourism revenue in 2002. But, later it was calculated that actually 10 percent amounting to about US\$6.0 billion. (Zhao Zhong,Hai Wen,Wang Jian, Hou Zhen-Gang, 2004).

10. In April 2009, a new viral infection was reported in Mexico. Later this was officially announced as A [H1N1] which consist of Swine component. According to the journal article, which has been published on the International Journal of Tourism Policy, this was caused many damages to the Mexican government and its economy in particular. For instance, travel restriction on tourist were imposed by leading countries like France, Italy, Japan, and China. It was suggested and estimated that the tourism industry of Mexico would hit by US\$ 5 billion. Aviation industry was also badly hit by the reduction of sales by 50 percent. Accordingly other businesses, such as Taxi, Money exchange, and Fast food restaurants were also affected. (Monterrubbio, 2010).

11. There are many example can be seen all over the world with respect to the outbreak of epidemic viruses. Following table which was obtain from a journal, published on Science Direct

**RESTRICTED**

gives how those epidemic could harm economies. (Kristine M. Smith, 2019). According to the World Banks’ estimation of the economic losses from six major outbreaks of highly fatal zoonosis<sup>2</sup> between 1997 and 2009 amounted to at least US \$80 billion. If these outbreaks had been prevented, the avoided losses would have averaged US \$6.7 billion per year.

Table -1: Examples of financial impacts due to zoonotic infectious disease events beyond the public health sector

<b>Sectors Impacted</b>	<b>Time period</b>	<b>Geographic Scope</b>	<b>Disease</b>	<b>Metrics</b>	<b>Economic Estimate</b>
<b>Tourism</b>	2009	Mexico	H1N1	Tourism	2.8 billion
<b>Agriculture</b>	1998–2002	Somalia	RVF	Livestock export losses	435 million
<b>Government</b>	1998–1999	Malaysia	Nipah	Lost tax revenue	105 million
<b>Financial</b>	2013–2015	Ghana, Liberia, Sierra Leone	Ebola	Loss of investor confidence	600 million
<b>Travel</b>	2003	Global	SARS	Airline losses	7 billion+

*Sources: journal article on Infectious disease and economics: The case for considering multi-sectoral impacts*

12. Above factors and figures have suggested us that the importance of the readiness of Disaster Management Center (DMC) for responding to an outbreak of epidemic. Nevertheless, Sri Lanka has Ministry of Disaster Management, its readiness towards epidemic has to be critically evaluated. The recent outbreak of Corona Virus which resulted in bringing down students from Wuhan, China to Sri Lanka. During that period, so many incident, arguments and criticism were reported through media by aiming to

---

<sup>2</sup> Zoonosis is an animal disease that can be transmitted to human.

## **RESTRICTED**

some responsible authorities for their claim for demanding of equipment and protective cloth specially by medical practitioners, which shows the lack of competent and the poor preparedness to such kind of a incident.

13. PreventEpidemics.org is one of the best website that evaluate the countries for their preparedness and readiness for the epidemics and the pandemics. After evaluating, the country will be given a percentage which tells the countries preparedness towards epidemic. If the percentage is more than 80, then the respective country is said to be a “better prepared country”. If the percentage lies between 40% to 79%, then the country is categorized as “Work to do”. Countries, those evaluation percentages are below 39, are categorized into a “Not Ready”. In order to evaluate the country, they gather data from joint external evaluation, rigorous, objective and internationally accepted epidemic preparedness tool which developed by the World Health Organization. According to the PreventEpidemic.org, 80% of the assessed countries are not ready for an epidemic. Definitions which has given by the Prevent Epidemics for the categories as follows.

- a. **Better Prepared (80% or higher)**. Country is better prepared for the next epidemic. They have functioning systems to find, stop and prevent health threats, but they must work to maintain this level of protection for their people.
- b. **Work to Do (40-79%)**. Country has to work to prepare for the next epidemic. They are committed to improving preparedness, but an outbreak today could cause deaths and cross borders.
- c. **Not Ready (39% or lower)**. Country is not ready for the next epidemic. They have shown commitment to improving preparedness, but an outbreak could cause a devastating loss of lives and disrupt political and economic stability.
- d. **Pending**. Country has begun the external evaluation process but no data is available at this time. There is not a robust way of knowing whether this country is

**RESTRICTED**

prepared for an epidemic, but there will be in the near future. Country has begun the external evaluation process but no data is available at this time. Until then, we have no independent way of knowing their level of preparedness.

e. **Unknown.** Country has not volunteered to have an external, transparent evaluation of their ability to find, stop and prevent health threats. Without this robust assessment we cannot be certain they are ready prevent epidemics. Country has not volunteered to have an external, transparent evaluation of their ability to find, stop and prevent health threats. Without this, we have no independent way of knowing their level of preparedness.

Sri Lanka has been placed in a “work to do category”. The “ReadyScore<sup>3</sup>” is 57. Country’s preparedness are calculated according to the 19 preparedness areas under four major category which are “Find and Verify Outbreak”, “Stop outbreaks”, “Prevent outbreak” and “protect from other health threat”. Following charts shows how Sri Lanka was evaluated under each preparedness areas.

14. “Find and Verify Outbreaks” is the first major category under which, four preparedness area to be evaluated. In this category, Real-Time Surveillance and Workforce Development has reached nearly 80% benchmark. However other two areas of “Reporting” and the “National Laboratory System” have to be improved in order to achieve the 80% benchmark. Table-2 and the Graph 1 illustrate the percentages of each preparedness areas.

---

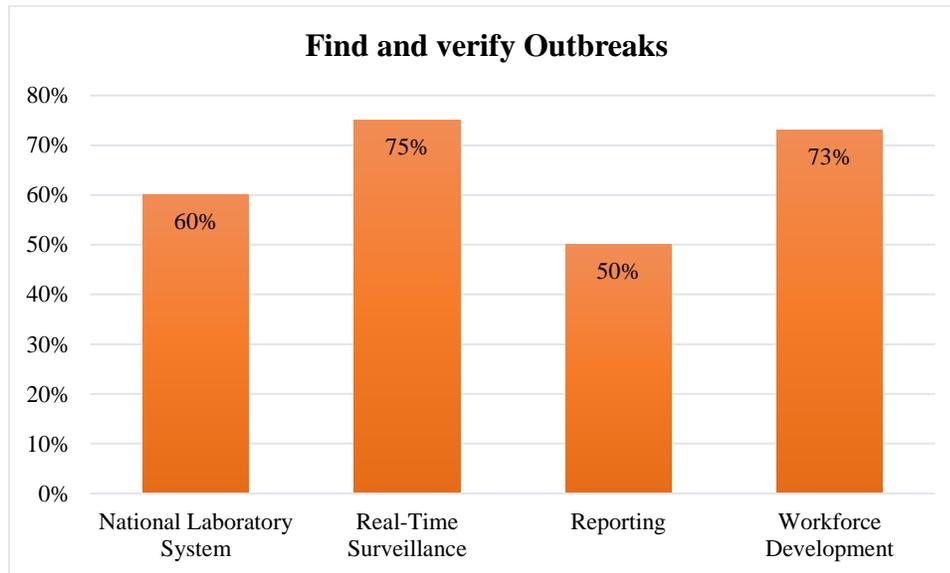
<sup>3</sup> ReadyScore is the score given by the preventepidemic.org after evaluating a country through 17 preparedness areas.

**RESTRICTED**

Table-2: Preparedness Area for Find and Verify Outbreaks

Preparedness Area for Find And Verify Outbreaks	Percentage
National Laboratory System	60%
Real-Time Surveillance	75%
Reporting	50%
Workforce Development	73%

*Sources: www.preventepidemic.org*



Graph-1: percentage of preparedness area for Find and Outbreaks

15. Under the second major category of “Stop Outbreak”, there are five preparedness areas in which, only “Linking Public Health” and “Security Authorities” have achieved the required level while “Preparedness” has evaluated as low as 20% which needs stern action from the respective authorities. Similarly, “Medical Countermeasures” and “Personnel Deployment” has evaluated 30% which is also needed remedial action. “Emergency Response Operation” has

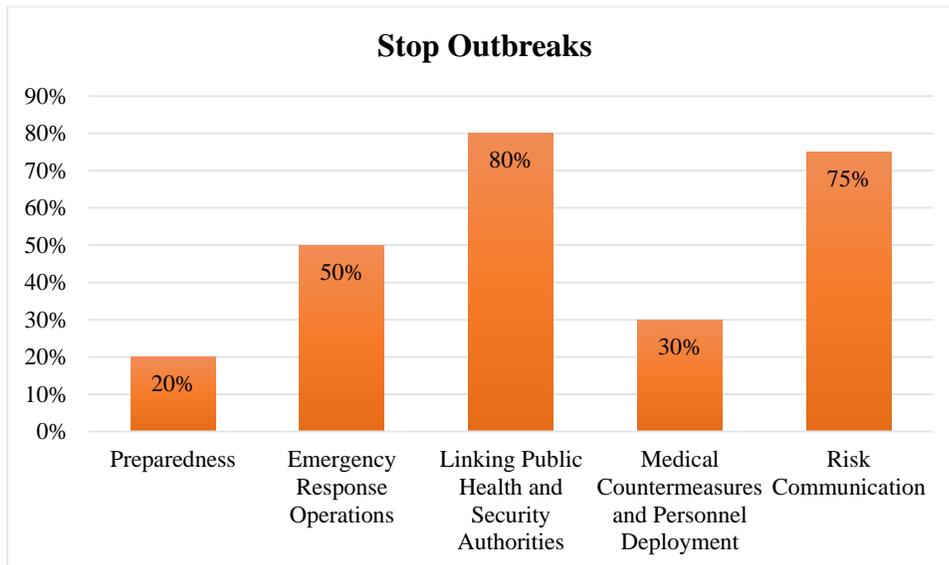
**RESTRICTED**

evaluated for 50% and it need to be improved. “Risk Communication” has almost achieved the desired level. Table-3 and the Graph-3 demonstrate the evaluated values for each areas.

**Table-3: Preparedness Area for Stop Outbreaks**

<b>Preparedness Area for Stop Outbreaks</b>	<b>Percentage</b>
Preparedness	20%
Emergency Response Operations	50%
Linking Public Health and Security Authorities	80%
Medical Countermeasures and Personnel Deployment	30%
Risk Communication	75%

*Sources: [www.preventepidemic.org](http://www.preventepidemic.org)*



**Graph-2: percentage of preparedness area for Stop Outbreaks**

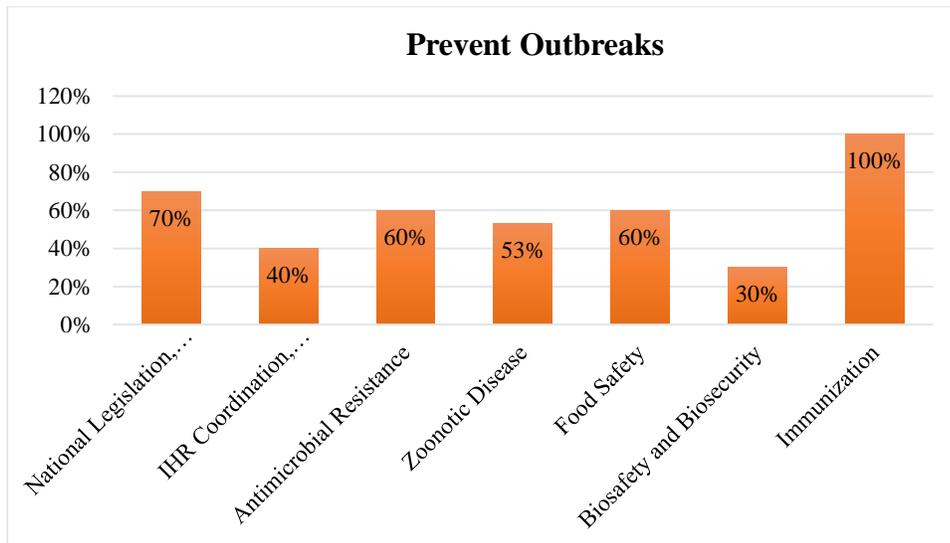
**RESTRICTED**

16. Under the third category, there are seven preparedness areas in which “immunization” reached to a maximum value which is 100%. “National Legislation, policy and Financing” has reached to the 70%. Valuation for “Antimicrobial Resistance” and “Food Safety” is 60%. However, “IHR Coordination, Communication and Advocacy” is evaluated for 40% while the evaluation for the “Biosafety and Biosecurity” is 30% which is the least in this category.

**Table-4: Preparedness Area for Prevent Outbreaks**

Preparedness Area for Prevent Outbreaks	Percentage
National Legislation, Policy and Financing	70%
IHR Coordination, Communication and Advocacy	40%
Antimicrobial Resistance	60%
Zoonotic Disease	53%
Food Safety	60%
Biosafety and Biosecurity	30%
Immunization	100%

Sources: [www.preventepidemic.org](http://www.preventepidemic.org)



**Graph-3 : percentage of preparedness area for Prevent Outbreaks**

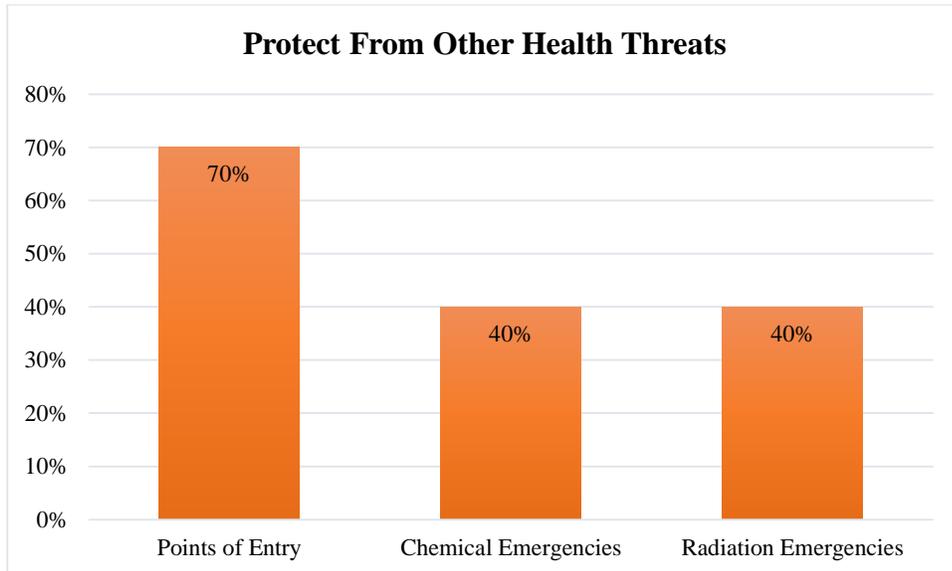
**RESTRICTED**

17. Under the fourth and the final category, there are three areas to be evaluated. “Point of Entry” has evaluated 70% while “Chemical Emergencies” and “Radiation Emergencies has evaluated similarly for 40%.

**Table-4: Preparedness Area for Protect From Other Health Threats**

<b>Preparedness Area for Protect From Other Health Threats</b>	<b>Percentage</b>
Points of Entry	70%
Chemical Emergencies	40%
Radiation Emergencies	40%

*Sources: www.preventepidemic.org*



**Graph-4: percentage of preparedness area of Protect from Other Health Threats**

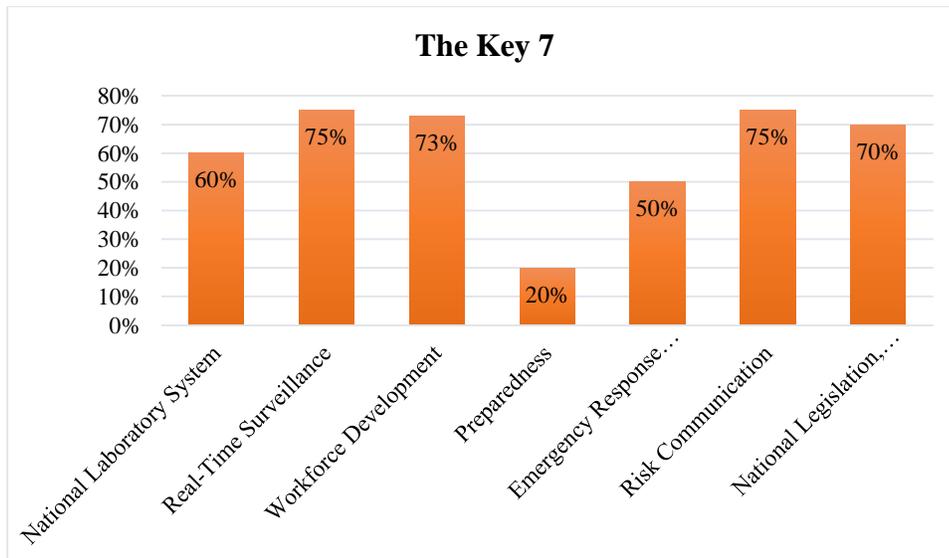
**RESTRICTED**

18. According to the Preventepidemics.org, there are seven key areas nominated as key foundational technical areas to be measured in order to strength the health system. As per the Table-5, “preparedness” should be given 1<sup>st</sup> priority to enhance its value. Even though other areas achieve significant value, desired objective is still far ahead.

Table-5: Preparedness Area for the Key 7

The Key 7	Percentage
National Laboratory System	60%
Real-Time Surveillance	75%
Workforce Development	73%
Preparedness	20%
Emergency Response Operation	50%
Risk Communication	75%
National Legislation, Policy and Financing	70%

Sources: [www.preventepidemic.org](http://www.preventepidemic.org)



Graph-5 : percentage of preparedness area of The Key 7

## **RESTRICTED**

19. According to the PreventEpidemic.org, they have identified the “Immunization” and Linking “Public Health and Security Authorities” as strength. Concurrently “Biosafety and Biosecurity”, “Medical Countermeasures and Personnel Deployment”, “Emergency Response Operation”, “National Laboratory System” and “Work Force Development” has been identified as gaps. Since there is a national action plan in place, it is quite easy to upgrade the areas which need attention to improve the ReadyScore.

## **CONCLUSION**

20. It is imperative that the outbreak of an epidemic will cause huge damage to any nation in the world. Not only that but also those epidemics can become pandemic due to the fact that the globalization and the drastically improvement of the transportation. According to the Preventepidemic.org, it takes just 36 hours to spread the infectious disease all over the world. Consequently it is high time to be proactive rather than reactive. Since we are a developing country, the environment should be quite healthy for the investment. If the epidemic outbreak had occurred, the outcomes could have been a disastrous. It is well illustrated in the Table-1. According to the journal article published on “Journal of Management and Tourism Research” the tourism sector is considered as the one of the main contributor to the Sri Lanka economy. The highest contribution which is 13.5percent to the GDP was recorded in 2017. And also tourism’ total contribution to employment was increased by 2.8percent with comparing 2016 (Ruwan Ranasinghe, 2018). So this is the first industry to be affected when such kind of an incident occur. Consequently other exports related industries will also be affected. Ultimately country become stagnated. Whole economy will stalemate.

21. According to the Preventepidemic.org, there are 17 areas to be concerned and improved other than “Immunization” and the “ Linkage between public Health and the Security Authority”

## **RESTRICTED**

so government authorities should get prompt and timely decision to improve those areas, since they are the vital factors to be able to contain and control the outbreaks. Since this technique has been developed by WHO, the credibility of the system is not questionable.

22. The recent outbreak of the corona virus in china indicates the red light to the nations like us. Though china is the second largest economy in the world and the technology they possess, still they are struggling to contain the virus. So it is better to be proactive rather than reactive.

23. Consequently it can be concluded that the readiness and the preparedness for epidemic is not up to the expected level.

## **RECOMMENDATION**

24. It is recommended to improve the areas where lagging behind as per the Preventepidemic.org. Since there is a separate ministry for the Disaster Management it is very easy to improve the areas where necessary.

25. This is the high time to establish a Task Force consisting with every stakeholders. Though there is National Action plan put in place, we have plenty of experience that every time disaster occurred only armed forces do their job to help general public because of the task oriented nature of the armed forces. Other committees which have been establish under the DMC, most of the occasion, they did not know even the number of the families affected. So it is recommended to task every stakeholders through the ministry and evaluate their task after incidents.

**RESTRICTED**

26. It is said that “Prevention is better than cure”. So awareness among the general public regarding epidemic is found be a very low. This has to be included into our education system also. We experienced that, during the recent outbreak of the corona virus, no school was conducted an awareness program.

27. Hospital management should establish mechanisms for developing and implementing a Hospital Emergency Risk Management Programme in order to ensure the effective management of the risks of internal and external emergencies, including epidemics.

Trincomalee

JMHI BANDARA

Lieutenant Commander

03 Mar 20

Student Officer

Word count-2850

**RESTRICTED**

**BIBLIOGRAPHY**

Kristine M. Smith, C. C. M. R. S. Y. F. B. K., 2019. Infectious disease and economics; The case for considering multi-sectoral impacts. *One Health*.

Monterrubio, C., 2010. Short-term economic impact of influenza A[H1N1] and government reaction on Mexicantourism industry; An analysis of the media. *International Journal of Tourism Polic*.

Paul Steele; Kanchana wickramasinghe, 2007. *Disaster Management Policy and Practice in Sri Lanka: Sharing Lessons among Government, Civil Society and Private Sector*. Colombo: Institute Policy Studies and OxfamAmerica.

Ruwan Ranasinghe, S. M., 2018. The Contribution of Tourism Income for the Economic Growth of Sri Lanka. *Journal of Management and Tourism Research* , 1(II), pp. 67-84.

Zhao Zhong,Hai Wen,Wang Jian, Hou Zhen-Gang, 2004. The Short Term Impact on Chinese Economy. *Asian Economic Papers*, Volume 3.

**Websites**

<https://www.bbc.com/news/business-51386575>

<https://www.cnbc.com/2020/02/11/coronavirus-4-charts-show-how-sars-hit-chinas-economy-in-2003.html>

<http://www.drrweb.dmc.gov.lk/>

<http://www.disastermin.gov.lk/>

<https://preventepidemics.org/>

<https://threader.app/>