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READABILITY AND COLLOCATIONS IN MALAYSIAN ONLINE HEALTH BROCHURES: A CORPUS-ASSISTED ANALYSIS

VERONICA CHONG XIN YEEN

UTAR

A RESEARCH PROJECT

SUBMITTED IN

PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR

THE BACHELOR OF ARTS (HONS) ENGLISH EDUCATION

FACULTY OF ARTS AND SOCIAL SCIENCE

UNIVERSITI TUNKU ABDUL RAHMAN

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VERONICA CHONG XIN YEEN

APPROVAL FORM

This research paper attached hereto, entitled "Readability and Collocations in Malaysian Online Health Brochures: A Corpus-Assisted Analysis" prepared and submitted by Veronica Chong Xin Yeen in partial fulfilment of the requirements for the Bachelor of Arts (Hons) English Language is hereby accepted.

_____ Date: _____

Supervisor

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ABSTRACT

Brochures are commonly used by health professionals to disseminate salient information to their target audience. However, little attention is given to investigate the readability of communicable disease brochures and the frequent collocates that appear with the communicable diseases. Previous studies stated that medical related reading materials are presented beyond the recommended reading level, Grade 6, hence making it incomprehensible for those with low educational attainment. This study aims to investigate the readability of communicable disease brochures and find out the frequent collocation of communicable disease produced by Kementerian Kesihatan Malaysia (KKM). Three formulas were used to calculate the readability scores of communicable disease brochures: Flesch Reading Ease (FRE), Flesch-Kincaid Grade Level (FKGL) and Simple Measure of Gobbledygook (SMOG). The frequent collocates of communicable disease are determined using GraphColl in #Lancsbox. The findings indicate that all brochures are written beyond the recommend level and the frequent collocates of communicable diseases are used to describe three important themes which are the transmission of the disease, vaccination and the name of the communicable disease. By improving the readability of communicable disease brochures may promote better health literacy and it is crucial for the target audience to comprehend these brochures to encourage voluntary health behaviours.

DECLARATION

I declare that the material contained in this paper is the end result of my own work and that due acknowledgement has been given in the bibliography and references to ALL sources be they printed, electronic or personal.

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Signature : 

Date : 12th April 2021

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LIST OF ABBRIVIATIONS

FKGL	Flesch Kincaid Grade Level
FRE	Flesch Reading Ease
HFMD	Hand, Foot and Mouth Disease
KKM	Kementerian Kesihatan Malaysia
MoH	Ministry of Health
MOHB	Malaysian Online Health Brochures
SMOG	Simple Measure of Gobbledygook

CHAPTER 1: INTRODUCTION

1.0 Introduction

Promotional materials are essential to every organization because they help the organization to reach out to its potential customers. These promotional materials come in different forms such as pamphlets, illustration, posters and others. One of the most common promotional documents is the brochure. The functions of a brochure are to inform, advertise and identify (Azizah, 2015). The usage of a brochure is versatile; it can be used to educate the public, publicize a company's services or introduce a newly launched product to the public (Bhadane, 2018). The design of a brochure can be made to suit the company's desired aesthetics. With this in mind, if a company's brochures can be recognized easily by the public, it shows that the company has a certain kind of prestige and credibility (Flottman, 2016). Focusing on Malaysia, one of the government organizations that use brochure as an educational and informative publication is the Malaysian Ministry of Health (MMoH).

Arguably one of the most important qualities of health brochures published by Kementerian Kesihatan Malaysia (KKM) is its ability to disseminate information that encourages their readers to generate a voluntary behaviour helpful for a healthy lifestyle (Wong et al., 2019). The information in health brochures consists of visual aids, such as pictures, charts, graphs and tables to improve the readers' readability and understanding. Today, though health brochures are being digitalized, physical health brochures are still commonly found in waiting lounges, which allow patients to use their waiting time by reading these educational brochures.

Besides that, health brochures from KKM are available on their website (https://www.infosihat.gov.my/index.php/multimedia/risalah) under the brochure category. These health brochures are labelled using Malay keywords related to various diseases, such as

HIV, Covid-19, Influenza and others. Most of the health brochures are available in two languages which are English and Malay.

1.1 Background of the study

Printed publications like brochures are deemed useful only if they are readable to the target audience. If the information on the brochures cannot be understood by the target audience, it will disrupt their decision making; hence putting them in a hazardous position which can be a matter of life and death. Even though there are a lot of studies done on the linguistics aspect of brochures, not many are concentrated on the readability and suitability of health brochures produced by KKM, particularly on communicable diseases.

Furthermore, Anagnostou and Weir (2008) claimed that collocation frequencies affects the measure of readability formulas such as Flesch-Kincaid Grade Level (Flesch et al, 1975), Flesch Reading Ease (Flesch, 1984) and others. This is because the readability measure is based on the word count; and the more words in a sentence, the higher or more complex the reading level (Anagnostou & Weir, 2008). Therefore, a high collocation frequency in written text like brochures will affect its readability, so there is a need to explore the collocation in health brochures regarding communicable disease.

Apart from that, promotional brochures receive more attention compared to health brochures. For instance, Henry and Roseberry (1998) studied the information structure of travel brochures from Brunei. As for Chong and Ahmad (2014), they studied the rhetorical structure employed by Malaysian banking brochures. Furthermore, there are studies that are dedicated to study the specific linguistic features in brochures such, as Ip's (2008) research where she conducted a study on the discourse of tourist brochures in Hong Kong. Yang (2012) identified the use of personal pronouns in brochures from United Kingdom. In short, all the aforementioned studies focus on the rhetorical structure of the brochure and their discourse.

The documentation of the readability of health brochures regarding communicable diseases are still insufficient.

Considering the above, it is essential to note that brochures are cost effective which enable organizations to distribute them extensively in order to reach as many readers as possible (Chong & Ahmad, 2014). They are usually distributed to the target audience free of charge. Nonetheless, these brochures are designed uniquely to catch the attention of the public and the public are able to distinct them easily compared to booklets, pamphlets and other promotional documents (Flottman, 2016).

Despite that, brochures still have a few disadvantages when it comes to effectiveness. Brochures are easily disposed and it does not have a lasting impact (ForestLitho Printers, 2017).

1.2 Statement of Problem

Studies regarding the readability of Malaysian health brochures on communicable disease are noticeably insufficient. Existing studies about medical brochures are more inclined to the readability of oral health pamphlets (Wong et al., 2019), the effectiveness of an educational brochure as a risk minimization activity (Bester et al., 2016) and acceptance of migraine education brochures and patient-perceived satisfaction (Martinez et al., 2015). Therefore, there is a need to examine the readability of Malaysian communicable disease health brochures.

Past studies on educational and informative health materials exhibit high readability levels. For instance, Downing et al. (2011) studied the readability of websites that are designed for asplenic patients and found that the websites were written beyond the patients' understanding. Similar results are obtained by Boztas et al. (2017) on the readability of internet-sourced patient education materials related to "labour analgesia". In addition, Daud and Hamid (2014) investigated the readability level of 'About Us' section written by Malaysian Hospital

Websites, and the findings showed that the construction of said section is constructed was difficult to read for patients with lower literacy level. Thus, it is vital to investigate the readability of Malaysian health brochures on communicable disease so that KKM will be assured that the content is comprehensible to patients and target public.

Corpus analysis is being employed to analyse language concerning the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; formerly called 2019-nCoV). The existing literature are focused on media discourse (Katermina & Yachenko, 2020; Singer, 2020), semantic prosody (Aslam et al., 2020) and the collocation network of Covid-19 in the letters to the editor (Joharry & Turiman, 2020). However, these studies are focusing solely on Covid-19 instead of other communicable disease like HIV/AIDS, dengue, cholera, influenza, typhoid and others. This research will add to the existing literature of corpus analysis by determining the collocation of other communicable diseases mentioned above.

Therefore, the research objectives and questions in the next section are constructed to fill the research gaps mentioned above.

1.3 Research Objectives

a) To identify the readability of communicable disease health brochures produced by KKM.
b) To determine commonly used words to describe communicable disease in health brochures produced by KKM.

1.4 Research Questions

a) What are the readability levels of communicable disease health brochures produced by KKM?
b) What are the relevant collocations of words used to describe communicable disease?

1.5 Significance of Study

This research contributes to existing literature on the readability of printed materials while focusing on the importance of creating readable health brochures for the public. Furthermore, this study revealed the suitability of these health brochures for their target audience. According to Wong et al. (2019), readability and suitability of these printed materials do not necessarily correspond with each other. Some health brochures might be easy to read but the readers need to have some basic knowledge of the topic in order to understand the content effectively. As a result, KKM should elevate the salience of the health brochures based on the public's language proficiency and comprehension.

By applying Flesch-Kincaid Reading Level (Flesch et al., 1975), Flesch Reading Ease (Flesch, 1984) and Simple Measure of Gobbledygook (SMOG) (McLaughlin, 1969), this research contributes to the development of well written health brochures that are suitable and readable for Malaysians from all education levels, including those possessing primary and secondary education level. Hence, KKM will be able to revise their health brochures on communicable diseases so that their target audience will feel encouraged by the messages in the brochures and take voluntary steps to improve their health.

1.6 Scope of the Study

This research investigates the readability of online English communicable diseases health brochures produced by KKM published from 2000 to 2020. This is because health brochures from the 90s are not available in soft copy and they are only accessible in public clinics and other health institutions. Moreover, only the English health brochures are investigated because the amount of words in English brochures are sufficient to generate its reading level using the readability formulas proposed in this research, unlike brochures in Bahasa Melayu that have insufficient words to generate an accurate reading level. Lastly,

communicable disease brochures are chosen due to a paucity of data on the impact of the reading material produced by KKM and its social outcomes.

1.7 Definition of Terms

1.7.1 Readability

Readability is defined as the reader's understanding of words, phrases and ideas in the passage (Dahlia & Wray, 2014). A readability formula will be utilized to calculate the ease of understanding of texts (Fry, 1968). The formula will "offer the healthcare provider an easy-to-use method to assess the reading difficulty of most print materials" (Doak & Root, 1985, p. 44).

1.7.2 Collocation

J.R. Firth coined the term 'collocation' in 1950 that carries the meaning of common occurrence of particular words (Firth, 1957). To Halliday (1994), collocations are words that have a simple tendency to co-occur. Toolan (2009) mentioned "collocation is the lexical company a word tends to keep (a minority of which co-habitings give rise to clichés)". "This shows that two or more words are collocates when they co-exist very often but not more than five words apart in a sentence" (Sinclair, 2004, p. 141). As an example, "we drink *strong tea*, not *powerful tea*, drive through *dark nights* during which animals on the road may be scarcely visible to the naked eye, and this may cause *an accident* – indeed, *a tragic accident*, etc. etc.) it has prompted a striking variety of different characterisations" (Toolan, 2009, p. 18).

1.7.3 Health Brochures

Health brochures are written materials that function as a medium to deliver and share required health information (Hoffman & McKenna, 2006; Paul, 2008). It also highlights messages obtained verbally from health professionals (Shieh & Hosei, 2008) and promote health literacy (Jahan et al., 2014). Health brochure incorporates visual aids to create an

interactive format so that it can motivate people to adopt the messages and advices given by health professionals in their everyday lives (Shieh & Hosei, 2008). Health brochures also have other elements such the name of the publisher, website, and illustration that represents the symptoms or risk of the said disease. The following Figure 1.1 and Figure 1.2 depict the layout and the elements included in a health brochure.

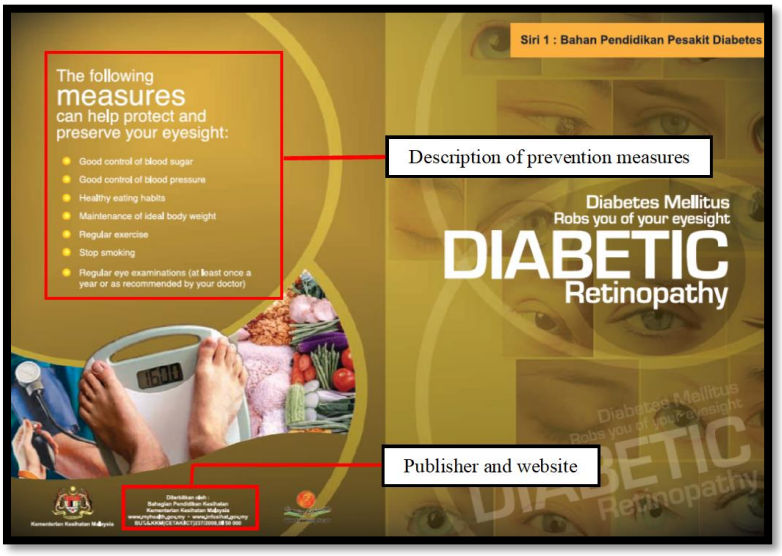

Figure 1.1: The front page layout of a health brochures and the elements in it.

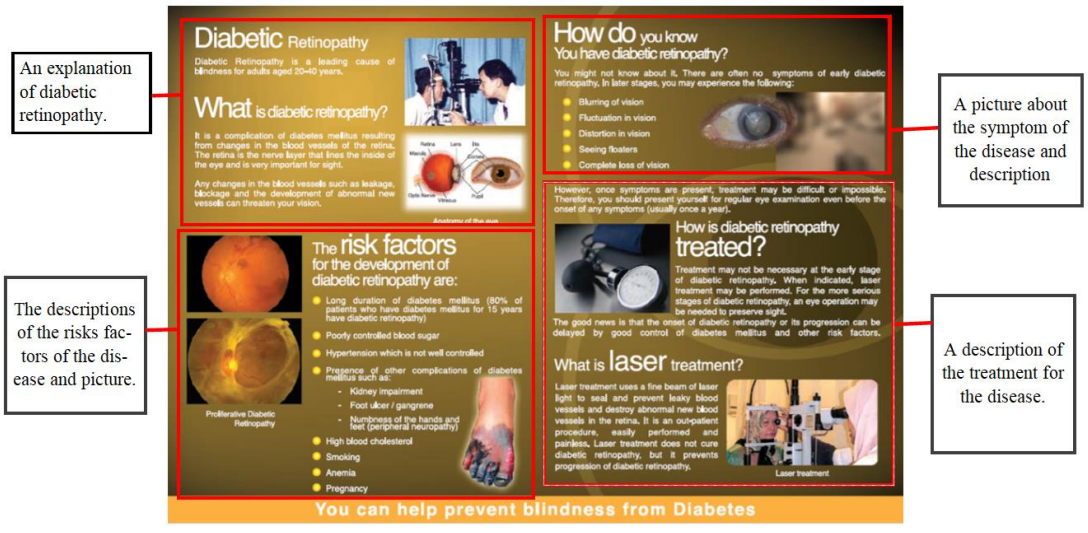

Figure 1.2: The back layout of a health brochure and the elements in it.

1.8 Chapter Summary

This chapter illustrates the advantages and disadvantages of brochures and a brief background on the studies done using brochures. It also discussed the objectives and questions for the study which are derived from the research gaps that can be found in past studies. Moreover, this chapter also offers readers the significance and the scope of the study. Lastly, three terms that will be investigated in the following chapters were defined.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This chapter is will enlighten readers about readability and collocational analysis, as well as past studies about the reading level for health information and the common collocation in texts related to science. Section 2.1 explains the importance of health literacy and health literacy about communicable disease. Section 2.2 points out the factors that motivates online health information seeking. Section 2.3 consists of the development of the readability formula and a comprehensive review of past studies done on the reading levels of medical related texts. Section 2.4 discusses the recommended reading levels for health related information. Section 2.5 explores the lexical collocation in science related academic texts and journalistic texts. Lastly, Section 2.6 is the conceptual framework for this study.

2.1 Health Literacy

The World Health Organization (2018) defined health literacy as an individual's capacity to obtain relevant information to make sound healthcare decisions as well as improving their quality of life. It is essential to note that health literacy is important for adults, adolescents and elderlies (Broder et al., 2017; Ahmad et al., 2020). Ozturk and Ayaz-Alkaya (2020) also claimed that health literacy is a significant factor in preventing unwanted health issues. Prevention can be achieved by having a basic level of health literacy (Nutbeam, 2000). Over the years, health literacy has progressed from applying functional skills in a medical setting to a multifaceted concept that requires advanced skills such as impacting the health system and the public (Nutbeam, 2000).

2.1.1 Health literacy on communicable diseases

The menacing threat presented by communicable diseases is not an issue that can be taken lightly. Communicable diseases are also known as infectious diseases. World Health

Organization (n.d.) stated that communicable disease is transmitted through microorganisms, namely bacteria, viruses, parasites and fungi instantly or contingently from an individual to another. A number of communicable diseases spread through animal bites and excrement. Moreover, sexually transmitted infections (STIs) like HIV and viral hepatitis are passed on through bodily fluids and blood (Ministry of Health Malaysia, 2017).

There are several factors that helped in developing new pathogens like Covid-19, Ebola virus and other re-emerging communicable diseases previously thought to be under control (Castro-Sanchez et al., 2015) The effective response to these life-threatening diseases require multifunctional components such as providing enough clinical care, educating the public about the preventive measures like vaccination and promoting self-efficacy so that the public can adopt the preventive measures religiously (Yang et al., 2018).

In Malaysia, the Ministry of Health has been actively publishing patient education materials such as brochures, leaflets, posters and videos to enhance Malaysian's communicable disease health literacy. KKM has an archive of communicable disease health brochures namely AIDS/HIV, avian flu, chikungunya, cough, Covid-19, dengue, hepatitis B, hand foot and mouth disease (HFMD), influenza, H1N1, pertussis, rubella, SARS, cholera, tuberculosis, tetanus and typhoid. These health brochures are available in two languages, Bahasa Malaysia and English. On the one hand, the aforementioned health brochures are available to the public online in order for the public to develop voluntary preventive behaviours. On the other hand, healthcare providers are required to convey the messages in the health brochures in a readable and understandable manner (Hamid et al., 2020).

2.2 Online Health Information Seeking

With the availability of the Internet, it has become easier for individuals, families and caregivers to use the Internet to seek information about health and body (Rice, 2006; Pang et

al., 2014; Pang et al., 2015). The results from Jacobs et al.'s (2017) study suggested that the main purpose of online health information is to cut down the disproportion in heath information accessibility and availability. According to Massey (2016), the Internet provides cost-effective health information source and by the virtue of its ubiquity, it is likely to offer information that otherwise might be unobtainable. Moreover, individuals with poor or fair health (Houstan & Allison, 2002; Atkinson et al., 2009) and chronic health conditions (Bansil et al., 2006) are more inclined to utilize the Internet for health concerns. The results obtained by Tennant et al. (2015) indicated that Internet users are usually younger with better socioeconomic status and they are more knowledgeable. Consistent results were generated in Fox and Duggan (2013), Beaudoin and Hong (2011) and Jacobs et al. (2017) which stated that age is one of the contributing of online health information seeking. Apart from that, several studies also reported that digital disparity is one of the contributing factors with reference to age and socioeconomic status (Lorence & Park, 2007; Massey, 2016; Rains, 2008).

According to Internet World Stats (2020), the amount of Internet users worldwide are 4.6 billion people; for Malaysia itself, there are 81.4% of the population or 32.4 million people using the Internet. In Malaysia, one of the most famous searches among teenagers and adults are looking up health information online (Ahamd et al., 2020). Based on a survey conducted by Malaysian Communication and Multimedia Commission (MCMC) in 2018, there were 87.4% of internet users and majority of them were from age 20 to 40 as compared to the users who were from age 50 and above (18.1%) (Malaysian Communication and Multimedia Commission, 2019). The findings by MCMC correspond to the findings obtained by Beaudoin and Hong (2011), Fox and Duggan (2013) and Jacobs et al. (2017) – United States of America and Bach and Wenz (2020) – Germany. Furthermore, a collaborative research between MCMC and Institute for Health Behavioural Research (IHBR), was carried out in 2017 and seeking online health information among Malaysians was part of the research. The results stated that 77.2%

of Malaysians look for health information online. The results highlighted that popular health topics searched by Malaysians are 'symptoms and diseases' (91.4%), 'healthcare tips' (89.8%), 'treatment method' (83.5%), 'medications/ drug information' (73.7%) and lastly 'place to get treatment' (63.8%). In general, 82.7% of Malaysians were reported to believe the health information they obtained from the internet. However, 5.7% of Malaysian felt otherwise, while the remaining 11.7% are unprejudiced (Malaysian Communication and Multimedia Commission, 2017).

In a recent study, Ahmad et al. (2020) investigated the elderly in Malaysia looking for health information on the Internet. They found that 86.4% of elderly accessed the Internet to look for health information, and their four popular searches are violence (39.9%), skin-care (31%), disease information (20.9%) and hearing problem (20.5%). The health portals they frequently visited were MOH Portal (34.4%), followed by Nutrition Division Portal (27.5%), and lastly MYHEALTH Portal (19.4%). In short, this study reported that 9 out of 10 elderly used the internet to get the latest news compared to looking for health information. The motivation behind their searches was that they wanted to know the latest news happening around the world; but, seeking for health information will become the priority when they suffer from some illnesses. Similar results can be seen in Houstan and Allison (2002), Atkinson et al. (2009) and Bansil et al. (2006) studies which were conducted in the United States of America.

2.2.1 Health Information Seeking Behaviour

Zimmerman and Shaw (2019) defined health information seeking behaviour (HISB) as a multidimensional concept that focuses on health promotion and people's psychological state of handling or being diagnosed with an illness or medical condition. Due to the technological advancement, several studies reported that people are starting to seek health information online so that they are able to enhance their health literacy levels (Lee & Kim, 2015). It would guide

them to adopt a healthy lifestyle (Wonsun et al., 2015) and feel confident when making decisions about their own health conditions (Roettl et al., 2016). Moreover, another advantage is that individuals get to maintain their anonymity when browsing for health information (Jacobs et al., 2017). On the whole, health information seeking behaviour is an umbrella term for browsing health information, constantly updating their health literacy and being a passive recipient of health information (Zimmerman & Shaw, 2019).

Kuske et al. (2017) identified four components that influence an individual's health information seeking behaviour, which include demographic, cognitive, internal and external factors. The first factor is demographic which involves socioeconomic status, income, gender, age and education. Past studies have reported that low socioeconomic status (Bach & Wenz, 2020), low education levels and low income levels (Ulla Diez & Perez-Fortis, 2009) can influence an individual's health information seeking behaviour. These three studies found out that parents and adolescents with higher education, high income level and better socioeconomic status tend to be healthier and promote positive health behaviour to the people around them (Bach & Wenz, 2020; Ozturk & Ayaz-Alkaya, 2020; Ulla Diez & Perez-Fortis, 2009). In the studies by Ulla Diez and Perez-Fortis (2009) and Bach and Wenz (2020), they indicated that women are more likely to browse the internet for health online information, as well as individuals who received tertiary education. Furthermore, Ulla Diez and Perez-Fortis (2009) and Ozturk and Ayaz-Alkaya (2020) asserted that mothers with higher education levels have a positive impact on their children's health.

Furthermore, the second factor is cognitive. Wang et al. (2019) suggested that the cognitive factor includes ease of use, usefulness, behavioural control and benefits. For instance, Ahmad et al. (2020) found out that the reason elderlies seek health information online is to gather information regarding their personal health; and it is free, fast and convenient. The findings by Bach and Wenz (2020) suggested that the adolescents, adults, non-smokers and

individuals with tertiary education are more likely to utilize the search engine to seek health information due to the ease of use and ability to use health-related apps to keep track of their health.

Moreover, the third contributor is internal factor which consist of attitude, self-efficacy, Internet experience, health anxiety and trust (Wang et al., 2019). Researchers claimed that trust in healthcare and self-belief are the driving factors that motivate online health information seeking behaviour. Consistent results were reported by Cao et al. (2016) and Wang et al. (2019) on individuals in China. Same goes to the study done by Jaafar et al. (2017) on Malaysians. Lastly, external factor concerns the individual's environment affects their health behaviour. Wang et al. (2019) found out that social support and subjective norms have an influence on an individual's health behaviour, and similar results are achieved in McKinley and Wright's (2014) study on informational social support and online health information seeking.

In short, most of the past studies focused on how health information seeking behaviour influences individuals to make decisions relating to health, ways to improve their level of health literacy and the factors that prompt the health information seeking behaviour. Thus, health information seeking behaviour is able to encourage an individual to lead a healthier lifestyle which decreases the rate of morbidity and mortality. Needless to say online health information should be readable for all age groups because it gives them more motivation to constantly look for health information and improve their healthy literacy level.

2.3 Readability Formula

Dale and Chall (1949) stated that readability is "the sum total (including the interactions) of all those elements within a given piece of printed material that affects the success a group of readers have with it" (p.23). The significance of readability consists of three factors, namely the rise in the amount of reading required for success, the deterioration of comprehension skills

of secondary school graduates, and the simplification of written text as an unbiased clarification for the rise of reading and the deterioration of comprehension skills (Klare, 1984). Therefore, the development of readability formula is used as predictive devices to provide an estimation of the reading level of the written text and to identify the complexity of vocabulary using word length counts (Friedman & Hoffman-Goetz, 2006). The following section will further clarify the three readability formulas used in this research.

2.3.1 Flesch-Kincaid Grade Level (FKGL)

Rudolph Flesch formulated a text readability measurement called Flesch-Kincaid Grade Level which uses word sentence and sentence length to calculate the readability of a text (Kincaid et al., 1975). The Flesch-Kincaid Grade Level formula can be seen in Figure 2.1. The results generated from the formula is referred to Flesch-Kincaid Grade Level that ranges from 100 (easy to read) to 0 (difficult to read). Figure 2.2 shows the conversion table for Flesch-Kincaid Grade Level Formula.

$$0.39\left(\frac{Total\ words}{Total\ sentences}\right) + 11.8\left(\frac{Total\ syallables}{Total\ words}\right) - 15.59$$

Figure 2.1: *Flesch-Kincaid Grade Level Formula*

Flesch Kincaid grade level	Numeric level of the text	Readability level
5	90-100	Very easy
6	80-90	Easy
7	70-80	Quite easy
8-9	60-70	Standard
10-11	50-60	Rather difficult
13-16	30-50	Difficult
Adults	0-30	Very difficult

Figure 2.2: *Flesch-Kincaid Grade Level's conversion table*

2.3.2 Flesch Reading Ease (FRE)

Flesch Reading Ease (Flesch, 1984) measures texts that are written between Grade 5 and university graduate level. This readability formula is based on two components which are average sentence length (the number of sentence) and average word length (the number of syllables) which can be seen in Figure 2.3. After the calculation, the results will be referred to as the Flesch Reading Ease Scale indicating the school level in Figure 2.4.

$$206.835 - 1.015\left[\frac{Total\ words}{Total\ sentences}\right] - 84.6\left[\frac{Total\ syallables}{Total\ words}\right]$$

Figure 2.3: Flesch Reading Ease Formula

Score	School Level	Notes
100.0–90.0	5th Grade	Very easy to read. Easily understood by an average 11-year-old student.
90.0–80.0	6th Grade	Easy to read. Conversational English for consumers.
80.0–70.0	7th Grade	Fairly easy to read
70.0–60.0	8th & 9th Grade	Plain English. Easily understood by 13- to 15-year-old students
60.0–50.0	10th to 12th Grade	Fairly difficult to read.
50.0–30.0	College	Difficult to read
30.0–10.0	College Graduate	Very difficult to read. Best understood by university graduates
10.0–0.0	Professional	Extremely difficult to read. Best understood by university graduates

Figure 2.4: Flesch Reading Ease Scale

2.3.3 Simple Measure of Gobbledygook (SMOG)

McLaughlin (1969) formulated the SMOG Readability Formula as an enhanced version of previous formulas. The formula in Figure 2.5 is used to estimate the number of years of education required for an individual to read a text. The results derived from the formula is referred to as the SMOG Conversion Table in Figure 2.6 indicating the education level.

$$1.043\sqrt{Number\ of\ polysyllables \times \frac{30}{Number\ of\ sentences}} + 3.1291$$

Figure 2.5: SMOG Readability Formula

Levels	
SCORE/ Grade	Education Level
1-4	Elementary School
5-8	Middle School
9-12	High School
13-16	Undergraduate
17+	Graduate

Figure 2.6: SMOG conversion table

2.4 Recommended reading levels for health information

As a matter of fact, there is a broad range of health information sources on the Internet and a majority of people are actively seeking health information online (Massey, 2016). Boxell et al. (2012) claimed that individuals with low literacy levels are unable to understand the health information they read. As a result, they will have less health awareness and they will experience more barriers in seeking medical help. They also revealed that there is a relationship between health information and service barriers, which may reflect in skills like scheduling a medical appointment and consulting health care professionals (Boxell et al., 2012). Furthermore, it has become a concern that individuals with low literacy levels are more likely to engage in life-threatening health practices, which could result in an increase of morbidity and premature death (World Health Organization, 2018). According to a study conducted by Institute of Public Health (2015), the level of sufficient health literacy among Malaysian adults is 6.6%. In order for the public to improve their health literacy, the information delivered by health experts should be written no higher than sixth grade (McKenzie et al., 2016) which is equivalent to Primary Year 6 according to the education system in Malaysia (Wong et al, 2019).

However, results from previous studies showed that the reading levels of printed and online health materials are written above the recommended level. For instance, online dengue materials in the US are reported to be written for the 10th grade instead of following the recommended 6th grade (Meleo-Erwin et al., 2020). Consistent results are recorded for patient education materials related to parathyroid surgery (Patel et al., 2015), early intervention program literature (Pizur-Barnekow et al., 2011), American shoulder and elbow surgeons' patient brochure (Schmaier et al., 2018) and lastly leaflets about sexual health promotion (Corcoran & Ahmad, 2016) in the US ranges from 9th grade to college graduate. Interestingly, in the UK, orthodontic patient information leaflets are difficult for the UK population to read and the average reading level for the information leaflets is 7th grade (Seehra et al., 2016). In the Netherlands, information forms for children and adolescents also showed similar results in that it is only suitable for children who have received Grade 9 education (Groten-Wiegers et al., 2015). Furthermore, in Qatar, the patient information leaflets for antidiabetic medication can only be understood by readers who are 11th graders and above (Munsour et al., 2017), and similar results are reported by Downing et al. (2011) that the online health information for asplenic patients in Canada is written for 11th graders too.

2.4.1 Reading levels of health information in Malaysia

The reading levels of health information in Malaysia also exhibit similar results from other countries. For instance, Daud and Hamid (2014) investigated the readability level of the 'About Us' section of Malaysian Hospitals. The readability formulae used in this study are FOG and SMOG. The results showed that the 'About Us' sections of Malaysian hospitals are beyond the recommended 6th grade level, and most of the content are only suitable for undergraduates and graduates. Similar results were found in the research of Hamid et al. (2020) whereby 9 out 14 texts were categorised as difficult by SPIKE Dyslexia, and readers with reading difficulties were unable to comprehend the Covid-19 information published by the

Malaysian Ministry of Health, which could have resulted in an increase of infection cases. However, Wong et al. (2019) reported that oral education pamphlets composed by the Malaysian Ministry of Health Malaysia corresponded to the recommended education level, which is 6th grade and it is equivalent to primary school's Year 6 in Malaysia.

2.5 Lexical collocation in science related academic texts and journalistic texts

Collocation helps readers to retrieve information easily (Huston & Francis, 2000) and consequently improve their comprehension level. This is because the human brain has the ability to analyse prefabricated units like collocations more efficiently (Menon & Mukundan, 2012). A number of past studies reported that collocation knowledge tends to improve learners and readers' use of language. Sadighi and Sahragard (2013) and Tekingul (2013) stressed that collocation knowledge has an impact on reader's comprehension of text. Moreover, the purpose of using collocation analysis is to explore the discourse used in scientific texts and journalistic texts. Therefore, the following studies on collocations have been done by scholars to find out common collocation patterns in academic texts and journalistic texts related to science.

Menon and Mukundan (2012) investigated the collocations patterns of high frequency noun keywords in science textbooks used by upper secondary students in Malaysia. Their findings showed the highest frequencies collocation pattern found in the textbooks are noun-noun (NN), noun-adjective (NA), adjective-noun (AN) and lastly verb-noun (VN). Moreover, in Trinant and Yodkamlue's (2018) study, similar results are obtained whereby nursing research articles consists a majority of NN, AN, NA and VN collocation pair, and the least frequent collocation is noun-adverb collocation pair. Consistent results were achieved by Joharry and Turiman (2020), where the collocation pair of the node word, Covid-19 are NN, VN and NV are most the common in letters to the editor. In short, these three studies shared the same results where the predominant collocational pairs are NN, NA, AN and VN. The noun

act as a base and it can be considered as a characteristics of collocational patterns found in the area of science such as educating ESL learners about science, nursing and descriptions on an infectious disease in journalistic texts.

It can be deduced that the collocational pattern found in science related academic texts and journalistic texts may have a significant influence on the collocations in health brochures published by KKM, because they do not have huge differences in structure and vocabulary (Joharry & Turiman, 2020; Menon & Mukundun, 2012; Trinant & Yodkamlue, 2019).

2.6 Conceptual Framework

Figure 2.7 depicts the conceptual framework for this research. The research is divided into two stages. The first stage is to determine the readability of communicable disease health brochures and the second stage is to find out the words used to describe communicable disease. The readability of the communicable diseases will the evaluated using FKGL, FRE and SMOG. Next, the collocation analysis will be carried out using GraphColl in #LancsBox. The following chapter will further elucidate the researcher's approach to each step of the analysis.

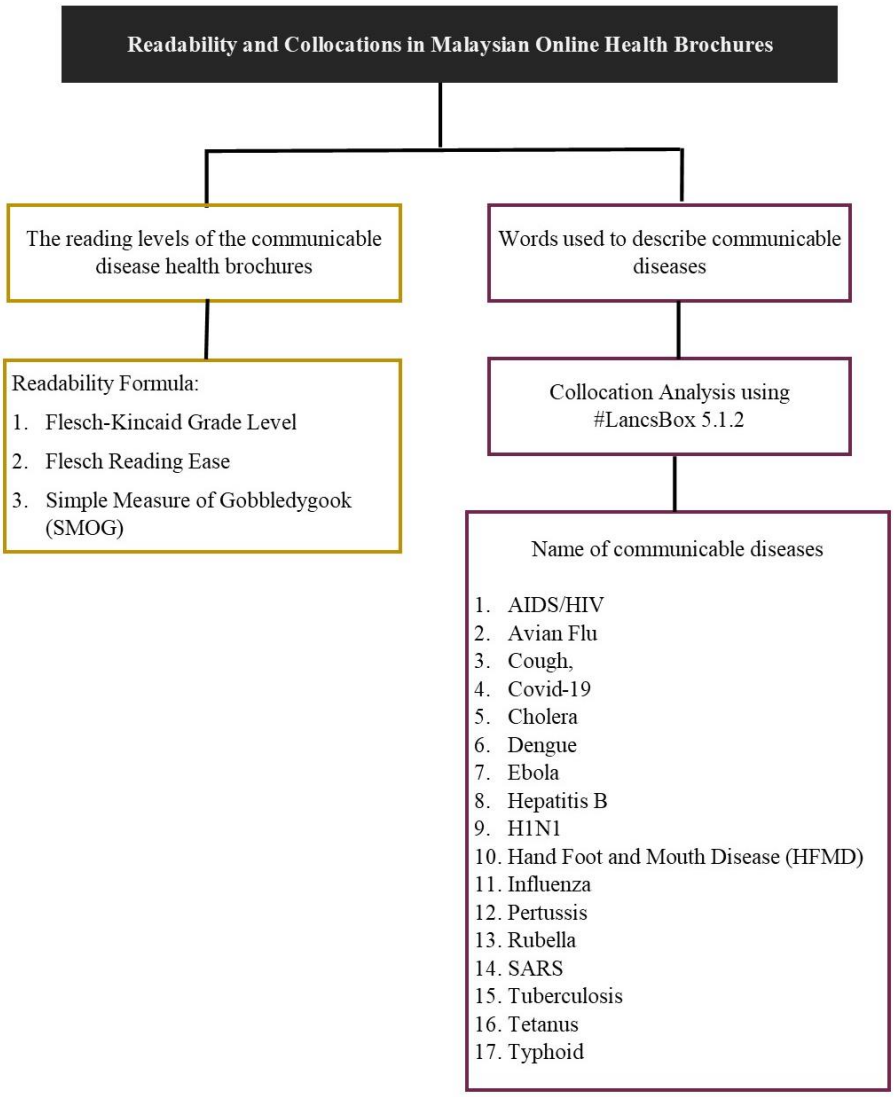

Figure 2.7: Conceptual framework for the readability and collocation in Malaysian online health brochures.

2.7 Chapter Summary

This chapter describes the importance of health literacy and the determinants of online health information seeking behaviours. It also investigates the readability formula and reviewed past studies on the suitable reading level for medical related texts in other countries and Malaysia. This was followed by a review of past studies related to collocations and findings on collocational patterns in science related texts. Lastly, the conceptual framework for this study was depicted.

CHAPTER 3: METHODOLOGY

3.0 Introduction

This chapter illustrates the research design used to analyse the communicable disease health brochures and the creation of Malaysian Online Health Brochures corpus. It also describes the usage of a corpus analysis software tool and online readability calculator, as well as the research procedure for this study.

3.1 Research Design

This is a corpus assisted research which employed primary data collection by compiling online Malaysian health brochures as a corpus. This method was chosen because it can help examine the readability of online Malaysian health brochures, while also allowing the researcher to determine the collocations used to describe various communicable diseases.

3.2 Corpus and Tools

This section discusses the creation of the Malaysian Online Health Brochure (MOHB) Corpus and tools used to identify the readability and collocations of the health brochures.

3.2.1 Creation of Malaysian Online Health Brochures Corpus

A total of 32 communicable disease health brochures from KKM were used to create the corpus for this research. All the brochures for the past twenty years were downloaded from the KKM website. These 32 English communicable disease health brochures were translated from Bahasa Malaysia communicable disease brochures. This is because KKM acknowledged the importance of the communicable diseases health and translated it to English so that it can reach more readers and encourage them adopt the preventive measures in their life (Ministry of Health, 2019). The selection of these health brochures are based on the type of diseases, specifically communicable diseases. Another criterion taken into consideration was the number

of words on the health brochures. Health brochure contains both texts and visuals aids such as pictures, illustration and charts to reinforce the message delivered to its readers (Wong et al., 2019). However, those visual aids will be eliminated. Figure 3.1 is a sample of the health brochure selected for the corpus.

Figure 3.1: Sample of communicable disease health brochure selected for the corpus

The communicable diseases health brochures selected for this corpus were AIDS/HIV, avian flu, cough, Covid-19, dengue, hepatitis B, hand foot and mouth disease (HFMD), influenza, H1N1, pertussis, rubella, SARS, cholera, tuberculosis, tetanus and typhoid. As these are the only available health brochures on the KKM website and they are published from 2000 to 2020.

The format of these KKM communicable disease health brochures are in PDF and they will be converted to plain text. Next, the target text was uploaded to the online readability calculator to identify the reading level of the selected brochures, then to a corpus analysis software to determine the frequent collocation of communicable diseases.

3.2.2 Readability Calculator

An online readability calculator (https://www.onlineutility.org/english/readability_test_and_improve.jsp) was used to calculate the reading level of the selected communicable disease brochures' plain text individually. The reading level of these health brochures would calculated using Flesch-Kincaid Grade Level, Flesch Reading Ease and SMOG. Next, the text document would be pasted in the readability calculator website which is depicted in Figure 3.2 where a Hepatitis B brochure is being used as an example.

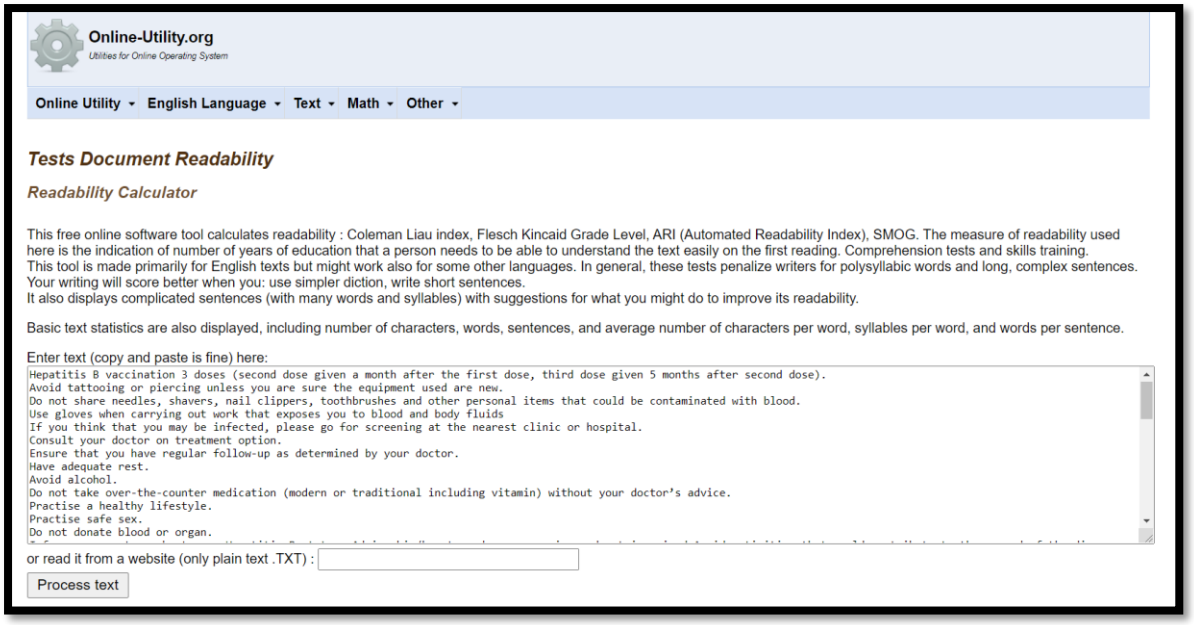

Figure 3.2: The texts from the Hepatitis B brochure pasted in the online readability calculator

Different readability formulas generate different scores due to the differences in measurement methods, thus, it is crucial to adopt multiple readability formulas to supplement each other (Klingbeil et al., 1995 as cited in Groten-Wiegers et al., 2015). It is important to note that these readability formulas that measures the length of words and sentences do not take the factors influencing the readability levels into account (Groten-Weigers et al., 2015). Despite their limitations, past studies still used these readability formulas to identify the readability of medical information (Groten-Weigers et al., 2014). Lastly, the results of the

Flesch-Kincaid Grade Level, Flesch Reading Ease and SMOG were recorded which can be seen in Figure 12 and the researcher would refer to the conversion table in Figure 4, Figure 6 and Figure 8 to determine the reading levels.

3.2.3 Corpus Analysis Software

In this research, collocates were analysed using the freely available corpus analysis software tool i.e. GraphColl in #LancsBox 5.1.2 (Brezina et al., 2020). Firstly, the Malaysian Online Health Brochures Corpus was uploaded into #LancsBox which can be seen in Figure 3.3. Once the corpus was successfully uploaded to the software, the process of determining relevant collocation of communicable disease can start by using GraphColl. The name of the communicable disease was used a node word and the five words on its left and right were identified to determine the common words that co-occur with the node word.

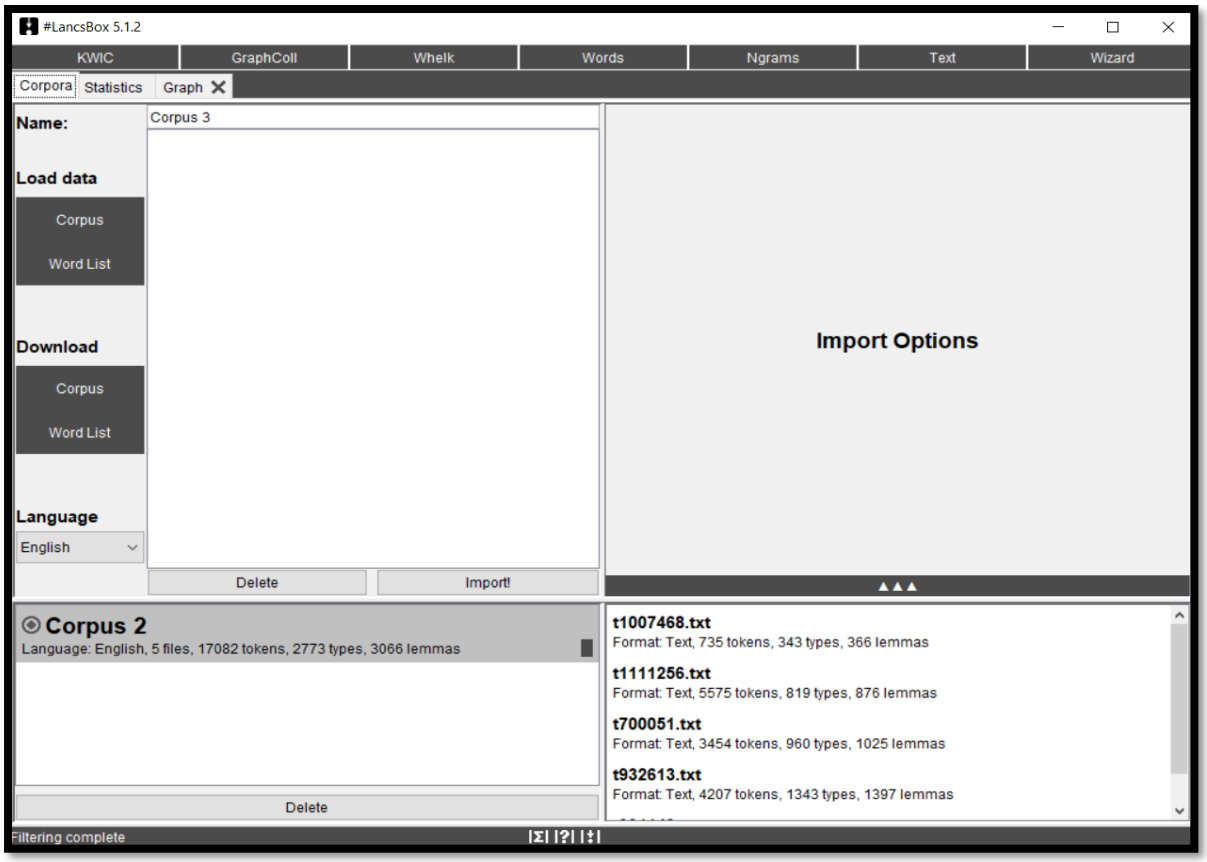

Figure 3.3: *Corpus 2 is an example of the compilation of several health brochures*.

3.3 Research Procedure

In stage one, the first step taken was using the search engine "Google" to access to the KKM Website to search for health brochures about communicable diseases. The terms used to conduct the search were the names of the communicable diseases. The list of communicable diseases was retrieved from the Case Definition for Infectious Disease in Malaysia which was published by the Disease Control Division from Malaysian Ministry of Health in 2017. The total number of communicable diseases listed in this booklet is forty. The list of communicable diseases was narrowed down based on the availability of the health brochures in the KKM website. In addition, the newly discovered severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; formerly called 2019-nCoV) was added into the list. This step is to ensure that all possible health brochures about communicable diseases were searched.

Moreover, another criterion was considered, health brochures in languages other than English were excluded because this research focused on English communicable disease brochures only. All available communicable disease health brochures were downloaded in PDF format then converted to plain text. Visual aids on the health brochures such as copyright notice, date stamps, tables, illustration, website information, hyperlinks and pictures were eliminated to prevent skewing readability score (Patel et al., 2015). This is because the plain text format does not read images and visual aids.

The second step was to name the plain texts of these health brochures were named according to the title of the brochures. The readability of these health brochures was calculated using FRE, FKGL and SMOG. These plains texts were inserted individually into the free online readability calculator at http://www.online-utility.org/english/readability_test_and_improve.jsp.

The third step was generating all the readability levels of the health brochures and the results were tabulated according to the readability formulas used. With these steps, the first research objective of this research was fulfilled. Later, the readability scores were referred to conversion table of each readability formula so that the researcher could determine the reading levels of these communicable disease health brochures and conclude that whether it is easily understood by Malaysians.

The second stage of the study utilized all the converted plain texts of the health brochures which was completed in the second step. The following step was compiling all the plain texts of these health brochures to create a corpus titled Malaysian Online Health Brochure Corpus and upload them into #LancsBox. Once the corpus was fully uploaded and tagged, the researcher generated the concordance list. With the help of #LancsBox, the second research objective was achieved which is to find out the common words surrounding the communicable diseases from a collocational point of view. Using one of the tools in #LancsBox, GraphColl extracted the collocates surrounding the node words which were the name of communicable diseases from a span of five words to the left and right of the node word. According to Berzina et al. (2015), the automatic extraction of collocation will be based on distance, frequency, exclusivity, directionality, dispersion and type token distribution. In this analysis, the collocation was measured based on Mutual Information cubed (MI3) and the mutual information score was set to 10 as the threshold value in order to determine the most frequent collocate.

The frequency of these collocations surrounding the name of the communicable diseases explained how KKM structured their health brochures to engage and deliver important information regarding communicable diseases. In addition, analyzing the dispersion of collocational items in the health brochures helped the researcher to understand the connectivity between the node words and the collocates which in turn revealed the purpose of publishing

health brochures and produced more accurate generalizations. The entire research procedure is depicted in Figure 3.4.

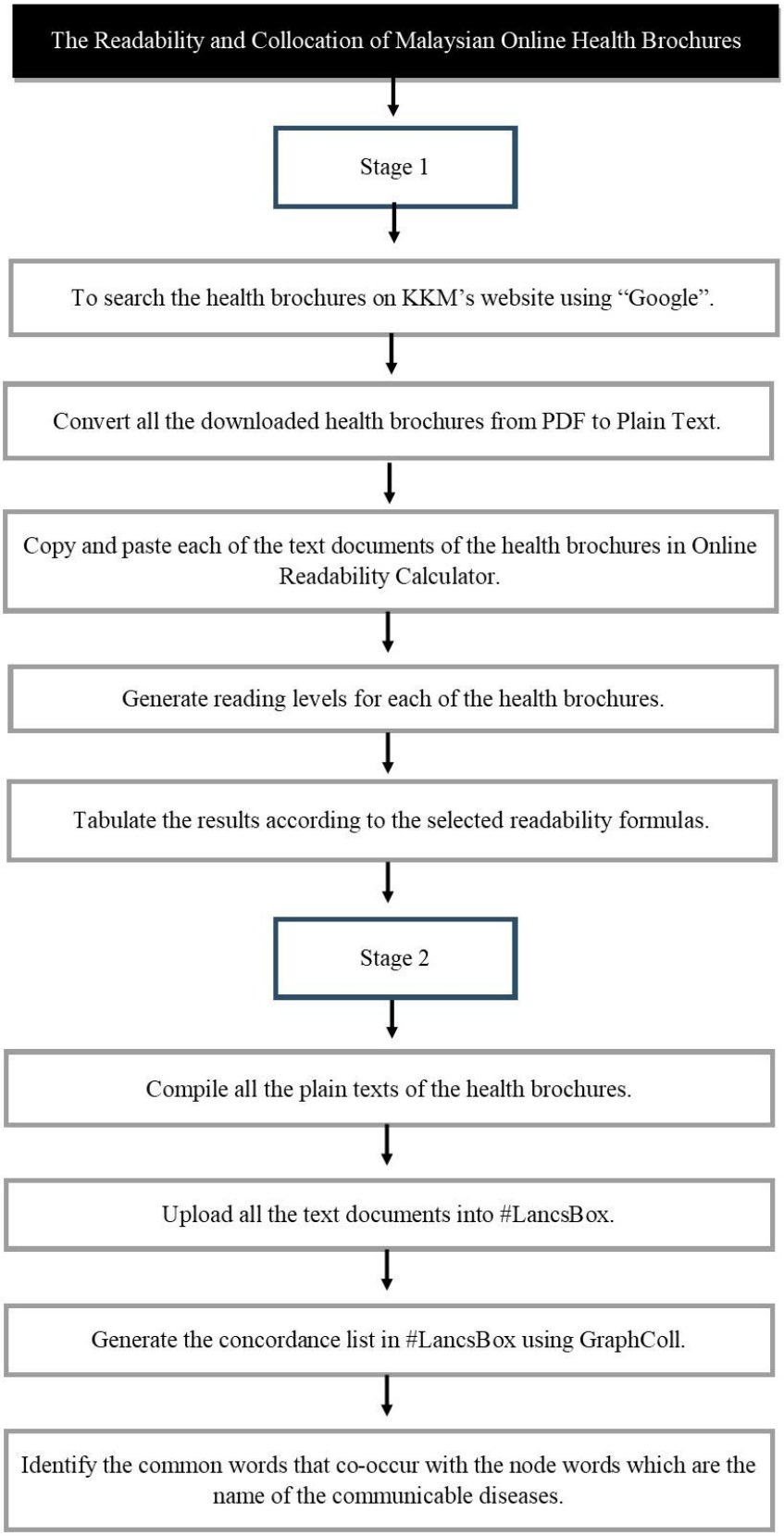

Figure 3.4: The research procedure of the readability and collocation of Malaysian Online Health Brochures

3.4 Chapter Summary

This chapter presented a comprehensive description of the research design that was used to identify the readability and collocations in Malaysian online health brochures. Most importantly, it explained the approaches which are using FRE, FKGL and SMOG to evaluate the communicable disease brochures published by KKM and using to GraphColl in #Lancsbox to find out the words that are used to describe the communicable disease.

CHAPTER 4: FINDINGS AND DATA ANALYSIS

4.0 Introduction

This chapter will be divided into two parts to cover the readability levels and collocation that are used to describe communicable disease. Section 4.1 addresses the readability levels of communicable disease health brochures produced by KKM. It will be sub-categorised into 3 sub-topics which highlight the readability scores obtained using Flesch Reading Ease (FRE), Flesch-Kincaid Grade Level (FGKL) and Simple Measure of Gobbledygook (SMOG). On the other hand, Section 4.2 presents frequently used collocates to describe the communicable disease. The 17 communicable diseases that Section 4.2 would be addressing are AIDS/HIV, Avian Influenza, Cholera, Cough, Covid-19, Dengue, Ebola, H1N1, Hepatitis B, Hand, Foot and Mouth Disease, Influenza, Pertussis, Rubella, SARS, Tuberculosis, Tetanus and Typhoid.

4.1 Readability levels from FRE, FKGL and SMOG of Health Brochures

In this research, 32 communicable disease brochures were evaluated by Flesch Reading Ease (FRE), Flesch-Kincaid Grade Level (FKGL) and Simple Measure of Gobbledygook (SMOG). The brochures are published from 2000 until 2020 and the length of the health brochures ranges from 225 to 791 words which were displayed in Table 4.1. The brochures with the highest readability score or lowest readability score on one of the readability scales does not have the same readability score in another readability scale because of varied calculation methods. Therefore, the results generated using FGKL, FRE and SMOG may differ slightly depending on the conversion table of each readability formula.

Table 4.1

The title of the communicable disease brochures and its length

No.	Title of the brochure	Number of words
AIDS/HIV		
1	AIDS is preventable	311
2	AIDS Guidelines for Hairdressers and Barbers	592
3	Go for HIV Test	313
4	HIV & AIDS	775
5	If you are going abroad… REMEMBER!	620
6	Teenagers & HIV/AIDS	383
7	Women and HIV/AIDS	430
8	Woman and HIV/AIDS	457
AVIAN INFLUENZA		
9	Avian Influenza What You Need to Know	352
10	Avian Influenza Bird Flu	302
CHOLERA		
11	Beware! Danger of Cholera	253
COUGH		
12	Cover Your Cough	225
CORONAVIRUS		
13	Basic Protective Measure Against The New Coronavirus	303
14	Covid19 Coronavirus Disease 2019	225
DENGUE		
15	Just Take 10 Minutes	321
16	Prevent Dengue	229

EBOLA		
17	Alert on Ebola Virus Disease	258
HEPATITS B		
18	Hepatitis B	382
HAND FOOT AND MOUTH DISEASE		
19	Prevent Hand Foot and Mouth Disease	341
INFLUENZA		
20	Influenza	604
21	Pandemic Influenza What You Need to Know: Keep Your Hands Clean	226
22	Influenza What You Need to Know: Influenza Virus	595
23	Influenza: What You Need to Know and Do If You Experience Signs and Symptoms of Influenza During a Pandemic Situation	465
24	Pandemic Influenza What You Need to Know: Frequently Asked Questions (FAQ)	547
25	Prevent Influenza A (H1N1)	238
26	Influenza A Wash Your Hands	791
PERTUSSIS		
27	Whooping Cough (Pertussis)	400
RUBELLA		
28	Rubella	379
SEVERE ACUTE RESPIRATORY SYNDROME (SARS)		
29	Health Alert from Ministry of Health, Malaysia on Severe Acute Respiratory Syndrome SARS	463

TUBERCULOSIS		
30	TB (Tuberculosis)	428
TETANUS		
31	Tetanus (Lock Jaw)	276
TYPHOID		
32	High Fever Abdominal Discomfort Diarrhoea	297
	Total number of words	12781

In Table 4.1, the total of AIDS/ HIV brochures is 8. Next, there are 2 brochures each for Avian Influenza, Coronavirus and Dengue. As for Influenza, there are a total of 7 brochures. Lastly, Cholera, Cough, Ebola, Hepatitis B, Hand Foot and Mouth Disease, Pertussis, Rubella, SARS, Tuberculosis, Tetanus and Typhoid each with 1 brochure. There are a total of 32 English communicable disease brochures collected from KKM's website. These brochures contain information about the symptoms of the disease, preventive ways and details about the cause of these communicable diseases.

4.1.1 Readability level from FKGL

Table 4.2 displays the results derived using FKGL. A total of 18 brochures were suitable for those who received Grade 8 and Grade 9 education which are associated with the readability level, standard. The brochure, "AIDS is Preventable" had the lowest readability level which was suitable for readers with Grade 6 education. Moreover, only 1 brochure about Hepatitis B was labelled as rather difficult and another 2 brochures about Coronavirus and Dengue were considered very difficult according to the FKGL's conversion table. In short, 96.88% of the brochures accessed using FKGL were beyond the recommended reading level proposed by the Institute of Public Health.

Table 4.2

Readability of communicable disease health brochures using FKGL

No.	Title of the brochure	Flesch Kincaid Grade Level	Readability Level
AIDS/HIV			
1	AIDS is preventable	4.4	Very easy
2	AIDS Guidelines for Hairdressers and Barbers	9.8	Standard
3	Go for HIV Test	7.4	Quite easy
4	HIV & AIDS	8.0	Standard
5	If you are going abroad… REMEMBER!	8.3	Standard
6	Teenagers & HIV/AIDS	9.0	Standard
7	Women and HIV/AIDS	7.9	Quite easy
8	Woman and HIV/AIDS	7.5	Quite easy
AVIAN INFLUENZA			
9	Avian Influenza What You Need to Know	6.1	Easy
10	Avian Influenza Bird Flu	8.0	Standard
CHOLERA			
11	Beware! Danger of Cholera	8.8	Standard
COUGH			
12	Cover Your Cough	8.8	Standard
CORONAVIRUS			
13	Basic Protective Measure Against The New Coronavirus	15.1	Very difficult
14	Covid19 Coronavirus Disease 2019	8.9	Standard

DENGUE			
15	Just Take 10 Minutes	19.6	Very difficult
16	Prevent Dengue	7.3	Quite easy
EBOLA			
17	Alert on Ebola Virus Disease	9.2	Standard
HEPATITIS B			
18	Hepatitis B	10.7	Rather difficult
HAND, FOOT AND MOUTH DISEASE			
19	Prevent Hand Foot and Mouth Disease	8.2	Standard
INFLUENZA			
20	Influenza	9.6	Standard
21	Pandemic Influenza What You Need to Know: Keep Your Hands Clean	5.6	Easy
22	Influenza What You Need to Know: Influenza Virus	8.7	Standard
23	Influenza: What You Need to Know and Do If You Experience Signs and Symptoms of Influenza During a Pandemic Situation	9.7	Standard
24	Pandemic Influenza What You Need to Know: Frequently Asked Questions (FAQ)	7.8	Quite easy
25	Prevent Influenza A (H1N1)	7.0	Quite easy
26	Influenza A Wash Your Hands	7.9	Quite easy
PERTUSSIS			
27	Whooping Cough (Pertussis)	9.6	Standard
RUBELLA			
28	Rubella	8.9	Standard

SEVERE ACUTE RESPIRATORY SYNDROME (SARS)			
29	Health Alert from Ministry of Health, Malaysia on Severe Acute Respiratory Syndrome SARS	8.2	Standard
TUBERCULOSIS			
30	TB (Tuberculosis)	9.1	Standard
TETANUS			
31	Tetanus (Lock Jaw)	8.3	Standard
TYPHOID			
32	High Fever Abdominal Discomfort Diarrhoea	8.3	Standard

4.1.2 Readability level from FRE

The readability scores accessed using FRE are shown in Table 4.3. The results revealed that only one brochure, "AIDS is Preventable" follows the recommended reading level which was Grade 6. 18 out of 32 communicable health brochures had reading levels of Grade 10 to 12. Moreover, 8 brochures related to Cholera, Covid-19, Ebola, Hepatitis B, Influenza, Pertussis and Tetanus had reading levels that are suitable for college students. 4 brochures associated with HIV, Avian Influenza, Hand, Foot and Mouth Disease, and H1N1 shared the same reading level that were suitable for Grade 8 and 9. Besides that, the brochure, "Just Take 10 Minutes" had the highest reading level that can be understood by college graduates. Overall, 96.88% of the communicable disease brochures accessed by FRE were beyond the recommended reading level proposed by the Institute of Public Health.

Table 4.3

Readability of communicable disease health brochures using FRE

No.	Title of the brochure	Flesch Reading Ease	Reading Level (Grade)
AIDS/HIV			
1	AIDS is preventable	81.9	6
2	AIDS Guidelines for Hairdressers and Barbers	53.1	10-12
3	Go for HIV Test	64.9	8 & 9
4	HIV & AIDS	57.2	10-12
5	If you are going abroad… REMEMBER!	59.3	10-12
6	Teenagers & HIV/AIDS	50.8	10-12
7	Women and HIV/AIDS	55.3	10-12
8	Woman and HIV/AIDS	59.5	10-12
AVIAN INFLUENZA			
9	Avian Influenza What You Need to Know	67.9	8 & 9
10	Avian Influenza Bird Flu	59.00	10-12
CHOLERA			
11	Beware! Danger of Cholera	46.1	College
COUGH			
12	Cover Your Cough	58.9	10-12
CORONAVIRUS			
13	Basic Protective Measure Against The New Coronavirus	31.6	College
14	Covid19 Coronavirus Disease 2019	48.1	College
DENGUE			
15	Just Take 10 Minutes	25.9	College graduate
16	Prevent Dengue	59.0	10-12
EBOLA			
17	Alert on Ebola Virus Disease	47.5	College

HEPATITIS B			
18	Hepatitis B	40.2	College
HAND, FOOT AND MOUTH DISEASE			
19	Prevent Hand Foot and Mouth Disease	61.7	8 & 9
INFLUENZA			
20	Influenza	47.6	College
21	Pandemic Influenza What You Need to Know: Keep Your Hands Clean	69.9	8 & 9
22	Influenza What You Need to Know: Influenza Virus	52.2	10-12
23	Influenza: What You Need to Know and Do If You Experience Signs and Symptoms of Influenza During a Pandemic Situation	56.0	10-12
24	Pandemic Influenza What You Need to Know: Frequently Asked Questions (FAQ)	55.8	10-12
25	Prevent Influenza A (H1N1)	59.9	10-12
26	Influenza A Wash Your Hands	56.8	10-12
PERTUSSIS			
27	Whooping Cough (Pertussis)	45.3	College
RUBELLA			
28	Rubella	51.4	10-12
SEVERE ACUTE RESPIRATORY SYNDROME (SARS)			
29	Health Alert from Ministry of Health, Malaysia on Severe Acute Respiratory Syndrome SARS	54.8	10-12
TUBERCULOSIS			
30	TB (Tuberculosis)	53.9	10-12
TETANUS			
31	Tetanus (Lock Jaw)	47.7	College

TYPHOID			
32	High Fever Abdominal Discomfort Diarrhoea	52.2	10-12

4.1.3 Readability level from SMOG

Table 4.4 depicts the results derived from SMOG. The results indicated that only 3 brochures related to AIDS, Cough and H1N1 followed the recommended reading level, Grade 6 which is equivalent to middle school education. According to the Malaysian education system, Grade 6 is equivalent to primary school, Year 6. Based on the calculation derived using SMOG, 84.38% of the communicable health brochures published were suitable for readers with high school education. However, the brochure "Basic Protective Measure Against the New Coronavirus" had the highest readability score which can be only understood by undergraduates and the brochure, "Just Take 10 Minutes" had the readability score that was suitable for graduates.

Table 4.4

Readability of communicable disease health brochures using SMOG

No.	**Title of the brochure**	**SMOG**	**Reading Level**
AIDS/HIV			
1	AIDS is preventable	7.7	Middle school
2	AIDS Guidelines for Hairdressers and Barbers	11.7	High school
3	Go for HIV Test	9.8	High school
4	HIV & AIDS	10.7	High school
5	If you are going abroad… REMEMBER!	10.3	High school
6	Teenagers & HIV/AIDS	11	High school

7	Women and HIV/AIDS	10.3	High school
8	Woman and HIV/AIDS	10.1	High school
AVIAN INFLUENZA			
9	Avian Influenza What You Need to Know	9.1	High school
10	Avian Influenza Bird Flu	10.3	High school
CHOLERA			
11	Beware! Danger of Cholera	11.1	High school
COUGH			
12	Cover Your Cough	8.8	Middle school
CORONAVIRUS			
13	Basic Protective Measure Against The New Coronavirus	14.9	Undergraduate
14	Covid19 Coronavirus Disease 2019	9.9	High school
DENGUE			
15	Just Take 10 Minutes	17.6	Graduate
16	Prevent Dengue	9.4	High school
EBOLA			
17	Alert on Ebola Virus Disease	11.1	High school
HEPATITIS B			
18	Hepatitis B	11.7	High school
HAND, FOOT AND MOUTH DISEASE			
19	Prevent Hand Foot and Mouth Disease	10.3	High school
INFLUENZA			
20	Influenza	11.6	High school
21	Pandemic Influenza What You Need to Know: Keep Your Hands Clean	8.7	Middle school

22	Influenza What You Need to Know: Influenza Virus	10.8	High school
23	Influenza: What You Need to Know and Do If You Experience Signs and Symptoms of Influenza During a Pandemic Situation	11.7	High school
24	Pandemic Influenza What You Need to Know: Frequently Asked Questions (FAQ)	10.2	High school
25	Prevent Influenza A (H1N1)	9.5	High school
26	Influenza A Wash Your Hands	10.3	High school
PERTUSSIS			
27	Whooping Cough (Pertussis)	11.0	High school
RUBELLA			
28	Rubella	10.8	High school
SEVERE ACUTE RESPIRATORY SYNDROME (SARS)			
29	Health Alert from Ministry of Health, Malaysia on Severe Acute Respiratory Syndrome SARS	10.1	High school
TUBERCULOSIS			
30	TB (Tuberculosis)	11.0	High school
TETANUS			
31	Tetanus (Lock Jaw)	10.0	High school
TYPHOID			
32	High Fever Abdominal Discomfort Diarrhoea	9.6	High school

In short, the brochures that have consistent results from FKGL, FRE and SMOG are "Just take 10 minutes" and "Basic Protective Measure Against the New Coronavirus". These two brochures are suitable for readers who received tertiary education. It is worth highlighting that 6 brochures titled "Beware! Danger of Cholera", "Alert on Ebola Virus Disease",

"Influenza", "Whooping Cough (Pertussis)" and "Tetanus (Lock Jaw)" have a huge readability score difference. In FRE, these brochures are suitable for college students while FKGL and SMOG scores show that they are meant for readers who possessed middle school education from Grade 8 to Grade 10 which is equivalent to Form 2 to Form 4 based on the Malaysian education system. Lastly, 34.4% of communicable disease brochures have a small difference around 1 or 2-grade level.

4.2 Collocations of communicable disease in Malaysian Online Health Brochures (MOHB) corpus

This section discusses the analysis of frequent collocations of communicable disease in the Malaysian Online Health Brochures (MOHB) corpus. The corpus has 12510 tokens, 2109 types and 2083 lemmas. the name of the communicable disease is used as the node word to find out the frequent collocations of the communicable diseases using GraphColl in #LancsBox 5.1.2.

In this study, the researcher will use mutual information cube (MI3) as a statistical measure to generate the collocations in GraphColl. According to Berzina et al. (2015), MI3 will give more weight to the most frequent collocations in the corpus. MI3 is beneficial to this study because it eliminates the grammatical words and focuses on content words such as nouns, verbs, adjectives and adverbs (Al-Nakeeb & Mufleh, 2018). The researcher adopted the following settings: the word span is 5 words on each side of the node word, the frequency value was set to 2 (Al-Nakeeb & Mufleh, 2018) because the MOHB corpus is a small and specialized corpus. The mutual information (MI) score was set at 10 so that frequent and relevant collocations were shown in GraphColl (Marin, 2017).

The top 50 words in the MOHBC were illustrated in Table 4.5. The top 10 words in MOHBC are function words. It is important to note that this is a specialised corpus. It focuses

mainly on communicable diseases brochures and due to its small size, the top 50 words consist of more function words than content words. In order to achieve the second objective of this research, function words will not be included in the analysis. This is because content words carry a lot of semantic weight compared to function words (Bird et al., 2002). Moreover, the main role of function words is to express sentential structure only. Therefore, function words that appear in the 17 sub-categories will be disregarded.

In this corpus, the content word with the highest frequency is *influenza* followed by *HIV* and *virus*. These content words have a high frequency because out of 32 brochures, there are 11 brochures related to Influenza which include Avian Influenza and Coronavirus (Covid-19) and 8 AIDS/HIV brochures. Hence, the number of brochures is one of the factors that leads to the high frequency of the aforementioned content words.

Table 4.5

The top 50 words in MOHB corpus.

No.	**Type**	**Frequency**
1	the	442
2	and	402
3	to	291
4	of	275
5	is	190
6	or	189
7	a	186
8	with	170
9	you	150

10	your	138
11	influenza	137
12	•	123
13	in	112
14	can	110
15	are	107
16	hiv	100
17	be	95
18	virus	90
19	if	90
20	for	89
21	from	79
22	infected	77
23	health	74
24	by	74
25	have	70
26	as	64
27	it	63
28	that	62
29	at	60
30	water	58
31	not	58
32	aids	55
33	disease	53

34	infection	52
35	symptoms	52
36	hands	51
37	what	48
38	when	47
39	do	46
40	contact	45
41	avoid	45
42	through	43
43	spread	40
44	treatment	39
45	get	39
46	may	38
47	mouth	38
48	wash	37
49	how	37
50	nose	37

Table 4.6 displayed the frequency of node words and collocates whereby the MI score and collocation frequency is set to 0 so that the raw frequency can be generated by #LancsBox 5.1.2. The top 4 node words are Influenza, AIDS, Cough and Typhoid. These 3 node words have the most occurring in the MOHB corpus and the highest collocates. The 4 node words with the least occurrence and collocates are Ebola, Pertussis, Dengue and Hand, Foot and Mouth Disease.

Table 4.6

The frequency and collocates of the node words.

No.	**Node Words**	**Frequency**	**Collocates**
1	AIDS	55	202
2	Avian Influenza	16	59
3	Cough	33	149
4	Covid-19	6	42
5	Cholera	14	61
6	Ebola	4	27
7	Dengue	1	6
8	Hepatitis B	10	67
9	H1N1	12	67
10	Hand, Foot and Mouth Disease (HFMD)	0	0
11	Influenza	137	331
12	Pertussis	4	28
13	Rubella	12	62
14	SARS	10	57
15	Tuberculosis	6	44
16	Tetanus	11	61
17	Typhoid	17	75

The following 17 sub-categories will further explain the most salient collocates of the aforementioned communicable diseases. The research will elaborate on the reasons why the words collocate with node words.

4.2.1 Collocation of AIDS in MOHB Corpus

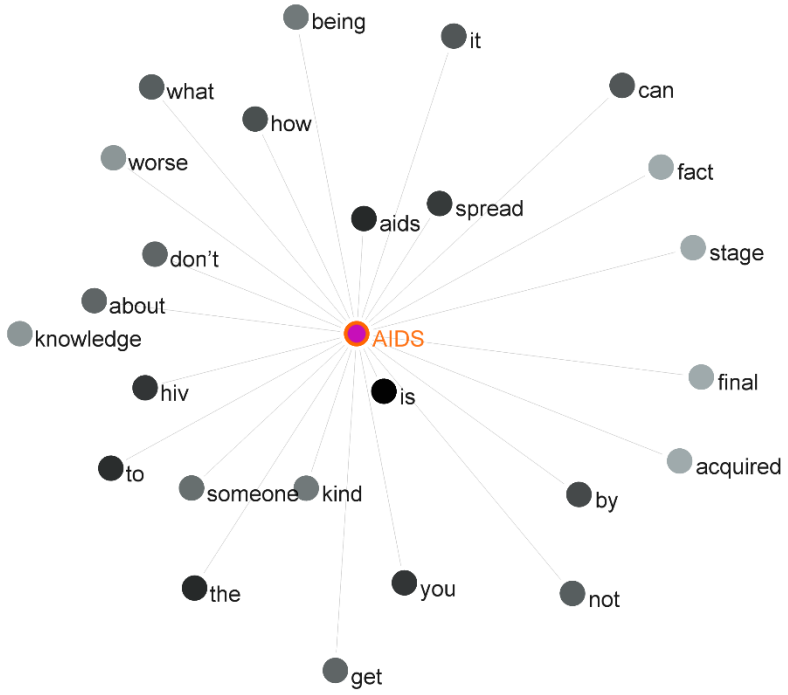

Figure 4.1: 25 most statistically significant collocates of AIDS in MOHB corpus

Figure 4.1 shows the 25 most salient collocates of AIDS. Figure 4.2 illustrates the concordance lines of 2 statistically significant action verbs related to the transmission of the virus are *spread* (MI 13.92) from line 1 to line 10 and *get* (MI 10.96) from line 41 to line 47. The word *acquired* (MI 10.82) from Line 48 to Line 49 is the name of AIDS which is also known as Acquired Immunodeficiency Syndrome in Figure 4.2. Furthermore, 5 out of 25 collocates are used to describe the virus. For instance, words like *HIV* (MI 12.90) from Line 16 to Line 28, *knowledge* (MI 10.99) from Line 38 to Line 40, *fact* (MI 10.82), *final* (MI 10.82) and *stage* (MI 10.82) from Line 50 to Line 55 are used to describe that AIDS is the last stage of HIV which is a known fact or general knowledge as shown in the concordance lines in Figure 4.2. Lastly, out of the 25 collocates, three collocates are used to express the treatment AIDS patients get from the people around them which are *someone* (MI 12.77) from Line 29 to Line 34, *kind* (MI 13.79) from Line 11 to Line 15 and *worse* (MI 11.58) from Line 35 to Line 37 as

shown in the concordance lines in Figure 4.2. In short, there are 11 content words collocates are included because they describe the transmission of AIDS, AIDS is the last stage of HIV and the emotional treatment people with AIDS get.

INDEX	FILE	LEFT	NODE	RIGHT
1	02 AIDS_G	Health Malaysia "We care for your health"	AIDS	HOW IT IS SPREAD AIDS is a
2	02 AIDS_G	your health" AIDS HOW IT IS SPREAD	AIDS	is a disease caused by the HIV
3	02 AIDS_G	person's immune system to fight against diseases.	AIDS	can be spread only through three ways:
4	05 If you a	some rare forms of cancers. How is	AIDS	spread? The AIDS virus spread most frequently
5	05 If you a	of cancers. How is AIDS spread? The	AIDS	virus spread most frequently through sexual activity.
6	05 If you a	during or shortly after birth. How is	AIDS	not spread? AIDS is not spread by
7	05 If you a	after birth. How is AIDS not spread?	AIDS	is not spread by casual contact such
8	05 If you a	Nor is it spread by insect bites.	AIDS	is not spread by swimming pool, public
9	05 If you a	heeding the following simple rules. Don't bring	AIDS	home. How can sexual spread of AIDS
10	05 If you a	AIDS home. How can sexual spread of	AIDS	be prevented? Do not have sex with
11	01AIDS IS	those who have AIDS." You don't get	AIDS	by being kind to someone with AIDS.
12	01AIDS IS	AIDS by being kind to someone with	AIDS.	AIDS is preventable practice a healthy lifestyle.
13	01AIDS IS	by being kind to someone with AIDS.	AIDS	is preventable practice a healthy lifestyle. A
14	01AIDS IS	Don't make it worse. You don't get	AIDS	by being kind to someone with AIDS.
15	01AIDS IS	AIDS by being kind to someone with	AIDS.	HIV is only transmitted through sexual intercourse
16	01AIDS IS	AIDS by being kind to someone with	AIDS.	HIV is only transmitted through sexual intercourse
17	02 AIDS_G	blood containing the HIV virus from an	AIDS	patient or carrier to another person. III.
18	06 TEENA(	system to fight off diseases. HIV causes	AIDS.	WHAT IS AIDS? "Acquired Immunodeficiency Syndrome" is
19	06 TEENA(	off diseases. HIV causes AIDS. WHAT IS	AIDS?	"Acquired Immunodeficiency Syndrome" is a disease you
20	06 TEENA(	interests in acquiring knowledge about HIV and	AIDS.	Still there are teenagers who do not
21	06 TEENA(	teachers. • Learn more about HIV and	AIDS	so that you can be a good
22	07 WOMEI	more vulnerable to HIV infection, which causes	AIDS.	Studies have shown that females are being
23	07 WOMEI	1986-2010) Women are vulnerable to HIV and	AIDS!	How Women infected with HIV? The common
24	07 WOMEI	Equip yourself with knowledge on HIV and	AIDS.	Get tested for HIV to know your
25	07 WOMEI	confidential. Practice healthy lifestyle. Prevent HIV and	AIDS	before it is too late. Do HIV
26	08 WOMEI	WOMEN & HIV/AIDS Believe it: WOMEN get	AIDS	HOW ARE WOMEN GETTING HIV? The most
27	08 WOMEI	Equip yourself with knowledge on HIV and	AIDS. -	Encourage your partner to get tested for
28	08 WOMEI	Practice a healthy lifestyle, prevent HIV and	AIDS	before it is too late. Health Education
29	01AIDS IS	those who have AIDS." You don't get	AIDS	by being kind to someone with AIDS.
30	01AIDS IS	AIDS by being kind to someone with	AIDS.	AIDS is preventable practice a healthy lifestyle.
31	01AIDS IS	by being kind to someone with AIDS.	AIDS	is preventable practice a healthy lifestyle. A
32	01AIDS IS	Don't make it worse. You don't get	AIDS	by being kind to someone with AIDS.
33	01AIDS IS	AIDS by being kind to someone with	AIDS.	HIV is only transmitted through sexual intercourse
34	05 If you a	appearances if someone is infected with the	AIDS	virus; he/she can look healthy. Do not
35	01AIDS IS	me now. The worse part about having	AIDS	is everyone treats you like a leper.
36	01AIDS IS	a break. It's painful enough to have	AIDS.	Don't make it worse. You don't get
37	01AIDS IS	Don't make it worse. You don't get	AIDS	by being kind to someone with AIDS.
38	06 TEENA(	interests in acquiring knowledge about HIV and	AIDS.	Still there are teenagers who do not
39	07 WOMEI	Equip yourself with knowledge on HIV and	AIDS.	Get tested for HIV to know your
40	08 WOMEI	Equip yourself with knowledge on HIV and	AIDS. -	Encourage your partner to get tested for
41	01AIDS IS	love and compassion for those who have	AIDS."	You don't get AIDS by being kind
42	01AIDS IS	those who have AIDS." You don't get	AIDS	by being kind to someone with AIDS.
43	01AIDS IS	doesn't have a sister. You don't get	AIDS	from... living together, working together, playing together,
44	01AIDS IS	Don't make it worse. You don't get	AIDS	by being kind to someone with AIDS.
45	07 WOMEI	Equip yourself with knowledge on HIV and	AIDS.	Get tested for HIV to know your
46	08 WOMEI	WOMEN & HIV/AIDS Believe it: WOMEN get	AIDS	HOW ARE WOMEN GETTING HIV? The most
47	08 WOMEI	Equip yourself with knowledge on HIV and	AIDS. -	Encourage your partner to get tested for
48	06 TEENA(	system to fight off diseases. HIV causes	AIDS.	WHAT IS AIDS? "Acquired Immunodeficiency Syndrome" is
49	06 TEENA(	off diseases. HIV causes AIDS. WHAT IS	AIDS?	"Acquired Immunodeficiency Syndrome" is a disease you
50	05 If you a	or travel, you need to know about	AIDS.	AIDS is a fact in today's world
51	05 If you a	travel, you need to know about AIDS.	AIDS	is a fact in today's world throughout
52	04 HIV&AI	that person eventually fall sick. What is	AIDS?	AIDS is the final stage of HIV
53	04 HIV&AI	person eventually fall sick. What is AIDS?	AIDS	is the final stage of HIV infection,
54	04 HIV&AI	that person eventually fall sick. What is	AIDS?	AIDS is the final stage of HIV
55	04 HIV&AI	person eventually fall sick. What is AIDS?	AIDS	is the final stage of HIV infection,

Figure 4.2: The concordance lines of AIDS

4.2.2 Collocation of Avian Influenza in MOHB Corpus

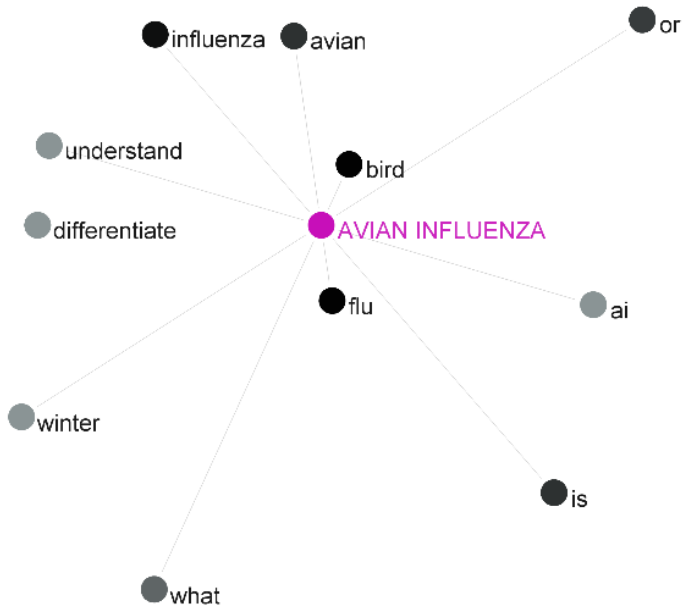

Figure 4.3: 11 most statistically significant collocates of Avian Influenza in MOHB corpus

Figure 4.3 shows the 11 most statistically significant Collocates of Avian Influenza. Avian Influenza is associated with words that describe the origin of the disease and variation of influenza. For instance, *bird* tops the list of collocates with an MI score of 17.33 followed by *flu* (MI 17.12). *Bird* and *flu* are strong collocates of Avian Influenza because it is also known as bird flu or *AI* (MI 12.60) which can be seen in the concordance lines in Figure 4.4 in line 1 to line 10. Furthermore, *differentiate* and *understand* have similar MI scores, 12.60. These two words are used to describe Avian Influenza as another form of influenza because it is important for the public to understand the difference and understand it as shown in line 8 and line 9 in Figure 4.4. Lastly, *winter* (MI 11.02) is the weakest collocate because it is used to express that Avian Influenza cases are at their peak during winter as shown in line 6 and 7 in Figure 4.4. In brief, 6 content words are used to express the different names of Avian Influenza, differentiate

Avian Influenza with other Influenzas and Avian Influenza cases increases during the cold season.

INDEX	FILE	LEFT	NODE	RIGHT
1	09 Avian I	WHAT YOU NEED TO KNOW Bird flu	(Avian Influenza)	WHAT IS BIRD FLU? Bird Flu or
2	09 Avian I	WHAT IS BIRD FLU? Bird Flu or	Avian Influenza	is a type of contagious disease that
3	10 Avian I		Avian Influenza	(Bird flu) 1. Avian Influenza Avian Influenza
4	10 Avian I	Avian Influenza (Bird flu) 1.	Avian Influenza	Avian Influenza **(AI)** or bird flu is
5	10 Avian I	Avian Influenza (Bird flu) 1. Avian Influenza	Avian Influenza	**(AI)** or bird flu is a type
6	21 Influen	influenza infection rises during winter. WHAT IS	AVIAN INFLUENZA?	Avian influenza or bird flu is a
7	21 Influen	rises during winter. WHAT IS AVIAN INFLUENZA?	Avian influenza	or bird flu is a contagious disease
8	23 Ris_Infl	should be able to understand and differentiate:	AVIAN INFLUENZA	Avian influenza or bird flu is a
9	23 Ris_Infl	understand and differentiate: AVIAN INFLUENZA	Avian influenza	or bird flu is a contagious disease
10	25 Ris_FA(	it is known as a seasonal flu.	Avian Influenza	also known as bird flu is a

Figure 4.4: The concordance lines of Avian Influenza

4.2.3 Collocation of Cough in MOHB Corpus

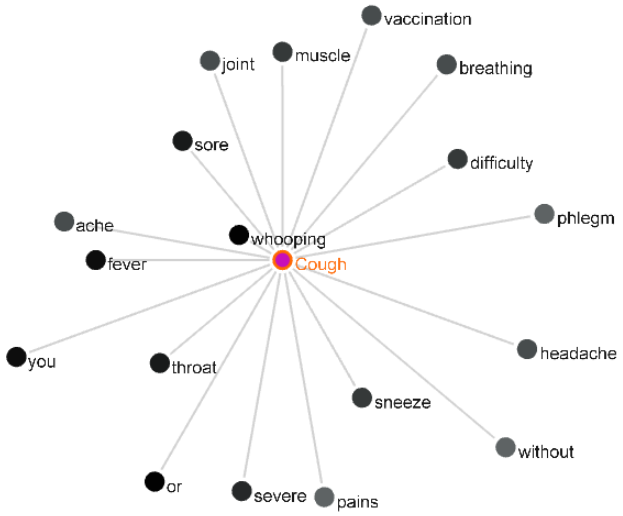

Figure 4.5: 18 most statistically significant collocates of Cough in MOHB corpus

Figure 4.5 illustrates the 18 most statistically significant collocates of cough. *Whooping* is the most salient collocate with a MI score of 15.72. This is because whooping cough is a persistent hacking cough that is common among children and adults (Pillay & Swingler, 2003; Barlow et al., 2014). Moreover, cough is a common symptom for some communicable diseases such as Influenza A (H1N1). It is essential to note that cough collocates with 13 different words which are signs and symptoms of other communicable diseases. The 13 collocates are *sneeze*

(MI 13.28), *sore* (MI 13.28) *throat* (MI 13.18), *fever* (MI 12.56), *difficulty* (MI 12.20), *muscle* (MI 12.07), *joint* (MI 11.98), *ache* (MI 11.76), *severe* (MI 11.46), *pains* (MI 11.32), *breathing* (MI 10.98), *headache* (MI 10.86) and *phlegm* (MI 10.73) which are visualised from line 8 to line 69 in Figure 4.6. On one hand, *vaccination* (MI 10.86) collocates with cough namely whooping cough. This is because whooping cough is a vaccine-preventable respiratory infection (Barlow et al., 2014). From line 70 to line 71 shows that whooping cough shares the same vaccination with tetanus, diphtheria, polio and haemophilus in Figure 4.6. In short, there are 15 content words collocates that show that whopping is a common collocate of cough, cough is one of the symptoms for certain communicable disease and vaccination for whooping cough.

Index	File	Left	Node	Right
1	12 Cover your cough.t	serious respiratory illness such as: Influenza **Whooping**	cough	Severe Acute Respiratory Syndrome (SARS) Tuberculosis (TB)
2	27 Whooping cough.tx	**Whooping**	cough	(Pertussis) Roles of parents and community Ensure
3	27 Whooping cough.tx	e www.infosihat.gov.my or www.myhealth.gov.my What is **Whooping**	Cough?	What is a **whooping** cough? A respiratory
4	27 Whooping cough.tx	is Whooping Cough? What is a **whooping**	cough?	A respiratory infection caused by Bordetella pertussis
5	27 Whooping cough.tx	• Loss of appetite Complication of **whooping**	cough	Mild complications Rupture of blood vessel of
6	27 Whooping cough.tx	Before breastfeeding or feeding your child **Whooping**	cough	vaccination **Whooping** cough containing vaccination 5-in-1 combination
7	27 Whooping cough.tx	feeding your child Whooping cough vaccination **Whooping**	cough	containing vaccination 5-in-1 combination Vaccine (diphtheria, tetanus,
8	09 Avian InfluenzaWh	AND SYMPTOMS? High fever (more than 38°C)	Cough	**Sore** throat Headache Muscle / joint ache
9	10 Avian Influenza(Bi	are High fever (exceeding 38) **Sore** throat	Cough	Headache Muscle pains Joint pains Fatigue Complications
10	21 Influenza_BI.txt	common cold Symptom Fever Fatigue Muscle/joint pains	Cough	Cold/Runny nose Sneeze **Sore** throat Headache Cause
11	21 Influenza_BI.txt	and soup to relieve **sore** throat and	cough.	Maintain a balanced diet and sufficient sleep/rest.
12	23 Ris_Influenza_BI_w	or fluids to relieve **sore** throat and	cough.	• Maintain a balanced diet and sufficient
13	26 Cegah_Influenza_P	as - Fever and any one of these; -	Cough -	Difficulty in breathing - **Sore** throat - Headache - Body
14	32 Health Alert BI.txt	than 38.5°C, muscle ache, **sore** throat,	cough	and headache); followed by difficulty in breathing
15	13 BASIC PROTECTIVE	germs and viruses. If you **sneeze** or	cough	into your hands, you may contaminate objects
16	18 INFLUENZA A WASH	(H1N1)? The spread begins when infected people	cough	or **sneeze**, infected droplets get on their
17	21 Influenza_BI.txt	common cold Symptom Fever Fatigue Muscle/joint pains	Cough	Cold/Runny nose **Sneeze** Sore throat Headache Cause
18	24 Ris_Panduan_BI_w	mask, tissue paper or handkerchief when you	cough	or **sneeze** • Inform the relevant authorities
19	26 Cegah_Influenza_P	mouth with tissues or handkerchief when you	cough	or **sneeze**. Dispose tissues properly. Wash your
20	09 Avian InfluenzaWh	AND SYMPTOMS? High fever (more than 38°C)	Cough	Sore **throat** Headache Muscle / joint ache
21	10 Avian Influenza(Bi	are High fever (exceeding 38) Sore **throat**	Cough	Headache Muscle pains Joint pains Fatigue Complications
22	21 Influenza_BI.txt	common cold Symptom Fever Fatigue Muscle/joint pains	Cough	Cold/Runny nose Sneeze Sore **throat** Headache Cause
23	21 Influenza_BI.txt	and soup to relieve sore **throat** and	cough.	Maintain a balanced diet and sufficient sleep/rest.
24	23 Ris_Influenza_BI_w	or fluids to relieve sore **throat** and	cough.	• Maintain a balanced diet and sufficient
25	32 Health Alert BI.txt	than 38.5°C, muscle ache, sore **throat**,	cough	and headache); followed by difficulty in breathing
26	09 Avian InfluenzaWh	AND SYMPTOMS? High **fever** (more than 38°C)	Cough	Sore throat Headache Muscle / joint ache
27	10 Avian Influenza(Bi	are High **fever** (exceeding 38) Sore throat	Cough	Headache Muscle pains Joint pains Fatigue Complications
28	13 BASIC PROTECTIVE	surface to yourself. If you have **fever**,	cough	& difficulty breathing, seek medical care early
29	13 BASIC PROTECTIVE	medical care early Whenever you have **fever**,	cough	and difficulty breathing it's important to seek
30	14 COVID19 CORONAV	the symptoms of infection? 1. **Fever** 2.	Cough	3. Difficulty in breathing If you develop
31	18 INFLUENZA A WASH	of Influenza A(H1N1) are flu-like, including **fever**,	cough,	headache, musde and joint pain, sore throat
32	18 INFLUENZA A WASH	who appear unwell and have **fever** and	cough;	Wash your hands with soap and water
33	21 Influenza_BI.txt	common cold Symptom **Fever** Fatigue Muscle/joint pains	Cough	Cold/Runny nose Sneeze Sore throat Headache Cause
34	13 BASIC PROTECTIVE	surface to yourself. If you have fever,	cough	& **difficulty** breathing, seek medical care early
35	13 BASIC PROTECTIVE	medical care early Whenever you have fever,	cough	and **difficulty** breathing it's important to seek
36	14 COVID19 CORONAV	the symptoms of infection? 1. Fever 2.	Cough	3. **Difficulty** in breathing If you develop
37	26 Cegah_Influenza_P	as - Fever and any one of these; -	Cough -	**Difficulty** in breathing - Sore throat - Headache - Body
38	32 Health Alert BI.txt	than 38.5°C, muscle ache, sore throat,	cough	and headache); followed by **difficulty** in breathing
39	09 Avian InfluenzaWh	AND SYMPTOMS? High fever (more than 38°C)	Cough	Sore throat Headache **Muscle** / joint ache
40	10 Avian Influenza(Bi	are High fever (exceeding 38) Sore throat	Cough	Headache **Muscle** pains Joint pains Fatigue Complications
41	18 INFLUENZA A WASH	of Influenza A(H1N1) are flu-like, including fever,	cough,	headache, **musde** and joint pain, sore throat
42	25 Ris_FAQ_BI_web.tx	Headache Fatigue **Muscle** / joint ache Severe	cough	without phlegm in the beginning10. What
43	32 Health Alert BI.txt	than 38.5°C, **muscle** ache, sore throat,	cough	and headache); followed by difficulty in breathing
44	10 Avian Influenza(Bi	are High fever (exceeding 38) Sore throat	Cough	Headache Muscle pains **Joint** pains Fatigue Complications
45	18 INFLUENZA A WASH	of Influenza A(H1N1) are flu-like, including fever,	cough,	headache, musde and **joint** pain, sore throat
46	25 Ris_FAQ_BI_web.tx	• Muscle / **joint** ache • Severe	cough	without phlegm in the beginning Patients may
47	25 Ris_FAQ_BI_web.tx	Headache Fatigue Muscle / **joint** ache Severe	cough	without phlegm in the beginning10. What
48	23 Ris_Influenza_BI_w	mild Muscle/joint **ache** Moderate to severe Mild	Cough	Severe, without phlegm in the beginning None
49	25 Ris_FAQ_BI_web.tx	• Muscle / joint **ache** • Severe	cough	without phlegm in the beginning Patients may
50	25 Ris_FAQ_BI_web.tx	Headache Fatigue Muscle / joint **ache** Severe	cough	without phlegm in the beginning10. What
51	32 Health Alert BI.txt	than 38.5°C, muscle **ache**, sore throat,	cough	and headache); followed by difficulty in breathing
52	12 Cover your cough.t	serious respiratory illness such as: Influenza Whooping	cough	**Severe** Acute Respiratory Syndrome (SARS) Tuberculosis (TB)
53	23 Ris_Influenza_BI_w	mild Muscle/joint ache Moderate to **severe** Mild	Cough	**Severe**, without phlegm in the beginning None
54	25 Ris_FAQ_BI_web.tx	• Muscle / joint ache • **Severe**	cough	without phlegm in the beginning Patients may
55	25 Ris_FAQ_BI_web.tx	Headache Fatigue Muscle / joint ache **Severe**	cough	without phlegm in the beginning10. What
56	27 Whooping cough.tx	Fever • Runny nose • Sneezing •	Cough	After 1-2 weeks • **Severe** coughing (whoop!!)
57	10 Avian Influenza(Bi	are High fever (exceeding 38) Sore throat	Cough	Headache Muscle **pains** Joint pains Fatigue Complications
58	21 Influenza_BI.txt	common cold Symptom Fever Fatigue Muscle/joint **pains**	Cough	Cold/Runny nose Sneeze Sore throat Headache Cause
59	13 BASIC PROTECTIVE	surface to yourself. If you have fever,	cough	& **difficulty** breathing, seek medical care early
60	13 BASIC PROTECTIVE	medical care early Whenever you have fever,	cough	and **difficulty** breathing it's important to seek
61	14 COVID19 CORONAV	the symptoms of infection? 1. Fever 2.	Cough	3. **Difficulty** in breathing If you develop
62	26 Cegah_Influenza_P	as - Fever and any one of these; -	Cough -	**Difficulty** in breathing - Sore throat - Headache - Body
63	09 Avian InfluenzaWh	AND SYMPTOMS? High fever (more than 38°C)	Cough	Sore throat **Headache** Muscle / joint ache
64	10 Avian Influenza(Bi	are High fever (exceeding 38) Sore throat	Cough	**Headache** Muscle pains Joint pains Fatigue Complications
65	18 INFLUENZA A WASH	of Influenza A(H1N1) are flu-like, including fever,	cough,	**headache**, musde and joint pain, sore throat
66	32 Health Alert BI.txt	than 38.5°C, muscle ache, sore throat,	cough	and **headache**); followed by difficulty in breathing
67	23 Ris_Influenza_BI_w	mild Muscle/joint ache Moderate to severe Mild	Cough	Severe, without **phlegm** in the beginning None
68	25 Ris_FAQ_BI_web.tx	• Muscle / joint ache • Severe	cough	without **phlegm** in the beginning Patients may
69	25 Ris_FAQ_BI_web.tx	Headache Fatigue Muscle / joint ache Severe	cough	without **phlegm** in the beginning10. What
70	27 Whooping cough.tx	Before breastfeeding or feeding your child Whooping	cough	**vaccination** Whooping cough containing vaccination 5-in-1 combination
71	27 Whooping cough.tx	feeding your child Whooping cough **vaccination** Whooping	cough	containing **vaccination** 5-in-1 combination Vaccine (diphtheria, tetanus,

Figure 4.6: The concordance lines of Cough

4.2.4 Collocation of Covid-19 in MOHB Corpus

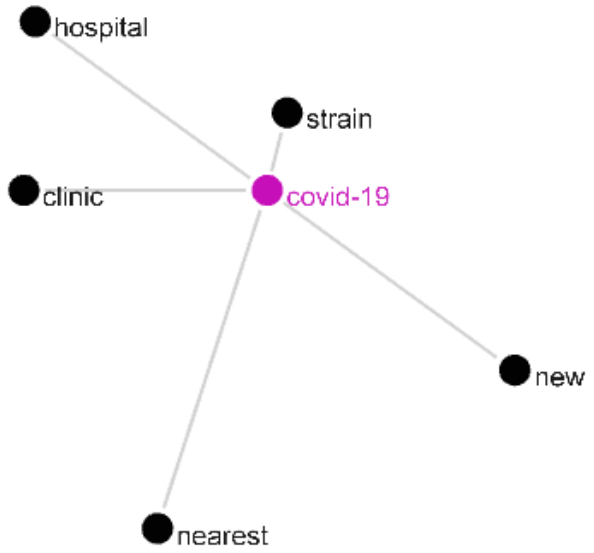

Figure 4.7: 5 most statistically significant collocates of Covid-19 in MOHB corpus

Figure 4.7 illustrated the 5 most statistically significant collocates of Covid-19 in MOHB corpus. *Strain* is the highest statistically significant collocate of Covid-19 with a MI score of 11.70 followed by *clinic* (MI 10.70), *hospital* (MI10.44), *new* (MI 10.32) and *nearest* (MI 10.03). Words like *strain* and *new* indicate that Covid-19 is a newly discovered disease as shown in line 3 and 4 in Figure 4.8. Moreover, words such as *clinic*, *hospital* and *nearest* are associated with Covid-19 because in the brochure anyone who has symptoms of Covid-19 is advised to visit the nearest hospital or clinic to receive a thorough check-up which can be seen in line 3 and 4 in Figure 4.8. In short, the 6 content words are used to express that Covid-19 is a new communicable disease and people with Covid-19 like symptoms are advised to go the nearest clinic or hospital.

INDEX	FILE	LEFT	NODE	RIGHT
3	14 COVID1	immediately at the nearest **clinic** or hospital.	Covid-19	Covid-19 is a new strain of the
4	14 COVID1	at the nearest **clinic** or hospital. Covid-19	Covid-19	is a new strain of the coronavirus

Figure 4.8: The concordance lines of Covid-19

4.2.5 Collocation of Cholera in MOHB Corpus

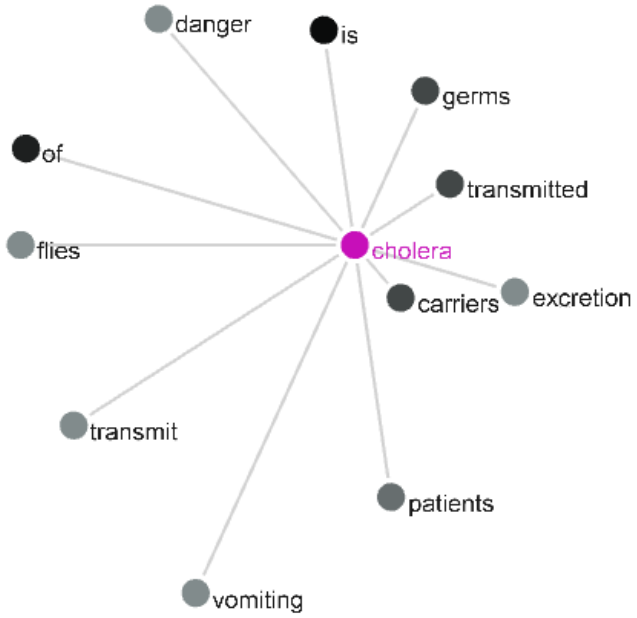

Figure 4.9: 11 most statistically significant collocates of Cholera in MOHB corpus

Figure 4.9 shows the 11 most frequent collocations of cholera. Words that are closely associated with cholera are used to convey the transmission of cholera. *Carriers* is the highest statistically significant collocate of cholera with a MI score of 13.96 which is visualised in line 10 to line 12 in Figure 4.10. The action verbs such as *transmitted* (MI 13.45) from line 1 to line 3, *transmit* (MI 10.80) in Line 4 and *vomiting* (MI 10.21) in line 6 are used to explain the transmission of cholera in Figure 4.10. Furthermore, nouns such as *excretion* (MI 12.80), *germs* (MI 12.77), *patients* (MI 11.75), *danger* (MI 11.22), *flies* (MI 10.80) are used to express the origin of the cholera virus as shown from line 6 to line 13 in Figure 4.10. It can be transmitted from a patient's excretion or flies carried those germs transfer the germs on the uncovered food. In short, 9 content words are used to describe the transmission of Cholera.

Index	File	Left	Node	Right
1	11 Beware	Beware! Danger of cholera What is	cholera?	Cholera is an easily **transmitted**, dangerous, diarrheal
2	11 Beware	Beware! Danger of cholera What is cholera?	Cholera	is an easily **transmitted**, dangerous, diarrheal disease
3	11 Beware	carriers' excretion to exposed or uncovered food.	Cholera	can be **transmitted** through contaminated hands by
4	11 Beware	if improper toilets are used. Flies **transmit**	cholera	germs from cholera carriers' excretion to exposed
5	11 Beware	and uncontrolled diarrhoea and **vomiting**. How is	cholera	transmitted? Cholera disease is spread by eating/drinking
6	11 Beware	are used. Flies transmit cholera germs from	cholera	carriers' **excretion** to exposed or uncovered food.
7	11 Beware	caused by bacteria known as Vibrio cholerae.	Cholera	**germs** can be found in faeces and
8	11 Beware	faecal /vomitus of cholera patients / carriers.	Cholera	**germs** can contaminate water supply if improper
9	11 Beware	if improper toilets are used. Flies transmit	cholera	**germs** from cholera carriers' excretion to exposed
10	11 Beware	food or water from faecal /vomitus of	cholera	**patients / carriers**. Cholera germs can contaminate
11	11 Beware	be found in faeces and vomitus of	cholera	**patients and carriers**. Signs and symptoms Acute
12	11 Beware	transmitted through contaminated hands by faeces of	cholera	**patients/carriers** if not washed before eating or
13	11 Beware	Beware! **Danger** of	cholera	What is cholera? Cholera is an easily
14	11 Beware	Beware! **Danger** of cholera What is	cholera?	Cholera is an easily transmitted, dangerous, diarrheal
15	11 Beware	if improper toilets are used. **Flies** transmit	cholera	germs from cholera carriers' excretion to exposed
16	11 Beware	are used. **Flies** transmit cholera germs from	cholera	carriers' excretion to exposed or uncovered food.

Figure 4.10: The concordance lines of Cholera

4.2.6 Collocation of Dengue in MOHB Corpus

Figure 4.11: 2 most statistically significant collocates of Dengue

In Figure 4.11, *cycle* (MI 12.61) and *stop* (MI 11.29) are the most salient collocates of dengue. These two collocates are used to stop the cycle of Aedes mosquitoes as illustrated in the concordance lines in Figure 4.12.

Index	Files	Left	Node	Right
1	16 PREVEN	PREVENT	DENGUE	**Stop** the life cycle of aedes mosquitoes
1	16 PREVEN	PREVENT	DENGUE	Stop the life **cycle** of aedes mosquitoes

Figure 4.12: The concordance lines of Dengue.

4.2.7 Collocation of Ebola in MOHB Corpus

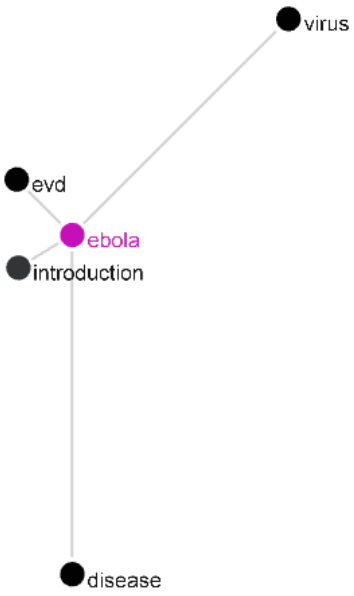

Figure 4.13: 4 most statistically significant collocates of Ebola in MOHB corpus

Figure 4.13 shows the 4 most statistically significant collocates of Ebola. *Introduction* tops the list with a MI score of 14.61 followed by *evd* (MI 14.37), *virus* (MI 11.11) and *disease* (MI 10.63). However, these collocates are known to be the full name of Ebola which is Ebola Virus Disease (EVD) as displayed in Figure 4.14. In short, 4 content words are used to describe the name of the disease.

Index	File	Left	Node	Right
1	17 ALERT (	ALERT ON	EBOLA	VIRUS DISEASE (EVD) INTRODUCTION Ebola virus disease
2	17 ALERT (	ALERT ON EBOLA VIRUS DISEASE (EVD) INTRODUCTION	Ebola	virus disease (EVD) is a severe, often

Figure 4.14: The concordance lines of Ebola

4.2.8 Collocation of Hepatitis B in MOHB Corpus

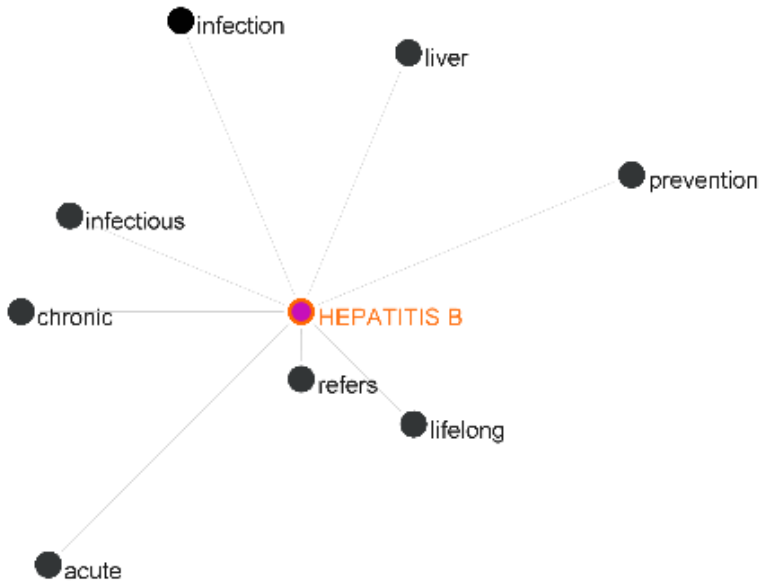

Figure 4.15: 8 most statistically significant collocates of Hepatitis B in MOHB corpus

Figure 4.15 displays the 8 most statistically significant collocates of Hepatitis B. The most frequent collocate of Hepatitis B is *refers* with the highest MI score of 13.29. Furthermore, as displayed in Figure 4.16, 6 collocates of Hepatitis B specifically referred to the seriousness of Hepatitis B. For instance, *lifelong* (MI 12.29), *infectious* (MI 11.29), *chronic* (MI 10.96) and *liver* (MI 10.96), *infection* (MI 10.59) and *acute* (MI 10.12) are words that explained that Hepatitis B is a lifelong chronic disease and it damages the liver as shown in the selected concordance lines from line 1 to line 13 in Figure 4.16. Lastly, the collocate *prevention* (MI 10.12) suggested that Hepatitis B can be avoided by taking a vaccine as depicted in line 14 and line 15. In short, 8 contents words are used to describe the seriousness of Hepatitis B and vaccination.

Index	File	Left	Node	Right
1	19 hepatit	Tea-coloured urine Clay Pale– coloured stools Chronic	Hepatitis B	Disease Refers to lifelong infection with Hepatitis
2	19 hepatit	B Disease Refers to lifelong infection with	Hepatitis B	virus. It can cause serious health problem
3	19 hepatitis b English.txt		Hepatitis B	More infectious than HIV Prevention Hepatitis B
4	19 hepatit	Hepatitis B More infectious than HIV Prevention	Hepatitis B	vaccination 3 doses (second dose given a
5	19 hepatit	(5%) may develop prolonged (chronic) infection. Acute	Hepatitis B	Disease A short term infection that occurs
6	19 hepatit	Tea-coloured urine Clay Pale– coloured stools Chronic	Hepatitis B	Disease Refers to lifelong infection with Hepatitis
7	19 hepatit	by Ministry of Health Malaysia. What is	hepatitis B?	Inflammation of the liver caused by Hepatitis
8	19 hepatit	B? Inflammation of the liver caused by	Hepatitis B	Virus (HBV). Symptoms may be mild or
9	19 hepatit	(5%) may develop prolonged (chronic) infection. Acute	Hepatitis B	Disease A short term infection that occurs
10	19 hepatit	Tea-coloured urine Clay Pale– coloured stools Chronic	Hepatitis B	Disease Refers to lifelong infection with Hepatitis
11	19 hepatit	B Disease Refers to lifelong infection with	Hepatitis B	virus. It can cause serious health problem
12	19 hepatit	(5%) may develop prolonged (chronic) infection. Acute	Hepatitis B	Disease A short term infection that occurs
13	19 hepatit	occurs within 6 month after infected with	Hepatitis B	virus. Most acute disease recovered completely. Recovered
14	19 hepatitis b English.txt		Hepatitis B	More infectious than HIV Prevention Hepatitis B
15	19 hepatit	Hepatitis B More infectious than HIV Prevention	Hepatitis B	vaccination 3 doses (second dose given a

Figure 4.16: The concordance lines of Hepatitis B

4.2.9 Collocation for Hand, Foot and Mouth Disease in MOHB Corpus

Figure 4.17: No collocation for hand, foot and mouth disease

There are no collocates for Hand, Foot and Mouth Disease (HFMD) because there is only one brochure as illustrated in Figure 4.17. Moreover, HFMD is used as a title in the brochure instead of in the contents.

4.2.10 Collocation of H1N1 in MOHB Corpus

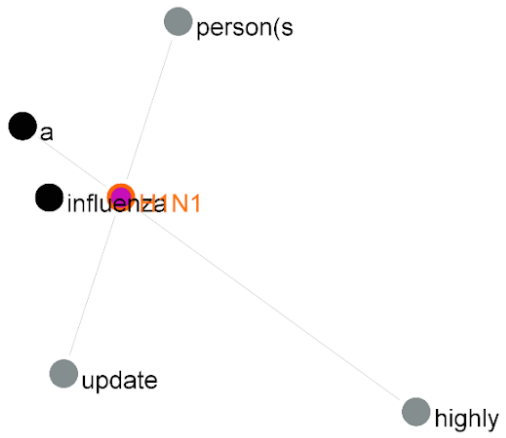

Figure 4.18: 5 most statistically significant collocates of H1N1 in MOHB corpus

Figure 4.18 displays the 5 most statistically significant collocates of H1N1. It is important to note that H1N1 is also known as Influenza A. That is the reason why *Influenza* and *A* has a high MI score, 14.03 and 13.57 as shown from line 1 to line 12 in Figure 4.19. These brochures were published during the peak of H1N1. Hence, words like *person(s)* (MI 13.02) in line 7 and line 8, *update* (MI 13.02) in line 11 and 12 and *highly* (MI 11.44) in line 3 and 4 collocated with the word H1N1 in Figure 4.19. This is because KKM wants to keep the public informed with the latest updates of H1N1. In brief, 5 content words are used to describe the name of the disease and the updates of the disease.

Index	File	Left	Node	Right
1	18 INFLUE	INFLUENZA A	(H1N1)	Protect yourself Wash hands Wash your hands
2	18 INFLUE	active. Ministry of Health Malaysia Influenza A	(H1N1)	Frequently Asked Questions (FAQs) 1. What is
3	18 INFLUE	Questions (FAQs) 1. What is Influenza A	(H1N1)?	Influenza A (H1N1) is highly contagious acute
4	18 INFLUE	What is Influenza A (H1N1)? Influenza A	(H1N1)	is highly contagious acute respiratory disease infecting
5	18 INFLUE	do people become infected with Influenza A	(H1N1)?	The spread begins when infected people cough
6	18 INFLUE	human to human transmission of Influenza A	(H1N1).	5. Is there any confirmation of transmission
7	18 INFLUE	an infected person spread the Influenza A	(H1N1)	disease to others? Person(s) with Influenza A
8	18 INFLUE	disease to others? Person(s) with Influenza A	(H1N1)	virus infection should be considered potentially contagious
9	26 Cegah_	Prevent INFLUENZA A.	(H1N1)	Travelling Abroad. Precautions To Observe: Travel to
10	26 Cegah_	close contact with cases of Influenza A	(H1N1),	use an appropriate protective mask. * Observe personal
11	26 Cegah_	that you have visited the Influenza A	(H1N1)	affected country/area. For current update of Influenze
12	26 Cegah_	country/area. For current update of Influenze A	(H1N1)	affected countries/areas please refer to www.moh.gov.my or

Figure 4.19: The concordance lines of H1N1

4.2.11 Collocation of Influenza in MOHB Corpus

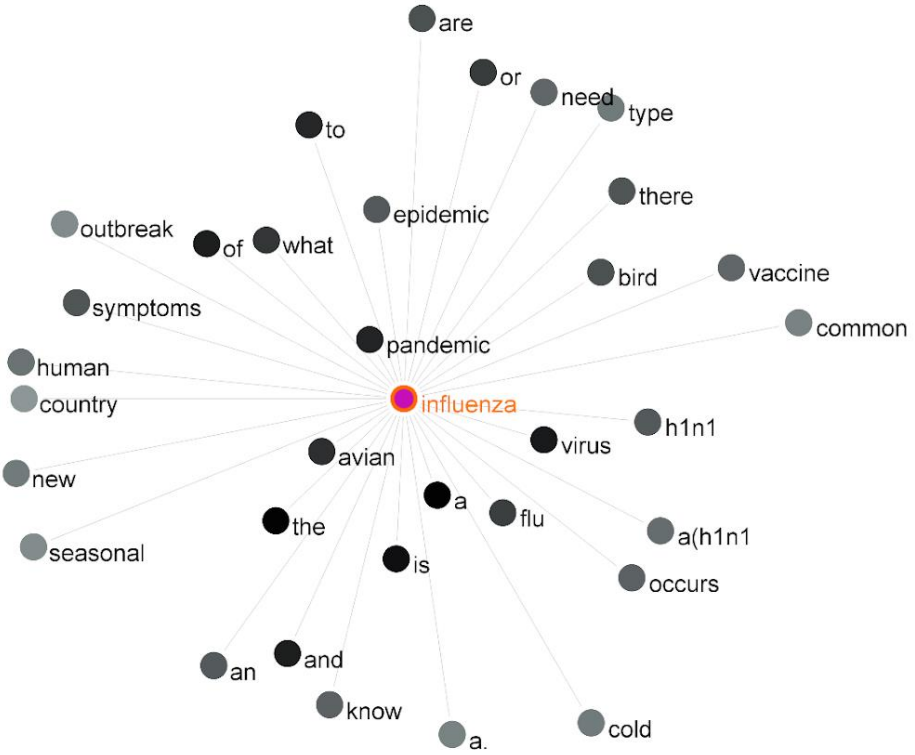

Figure 4.20: 34 most statistically significant collocates of Influenza in MOHB corpus

Figure 4.20 illustrates the 34 most salient collocates of Influenza. Mainly, influenza is associated with words that signify the seriousness of the disease. Moreover, influenza is also identified as *Influenza A*, *H1N1*, *Bird Flu* and *Avian Influenza* (which are one of the top 15 collocates in the list) from line 1 to line 19 in Figure 4.21. Moreover, Influenza is also known to cause a *pandemic* (MI 17.31), *epidemic* (MI 15.01) or *outbreak* (MI 11.46) depending on the seriousness of the disease as shown in the concordance lines from line 20 to line 38 in Figure 4.21. The words related to prevention is *vaccine* (MI 12.00) shows that influenza can be avoided through vaccination as displayed from line 42 to line 48 in Figure 4.21. Influenza is also known to be a seasonal disease by observing the concordance lines of *seasonal* (MI 11.14) from line 38 to line 41 in Figure 4.21. More examples are displayed in Appendix 2. In short, the aforementioned collocates help to describe, the variations of Influenza, the seriousness of Influenza and it is a seasonal disease.

Index	File	Left	Node	Right
1	09 Avian I	YOU NEED TO KNOW **Bird flu** (Avian	Influenza)	WHAT IS BIRD FLU? Bird Flu or
2	09 Avian I	IS BIRD FLU? **Bird Flu** or Avian	Influenza	is a type of contagious disease that
3	09 Avian I	contagious disease that infects poultry and birds.	Influenza	virus type A causes **Bird Flu**. This
4	10 Avian I	Avian	Influenza	(**Bird flu**) 1. Avian Influenza Avian Influenza
5	10 Avian I	Avian Influenza (**Bird flu**) 1. Avian	Influenza	Avian Influenza (AI) or **bird flu** is
6	10 Avian I	Influenza (Bird flu) 1. Avian Influenza Avian	Influenza	(AI) or **bird flu** is a type
7	18 INFLUE		INFLUENZA	**A (H1N1)** Protect yourself Wash hands Wash
8	18 INFLUE	keeping physically active. Ministry of Health Malaysia	Influenza	**A (H1N1)** Frequently Asked Questions (FAQs) 1.
9	18 INFLUE	Frequently Asked Questions (FAQs) 1. What is	Influenza	**A (H1N1)**? Influenza A (H1N1) is highly
10	18 INFLUE	(FAQs) 1. What is Influenza A (H1N1)?	Influenza	**A (H1N1)** is highly contagious acute respiratory
11	18 INFLUE	4. How do people become infected with	Influenza	**A (H1N1)**? The spread begins when infected
12	18 INFLUE	known as human to human transmission of	Influenza	**A (H1N1)**. 5. Is there any confirmation
13	18 INFLUE	long can an infected person spread the	Influenza	**A (H1N1)** disease to others? Person(s) with
14	09 Avian I	**AVIAN**	INFLUENZA	WHAT YOU NEED TO KNOW Bird flu
15	09 Avian I	YOU NEED TO KNOW Bird flu (**Avian**	Influenza)	WHAT IS BIRD FLU? Bird Flu or
16	09 Avian I	IS BIRD FLU? Bird Flu or **Avian**	Influenza	is a type of contagious disease that
17	10 Avian I	**Avian**	Influenza	(Bird flu) 1. **Avian** Influenza Avian Influenza
18	10 Avian I	Avian Influenza (Bird flu) 1. **Avian**	Influenza	**Avian** Influenza (AI) or bird flu is
19	10 Avian I	Influenza (Bird flu) 1. **Avian** Influenza **Avian**	Influenza	(AI) or bird flu is a type
20	21 Influer	a certain location or country. WHAT IS	INFLUENZA	**PANDEMIC**? Influenza pandemic occurs when influenza infects
21	21 Influer	location or country. WHAT IS INFLUENZA **PANDEMIC**?	Influenza	**pandemic** occurs when influenza infects a large
22	21 Influer	IS INFLUENZA PANDEMIC? Influenza **pandemic** occurs when	influenza	infects a large part of the world
23	21 Influer	that can cause epidemic and **pandemic**. The	influenza	virus is spread through droplets from the
24	22 Ris_Bas	**PANDEMIC**	INFLUENZA	What you need to know KEEP YOUR
25	23 Ris_Inf	can cause epidemic and **pandemic** outbreak. The	influenza	virus is spread through droplets from the
26	21 Influer	It can also infect humans. WHAT IS	INFLUENZA	**EPIDEMIC**? Influenza epidemic occurs when there is
27	21 Influer	also infect humans. WHAT IS INFLUENZA **EPIDEMIC**?	Influenza	**epidemic** occurs when there is an outbreak
28	21 Influer	change) to produce a new more dangerous	influenza	virus that can cause epidemic and pandemic.
29	21 Influer	that can cause **epidemic** and pandemic. The	influenza	virus is spread through droplets from the
30	23 Ris_Inf	mutate to produce a new more novel	influenza	virus that can cause **epidemic** and pandemic
31	23 Ris_Inf	can cause **epidemic** and pandemic outbreak. The	influenza	virus is spread through droplets from the
32	23 Ris_Inf	and birds. It can also infect human.	INFLUENZA	**EPIDEMIC** An influenza epidemic is an outbreak
33	21 Influer	occurs when there is an **outbreak** of	influenza	among people in a certain location or
34	23 Ris_Inf	can cause epidemic and pandemic **outbreak**. The	influenza	virus is spread through droplets from the
35	23 Ris_Inf	can also infect human. INFLUENZA EPIDEMIC An	influenza	epidemic is an **outbreak** of influenza among
36	23 Ris_Inf	An influenza epidemic is an **outbreak** of	influenza	among the people in a certain location
37	25 Ris_FA	pandemic is a global disease **outbreak**. An	influenza	pandemic occurs when a new influenza A
38	18 INFLUE	from Influenza A(H1N1)? No. Current **seasonal** human	influenza	vaccine does not provide protection from the
39	23 Ris_Inf	administered as a preventive vaccination. The **seasonal**	influenza	vaccine available in the market may protect
40	23 Ris_Inf	immunity yet to fight. The available **seasonal**	influenza	vaccine does not give protection against pandemic
41	25 Ris_FA	is known as a **seasonal** flu. Avian	Influenza	also known as bird flu is a
42	18 INFLUE	from Influenza A(H1N1)? No. Current seasonal human	influenza	**vaccine** does not provide protection from the
43	21 Influer	What is the difference between antiviral and	influenza	**vaccine**? Antiviral is a medicine for treating
44	21 Influer	administered as a precaution. Vaccination uses the	influenza	**vaccine** available in the market to protect
45	23 Ris_Inf	places. e. What is the role of	influenza	**vaccine**? The influenza **vaccine** is administered as
46	23 Ris_Inf	is the role of influenza **vaccine**? The	influenza	**vaccine** is administered as a preventive vaccination.
47	23 Ris_Inf	administered as a preventive vaccination. The seasonal	influenza	**vaccine** available in the market may protect
48	23 Ris_Inf	immunity yet to fight. The available seasonal	influenza	**vaccine** does not give protection against pandemic

Figure 4.21: The selected concordance lines of Influenza

4.2.12 Collocation of Pertussis in MOHB Corpus

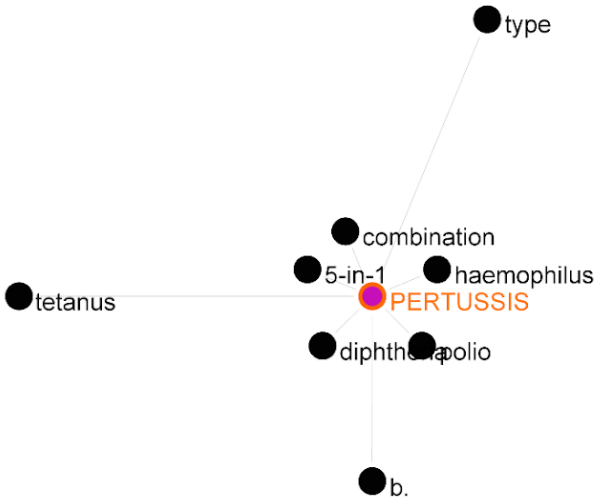

Figure 4.22: 8 most statistically significant collocates of Pertussis in MOHB corpus

Figure 4.22 depicts the 8 most statistically significant collocates of Pertussis. Pertussis is mostly identified with words associated with vaccination. For instance, *5-in-1*, *combination*, *diphtheria*, *haemophilus*, *polio* share the highest MI score which is 13.61 which can be seen in the concordance lines in Figure 4.23. Furthermore, the vaccination for pertussis can be administered on *tetanus* (MI 11.15). In short, the 6 content words are used to describe information related to vaccination.

Index	Files	Left	Node	Right
3	27 Whoop	containing vaccination 5-in-1 combination Vaccine (diphtheria, tetanus,	pertussis,	polio, haemophilus influenza type) B. Immunisation schedule
4	30 Tetanu	used is a 5-in-1 combination (diphtheria, tetanus,	pertussis,	polio, haemophilus influenza type) B. Dose 1

Figure 4.23: The concordance lines of Pertussis

4.2.13 Collocation of Rubella in MOHB Corpus

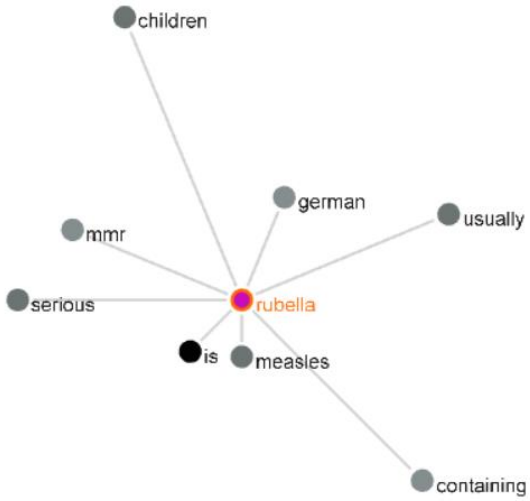

Figure 4.24: 9 most statistically significant collocates of Rubella in the MOHB corpus

Figure 4.24 illustrates the 9 most salient collocates of Rubella in the MOHB corpus. Furthermore, Rubella is also identified as German measles hence the collocates *measles* (MI 13.78) and *German* (MI 13.02) from line 1 to line 3. Moreover, the collocates also indicate that *children* (MI 10.31) are more prone to rubella compared to adults as shown in line 14 and line 15 in Figure 4.25. It is important to point out that the collocate *serious* (MI 11.45) emphasize that the seriousness of the disease on children from line 7 to line 8 and *usually* (MI 11.45) from line 9 to line 11 are used to express the infection Rubella is mild in Figure 4.25. Collocates like *MMR* (MI 12.02) in line 4 and 5 and *containing* (MI 11.02) in line 11 to 12 shows that Rubella is a vaccine-preventable disease in Figure 4.25. This vaccine can prevent Mumps, Measles and Rubella (MMR). In short, the 8 content words are used to describe the different names of Rubella, the seriousness of Rubella infection and vaccination for Rubella.

Index	Files	Left	Node	Right
1	28 Rubella	vaccines such as MMR (measles, mumps and	rubella).	Immunisation schedule Dose 1 at 9 months
2	28 Rubella	our website www.infosihat.gov.my / www.myhealth.gov.my What is	rubella?	Rubella or "German measles" is a disease
3	28 Rubella	website www.infosihat.gov.my / www.myhealth.gov.my What is rubella?	Rubella	or "German measles" is a disease caused
4	28 Rubella	day-care centres or school. Prevention Immunisation with	rubella	containing vaccines such as MMR (measles, mumps
5	28 Rubella	vaccines such as MMR (measles, mumps and	rubella).	Immunisation schedule Dose 1 at 9 months
6	28 Rubella	Treatment There is no specific treatment for	Rubella.	How serious is rubella? In children, Rubella
7	28 Rubella	specific treatment for Rubella. How serious is	rubella?	In children, Rubella is usually a mild
8	28 Rubella	Rubella. How serious is rubella? In children,	Rubella	is usually a mild disease. However, serious
9	28 Rubella	"German measles" is a disease caused by	Rubella	virus. The infection is usually mild with
10	28 Rubella	specific treatment for Rubella. How serious is	rubella?	In children, Rubella is usually a mild
11	28 Rubella	Rubella. How serious is rubella? In children,	Rubella	is usually a mild disease. However, serious
12	28 Rubella	children in your community are protected with	rubella	containing vaccine at 9 months and 12
13	28 Rubella	day-care centres or school. Prevention Immunisation with	rubella	containing vaccines such as MMR (measles, mumps
14	28 Rubella	spread the disease. Symptoms and signs of	rubella	In children, the symptoms typically last within
15	28 Rubella	specific treatment for Rubella. How serious is	rubella?	In children, Rubella is usually a mild
16	28 Rubella	Rubella. How serious is rubella? In children,	Rubella	is usually a mild disease. However, serious

Figure 4.25: The concordance lines of Rubella

4.2.14 Collocation of SARS in MOHB Corpus

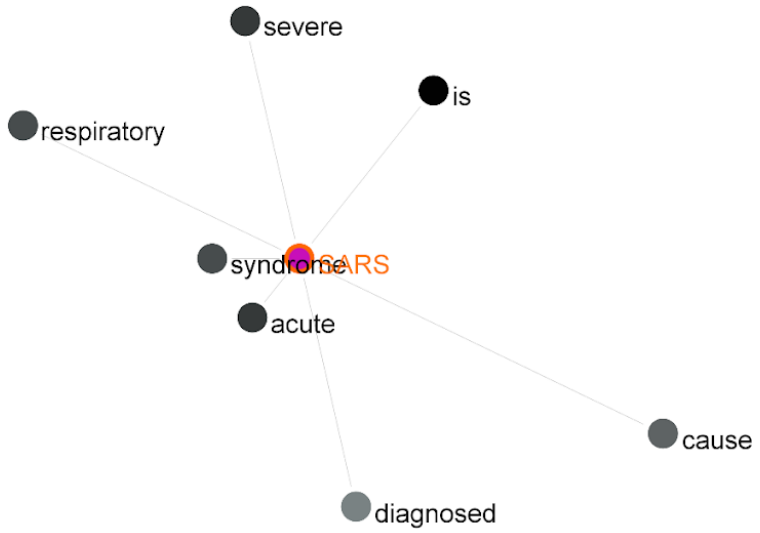

Figure 4.26: 7 most statistically significant collocates of SARS in MOHB corpus

Figure 4.26 shows the 7 strong collocates of SARS. It is important to note that 4 out of 7 collocates are known to be the full form of SARS which is Severe Acute Respiratory Syndrome which can be identified from line 1 to line 4 in Figure 4.27. The verb collocates such as *diagnosed* (MI 12.28) and *cause* (MI 10.79) are used to describe individuals who are diagnosed with SARS and the cause of SARS as displayed from Line 5 to Line 8 in Figure 4.27. In short, 6 content words are used to describe the name of the disease and the transmission of SARS.

Index	Files	Left	Node	Right
1	12 Cover y	Influenza Whooping cough Severe Acute Respiratory Syndrome	(SARS)	Tuberculosis (TB) These illnesses can spread easily
2	32 Health	Health, Malaysia on Severe Acute Respiratory Syndrome	SARS	1. What is Severe Acute Respiratory Syndrome
3	32 Health	1. What is Severe Acute Respiratory Syndrome	(SARS)?	Since February 2003, the World Health Organisation
4	32 Health	now known as Severe Acute Respiratory Syndrome	(SARS).	The illness is characterized by initial flu-like
5	32 Health	with persons who had been diagnosed with	SARS.	2. What is the cause of SARS?
6	32 Health	reported cases so far. 8. How is	SARS	diagnosed? Diagnosis is based on clinical illness,
7	32 Health	with persons who had been diagnosed with	SARS.	2. What is the cause of SARS?
8	32 Health	SARS. 2. What is the cause of	SARS?	The cause is still unknown. 3. Is

Figure 4.27: The concordance lines of SARS

4.2.15 Collocation of Tuberculosis in MOHB Corpus

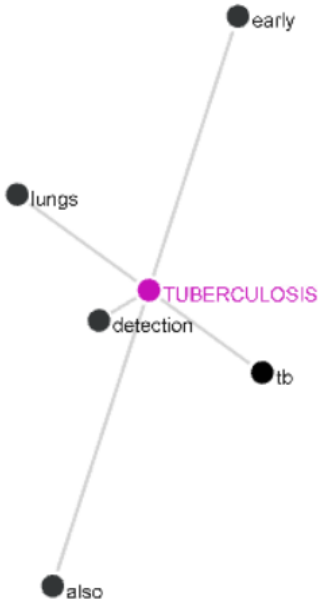

Figure 4.28: 5 most statistically significant collocates of Tuberculosis in MOHB corpus

Figure 4.28 depicts the 5 most statistically significant collocates of Tuberculosis. Tuberculosis is related to words that describe the damaged areas caused by the disease and early detection of the disease. For instance, *detection* tops the list with an MI score of 14.03 whereas *TB* is the acronym of tuberculosis comes second with an MI score of 12.78 followed by *lungs* (MI 12.44) which is the common area affected by tuberculosis as shown in line 6 and line 7 in Figure 4.29. Lastly, *early* has a MI score of 10.56 which is ranked as the weakest

collocates. To sum it up, the 4 content words are used to describe the name of tuberculosis and early detection of tuberculosis as well as the organ affected by tuberculosis.

Index	Files	Left	Node	Right
1	29 TB.txt	TB	(Tuberculosis)	Ensure early detection What is TB? Tuberculosis
2	29 TB.txt	(Tuberculosis) Ensure early detection What is TB?	Tuberculosis	is a dangerous infectious disease. It causes
3	04 HIV&AI	Carinii. * Infected with Cytomegalovirus (lungs, brain, retinas). *	Tuberculosis	(TB). * Fungal infections such as Candida and
4	12 Cover y	Whooping cough Severe Acute Respiratory Syndrome (SARS)	Tuberculosis	(TB) These illnesses can spread easily in
5	29 TB.txt	(Tuberculosis) Ensure early detection What is TB?	Tuberculosis	is a dangerous infectious disease. It causes
6	04 HIV&AI	Carinii. * Infected with Cytomegalovirus (lungs, brain, retinas). *	Tuberculosis	(TB). * Fungal infections such as Candida and
7	29 TB.txt	cough by a person suffering from active	Tuberculosis	of the lungs or also known as

Figure 4.29: The concordance lines of Tuberculosis

4.2.16 Collocation of Tetanus in MOHB Corpus

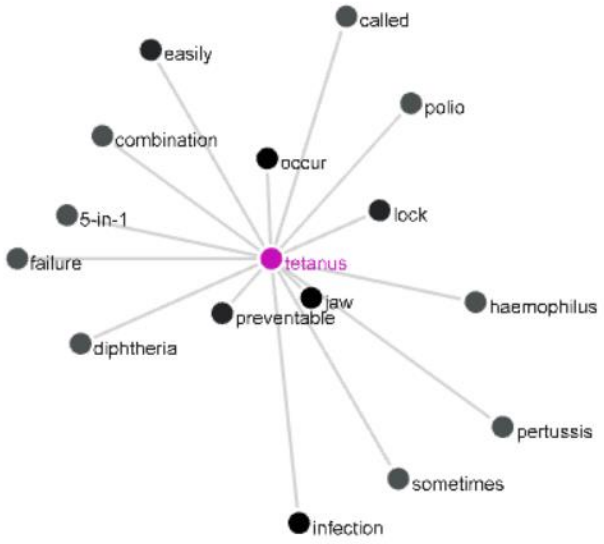

Figure 4.30: 17 most statistically significant collocates of Tetanus in MOHB corpus

Figure 4.30 illustrates the 17 most statistically significant collocates of Tetanus. It is important to point out that tetanus is also identified as lock jaw hence the highest statistically significant collocate is *jaw* with a MI score of 14.15 and *lock* with a MI score of 13.32 as shown from line 1 to line 3 in Figure 4.31. Moreover, tetanus is a vaccine-preventable disease. Patients can prevent tetanus by taking a 5-in-1 vaccine. Based on the concordance lines in Figure 4.31, this 5-in-1 vaccine can prevent tetanus, *diphtheria* (MI 12.51), *polio* (MI 12.15), *haemophilus*

(MI 12.51) and *pertussis* (MI 11.15) from line 10 to line 11. On the other hand, tetanus can cause respiratory failure hence the collocate *failure* (MI 11.56) in line 17 in Figure 4.31. In short, 15 content words are used to express the name of the disease and vaccination that is suitable for tetanus.

Index	Files	Left	Node	Right
1	30 Tetanus.txt		Tetanus	(**Lock Jaw**) Easily Preventable What is Tetanus?
2	30 Tetanu	Tetanus (**Lock Jaw**) Easily Preventable What is	Tetanus?	Tetanus sometimes called 'lock jaw' is a
3	30 Tetanu	(Lock Jaw) Easily Preventable What is Tetanus?	Tetanus	sometimes called '**lock jaw**' is a disease
4	30 Tetanus.txt		Tetanus	(Lock Jaw) Easily **Preventable** What is Tetanus?
5	30 Tetanu	Tetanus (Lock Jaw) Easily **Preventable** What is	Tetanus?	Tetanus sometimes called 'lock jaw' is a
6	30 Tetanu	(Lock Jaw) Easily **Preventable** What is Tetanus?	Tetanus	sometimes called 'lock jaw' is a disease
7	30 Tetanu	spasms). Respiratory failure. Health failure. How does	tetanus	infection **occur**? Tetanus infection can occur through
8	30 Tetanu	Health failure. How does tetanus infection **occur**?	Tetanus	infection can **occur** through wound contaminated by
9	30 Tetanu	from one person to another person. Neonatal	tetanus	can **occur** in babies born to mothers
10	27 Whoo	containing vaccination **5-in-1 combination Vaccine (diphtheria**,	tetanus,	**pertussis, polio, haemophilus influenza type**) B. Immunisation
11	30 Tetanu	Vaccine used is a **5-in-1 combination (diphtheria**,	tetanus,	**pertussis, polio, haemophilus influenza type**) B. Dose
12	30 Tetanus.txt		Tetanus	(Lock Jaw) **Easily** Preventable What is Tetanus?
13	30 Tetanu	Tetanus (Lock Jaw) **Easily** Preventable What is	Tetanus?	Tetanus sometimes called 'lock jaw' is a
14	30 Tetanu	(Lock Jaw) **Easily** Preventable What is Tetanus?	Tetanus	sometimes called 'lock jaw' is a disease
15	30 Tetanu	Tetanus (Lock Jaw) Easily Preventable What is	Tetanus?	Tetanus sometimes **called** 'lock jaw' is a
16	30 Tetanu	(Lock Jaw) Easily Preventable What is Tetanus?	Tetanus	sometimes **called** 'lock jaw' is a disease
17	30 Tetanu	spasms). Respiratory **failure**. Health **failure**. How does	tetanus	infection occur? Tetanus infection can occur through
18	30 Tetanu	Tetanus (Lock Jaw) Easily Preventable What is	Tetanus?	Tetanus **sometimes** called 'lock jaw' is a
19	30 Tetanu	(Lock Jaw) Easily Preventable What is Tetanus?	Tetanus	**sometimes** called 'lock jaw' is a disease
20	30 Tetanu	spasms). Respiratory failure. Health failure. How does	tetanus	**infection** occur? Tetanus infection can occur through
21	30 Tetanu	Health failure. How does tetanus **infection** occur?	Tetanus	**infection** can occur through wound contaminated by
22	30 Tetanu	found in soil and animal faeces. However,	tetanus	**infection** is not passed on from one

Figure 4.31: The concordance lines of Tetanus

4.2.17 Collocation of Typhoid in MOHB Corpus

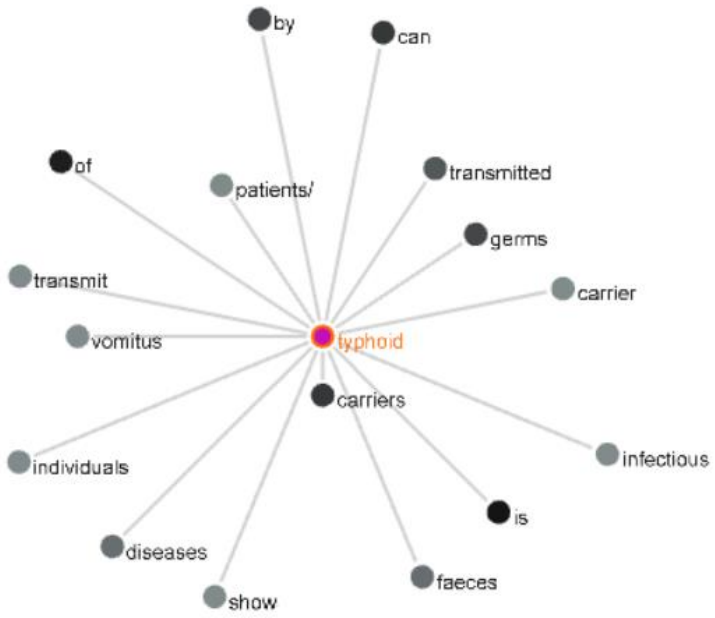

Figure 4.32: 17 most statistically significant collocates of typhoid in MOHB corpus

Figure 4.32 illustrates the 17 most salient collocates of typhoid. Typhoid is related to words that describe the transmission of the disease. For instance, collocates such as *carrier* (MI 14.47), *patients* (MI 12.52), *germs* (MI 12.48), *transmitted* (MI 12.20), *carrier* (MI 11.52), *vomitus* (MI 11.52), *faeces* (MI 11.28), *infectious* (MI 10.52), *transmit* (MI10.52) and *individuals* (MI 10.19) are used to describe that typhoid is transmitted through carriers or patients' vomitus and faeces as shown in the concordance lines from line 1 to line 32 in Figure 4.33. To sum it up, the 12 content words are used to express the transmission of typhoid.

Index	Files	Left	Node	Right
1	31 High Fe	and faeces of the infected individuals and	typhoid	**carriers**. Typhoid carrier is a person infected
2	31 High Fe	of the infected individuals and typhoid **carriers**.	Typhoid	carrier is a person infected by the
3	31 High Fe	which is contaminated with faeces/ vomitus of	typhoid	**patients/ carriers**. Typhoid germs can contaminate water
4	31 High Fe	with faeces/ vomitus of typhoid **patients/ carriers**.	Typhoid	germs can contaminate water supply if improper/insanitary
5	31 High Fe	improper/insanitary toilets are used. Flies transmit the	typhoid	germs from typhoid **carriers'** faeces to exposed
6	31 High Fe	used. Flies transmit the typhoid germs from	typhoid	**carriers'** faeces to exposed or uncovered food.
7	31 High Fe	carrier is a person infected by the	Typhoid	**germs** but does not show signs and
8	31 High Fe	which is contaminated with faeces/ vomitus of	typhoid	patients/ carriers. Typhoid **germs** can contaminate water
9	31 High Fe	with faeces/ vomitus of typhoid patients/ carriers.	Typhoid	**germs** can contaminate water supply if improper/insanitary
10	31 High Fe	improper/insanitary toilets are used. Flies transmit the	typhoid	**germs** from typhoid carriers' faeces to exposed
11	31 High Fe	used. Flies transmit the typhoid **germs** from	typhoid	carriers' faeces to exposed or uncovered food.
12	31 High Fe	does not show signs and symptoms of	Typhoid	diseases. How is typhoid **transmitted**? Typhoid is
13	31 High Fe	and symptoms of Typhoid diseases. How is	typhoid	**transmitted**? Typhoid is spread by eating food
14	31 High Fe	of Typhoid diseases. How is typhoid **transmitted**?	Typhoid	is spread by eating food or drinking
15	31 High Fe	and faeces of the infected individuals and	typhoid	carriers. Typhoid **carrier** is a person infected
16	31 High Fe	of the infected individuals and typhoid carriers.	Typhoid	**carrier** is a person infected by the
17	31 High Fe	which is contaminated with faeces/ **vomitus** of	typhoid	patients/ carriers. Typhoid germs can contaminate water
18	31 High Fe	with faeces/ **vomitus** of typhoid patients/ carriers.	Typhoid	germs can contaminate water supply if improper/insanitary
19	31 High Fe	improper/insanitary toilets are used. Flies transmit the	typhoid	germs from typhoid carriers' **faeces** to exposed
20	31 High Fe	used. Flies transmit the typhoid germs from	typhoid	carriers' **faeces** to exposed or uncovered food.
21	31 High Fe	which are contaminated by the **faeces** of	Typhoid	patients/carriers if not washed before eating or
22	31 High Fe	carrier is a person infected by the	Typhoid	germs but does not **show** signs and
23	31 High Fe	does not **show** signs and symptoms of	Typhoid	diseases. How is typhoid transmitted? Typhoid is
24	31 High Fe	does not show signs and symptoms of	Typhoid	**diseases**. How is typhoid transmitted? Typhoid is
25	31 High Fe	and symptoms of Typhoid **diseases**. How is	typhoid	transmitted? Typhoid is spread by eating food
26	31 High Fe	of Typhoid **diseases**. How is typhoid transmitted?	Typhoid	is spread by eating food or drinking
27	31 High Fe	Fever Abdominal Discomfort Diarrhoea It can be	typhoid.	Typhoid is an **infectious** disease caused by
28	31 High Fe	Abdominal Discomfort Diarrhoea It can be typhoid.	Typhoid	is an **infectious** disease caused by a
29	31 High Fe	improper/insanitary toilets are used. Flies **transmit** the	typhoid	germs from typhoid carriers' faeces to exposed
30	31 High Fe	used. Flies **transmit** the typhoid germs from	typhoid	carriers' faeces to exposed or uncovered food.
31	31 High Fe	and faeces of the infected **individuals** and	typhoid	carriers. Typhoid carrier is a person infected
32	31 High Fe	of the infected **individuals** and typhoid carriers.	Typhoid	carrier is a person infected by the

Figure 4.33: *The concordance lines of Typhoid*

4.3 Chapter Summary

This chapter reports the findings derived from FRE, FKGL and SMOG. In Section 4.1, it is shown that 32 of the brochures are above the recommended level which is Grade 6 equivalent to Primary 6 in Malaysia. The findings in Section 4.2 reported that most of the

collocates from Section 4.2.1 to Section 4.2.17 describes the transmission of the disease, variation of the disease, vaccination and the name of the disease. Moreover, it is worth noting that some collocates describe the infected areas caused by the disease, seasonal disease, ways to stop the disease and the origin of the disease.

CHAPTER 5: DISCUSSION AND CONCLUSION

5.0 Introduction

This chapter summarises the findings obtained in Chapter 4. Section 5.1 discusses the readability score derived from the three readability formulas namely FKGL, FRE and SMOG. Section 5.2 explains the factors affecting readability and Section 5.3 explores the benefits of collocations in health literacy. Section 5.4 points out the limitation of this study and provides recommendations for future research. Lastly, Section 5.5 is a general conclusion of this study.

5.1 Summary of findings

Overall, the readability scores generated from FKGL, FRE and SMOG provide an answer to **Research Question 1** regarding the readability levels of communicable disease health brochures produced by KKM. The readability results obtained in this study are not consistent with Wong et al. (2019) whereby the reading materials about oral health education published by the Oral Health Program and Ministry of Health Malaysia are written at the recommended grade level. Out of 32 communicable disease brochures, 31 brochures scored above the recommended grade level thus supporting previous studies done by Patel et al. (2015), Pizur-Barnekow et al. (2011), Schmaier et al. (2018), Corcoran & Ahmad (2016), Munsour et al. (2017), Groten-Wiegers et al. (2015) and Hamid et al. (2020). This goes to show that medical-related reading materials are not easily comprehensible for the public who did not receive education beyond Primary 6. This is because medical terms are used in the reading materials to indicate treatment, surgery, preventive measure and scientific names of the diseases. As a result, it requires readers to have a certain level of education to comprehend the text.

In Table 5.1, the average grade levels derived from FKGL, FRE and SMOG for each communicable disease are beyond the recommended level, i.e. Grade 6 equivalent to Primary

6 in Malaysia. The average grade level for AIDS/HIV and Avian Influenza brochures is Grade 9. Furthermore, the average grade level of communicable disease brochures such as Cough, Hand, Foot and Mouth Disease, Influenza, SARS and Typhoid, is at Grade 9. As for communicable disease brochures with the average grade level, Grade 10 are Cholera, Rubella, Tuberculosis and Tetanus. The communicable brochures with an average grade level of Grade 11 are Ebola, Hepatitis B and Pertussis. Lastly, Coronavirus brochures have an average grade level of Grade 12 and Dengue brochures are the hardest brochures to read, readers with a college degree can understand the text in the brochures.

Table 5.1

The average reading level of communicable disease brochures

No.	**Name of the disease**	**FRE**	**FKGL**	**SMOG**	**Average Grade Level**	**Grade Level**
1	AIDS/HIV	8.50	7.78	10.2	8.82	Grade 8
2	Avian Influenza	8.50	7.05	9.7	8.41	Grade 8
3	Cholera	13	8.80	11	10.93	Grade 10
4	Cough	11	8.80	8.8	9.53	Grade 9
5	Coronavirus (Covid-19)	13	12	12.4	12.47	Grade 12
6	Dengue	13	13.45	13.5	13.31	College
7	Ebola	13	9.20	11.1	11.10	Grade 11
8	Hepatitis B	13	10.70	11.7	11.80	Grade 11

9	Hand, Foot and Mouth Disease (HFMD)	8.50	8.20	10.3	9.00	Grade 9
10	Influenza	11	8.04	10.4	9.81	Grade 9
11	Pertussis	13	9.60	11	11.20	Grade 11
12	Rubella	11	8.90	10.8	10.23	Grade 10
13	SARS	11	8.20	10.1	9.77	Grade 9
14	Tuberculosis	11	9.10	11	10.37	Grade 10
15	Tetanus	13	8.30	10	10.43	Grade 10
16	Typhoid	11	8.30	9.6	9.63	Grade 9

Next, the result obtained using GraphColl in #LancsBox 5.1.2 has supplied an answer to **Research Question 2** regarding the relevant collocations of words used to describe the communicable disease. The collocations have shown salient information such as the transmission of the disease, the variation of the disease, vaccination and the name of the disease. It is worth noting that collocates such as *spread, get, acquired, transmitted, transmit, vomiting, carriers, faeces* and *germs* describe the transmission of disease which is evident for these 3 communicable diseases namely AIDS/HIV, Cholera and Typhoid. Besides, collocates that are associated with vaccination are distinct in Tetanus, Pertussis, Rubella and Cough. The common collocates that can be found in these three sub-categories are *vaccination*, *5-in-1*, *combination*, *diphtheria*, *haemophilus, polio*. These collocates implied that vaccination can prevent the public from infectious disease easily and effectively (Pillay & Swingler, 2003; Barlow et al.,

2014). Therefore, these common collocates can inform the public of the seriousness of these communicable diseases and educate them on preventive measures.

The findings of this study show that collocations provide the researcher with a more refined analysis of how words are linked with their node words. Williams (2001) and Gledhill (1996) stated that collocations can reveal the themes and the lexis of the domain. In this study, the collocation analysis discovered several themes namely, the variation of the communicable diseases, the risk of contracting the communicable diseases and the responses towards the communicable disease. It is evident in this study that Influenza has the most variations. The collocation analysis manages to detect 4 types of Influenza namely, Influenza A, H1N1, Bird Flu and Avian Influenza. Moreover, this risk that comes with Influenza is either an epidemic or a pandemic which can be seen in line 20 to line 32 the concordance lines in Figure 35. The most effective preventive measure towards Influenza identified in this study is through vaccination. Besides, other communicable diseases in this study also reported that vaccination is the most effective preventive measure namely, Rubella, Tetanus and Pertussis can be prevented through vaccination. Hence, the results obtained in this study support the notion stated by Williams (2001) and Gledhill (1996) whereby the collocates in KKM's communicable disease brochures manage to highlight salient information such as the spread of diseases, vaccination, variation of the disease and the name of the disease.

In short, the findings of this study revealed that the brochures published by KKM are beyond the recommended level suggested by the Institute of Public Health. It also shows that collocations can emphasize the important information published by KKM and serve its purpose as an educational material that encourages prevention.

5.2 Discussion

5.2.1 Factors affecting the readability score

The purpose of these communicable disease brochures is to educate the public and encourage voluntary behaviour so that the public will lead a healthy lifestyle. With this in mind, this present study analyses the readability of communicable disease brochures using FKGL, FRE and SMOG. However, it is important to note that several factors affect the readability score such as the use of words and the use of punctuation.

D'Alessandro et al. (2001) reported readability formulas disregarded the fact that medical information is conveyed using complex monosyllabic words, whereby readability formulas like FKGL, FRE and SMOG will rate the material as easy to read. For instance, FKGL and FRE are formulas that assume a reading material that has more sentences and a high word count are considered to be different. Friedman and Hoffman Goetz (2006) agreed that readability formulas have a linear relationship between words and sentence length. As a result, the requirement needed to comprehend a reading material increased such as education level and word recognition ability. SMOG, on the other hand, is highly dependent on polysyllabic words. For instance, brochures such as Basic Protective Measure Against the New Coronavirus and Just Take 10 Minutes, both have high scores due to the repetitive use of words like *coronavirus* (Basic Protective Measure Against the New Coronavirus), and *larvicide* and *temephos* (Just Take 10 Minutes). Therefore, improving the readability of communicable disease brochures include choosing the medically accurate words and considering the syllabic nature of words so that the readability score will not be skewed.

In general, this study reported that out of 32 brochures, only 1 brochure (AIDS is Preventable) is deemed easy to read by FKGL, FRE and SMOG. This is because this brochure has 32 sentences only. According to Grabeel et al. (2018), computerized scoring relies heavily on the full stop placement, therefore, the readability score will be lowered. This study used an online readability calculator to evaluate all 32 brochures. Moreover, Patel et al. (2015) emphasized that punctuations such as colons, semicolons and dashes will affect the readability

score. Furthermore, Grabeel et al. (2018) stated hand-scoring method SMOG is the preferred method to assess medical educational materials. Therefore, the use of punctuation is proven to be one of the factors that skewed the readability score when using an online readability calculator.

In conclusion, the use of words and punctuations will affect the readability score tremendously if they are not taken into consideration. Nonetheless, replacing medical terms that are more suitable to the target audience and removing unnecessary punctuation will improve the brochures' readability as well as providing patients with better health literacy.

5.2.2 The benefits of collocation in health literacy

Educational brochures published by KKM are used to disseminate important information to the public so they are kept up to date with the latest medical information. In this study, the findings derived from the collocational analysis showed that communicable disease brochures published by KKM highlight the transmission of the disease, the variation of the disease, vaccination and the name of the disease. Moreover, the collocations in these communicable disease brochures are focused on increasing the awareness of vaccination so that the public is well-informed with the latest treatment for communicable disease. With this in mind, the public could be equipped with skills and knowledge to practise self-efficacy and take appropriate precautionary steps.

Firstly, communicable disease-specific health literacy claimed to have a positive impact on the causes and outcomes of communicable diseases (Yang et al., 2018). For instance, words like *spread* and *get* that collocate with AIDS/HIV from this study highlighted the transmission of AIDS/HIV as one of the most prominent information emphasized by KKM. This goes to show that KKM wants to educate the public about the disease and, at the same, time reduce the cases of AIDS/HIV. Based on the statistics in Malaysian Health at a Glance, the spread of HIV

has been well controlled and the number of cases is decreasing significantly over recent years (Ministry of Health Malaysia, 2019). It is important to note that, most of the brochures collected for the MOHB corpus are AIDS/HIV related brochures from 2000 to 2020, which indicates that KKM is consistent with their publications because KKM is concerned with the public's health literacy. Therefore, continuous publication of communicable disease-specific health literacy can lower the spread of certain communicable disease and improve the public's awareness.

Secondly, health literacy plays an important role in eliciting vaccination-related actions. According to the MoH (2019), vaccine-preventable diseases (VPD) is one of the public health concerns in the world. In this study, the communicable diseases that collocate with the word 'vaccination' are Influenza, Tetanus, Pertussis, Rubella and Cough. Castro-Sanchez et al. (2016) asserted that effective immunisation and vaccination is an important part of health literacy. Based on the collocations found in KKM brochures, vaccination-related information, such as the 5-in-1 vaccination, collocate with pertussis and tetanus. On the other hand, Influenza collocates with *vaccination*, while Rubella collocates with *MMR* which stands for Measles, Mumps and Rubella. The aforementioned collocates are highlighted extensively in brochures, which are Influenza, Rubella, Tetanus, Pertussis and Cough. Collocates in these communicable brochures educate the public on the importance of taking vaccines because it lowers the risk of getting the aforementioned communicable disease. Past studies done by Todorova (2014) and Pati et al. (2011) revealed that individuals with higher health literacy are vaccinated, however, those with lower health literacy are unvaccinated. This is due to their lack of knowledge on vaccination which in turn affects their decision making and medical beliefs. Overall, the collocations associated with vaccines found in this study may be able to improve the public's health literacy regarding vaccination so that they can practice long term self-efficacy and take precautionary steps to protect their lives and loved ones.

Furthermore, the examination of collocations in KKM's communicable diseases have illustrated the relationship between communicable disease and the words associated with it. The collocations also uncover different types of cohesiveness used to shape the identified communicable disease themes which illustrate the healthcare communication done by KKM. For instance, in the Pertussis (Whooping Cough) brochure, an excerpt is extracted to show the content of the vaccination cohesively, "*Before breastfeeding or feeding your child* ***Whooping Cough*** *vaccination. Whooping cough containing vaccination 5-in-1 combination. Vaccine (diphtheria, tetanus,* ***pertussis****, polio, haemophilus influenza type B)."* According to Atkins and Harvey (2010) the field of 'healthcare communicable' includes government health education materials and the way health professionals convey medical messages regarding diseases, preventive measures, and its sign and symptoms. This can be seen in concordance lines of Cough which shows that cough is one of the sign and symptoms of Influenza A i.e. *"…of Influenza A(H1N1) are flu-like, including fever,* ***cough****, headache, muscle and joint pain, sore throat...*" and in the Rubella brochure, the following excerpt shows how health professionals conveyed the vaccination for Rubella, "*Immunisation with* ***rubella*** *containing vaccines such as MMR (measles, mumps and rubella)".* It is worth noting that it also shows how healthcare professionals interact with the public by giving the public a detailed explanation of the chemicals found in vaccines and signs and symptoms of a certain communicable disease. Furthermore, William (2001) highlighted that it is vital for health professionals to explain the information about the communicable disease in layman terms so that the public can comprehend the intended message easily and effectively.

To sum up, collocations benefit health literacy because it highlights important messages found in the communicable disease brochures. The intention behind these messages is to reduce communicable disease cases and raise the public's awareness so that they have a healthier lifestyle by taking appropriate preventive measures such as taking certain vaccination to curb

certain communicable diseases. Lastly, the collocations also enable researchers to have a better understanding of how healthcare communication in KKM brochures is executed.

5.3 Limitations of the study and recommendations for future research

This study has two limitations which are caused by the size of the corpus. The first limitation of this study is the soft copy of communicable disease brochures from 2000 to 2020 that were made available on the KKM's website. Communicable disease brochures from other medical organizations and hard copies of communicable disease brochures by KKM from the past 10 years are not evaluated. This is because some content by KKM in KKM facilities may be obsolete. However, the findings in this study will not generalize other communicable disease brochures by other medical organizations and KKM.

Next, this study does not apply the commonly used Mutual Information (MI) formula due to the size of the corpus. This study adopted the Mutual Information cube (MI3) instead so that the most frequent collocates will be presented. Moreover, the recommended threshold of the MI score is 6.0 (Baker, 2016). In this study, the recommended threshold value of MI score could not be used because the corpus size is small and the graph of collocates is overpopulated. As a result, this study has to opt for 10 as the threshold value of MI score.

In brief, the size of the corpus has caused the findings to be less refined. As a recommendation, future researchers should focus on brochures other than communicable disease brochures. Researchers can consider brochures produced by other medical organizations such as the World Health Organization (WHO), private health institutions and so on. With this in mind, findings in future researches will have a more accurate overview of the readability of medical-based brochures and the collocations related to the node words.

5.4 Conclusion

To conclude this research, the findings show that all 32 communicable diseases brochures published by KKM are not easily comprehensible for Malaysians with lower educational attainment. Furthermore, the collocates in KKM's communicable disease brochures manage to emphasize important information such as the spread of diseases, vaccination, variation of the disease and the name of the disease. This study has underlined the significance of communicable disease collocations because they represent major themes such as the risk of contracting a communicable disease, appropriate responses to curb these communicable diseases and the names used to address these communicable diseases. It is essential to note that KKM should improve the readability of these communicable diseases brochures so that Malaysians with lower educational attainment can understand the texts with ease.

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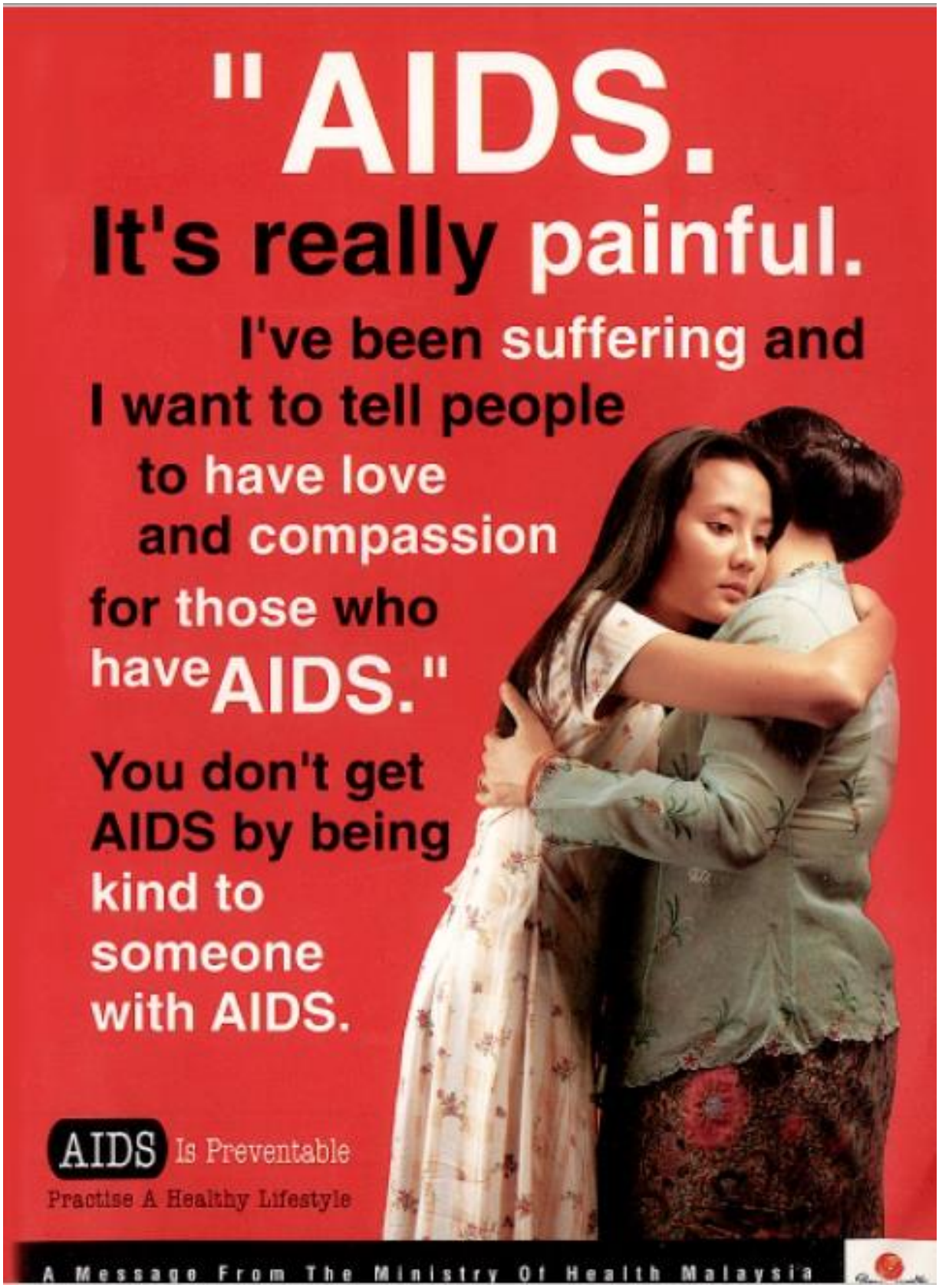
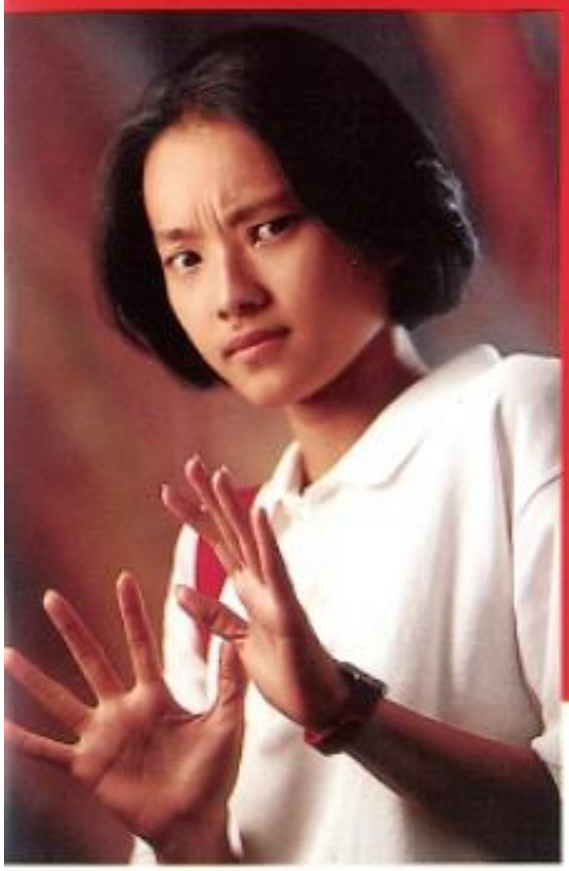
Appendix A

Communicable Disease Brochures

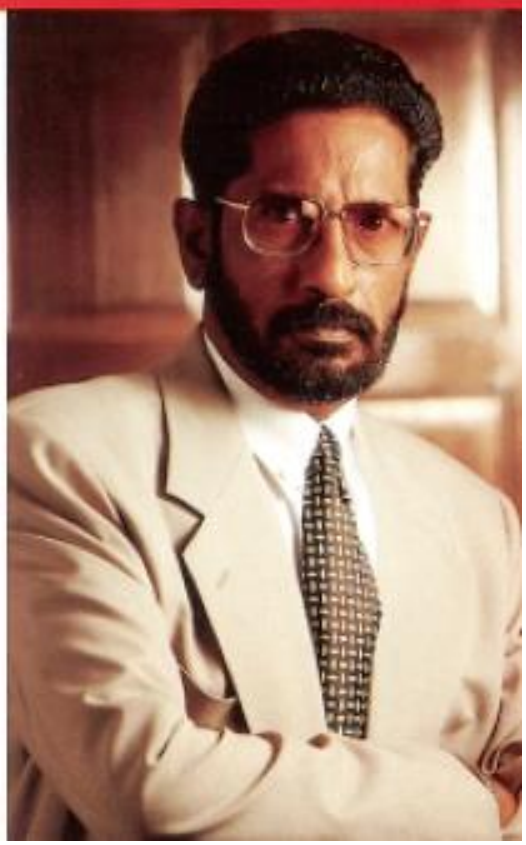

"AIDS.
It's really painful.
I've been suffering and
I want to tell people
to have love
and compassion
for those who
have AIDS."
You don't get
AIDS by being
kind to
someone
with AIDS.
AIDS Is Preventable
Practise A Healthy Lifestyle
A Message From The Ministry Of Health Malaysia



My friends avoid me now.

The worse part about having AIDS is everyone treats you like a leper.

One by one, my closest friends gave up on me, afraid I will infect them. I have no one to talk to. That's the hardest bit.



My boss stopped giving me work.

My colleagues sort of suspect I have HIV.

I was taking a lot of medical leave for a while...I was very depressed. My boss started to ignore me and after a nasty confrontation, he asked me to leave.

I didn't have a decent place to stay.

I regret being honest about having HIV.

When I told my landlord , who is also a family friend, he kept very quiet. The next thing I knew he had changed the padlocks and left my belongings outside the gate!

My brother, he disowned me.

I thought I could turn to my brother for help... to give me a job. But he refused to answer my calls. He even told his staff he doesn't have a sister.

Show love and compassion.
Don't ostracise and victimise the AIDS victims.
Many can still lead a normal life.
Give them a break.
It's painful enough to have AIDS.
Don't make it worse.

You don't get AIDS by being kind to someone with AIDS.

HIV is only transmitted through sexual intercourse or sharing needles as a drug user or from infected mother to unborn baby.

GENERAL INFORMATION

i) Cuts on the hands
Dress the cut on your hand with a waterproof bandage like elastoplast etc. before you start working. If you accidentally cut yourself during your work, encourage bleeding under running water and cover the cut with a waterproof bandage after the bleeding has stopped.

If your customers are injured accidentally, wipe the blood with a clean gauze and throw it into a rubbish bin. Avoid contact with the blood or gauze that was used to wipe the blood.

Ensure that instruments like scissors, shaving blade etc. that came into contact with your customers' blood are sterilised first before being reused.

ii) Inflamed Areas
Do not use sharp instruments like razor blades or rub too hard when you wash the hair on the skin area which is obviously inflamed because it can bleed easily.

iii) Disposal of sharp instruments
Sharp instruments like shaving blades, scissors etc. should be placed in a safe place or disposed properly so that they cannot accidentally injure your customers.

iv) Useful practices
You should always wash your hands with soap and water after each customer.

Always keep your shop clean. The floor should be swept and mopped with antiseptic liquid like Cresol, Chloroxylenol or Chlorhexidine at least once a day when you are about to close the shop.

FURTHER INFORMATION

If you need further advice, please contact the District Health Office or your nearest Health Center.

AIDS

GUIDE LINES FOR
HAIRDRESSERS AND BARBERS

DON'T DIE OF IGNORANCE

Published by Health Education Unit
Ministry of Health Malaysia 3000/91

MINISTRY OF HEALTH MALAYSIA
"We care for your health"

AIDS HOW IT IS SPREAD

AIDS is a disease caused by the HIV virus, which destroys a person's immune system to fight against diseases.

AIDS can be spread only through three ways.

i) having sexual intercourse with a person who is infected with the HIV virus.
ii) transfer of blood containing the HIV virus from an AIDS patient or carrier to another person.
iii) from an infected mother to her unborn child.

THE RISK OF AIDS AND YOUR WORK

The risk of being infected with AIDS in the course of your work is remote. Until now, no one has been known to be infected with HIV from hair dressing or hair cutting.

However, in the course of your work, blood may be transferred from one person to another accidentally.

Hence, in the interest of both yourself and your customer, safe procedures must be followed to ensure that infections including AIDS do not occur in the course of your work.

PROCEDURES TO BE FOLLOWED

i) If possible, use only disposable items eg. disposable razor blades.

ii) Sterilisation
All instruments used for hair dressing and hair cutting should be cleaned and sterilised.

Instruments like scissors, hair groomer, comb, hair clips, should be washed with soap and water daily.

All sharp instruments like razor blades and other instruments contaminated with your customers' blood should be sterilised before being used for other customers.

Methods of sterilisation:

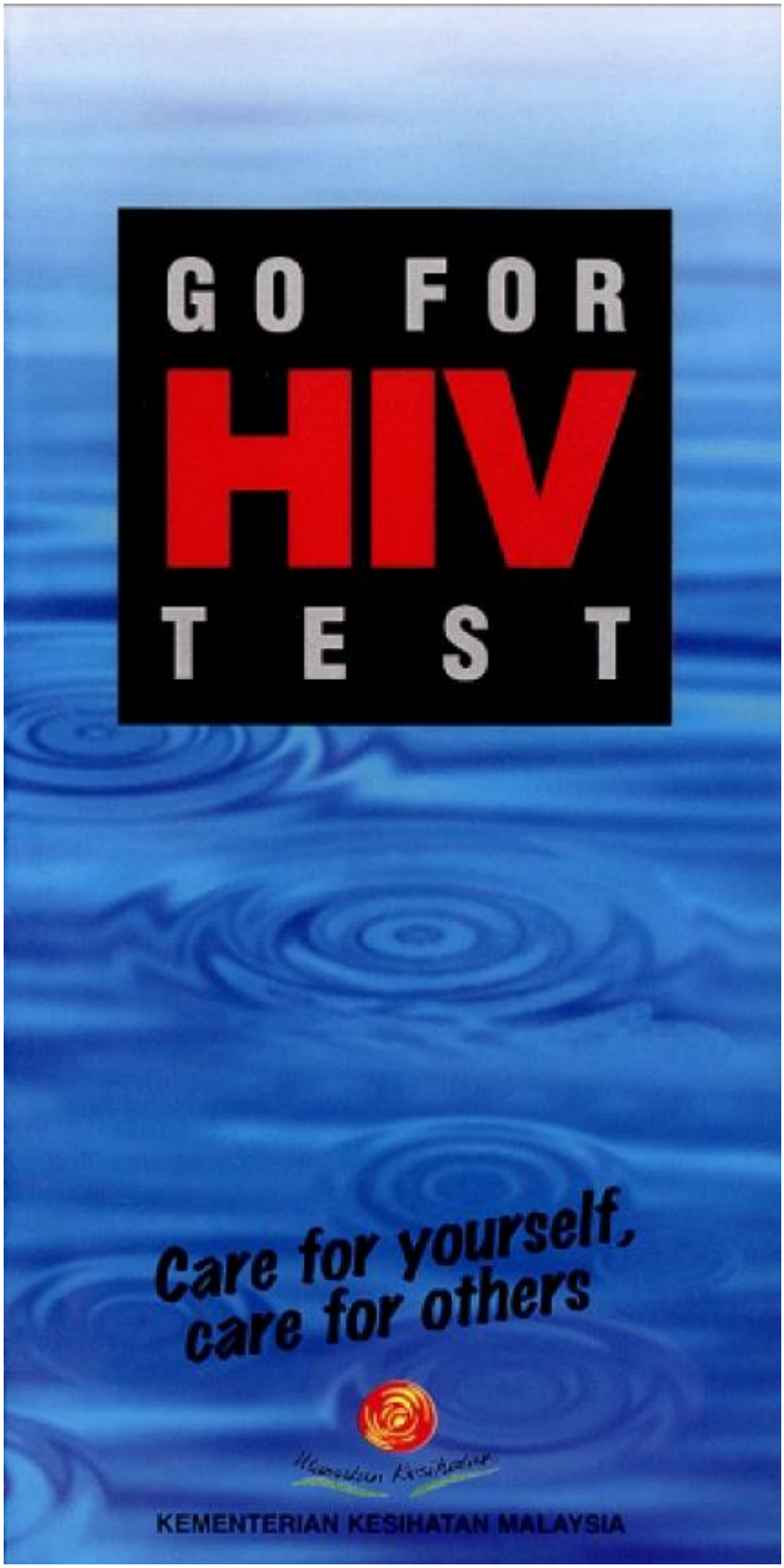
a) Autoclave
This is the best method because it is very effective in killing all types of germs and it is safe and easy to use.

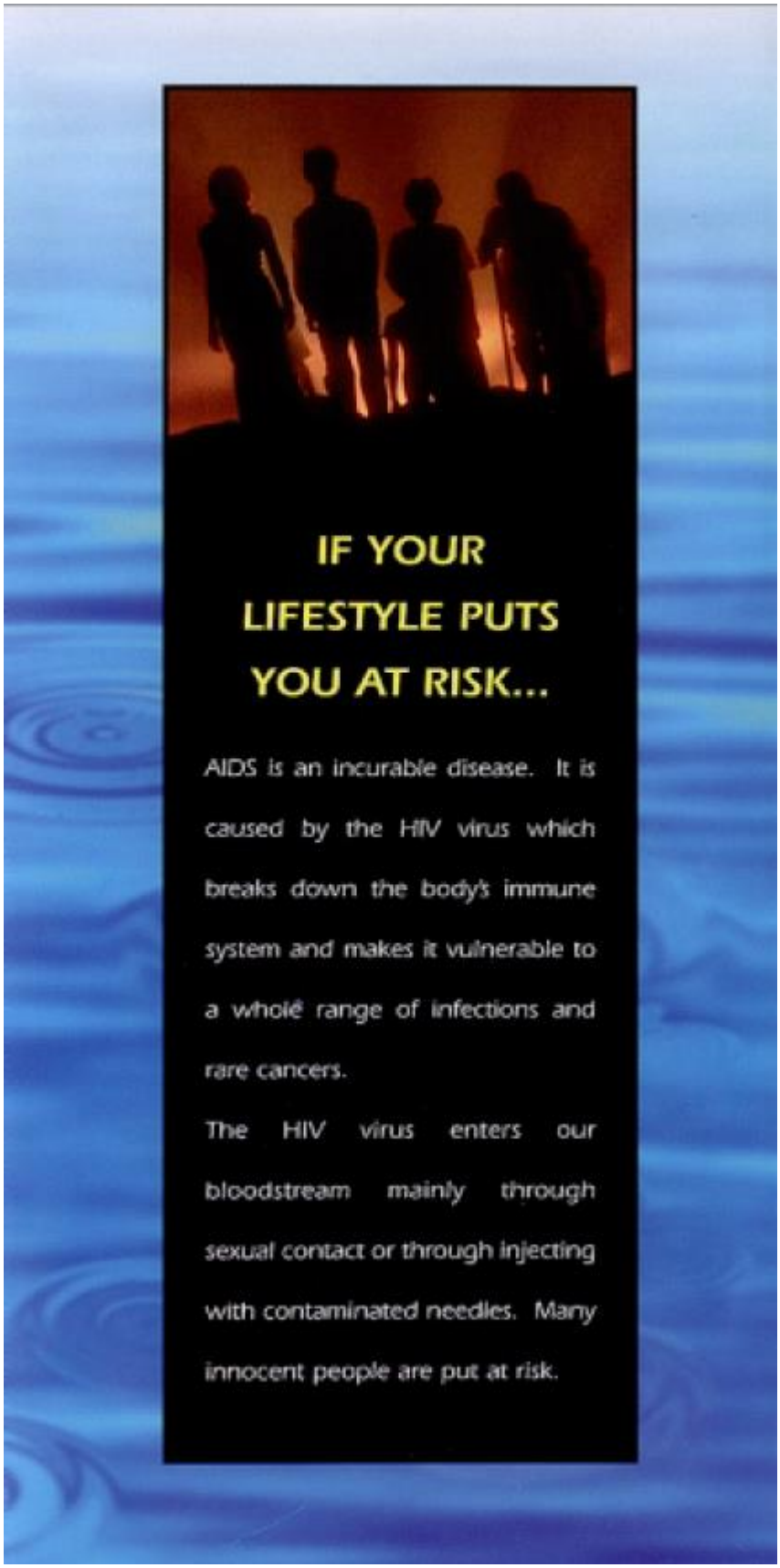
b) Other methods
If your do not own an autoclave as suggested, then any of the following methods can be used.

- Boil or steam the instruments in boiling water for 10 - 20 minutes before using them again. Sterilizers which use water is easily available in the market.

or

- Soak the instruments in disinfectants like Chlorhexidine and others according to the instructions given for each brand of disinfectant. After that, the instruments can be used again.


GO FOR
HIV
TEST
Care for yourself,
care for others
KEMENTERIAN KESIHATAN MALAYSIA


IF YOUR
LIFESTYLE PUTS
YOU AT RISK...
AIDS is an incurable disease. It is caused by the HIV virus which breaks down the body's immune system and makes it vulnerable to a whole range of infections and rare cancers.
The HIV virus enters our bloodstream mainly through sexual contact or through injecting with contaminated needles. Many innocent people are put at risk.

HIV IS SEXUALLY TRANSMITTED

If you've been unwise in your sexual activities or if you have unprotected sex, you have put yourself in danger of contracting the HIV virus. Are ***you*** in the clear? ***There's only one way to be sure.*** Get tested.

INJECTING DRUGS CARRIES THE HIGHEST RISK

Injecting drug users and especially those ***sharing*** needles are at the highest risk of HIV infection. Get tested before you become a danger to others. ***The HIV test could be the first step in saving your life and the life of your loved ones.***

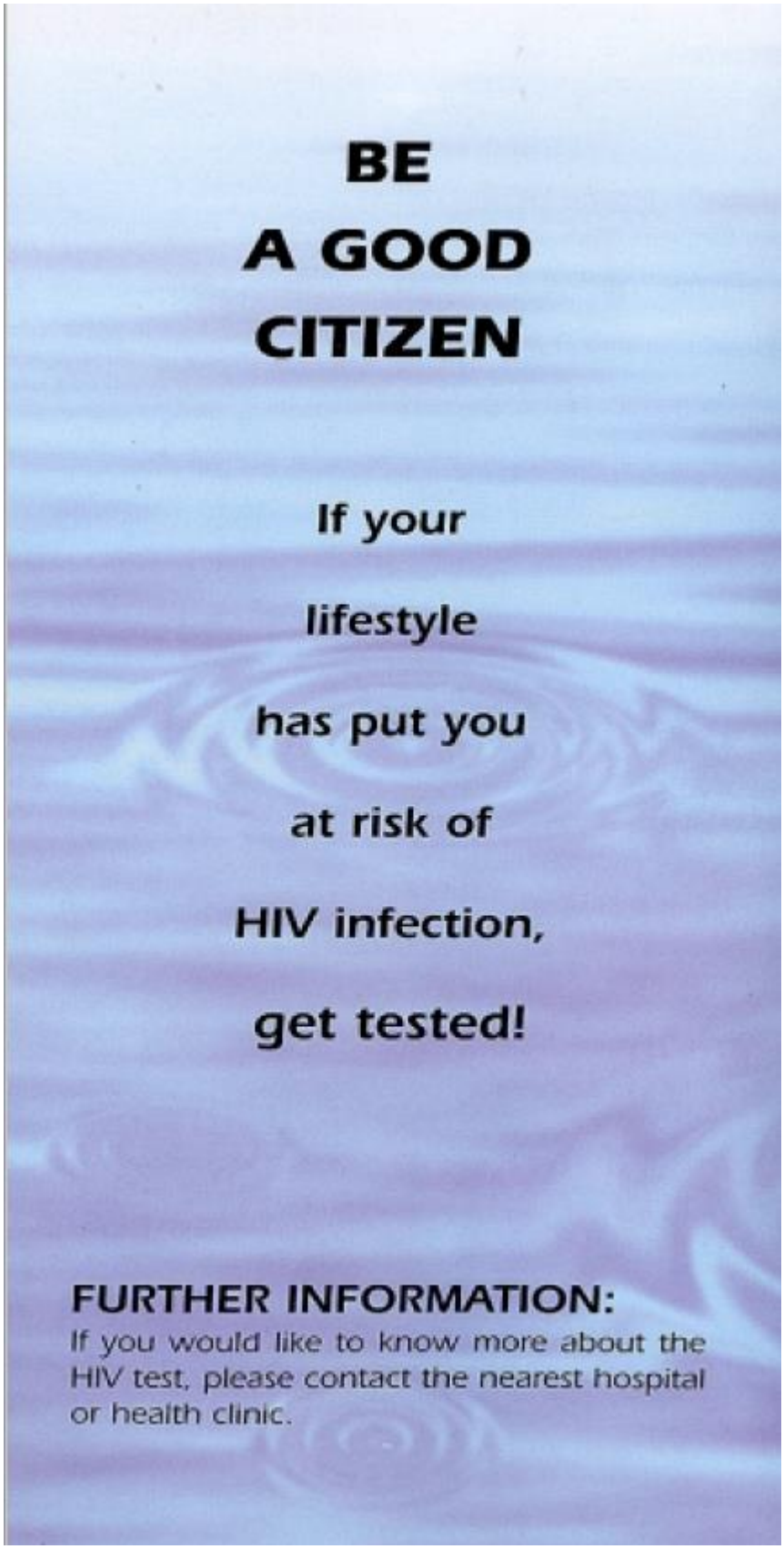
THE HIV VIRUS CAN BE PASSED FROM MOTHER TO CHILD

Innocence is no protection against contracting HIV. If you're planning to start a family you should make sure that your baby will not be infected. Only the HIV test can put your mind completely at rest. ***Think of your innocent child.*** Get tested!

THERE'S NOTHING TO FEAR FROM THE HIV TEST

If you think you may be at risk, getting tested for HIV is the only responsible thing to do and it involves no sacrifices.

- it's ***simple and painless***
- it's ***completely confidential***
- it's ***free*** at government hospitals and health clinics


BE
A GOOD
CITIZEN
If your
lifestyle
has put you
at risk of
HIV infection,
get tested!
FURTHER INFORMATION:
If you would like to know more about the HIV test, please contact the nearest hospital or health clinic.

HIV & AIDS

WHAT IS HIV ?

Virus that ravages the human body's immune system until it is no longer capable of fighting diseases. Those who are infected with HIV (HIV carriers) looks normal (not sick) and are usually unaware that this virus has infected them. The virus may take years to gradually weaken a person's immune system before that person eventually fall sick.

WHAT IS AIDS ?

AIDS is the final stage of HIV infection, when the body's immune system has been completely weaken and the person is afflicted with certain diseases and cancers (AIDS-defining condition) such as :

- Weight loss (more than 10%).
- Prolonged diarrhoea.
- Lung infection Pneumocystis Carinii.
- Infected with Cytomegalovirus (lungs, brain, retinas).
- Tuberculosis (TB).
- Fungal infections such as Candida and Histoplasma.
- Brain Toxoplasma infection.
- Infected with Herpes Simplex and Herpes Zoster (Shingles).
- Protozoan infections such as Cryptococcus, Microsporidium and Isospora.
- Cancers like Kaposi's Sarcoma and Lymphoma.

HOW IS HIV CONTRACTED ?

HIV infects humans mainly in three ways:

1. Unprotected sexual relationship with a person infected with HIV.
2. Transfer of infected blood through sharing of needles used for injecting drugs or through blood tranfusion with HIV infected blood.
3. From an HIV-infected mother to her baby during pregnancy, delivery, and breastfeeding.

FAQs

Answers To Your Doubts

1. Can HIV survive outside the human body ?
   HIV cannot survive for long outside the human body, and will be destroyed by hot and dry environment, soap/detergent, water and disinfectant.
2. Can HIV be contracted through oral sex ?
   There is a risk of infection if the semen or vaginal fluid from the infected partner goes into the mouth and there happens to be wound/crack/ulcer in the oral cavity.
3. Can HIV be contracted through kissing ?
   Theoretically, HIV in the blood or saliva that goes into the mouth of a person can infect the person if there happens to be wound/crack/ulcer in the person's oral cavity, but so far there has not been any reported cases of infection through this way.
4. Is there any medication that can cure this disease ?
   No. Prevention is still the best way to control the spread of this virus. The best practice is to avoid drug abuse and adultery. Use protection during sex and do not share needles syringes for injecting drugs.
5. Is there any medication to treat this disease ?
   ARV (antiretroviral) drugs can delay the progression of this disease and improve the quality of life for people who have HIV/AIDS.
6. Can HIV be contracted through blood donation ?
   You will not be infected through donating blood because the disposable equipment used is sterile. Do not donate blood if you or your partner is suspected or confirmed to be infected with HIV.
7. Can I be infected through casual physical contact ?
   No. HIV cannot be contracted through daily activities (at work, in school or at any social amenities), shaking hands, eating together, sporting, holding the door knob, using public amenities such as toilet or telephone or holding pets, etc.

8. Where can I find ARV treatment ?
   You can get ARV treatment at all government hospitals and health clinics.
9. Do I need to undergo HIV testing ?
   If you have been previously exposed to the risks of HIV infection, you are advised to go for HIV testing. It is always better to know your health status.
10. Where can I got HIV testing ?
    At the nearest government hospital or health clinic. The result will be strictly confidential, and a Medical Specialist or Family Medical Specialist will provide you with continuous medical care.
11. How is the test conducted ? Is it painful ?
    The test can be done using a blood sample taken from the tip of your finger. The result can be produce within (5 – 10 minutes). And if the result is positive, a confirmation test will follow. The confirmation test will take about 1 to 2 weeks, depending on the facilities available at the health clinic or hospital.
12. If the test result is negative, does it mean that I am truly free from this virus ?
    A negative test result simply means that the antibody against this virus cannot be detected at the time. If you have previously been exposed to risks of infection, you are advised to repeat the test after 3 to 6 months. After this interval the antibody (if any) is expected to become detectible.
13. Do my partner and I need to get tested before we get married ?
    It is always to know your partner's health status before marriage. You can still go through with the marriage but be sure to practice safe sex.

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Health Education Division
Ministry of Health Malaysia

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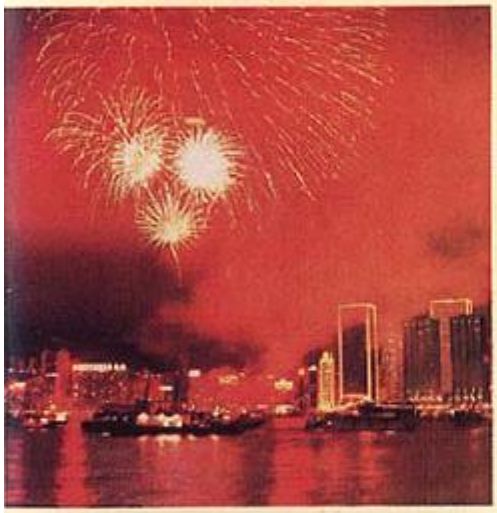
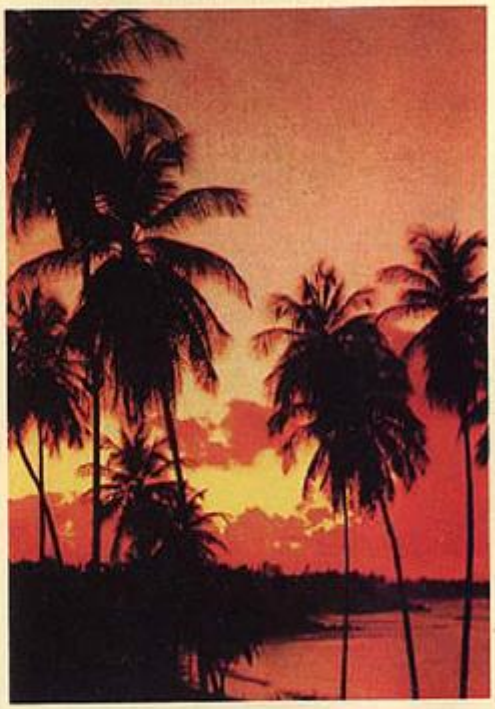
HIV & AIDS

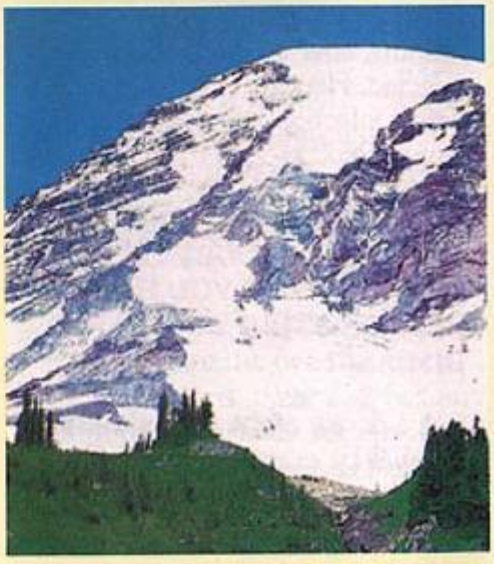
Health Education Division
Ministry of Health Malaysia

If you are going abroad....

REME MBER!







SHOULD YOU BE CONCERNED ABOUT AIDS?

No matter where you live or travel, you need to know about **AIDS. AIDS** is a fact in today's world-throughout the world.

WHAT IS AIDS?

AIDS is a disease caused by a virus which can break down the body's immune system and lead to death resulting from infections and/or some rare forms of cancers.

HOW IS AIDS SPREAD?

The **AIDS** virus spreads most frequently through sexual activity. The virus can be transmitted from any infected person to his or her sexual partner (man to man, man to woman, and from woman to man). But it is also spread by contaminated blood – in transfusions, on needles, or on any skin-piercing instruments. Also, an **AIDS** virus-infected mother can transmit the virus to her child before, during or shortly after birth.

HOW IS AIDS NOT SPREAD?

AIDS is not spread by casual contact such as sitting next to someone or shaking hands or working with people.

Nor is it spread by insect bites.

AIDS is not spread by:

- swimming pools
- public transportation
- food
- cups
- glasses
- plates
- toilets
- water
- air
- touching
- hugging
- coughing
- sneezing

CAN YOU THEN PROTECT YOURSELF AGAINST AIDS?

Yes. You can easily protect yourself against **AIDS** during your travels by knowing and heeding the following simple rules.

HOW CAN SEXUAL SPREAD OF AIDS BE PREVENTED?

Do not have sex with prostitutes (male or female) or casual acquaintances, even in countries that claim there is no AIDS problem. You cannot tell by appearances if someone is infected with the AIDS virus; he/she can look healthy. Do not be mislead by "AIDS - free" certification.

WHAT IF YOU ARE GOING TO HAVE SEXUAL RELATIONS WITH SOMEONE WHO MIGHT BE INFECTED?

Men should always use a condom each time from start to finish, and women should make sure their partner uses one. Use of a condom does reduce the risk of infection but it is not 100%

Reducing the number of your sexual partners will lower the risk of exposure to the **AIDS** virus.

WHAT ABOUT BLOOD TRANSFUSIONS, INJECTIONS AND OTHER SKIN-PIERCING INSTRUMENTS?

- Reduce the risk of serious injury and hence the need for blood transfusions. Wear seat belt and drive carefully. Don't mix alcohol with driving, boating or other activities that could lead to injury.
- Avoid injections unless absolutely necessary. If you must have an injection make sure the needle and syringe come straight from a sterile package or have been sterillized properly. For example, a needle and syringe which have been cleaned and then boiled for 20 minutes are ready for re-use.
- Other skin piercing instruments (tattoo and acupuncture needles, earpiercing equipment and dentists' tools) must always be sterile.
- In general, you should avoid any procedure which pierce the skin unless absolutely necessary.

WHAT IF YOU ARE ALREADY INFECTED WITH THE AIDS VIRUS?

Please consult your doctor for guidance well in advance of your proposed travel.

CAN THE DISEASE BE DETECTED IMMEDIATELY AFTER A PERSON HAS BEEN EXPOSED TO THE VIRUS?

AIDS antibodies, which indicate infection, only appear in the blood a few weeks, and sometimes several months, after a person has been infected. Hence it is not possible to detect infection immediately after exposure.

WHAT SHOULD YOU DO IF YOU ARE IN DOUBT OR SUSPECT THAT YOU HAVE BEEN EXPOSED TO THE DISEASE?

See a doctor at the nearest hospital. You will be examined fully and a blood test will be taken if necessary.


With no
cure or vaccine
so far for
AIDS,
PREVENTION
is vital
For more information
please contact your doctor
or the nearest hospital/
Health Centre/Clinic
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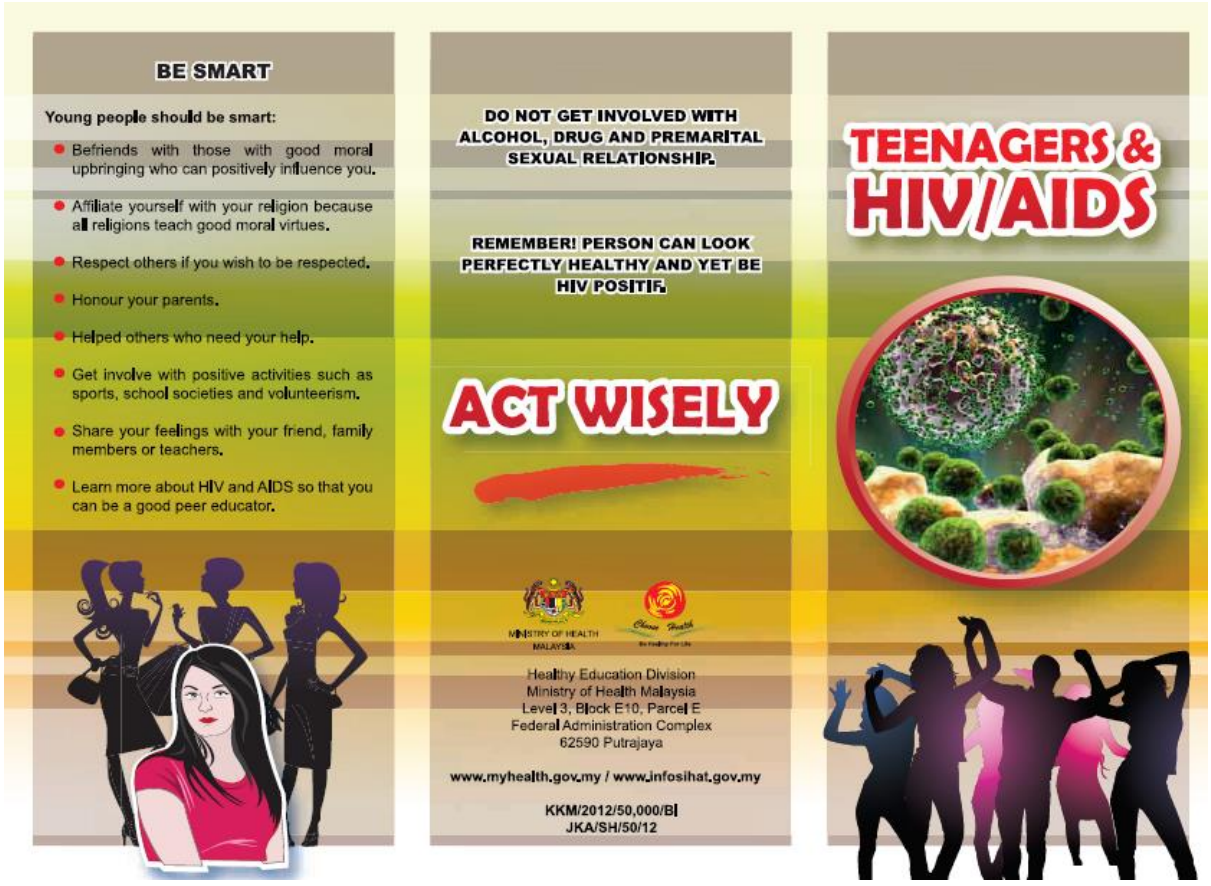
Division Of Health Services,
Ministry of Health Malaysia



BE SMART

Young people should be smart:

- Befriends with those with good moral upbringing who can positively influence you.
- Affiliate yourself with your religion because all religions teach good moral virtues.
- Respect others if you wish to be respected.
- Honour your parents.
- Helped others who need your help.
- Get involve with positive activities such as sports, school societies and volunteerism.
- Share your feelings with your friend, family members or teachers.
- Learn more about HIV and AIDS so that you can be a good peer educator.

DO NOT GET INVOLVED WITH ALCOHOL, DRUG AND PREMARITAL SEXUAL RELATIONSHIP.

REMEMBER! PERSON CAN LOOK PERFECTLY HEALTHY AND YET BE HIV POSITIF.

ACT WISELY

MINISTRY OF HEALTH MALAYSIA

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www.myhealth.gov.my / www.infosihat.gov.my

KKM/2012/50,000/BI
JKA/SH/50/12

TEENAGERS & HIV/AIDS

WHAT IS HIV?

"Human Immunodeficiency Virus". Virus that weakens the ability of your body's immune system to fight off diseases. HIV causes AIDS.

WHAT IS AIDS?

"Acquired Immunodeficiency Syndrome" is a disease you get when HIV destroys your body's immune system. Normally your immune system helps you fight off illness. When your immune system fails, you can become very sick and can die.

WHY TAKE THE RISK?

Anyone who are infected with HIV has the potential to infect others. But it not that EASY! You can only get infected with HIV through:-

- Unprotected sex with an HIV infected person.
- Sharing needles, syringes contaminated with HIV when taking drugs.
- HIV positive mother to her child during pregnancy, delivery and breastfeeding.

TEENAGERS : YOUR RISK FACTORS

SEXUAL RELATIONSHIP

- Early age sexual initiation when most young people are still ignorant about the risk of HIV infection.
- Heterosexual transmission due to lack of recognition of their partners risk factors.
- Homosexual transmission because homosexuals who do not disclose their sexual orientation are less likely to seek HIV testing.

SUBSTANCE ABUSE

- Young people are more likely to engage in high-risk behaviours that expose them to HIV infection if they are intoxicated with alcohol, tobacco and drugs.

LACK OF AWARENESS

- The devil-may-care attitude and lack of interests in acquiring knowledge about HIV and AIDS. Still there are teenagers who do not know how infection occurs and misconceptions related to HIV / AIDS

POVERTY AND OUT OF SCHOOL

- Young people who are from low economic background and dropped out of school are more likely to engage in high risk behaviours.

What Women Can Do

- Practice healthy lifestyle.
- Abstain from premarital sex.
- You and your partners should go for HIV screening before marriage.
- If you are practicing risky lifestyle, consider the following :
  - Seek counseling and advice.
  - Equip yourself with knowledge on HIV and AIDS.
  - Get tested for HIV to know your status.
  - Know your partner's background.
  - Encourage your partner to get tested for HIV.
  - Use protection every time you have sex.
  - Seek treatment if you think you have been exposed to other sexually transmitted diseases such as Gonorrhea, Syphilis and others. These diseases can increase your risk of getting HIV.
  - Don't take alcohol and/or illicit drugs.
  - Don't prostitute yourself.

What Is HIV Screening

- It is an easy and simple test to know your HIV status
- If the result is reactive, a confirmatory test and confidential counseling and will be given

Where

Get Tested For HIV

- It is free of charge at any government health clinics
- The result is confidential

PRACTICE HEALTHY LIFESTYLE.
PREVENT HIV AND AIDS BEFORE IT IS TOO LATE.
DO HIV SCREENING NOW!

Published by :
Health Education Division
Ministry Of Health Malaysia

www.myhealth.gov.my
www.infosihat.gov.my
KKM/50/,000/NI
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Globally, young women and girls are more vulnerable to HIV infection, which causes AIDS. Studies have shown that females being 2.5 times more likely to be infected with HIV as their males counterparts. The proportion of women infected by HIV worldwide has steadily grown with current statistics showing that half of all people living with HIV globally are females. In Malaysia, of the 91,362 reported HIV cases, less than 10% or 9,266 were females. (source: MoH , 1986-2010).

Women Are Vulnerable To HIV & AIDS!

How

Women Infected With HIV?

- The common modes of transmission of HIV among women are:
  - through heterosexual contact
  - through sharing of infected syringes and needles during intravenous drug addiction

Why

Women Are Susceptible To HIV Infection

- Biological vulnerability
  - Women are twice likely as a man to get HIV during vaginal sex (lining of the vagina provides a large surface area of potential exposure to HIV infected semen).
- Social and cultural vulnerability
  - Fear to say "NO" to sex.
  - Unable to convince their partner (husband or boyfriend) to use condom for fear of rejection.
  - Unable to discuss with their partner about:
    - Abstinence
    - Faithfulness
  - Ignorance of their partner's risky behavior.
  - Generally women may be caregivers and they have no time to care for themselves.

Why

It is Important For Women To Prevent From HIV Infection

- Women with HIV can transmit the virus to their babies during :-
  - pregnancy
  - delivery
  - breast feeding

HOW ARE WOMEN GETTING HIV?

The most common ways are:
1. Having sex with a man who has HIV.
2. Sharing injection drug works (needles, syringes etc.) used by someone with HIV.

WHY WOMEN?

Women have unique issues and specific challenges that make it harder for them to prevent HIV or to take care of themselves if they have HIV. The reasons include:

1. Women can give HIV to their babies. Women who have HIV can give it to their babies during:
   - Pregnancy.
   - Delivery.
   - Breastfeeding.

   (Save your baby by seeking treatment as soon as possible)*

2. Women's bodies are different.
   - Women are twice likely as a man to get HIV during vaginal sex (lining of the vagina provides a large surface area of potential exposure to HIV infected semen).
   - Some diseases or disorders unique to women make HIV more serious.

3. Women may lack control in relationships.
   - Scared to say "NO" to sex.
   - Scared to insist their partners (husband or boyfriend) to use protection.
   - Cannot talk to their partners about:
     - Abstinence.
     - Faithfulness.
     - Using protection.
   - Do not know if their partner is doing things that put him (therefore her) at risk.
   - Women may be caregivers for others and feel that they have no time to take care of themselves.

WHAT WOMEN CAN DO?

- Abstain from premarital sex. You and your partners should go for HIV screening before marriage.
- If you are practicing risky lifestyles, consider the following:
  - Get tested for HIV.
  - Equip yourself with knowledge on HIV and AIDS.
  - Encourage your partner to get tested for HIV if he has not been tested.
  - Use protection every time you have sex.
  - If you think you have been exposed to other sexually transmitted diseases such as Gonorrhea, Syphilis or Chlamydia Trachomatis, get treatment. These diseases can increase your risk of getting HIV.
- If you believe you have a low risk for HIV infection, get tested whenever you have regular medical check-up.
- Do not inject illicit drugs. You can get HIV through sharing of needles, syringes that has been contaminated with HIV infected blood.
- If you do inject drugs, do the following:
  - Use only clean needles, syringes and other works.
  - Never share needles, syringes and other works.
  - Get tested for HIV at least once a year.
  - Consider getting counseling and treatment for your drug addiction.
- Do not have sex under the influence of drug or alcohol because being high can make you more likely to take risk.

Believe it: WOMEN are AIDS

GET TESTED FOR HIV AT ALL GOVERNMENT CLINICS OR HOSPITALS NEAR YOU.

Women & HIV/AIDS

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Ministry of Health Malaysia,
Level 3, Block E10, Parcel E,
Federal Government Administration Centre,
62590 Putrajaya.

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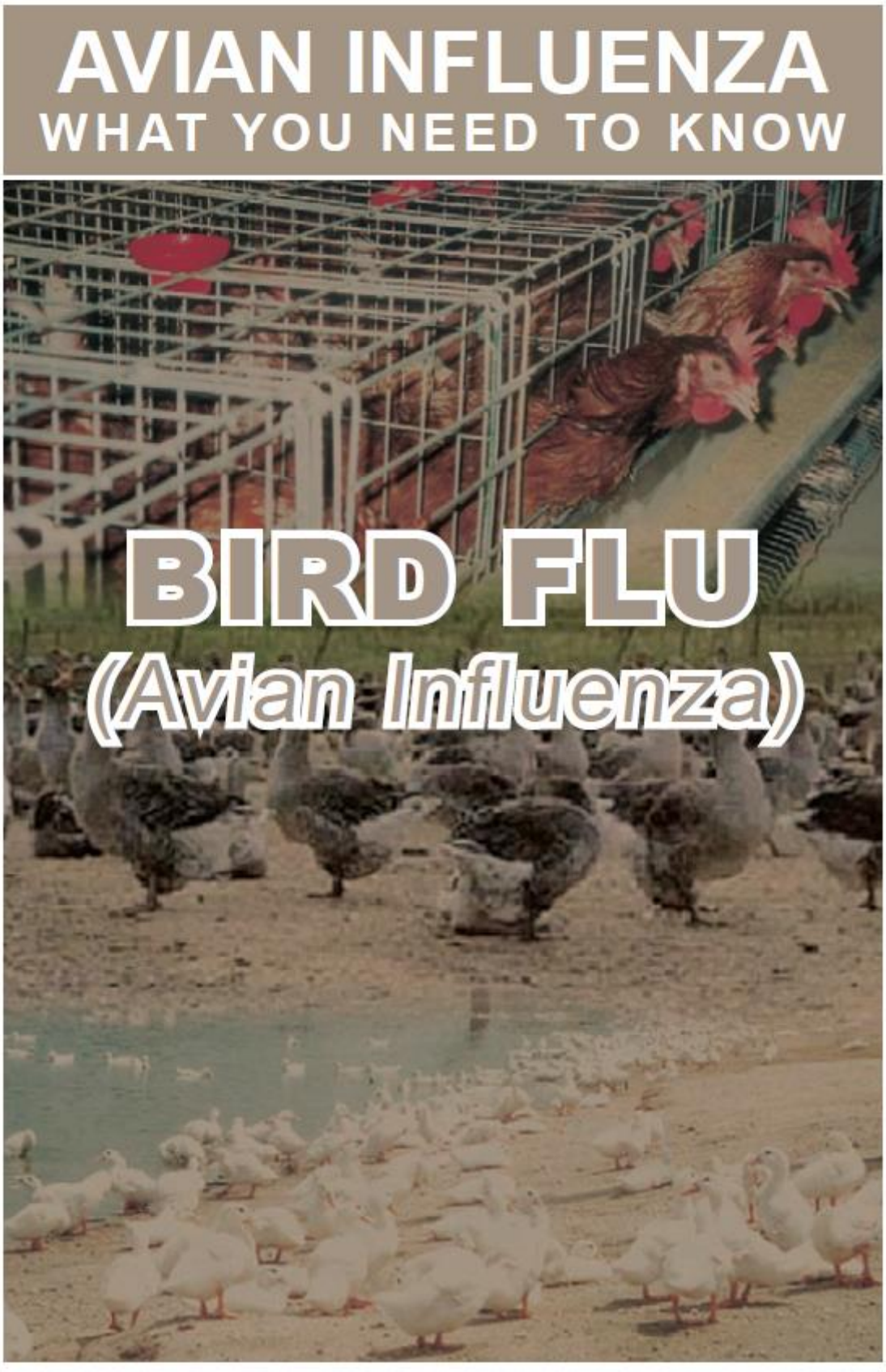
AVIAN INFLUENZA
WHAT YOU NEED TO KNOW
BIRD FLU
(Avian Influenza)

WHAT IS BIRD FLU?

- Bird Flu or Avian Influenza is a type of contagious disease that infects poultry and birds
- Influenza virus type A causes Bird Flu. This virus has many subtypes. Most of the current outbreaks reported is caused by subtype H5N1 and H7N7
- Migratory waterfowls are the natural reservoir of this virus
- Human can be infected if exposed directly to sick birds or poultry.

HOW IT IS SPREAD?

a) Among birds

Through droplets from the nose, saliva and droppings. This virus can survive in bird droppings up till 30 days.

b) From birds to human

Human can be infected through:

- Direct contact with sick poultry, birds and their produces
- Droppings of sick birds
- Water contaminated with the droppings of sick birds
- Objects such as containers, cages, and clothes contaminated with the droppings and droplets of sick birds

WHAT ARE THE SIGNS AND SYMPTOMS?

- High fever (more than 38ºC)
- Cough
- Sore throat
- Headache
- Muscle / joint ache
- Fatigue

COMPLICATIONS OF THE INFECTION CAN CAUSE PNEUMONIA AND LEAD TO DEATH

WHO ARE AT RISK?

a) Farm workers and family members whose poultry/birds have been infected

b) Traders and workers who deal with poultry, birds and eggs

c) Veterinarians who handle sick birds

d) Those involved with culling of infected birds

e) Those who are handling birds kept:
   - for cock fighting
   - for competitions
   - as a pet.

HOW TO PROTECT YOURSELF?

- Those working in animal farms should use masks, gloves, apron and boots. Take a shower and change before going home
- Wash your hands regularly with soap and clean water
- Ensure you only obtain poultry meat from reliable sources
- Wear gloves or use plastic to handle carcasses of birds. Do not handle carcasses of birds with bare hands
- Abide to all directives and regulations issued by the authorities

REPORT UNUSUAL DEATHS AMONG POULTRY/ BIRDS TO THE VETERINARY DEPARTMENT

Goose Health

Be Healthy For Life

Published by:
MINISTRY OF HEALTH MALAYSIA
Tel: 03-8881 0200/300
Website: http://dph.gov.my/survelans/
http://www.infosihat.gov.my
PI.5 (versi 1), 12/2006 (BI 100,000)

5. Ways To Protect Yourself

- Always engage in good animal husbandry practices such as wearing a mask to cover your nose and mouth, gloves, an apron and boots.
- Wash your hands with soap and clean water regularly.
- Ensure you only choose healthy meat and poultry products.
- Obey all directions and regulations released by the government.

Goose Health

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http://dph.gov.my/survelans/

AVZ/(2).02/'06(50,000-BI)

AVIAN INFLUENZA

BIRD FLU

1. Avian Influenza

- Avian Influenza (AI) or bird flu is a type of contagious disease infecting poultry and birds.
- Influenza virus type A causes Avian Influenza. This virus has many subtypes. The H5N1 virus, which is the cause of the current outbreaks reported, can lead to high death rates among birds.
- Migratory waterfowls are the natural reservoir of this virus.
- Normally, this disease does not infect humans; but recent developments show that humans too can be infected if exposed to sick birds.

2. How This Disease Spreads

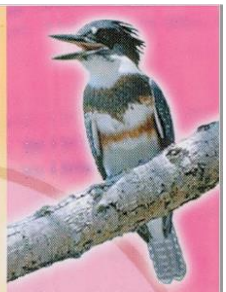
a) From birds to birds

This disease spreads among birds through droplets from the nose, saliva and droppings. This virus can survive in bird droppings up till 30 days.

b) From birds to humans

Humans can be infected through:

- Direct contact with sick poultry, birds and their produce.
- Droppings of sick birds.
- Water contaminated with the droppings of sick birds.
- Objects such as containers, cages and clothes contaminated with the droppings of sick birds.



3. Signs and Symptoms

Signs & Symptoms of the Avian Influenza are

- High fever (exceeding 38°C)
- Sore throat
- Cough
- Headache
- Muscle pains
- Joint pains
- Fatigue

Complications of the infection can lead to pneumonia and death.

4. Groups at Risk

a) Farm workers

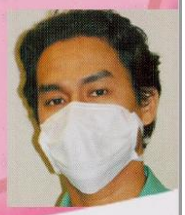
- Those working on animal farms (poultry/birds) that may be infected.

b) Poultry and bird traders

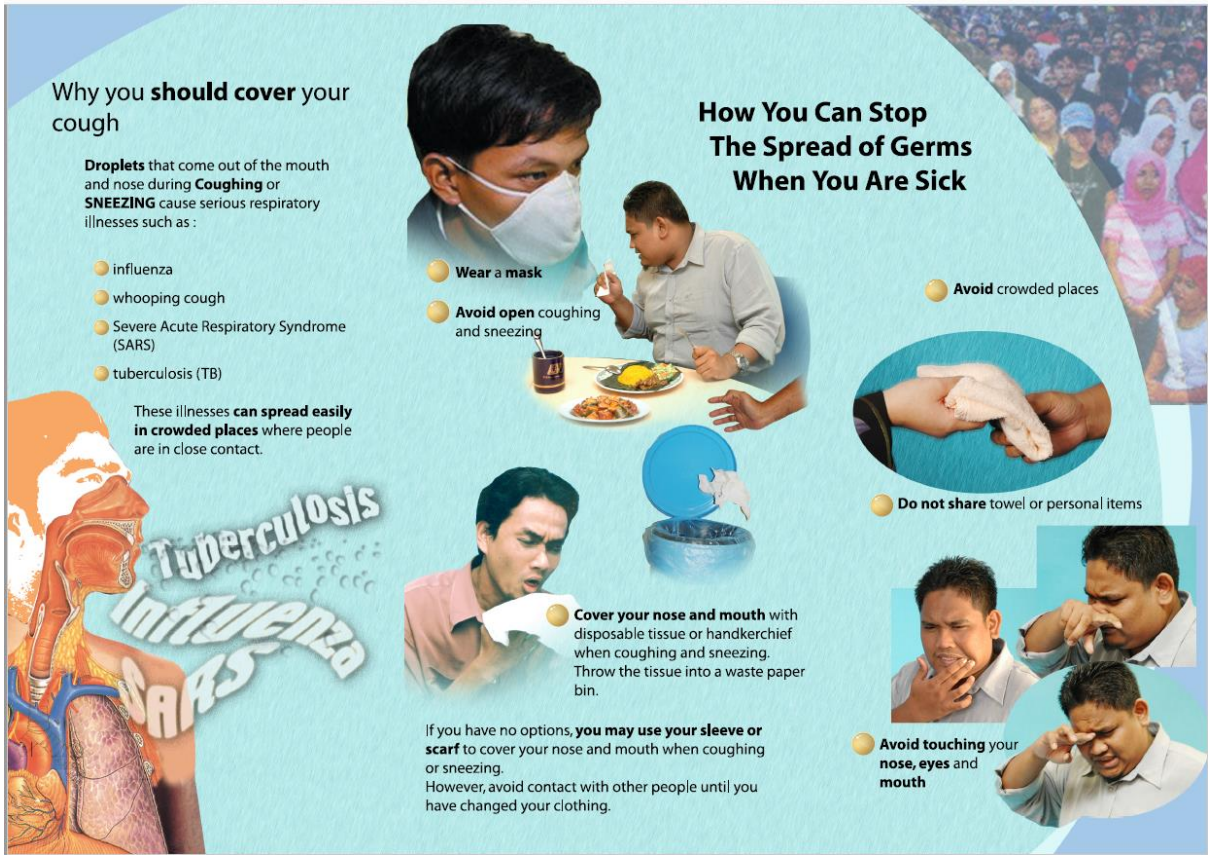
- Poultry and bird sellers who handle eggs, storage containers and objects contaminated with bird droppings.

c) Veterinary/health workers

- Those involved in culling of sick birds.




How You Can Stay Healthy
Wash your hands with soap and clean water or any antiseptic lotion or fluid
Wash your hands each time after :
• coughing or sneezing
• touching
– raw food materials
– contaminated surfaces
– your face, ears, nose, mouth
– and other parts of your body
Also wash your hands
• after using the toilet
• before eating
• before and while preparing food
• whenever your hands are dirty
Telephone : 03 - 8881 0200 • 03 - 8881 0300
Website : http:www//dph.gov.my/survelans/
: http://www.infosihat.gov.my
Cover Your COUGH
Stop
The Spread of Germs
That Make
You and Others Sick


Why you should cover your cough
Droplets that come out of the mouth and nose during Coughing or SNEEZING cause serious respiratory illnesses such as :
influenza
whooping cough
Severe Acute Respiratory Syndrome (SARS)
tuberculosis (TB)
These illnesses can spread easily in crowded places where people are in close contact.
Tuberculosis
Influenza
SARS
How You Can Stop The Spread of Germs When You Are Sick
Wear a mask
Avoid open coughing and sneezing
Avoid crowded places
Do not share towel or personal items
Cover your nose and mouth with disposable tissue or handkerchief when coughing and sneezing. Throw the tissue into a waste paper bin.
If you have no options, you may use your sleeve or scarf to cover your nose and mouth when coughing or sneezing.
However, avoid contact with other people until you have changed your clothing.
Avoid touching your nose, eyes and mouth

PREVENTION

Drink boiled water

Eat newly cooked food

Use clean water to wash vegetables, fruits and cooking utensils

Cover all food from flies, other insects and rodents

Wash hands with soap and clean water after using toilet, before eating and preparing food

Clean your house surroundings and dispose rubbish properly

Choose clean food premises when eating out

Use proper toilet

SEEK EARLY TREATMENT IF YOU HAVE SIGNS AND SYMPTOMS OF CHOLERA

Ministry of Health Malaysia

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Health Education Division, Ministry of Health Malaysia
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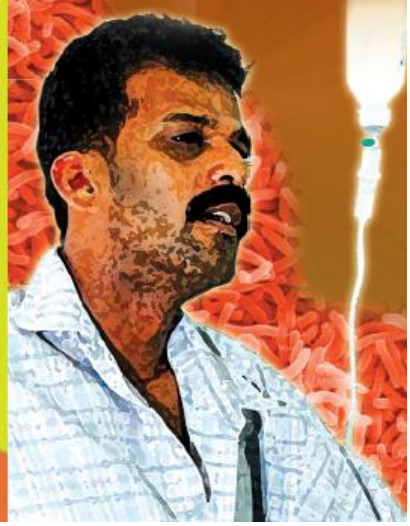
BUT. 7, KKM (CETAK/PB) 236/2008, BI 50,000

Be Healthy For Life

BEWARE! DANGER OF CHOLERA



WHAT IS CHOLERA?

Cholera is an easily transmitted, dangerous, diarrheal disease caused by bacteria known as Vibrio cholerae. Cholera germs can be found in feaces and vomitus of cholera patients and carriers.

Cholera carrier is a person infected by the cholera germs but does not show signs or symptoms of cholera disease. A carrier is difficult to be traced and always transmits cholera germs through their feaces that infects others.

SIGNS AND SYMPTOMS

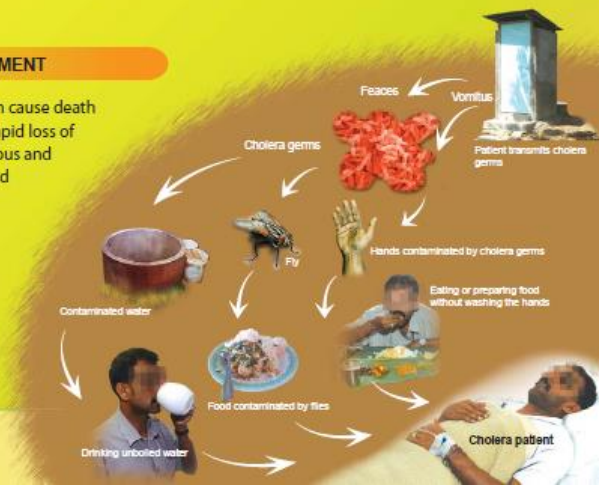
- Acute and prolonged diarrhoea
- Stiff muscle and cramps
- Dry skin , feeling thirsty, dry tongue and sunken eyes due to dehydration
- Continuous vomiting
- Low blood pressure , low heart rate, cold and flabby skin
- Patient may not urinate due to dehydration

IF DELAYED IN TREATMENT

Seeking late treatment can cause death within hours because of rapid loss of body fluid due to continuous and uncontrolled diarrhoea and vomiting.

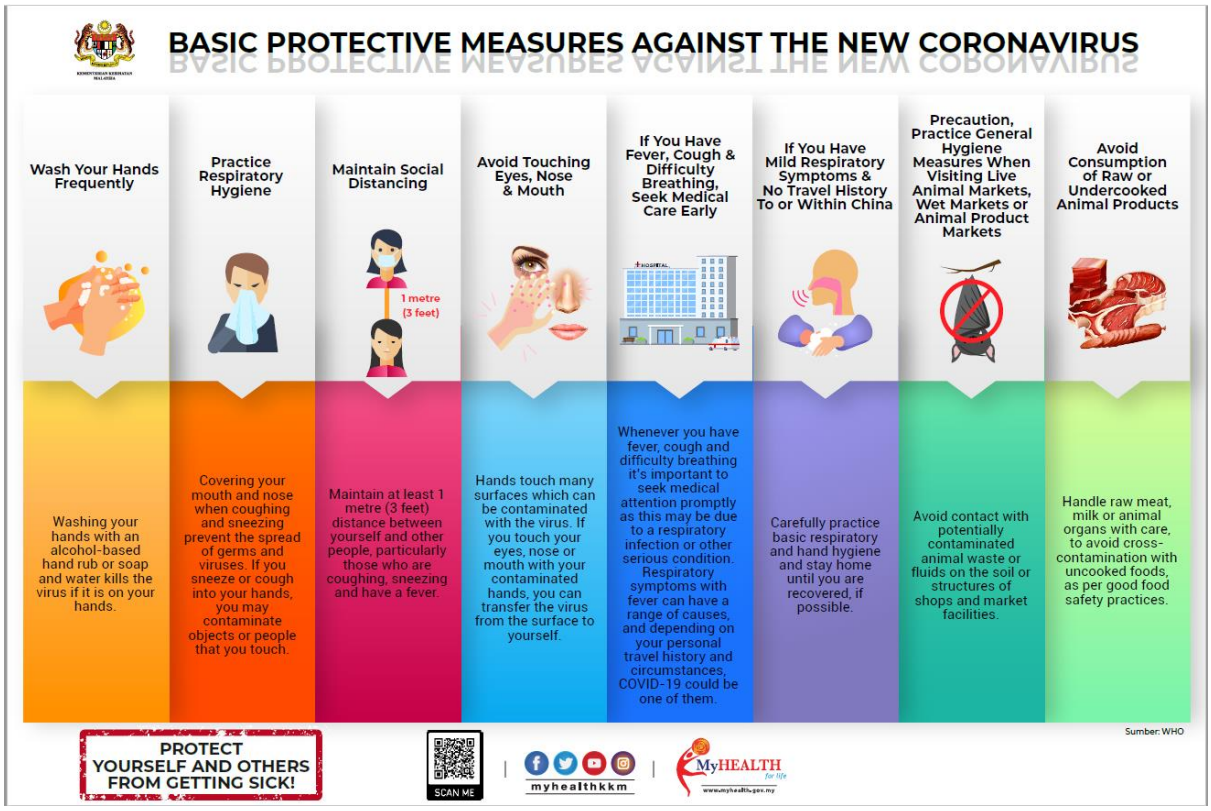
HOW IS CHOLERA TRANSMITTED?

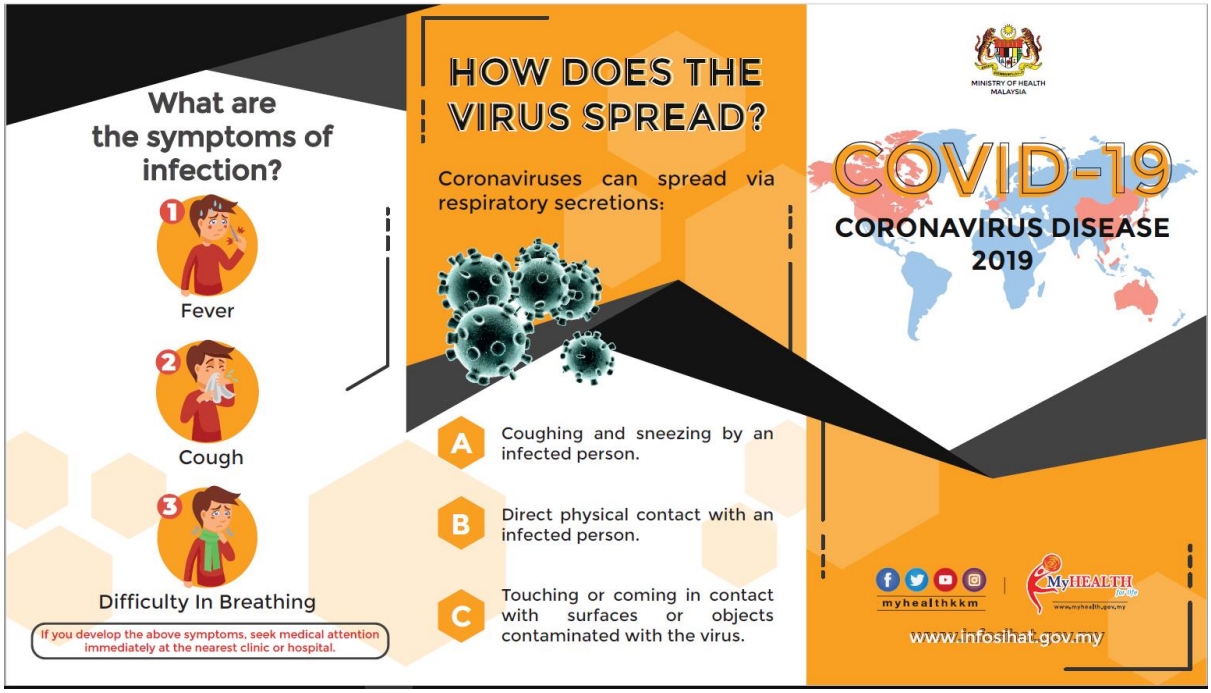
- Cholera disease is spread by eating/drinking contaminated food or water from fecal / vomitus of cholera patients / carriers. Cholera germs can contaminate water supply if improper toilets are used
- Flies transmit cholera germs from cholera carriers' excretion to exposed or uncovered food
- Cholera can be transmitted through contaminated hands by feaces of cholera patients/carriers if not washed before eating or preparing food



SEEK IMMEDIATE TREATMENT

Drink water as much as possible to avoid dehydration


BASIC PROTECTIVE MEASURES AGAINST THE NEW CORONAVIRUS
Wash Your Hands Frequently
Washing your hands with an alcohol-based hand rub or soap and water kills the virus if it is on your hands.
Practice Respiratory Hygiene
Covering your mouth and nose when coughing and sneezing prevent the spread of germs and viruses. If you sneeze or cough into your hands, you may contaminate objects or people that you touch.
Maintain Social Distancing
1 metre (3 feet)
Maintain at least 1 metre (3 feet) distance between yourself and other people, particularly those who are coughing, sneezing and have a fever.
Avoid Touching Eyes, Nose & Mouth
Hands touch many surfaces which can be contaminated with the virus. If you touch your eyes, nose or mouth with your contaminated hands, you can transfer the virus from the surface to yourself.
If You Have Fever, Cough & Difficulty Breathing, Seek Medical Care Early
Whenever you have fever, cough and difficulty breathing it's important to seek medical attention promptly as this may be due to a respiratory infection or other serious condition. Respiratory symptoms with fever can have a range of causes, and depending on your personal travel history and circumstances, COVID-19 could be one of them.
If You Have Mild Respiratory Symptoms & No Travel History To or Within China
Carefully practice basic respiratory and hand hygiene and stay home until you are recovered, if possible.
Precaution, Practice General Hygiene Measures When Visiting Live Animal Markets, Wet Markets or Animal Product Markets
Avoid contact with potentially contaminated animal waste or fluids on the soil or structures of shops and market facilities.
Avoid Consumption of Raw or Undercooked Animal Products
Handle raw meat, milk or animal organs with care, to avoid cross-contamination with uncooked foods, as per good food safety practices.
Sumber: WHO
PROTECT YOURSELF AND OTHERS FROM GETTING SICK!
SCAN ME
myhealthkkm
MyHEALTH


What are the symptoms of infection?
1
Fever
2
Cough
3
Difficulty In Breathing
If you develop the above symptoms, seek medical attention immediately at the nearest clinic or hospital.
HOW DOES THE VIRUS SPREAD?
Coronaviruses can spread via respiratory secretions:
A
Coughing and sneezing by an infected person.
B
Direct physical contact with an infected person.
C
Touching or coming in contact with surfaces or objects contaminated with the virus.
MINISTRY OF HEALTH MALAYSIA
COVID-19
CORONAVIRUS DISEASE 2019
myhealthkkm
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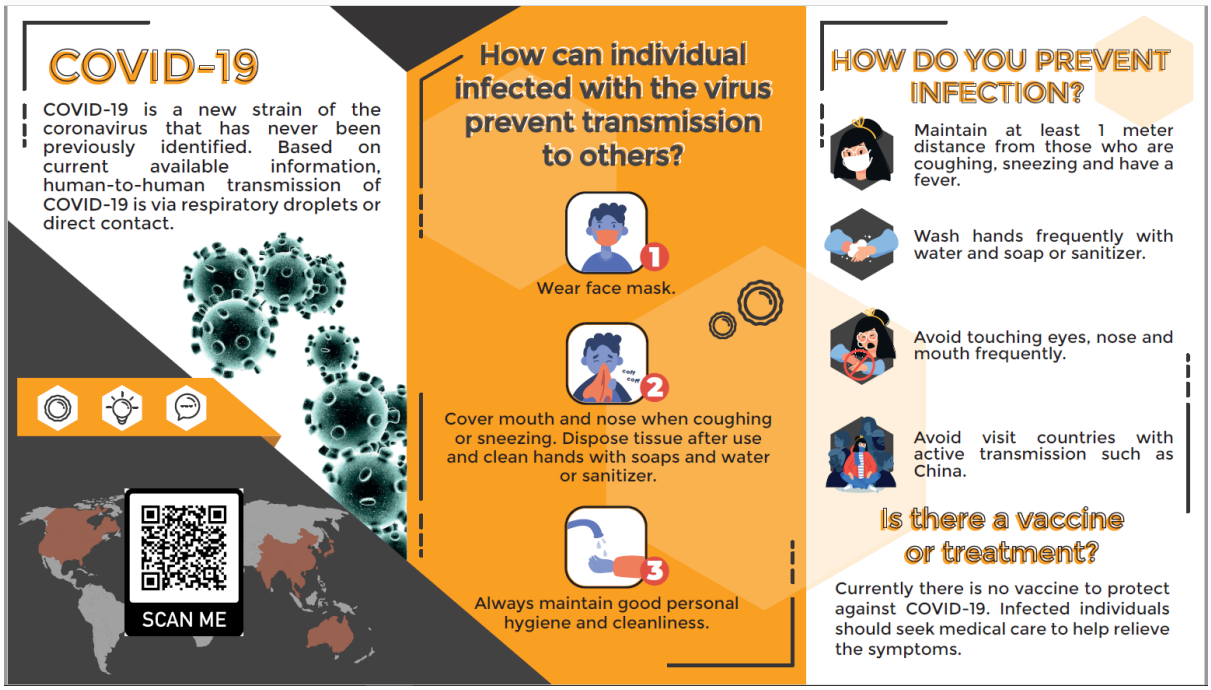

COVID-19
COVID-19 is a new strain of the coronavirus that has never been previously identified. Based on current available information, human-to-human transmission of COVID-19 is via respiratory droplets or direct contact.
SCAN ME
How can individual infected with the virus prevent transmission to others?
1
Wear face mask.
2
Cover mouth and nose when coughing or sneezing. Dispose tissue after use and clean hands with soaps and water or sanitizer.
3
Always maintain good personal hygiene and cleanliness.
HOW DO YOU PREVENT INFECTION?
Maintain at least 1 meter distance from those who are coughing, sneezing and have a fever.
Wash hands frequently with water and soap or sanitizer.
Avoid touching eyes, nose and mouth frequently.
Avoid visit countries with active transmission such as China.
Is there a vaccine or treatment?
Currently there is no vaccine to protect against COVID-19. Infected individuals should seek medical care to help relieve the symptoms.

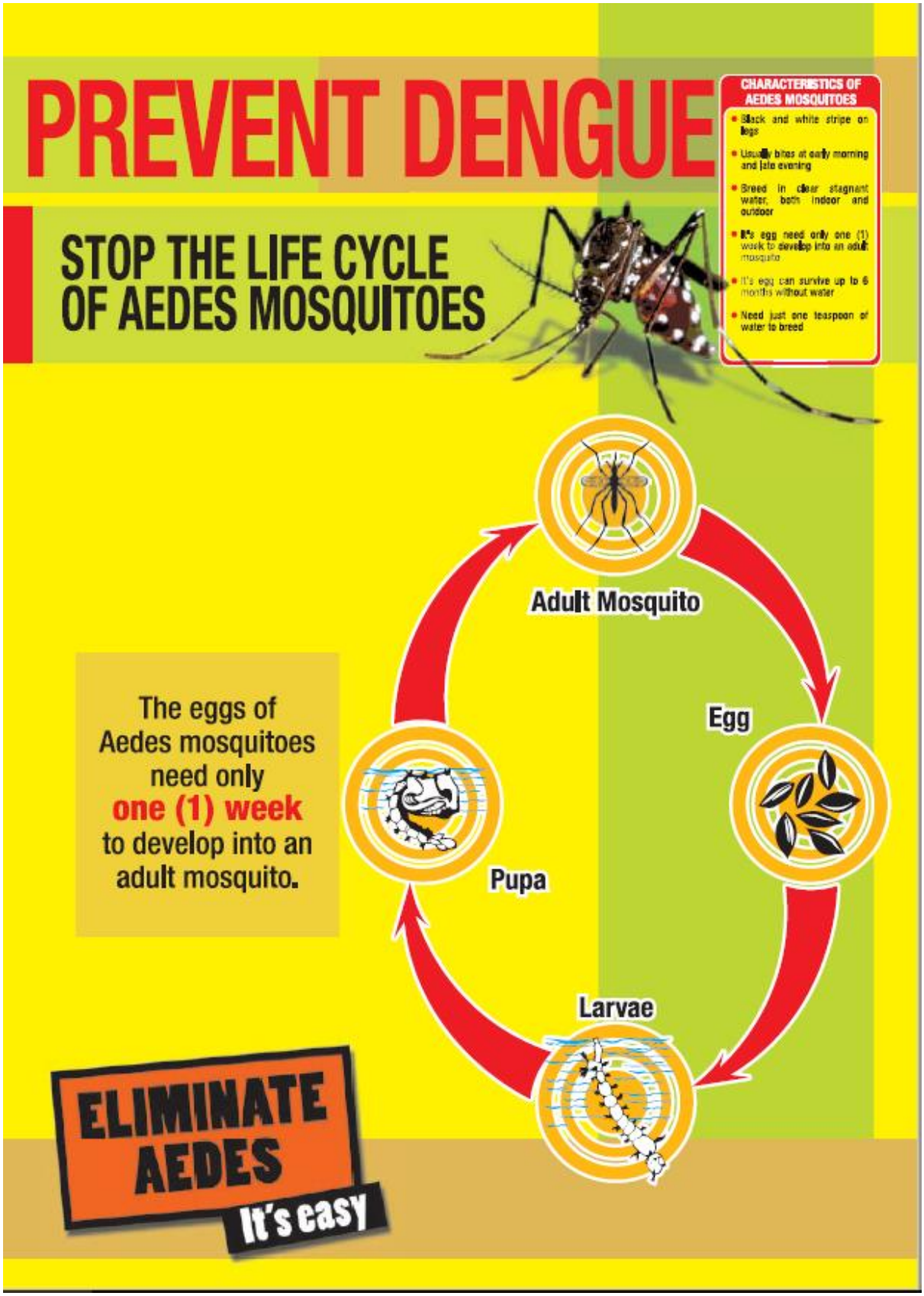

Aedes mosquitoes need only 7 days to develop from eggs to adults
Adult Female Mosquito
Life cycle of the Aedes mosquitoes
7days
Eggs
Larva
Pupa
You can break the Aedes mosquitoes' life cycle by destroying the breeding places inside and outside the house once a week
Published by:
Health Education Division in collaboration with Disease Control Division
Ministry of Health Malaysia
Be Healthy For Life
Just take 10 minutes!!!
Inspect your homes once a week and stop Aedes breeding

Make sure

there are **no Aedes** breeding places in the areas surrounding your house. Do the following actions:

Places to inspect		Breeding Yes	Breeding No	Actions to take	(√)
Inside the house					
Refrigerator under tray				• Scrub and wash every week • Put larvicide *(temephos)*	
Tray under plate racks				• Dispose accumulated water • Avoid using tray	
Ant guards				• Scrub and wash every week • Put larvicide *(temephos)*	
Bath tub				• Scrub and wash every week • Put larvicide *(temephos)*	
Toilet cistern				• Cover properly • Put larvicide *(temephos)* • Repair immediately when faulty	
Toilet bowl				• Put larvicide *(temephos)* • Cover properly and repair immediately	
Pail				• Scrub and wash every week • Cover properly • Keep it upside down when not in use	
Flower vase				• Scrub and wash every week • Put larvicide *(temephos)* • Avoid using water *(wrap the flower stalks with wet wool/paper)*	
Outside the house					
Drums filled with water				• Scrub and wash every week • Put larvicide *(temephos)* • Cover properly • Dispose if not used • Keep it upside down when not in use	
Earthen ware				• Scrub and wash every week • Put larvicide *(temephos)* • Cover properly • Keep it upside down when not in use	

Places to inspect		Breeding Yes	Breeding No	Actions to take	(√)
Flower pot				• Make sure pot does not hold any water	
Flower pot tray				• Scrub and wash every week • Put larvicide *(temephos)* • Avoid using tray	
Tin cans				• Gather and dispose properly • Keep away from rain	
Tyres				• Keep away from rain • Put larvicide *(temephos)* • Store and cover the top	
Hydrophonic containers				• Put larvicide *(temephos)*	
Canvas and all types of plastic sheets				• Dispose any stagnant water • Fold and keep away from rain	
Water containers for pets				• Scrub, wash and change the water weekly	
Polystyrene containers				• Gather and dispose properly	
Drains				• Wash and clean every week	
To be carried out by adults only					
Rain gutters				• Make sure no clogging • Replace and repair when faulty	


PREVENT DENGUE
CHARACTERISTICS OF AEDES MOSQUITOES
Black and white stripe on legs
Usually bites at early morning and late evening
Breed in clear stagnant water, both indoor and outdoor
It's egg need only one (1) week to develop into an adult mosquito
It's egg can survive up to 6 months without water
Need just one teaspoon of water to breed
STOP THE LIFE CYCLE OF AEDES MOSQUITOES
Adult Mosquito
Egg
Pupa
Larvae
The eggs of Aedes mosquitoes need only one (1) week to develop into an adult mosquito.
ELIMINATE AEDES
It's easy


Aedes Breeding Grounds
Inside The House:
• Flower vase
• Water container
• Refrigerator under tray
• Water tank
• And other water containers
Outside The House:
• Used tyres
• Plastic bags, cans and lunch box
• Broken bottles or glass that could hold water
• Roof gutter
• Coconut shells, cocoa pods, banana, bamboo and yam stumps
Prevent Breeding of Aedes Mosquitoes
• Collect all containers that can hold water, such as cans and bottles and dispose them at designated places
• Cover all water containers, or
- add larvicides (temephos) according to recommended dose from the label, or
- change water and scrub the inside of all water containers once a week
• Change water and scrub the inside of flower vases once a week
• Clean plant pot plates and scrub thoroughly to remove Aedes mosquito eggs once a week
• Destroy adult Aedes mosquitoes by using aerosol
Published By:
Vector-Borne Disease Section
Tel : 03-8888 6252 Fax : 03-8888 6251
www.infosihat.gov.my
Ministry Of Health Malaysia

ALERT ON EBOLA VIRUS DISEASE (EVD)

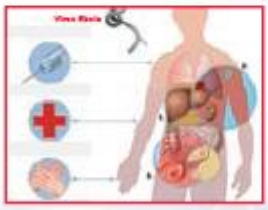
• INTRODUCTION

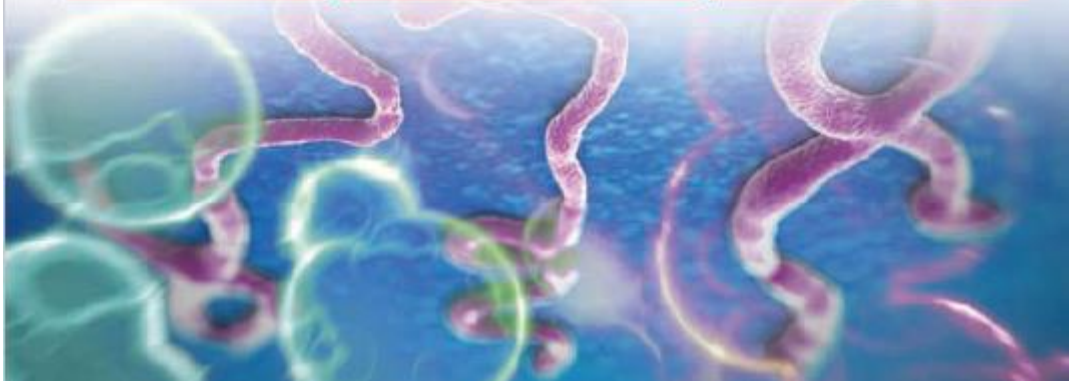
Ebola virus disease (EVD) is a severe, often fatal illness, with high death rate. The illness affects humans and animals such as fruit bats and monkeys. Ebola first appeared in 1976 in two simultaneous outbreaks, in the Democratic Republic of Congo and Sudan, respectively. Since March 2014, the World Health Organization was informed regarding EVD outbreaks involving West African countries (i.e. Guinea, Sierra Leone, Liberia and Nigeria).

• MODE OF TRANSMISSION

You may be exposed to the ebola virus through direct contact with:

- Bodily fluids of a person who is sick with or has died from EVD (e.g. blood, vomit, pee, poop and other fluids).
- Objects contaminated with the virus (e.g. needles, medical equipment etc.).
- Infected animals (by contact with blood or fluids or infected meats).





• SYMPTOMS

Symptoms can appear from 2 to 21 days after exposure:

- Fever
- Headache
- Joint and muscle aches
- Intense weakness
- Vomiting
- Rashes
- Diarrhoea
- Unexplained bleeding

• HEALTH ADVISORY

You are advised to practice the following:

- Maintain good personal hygiene such as frequent hand washing with soap and water or use hand sanitizer regularly.
- Limit contact with healthy individuals around you, once you are symptomatic.

REMINDER!

Monitor your health status within 21 days upon returning from the affected countries and seek medical attention **IMMEDIATELY** from the nearest health facility for further assessment if you have the symptoms as mentioned

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Prevention

- Hepatitis B vaccination 3 doses (second dose given a month after the first dose, third dose given 5 months after second dose)
- Avoid tattooing or piercing unless you are sure the equipment used are new
- Do not share needles, shavers, nail clippers, toothbrushes and other personal items that could be contaminated with blood
- Use gloves when carrying out work that exposes you to blood and body fluids

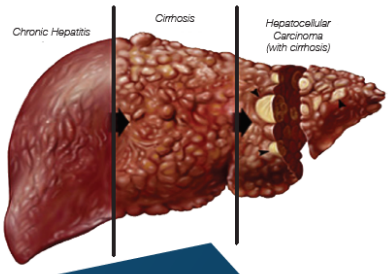
If you think that you may be infected, please go for screening at the nearest clinic or hospital.

If you are infected with Hepatitis B

- Consult your doctor on treatment option
- Ensure that you have regular follow-up as determined by your doctor
- Have adequate rest
- Avoid alcohol
- Do not take over-the-counter medication (modern or traditional including vitamin) without your doctor's advice
- Practise a healthy lifestyle
- Practise safe sex
- Do not donate blood or organ
- Inform your partner about your Hepatitis B status. Advice him/her to undergo screening and get immunised
- Avoid activities that would contribute to the spread of the disease

Hepatitis B

More infectious than HIV



For futher information, please contact the nearest health clinic or hospital, or refer to our website

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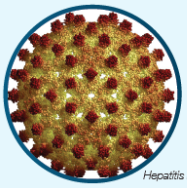
What is hepatitis B

Inflammation of the liver caused by *Hepatitis B Virus* (HBV).



Hepatitis B Virus

Symptoms may be mild or severe. Some recovered (acute infection) but others (5%) may develop prolonged (chronic) infection.

Acute Hepatitis B Disease

- A short term infection that occurs within 6 month after infected with Hepatitis B virus
- Most acute disease recovered completely
- Recovered patient will develop lifelong immunity

Sign of symptoms :

- Fever
- Lethargy
- Loss of appetite
- Nausea
- Vomiting
- Abdominal pain
- Jaundice
- Tea-coloured urine
- Clay Pale – coloured stools

Chronic Hepatitis B Disease

Refers to lifelong infection with Hepatitis B virus. It can cause serious health problem such as :

- Liver damage
- Cirrhosis (chronic damaging to liver cells)
- Liver failure
- Liver cancer

Chronic infection usually occurs among patient infected early in life

How does it spread

- Blood and blood products
- Body fluids / sexual intercourse
- Tattooing
- Sharing of bore / injection of needles
- From an infected mother to the child during delivery
- Sharing of personal items (razors, toothbrushes, nail clippers)

It does not spread by

- Hugging
- Kissing
- Holding / shaking
- Breast milk
- Sharing of food and utensils
- Coughing or sneezing

LOVE YOUR CHILD • PREVENT THE HAND, FOOT & MOUTH DISEASE

Choose Health
Be Healthy For Life

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Health Education Division, Ministry of Health Malaysia
Website: www.myhealth.gov.my • www.infosihat.gov.my
BUT. 3, KKM (CETAK/PB) 236/2008, BI 10,000

Prevent the Hand, Foot & Mouth Disease

Guidelines For Parents and Carers

- The hand, foot & mouth disease is caused by a virus (of the enterovirus group) that usually infects children below the age of 5.
- Infection occurs due to lack of personal hygiene or exposure to the virus in crowded places and environments.
- The disease is contracted through direct contact with infected people, and their faeces, saliva and nasal secretions.
- Most of the cases are not fatal. However, in serious cases it can damage the heart and the nervous system.
- To prevent the infection from spreading, every family member is advised to practise good personal hygiene.

Signs and Symptoms of the Disease

- Rashes and blisters on hands, feet and the napkin area
- Throat and mouth ulcers
- Fever
- Headaches
- Loss of appetite

Prevention Steps

- Wash hands with soap and clean water before preparing food, after going to the toilet, after changing diapers and after washing your child's faeces.
- Cover your mouth and nose with tissue paper when sneezing or coughing.
- Do not share personal items like toothbrushes, handkerchiefs, towels, blankets, cups, forks and spoons.

- After work, take a shower and change your clothes before playing with your baby or younger children.
- Clean objects that might have come into contact with your child's saliva; such as toys, table surfaces, chairs and floor surfaces.
- Refrain from bringing younger children to crowded public places such as shopping centres, cinemas, swimming pools, markets and bus stations.

If your child shows symptoms of the hand, foot & mouth disease:

- Take the child to the nearest hospital or clinic immediately.
- Do not send the child to the nursery, the babysitter's place or to school.
- Wipe all secretions from the child's mouth and nose with tissue paper.

e. What is the difference between antiviral and influenza vaccine?

Antiviral is a medicine for treating infected patients. Timely administration can help reduce the impact of the disease's symptoms and signs as well as lessen the possibility of complications.

Vaccine is administered as a precaution. Vaccination uses the influenza vaccine available in the market to protect individuals from getting infected or to reduce the symptoms of the virus infection.

The Ministry of Health recommends influenza vaccination for those planning to visit countries with temperate climates that experience winter and for those planning pilgrimage to Mecca. However, vaccination is only provided by certain clinics or private hospitals and the individuals are required to pay for it.

f. The current influenza situation in Malaysia

According to studies, influenza infection occurs in Malaysia all year round. However, the number of cases increase during rainy season from April till June and November till January.

In countries with temperate climates, the influenza infection rises during winter.

WHAT IS AVIAN INFLUENZA?

Avian influenza or bird flu is a contagious disease that normally infects poultry and birds. It can also infect humans.

WHAT IS INFLUENZA EPIDEMIC?

Influenza epidemic occurs when there is an outbreak of influenza among people in a certain location or country.

WHAT IS INFLUENZA PANDEMIC?

Influenza pandemic occurs when influenza infects a large part of the world population. This occurs due to the emergence of a new influenza virus and the victims do not have the body immunity to fight that particular strain of virus.

Influenza virus can spread through droplets of liquid from the mouth and nose when speaking, sneezing or coughing. The virus then enters the body through the respiratory tract.

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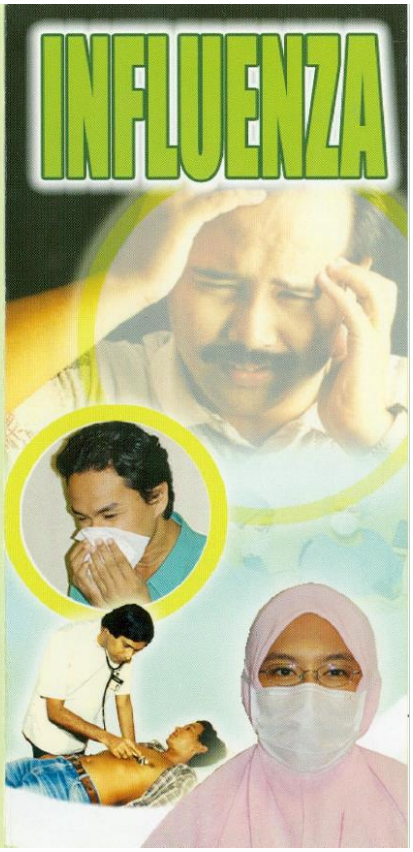
http://dph.gov.my/survelans/
AV1/(2),02/'06(50,000-8))



INFLUENZA

Influenza or flu is a contagious disease caused by the Influenza Virus.

a. Influenza Virus

There are 3 subtypes of Influenza Viruses, namely A, B and C. All three can infect humans, with Virus A being the most dangerous as it infects both animals and humans.

Type A influenza virus mutates (genetic change) to produce a new more dangerous influenza virus that can cause epidemic and pandemic.

The influenza virus is spread through droplets from the mouth and nose when speaking, sneezing or coughing. The virus then enters the body through the respiratory tract.

b. Is influenza and common cold the same?

No. Even though both of them have similar symptoms, Influenza's symptoms are more severe and may cause life-threatening complications.

Comparison between influenza and the common cold

Symptom	Influenza (Flu)	Common cold
Fever	High. Normally above 38°C	Low, below 38°C
Fatigue	Severe, lasting up to 2-3 weeks	Very mild
Muscle/joint pains	Severe	Mild
Cough	Severe, without phlegm in the beginning	None/Mild
Cold/ Runny nose	None/mild	Severe
Sneeze	Frequent	Occasionally
Sore throat	Severe	None/Mild
Headache	Severe	Mild
Cause	Influenza virus A, B or C	Adenovirus, Rhinovirus, Parainfluenza virus and others.

c. What is the treatment for influenza?

Symptomatic treatment is recommended.

- Drink warm water and soup to relieve sore throat and cough.
- Maintain a balanced diet and sufficient sleep/rest.
- Avoid stress as it can weaken the body's immune system
- If needed, get treatment from clinics or hospitals.

d. How can we prevent influenza from spreading?

i. Cover mouth and nose with a tissue or handkerchief when sneezing or coughing.

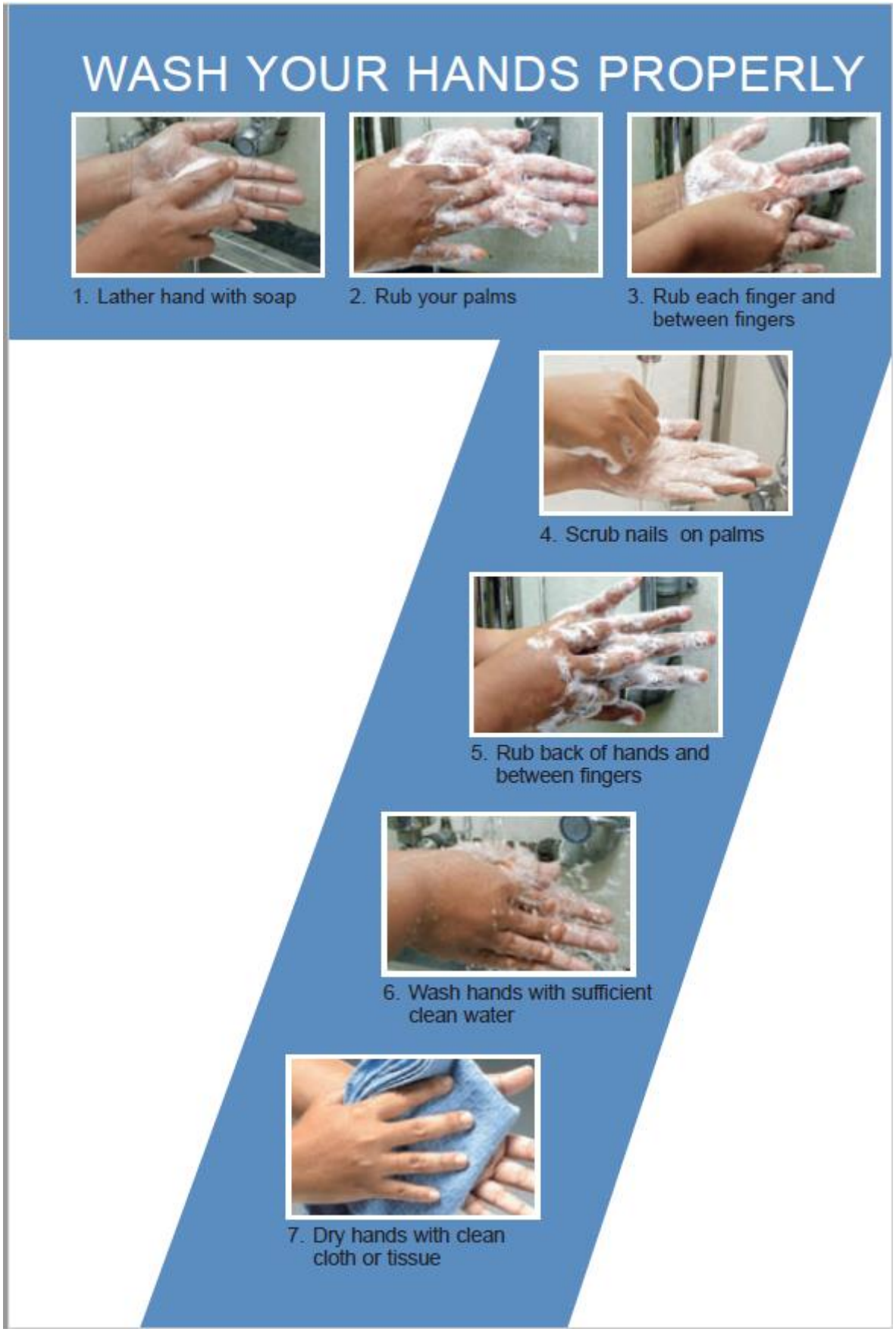
ii. Wash hands with soap after coughing/sneezing or touching a contaminated surface.

iii. Dispose used tissues into the dustbin.

iv. Wear a mask while infected with influenza.

v. Avoid being in public places when having a cold or influenza.


PANDEMIC INFLUENZA
WHAT YOU NEED TO KNOW
KEEP YOUR
HANDS CLEAN


WASH YOUR HANDS PROPERLY
1. Lather hand with soap
2. Rub your palms
3. Rub each finger and between fingers
4. Scrub nails on palms
5. Rub back of hands and between fingers
6. Wash hands with sufficient clean water
7. Dry hands with clean cloth or tissue


Call me BETA STREPTOCOCCI Group A ... I'm delighted to give you a sore throat
Hi I'm STAPHYLOCOCCUS How would you like a big zit or boil?
My name is BACILLUS SPECIES and I'm a normal contaminate
I'm known as INFLUENZA A. Among other things, I love to give you pneumonia
I am CLOSTRIDIUM DIFFICILE. I cause colitis
WHAT ARE THE DANGERS LYING ON YOUR HAND?
BOO! I'm E coli - short for ESCHERICHIA coli, I cause nice things like diarrhoea or urinary tract infections.


PRACTICE WASHING HANDS:
• After using the toilet
• Before eating
• Before and while preparing food
• When you touch raw food materials, contaminated surfaces; your face, nose, ears or other parts of the body
• Whenever your hands are dirty
REMOVE YOUR RING AND BANGLES/ BRACELETS BEFORE WASHING HANDS
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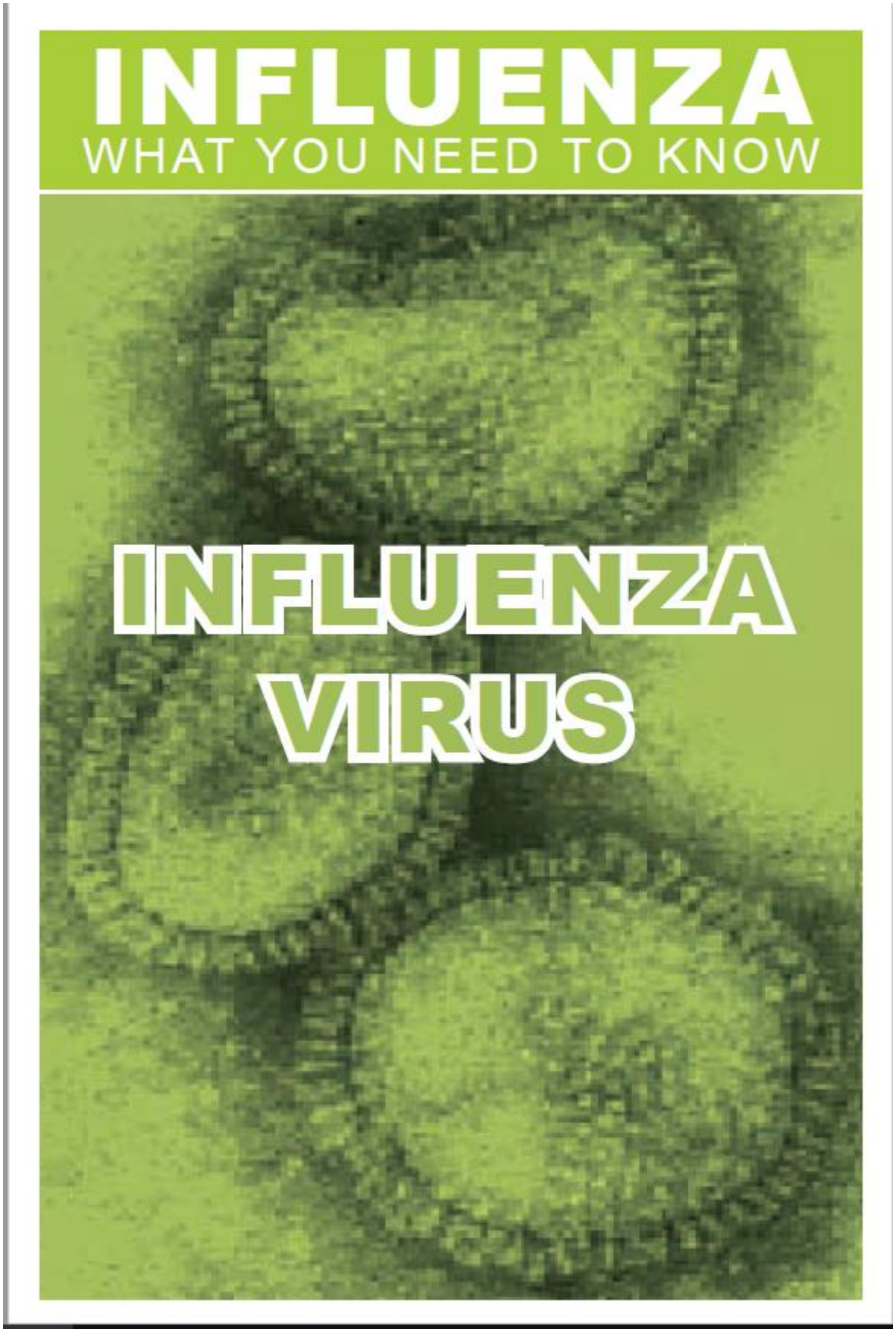
INFLUENZA
WHAT YOU NEED TO KNOW
INFLUENZA
VIRUS

INFLUENZA

Influenza or flu is a contagious disease caused by the influenza virus

A. INFLUENZA VIRUS

There are 3 types of influenza virus, namely A, B and C. All types can infect human. Influenza virus A is the most dangerous as it infects both animals and human. It can mutate to produce a new more novel influenza virus that can cause epidemic and pandemic outbreak.

The influenza virus is spread through droplets from the mouth and nose when speaking, sneezing or coughing. The virus then enters the body through the respiratory tract.

B. IS INFLUENZA AND COMMON COLD THE SAME?

No.

Even though both have similar symptoms, the symptoms for influenza are more severe and may cause life threatening complications.

Comparison between influenza and the common cold:

SYMPTOM	INFLUENZA (FLU)	COMMON COLD
Fever	High. Normally above 38ºC	Low, below 38ºC
Fatigue	Severe, lasting up to 2 - 3 weeks	Very mild
Muscle / joint ache	Moderate to severe	Mild
Cough	Severe, without phlegm in the beginning	None / Mild
Cold / runny nose	None / Mild	Severe
Sneezing	Frequent	Occasionally
Sore throat	Moderate to severe	None/Mild
Headache	Moderate to severe	Mild
Cause	Virus influenza A, B or C	Adenovirus, Rhinovirus, Parainfluenza virus, Corona virus and others

C. WHAT IS THE TREATMENT FOR INFLUENZA?

Symptomatic treatment is recommended. There is no specific treatment for influenza but an antiviral agent may be considered. You are advised to consult your doctor.

You can also take the following actions on your own:

- Take fever medication such as paracetamol
- Drink warm water or fluids to relieve sore throat and cough
- Maintain a balanced diet and sufficient sleep or rest
- Avoid stress as it can weaken your immune system
- If signs and symptoms persist or worsen get treatment from your doctor

D. HOW CAN WE PREVENT INFLUENZA FROM SPREADING?

i. Cover mouth and nose with a tissue or handkerchief when sneezing or coughing

ii. Wash you hands with soap and clean water each time after:
   - Coughing or sneezing
   - Touching raw food materials and contaminated surfaces
   - Touching your face, ears, nose, mouth and other parts of the body

iii. Dispose used tissues into the dustbin

iv. Wear a face mask when having symptoms

v. Avoid public places

E. WHAT IS THE ROLE OF INFLUENZA VACCINE?

The influenza vaccine is administered as a preventive vaccination. The seasonal influenza vaccine available in the market may protect normal healthy adult from influenza if there is a good match between vaccine strain and circulating viral strain.

The Ministry of Health recommends the influenza vaccination for those planning to visit countries during winter and pilgrims to Mecca. The vaccination is only provided by certain private clinics and private hospitals.

BE SURE YOU KNOW THE DIFFERENCE!

You should be able to understand and differentiate:

AVIAN INFLUENZA

Avian influenza or bird flu is a contagious disease that normally infects poultry and birds. It can also infect human.

INFLUENZA EPIDEMIC

An influenza epidemic is an outbreak of influenza among the people in a certain location or country.

INFLUENZA PANDEMIC

An influenza pandemic occurs when influenza infects a large portion of the world's population. This is due to the emergence of a new novel influenza virus which the population does not have the immunity yet to fight.

The available seasonal influenza vaccine does not give protection against pandemic influenza virus.

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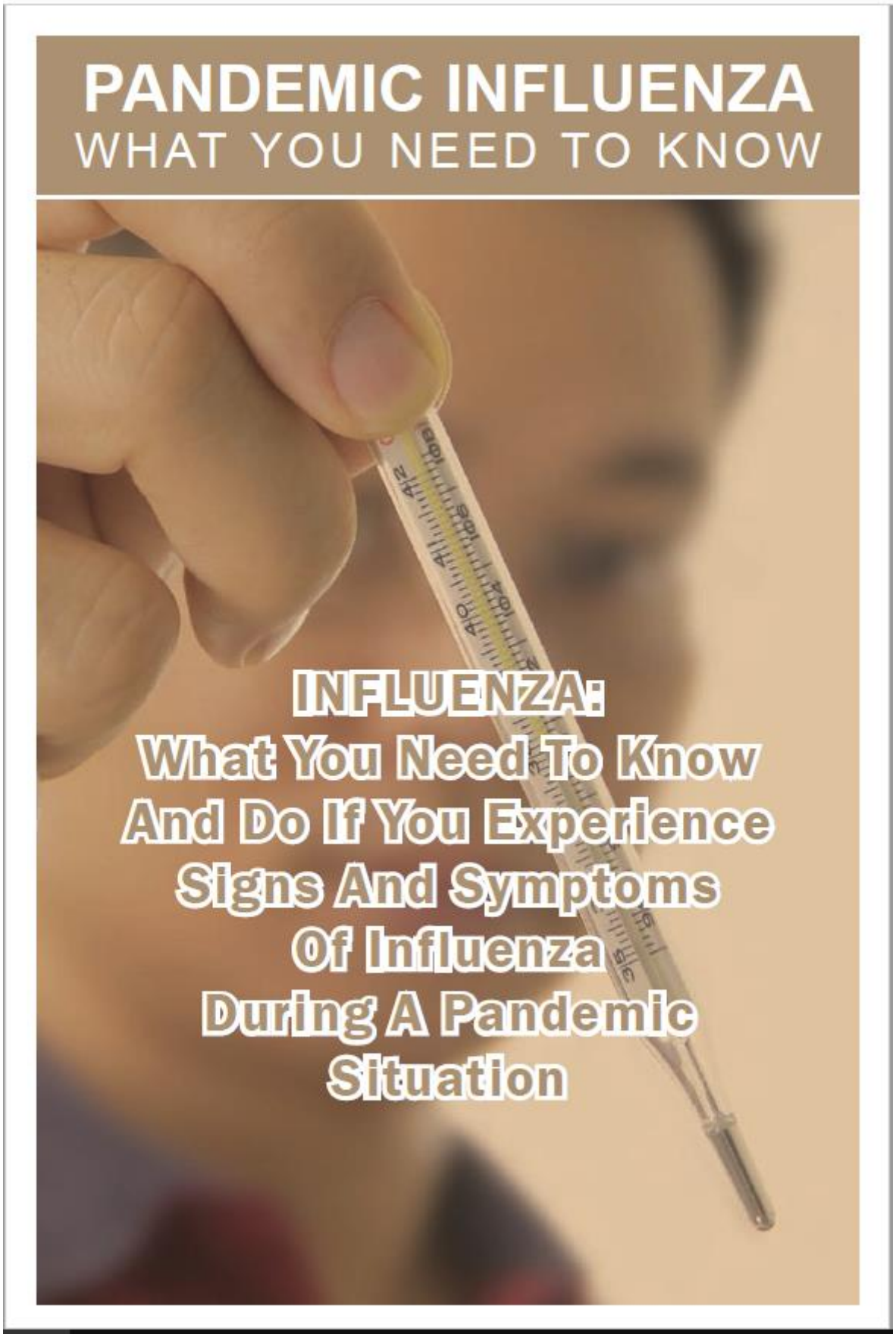
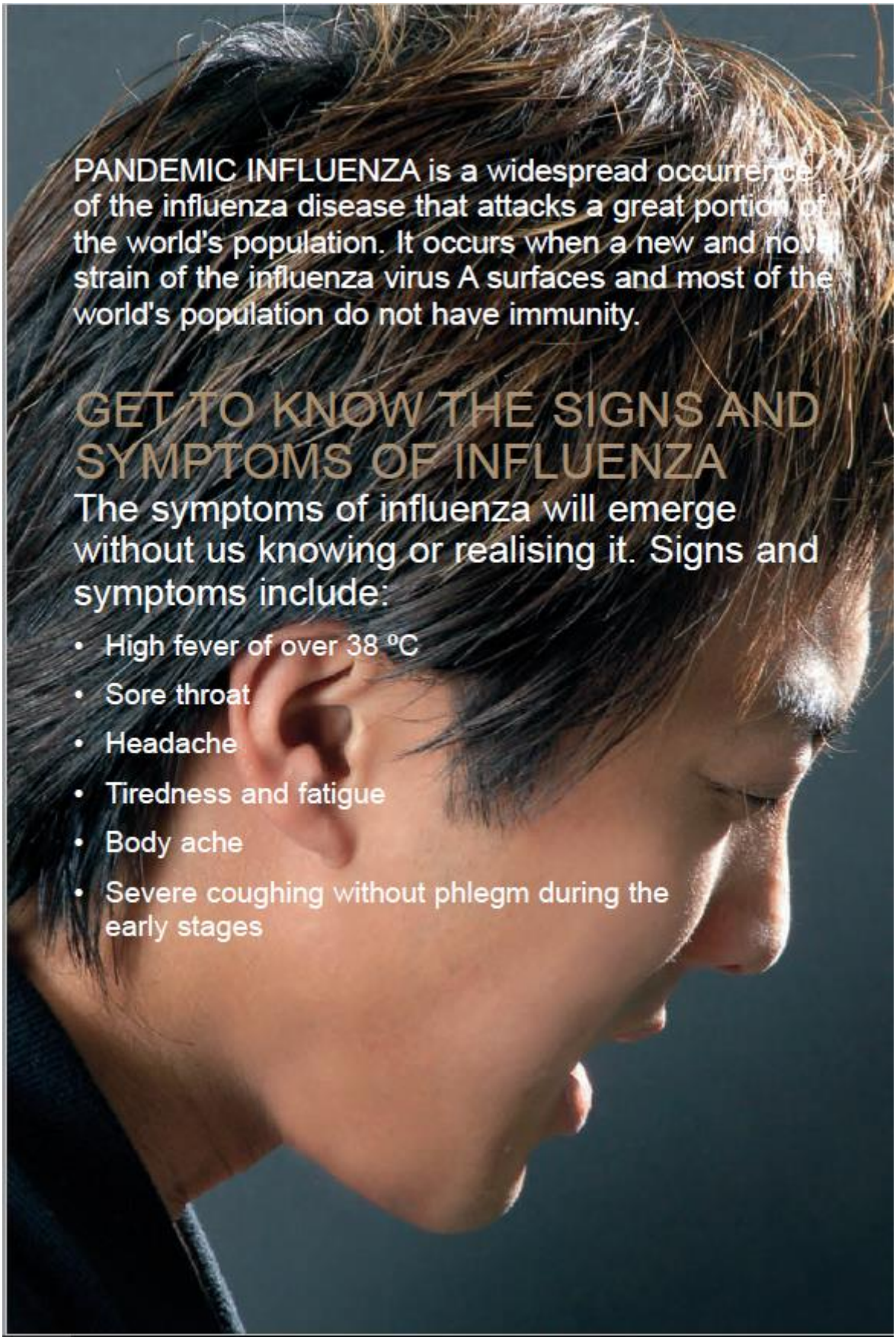

PANDEMIC INFLUENZA
WHAT YOU NEED TO KNOW
INFLUENZA:
What You Need To Know
And Do If You Experience
Signs And Symptoms
Of Influenza
During A Pandemic
Situation


PANDEMIC INFLUENZA is a widespread occurrence of the influenza disease that attacks a great portion of the world's population. It occurs when a new and novel strain of the influenza virus A surfaces and most of the world's population do not have immunity.
GET TO KNOW THE SIGNS AND SYMPTOMS OF INFLUENZA
The symptoms of influenza will emerge without us knowing or realising it. Signs and symptoms include:
• High fever of over 38 ºC
• Sore throat
• Headache
• Tiredness and fatigue
• Body ache
• Severe coughing without phlegm during the early stages

GET TO KNOW THE NORMAL BODY TEMPERATURE

Normal body temperature differs according to the places at which the readings were taken:

Mouth	35.5°C to 37.5°C (95.9°F to 99.5°F)
Ear	35.8°C to 38°C (96.4°F to 100.4°F)
Armpits	34.7°C to 37.3°C (94.5°F to 99.1°F)
Rectum (anus)	36.6°C to 38°C (97.9°F to 100.4°F)

ACTIONS TO BE TAKEN IF YOU ARE EXPERIENCING THE SIGNS AND SYMPTOMS OF INFLUENZA

If you are experiencing any signs and symptoms of the influenza disease, you are advised to:

- Take fever medication such as paracetamol
- Drink a lot of water
- Get a lot of rest
- Avoid alcohol and smoking
- Stop visiting public places or gatherings to avoid spreading the disease to those around you
- Cover your nose and mouth with a mask, tissue paper or handkerchief when you cough or sneeze
- Inform the relevant authorities about your health condition

PAY ATTENTION TO THE WARNING SIGNS THAT COULD THREATHEN THE LIVES OF CHILDREN

- Difficulty in breathing
- Lips turning blue
- Constantly exhausted or unable to move
- Lethargic, stupor or difficulties in getting out of bed
- Stiff neck
- Looks confused
- Having fits or convulsion
- Have not been urinating for the past 12 hours

PAY ATTENTION TO THE WARNING SIGNS THAT COULD THREATHEN THE LIVES OF ADULTS

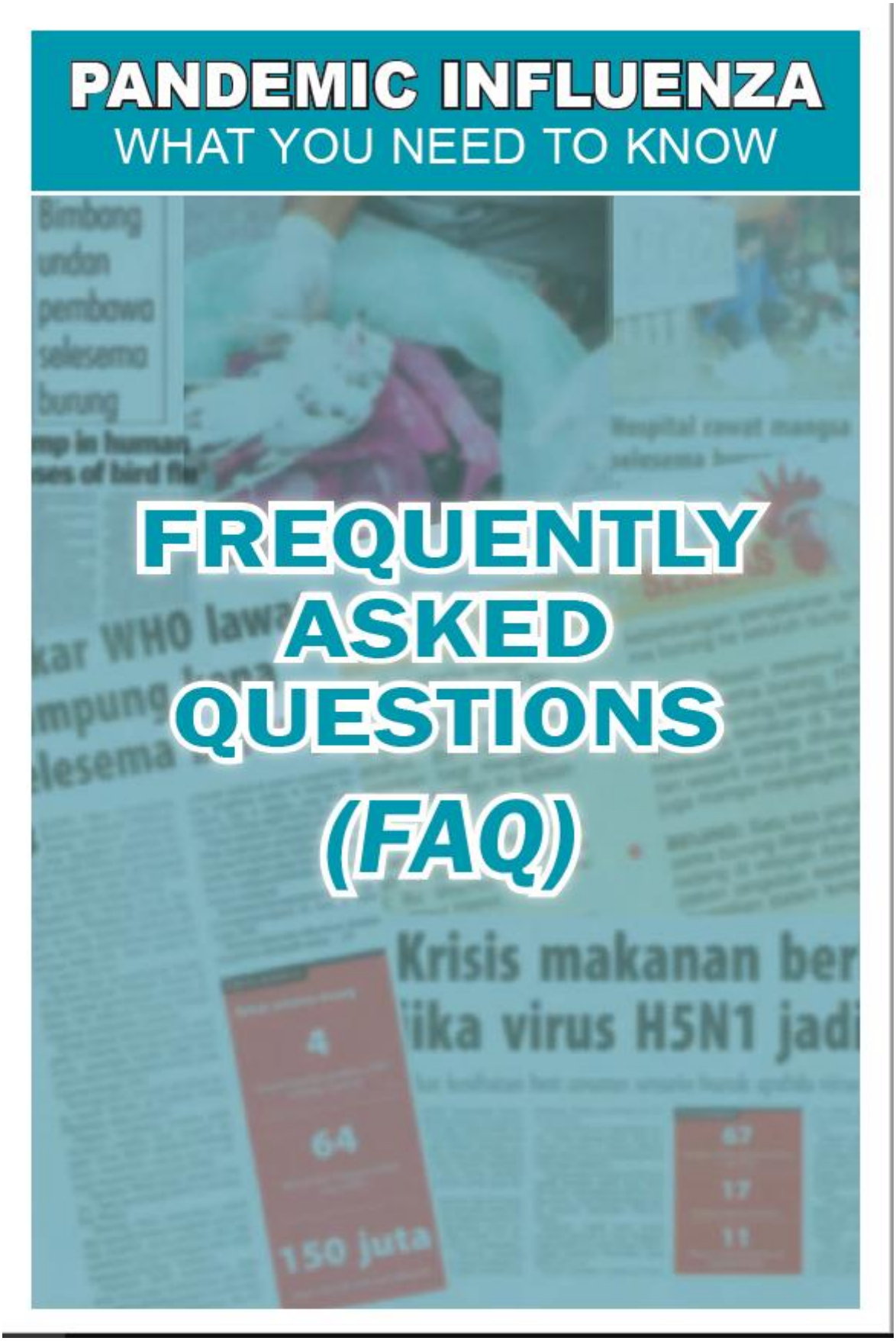
- Prolonged fever for more than 5 days
- Difficulty in breathing, even while resting
- Lips turning blue
- Chest pains while breathing in (inhaling)
- Coughing without phlegm
- Feels that you are recovering, but suddenly having fever and compressed breathing all over again
- Looks confused and lacking orderliness
- Becoming unconscious

IF YOU EXPERIENCE ANY OF THE WARNING SIGNS ABOVE, PLEASE PROCEED IMMEDIATELY TO THE SPECIAL COUNTERS AT THE DESIGNATED HOSPITALS

Goose Health

Be Healthy For Life

Published by:
MINISTRY OF HEALTH MALAYSIA
Tel: 03-8881 0200/300
Website: http://dph.gov.my/survelans/
http://www.infosihat.gov.my
PI.7 (versi 1), 12/2006 (BI 100,000)


PANDEMIC INFLUENZA
WHAT YOU NEED TO KNOW
FREQUENTLY ASKED QUESTIONS (FAQ)

1. What is pandemic influenza?

A pandemic is a global disease outbreak. An influenza pandemic occurs when a new influenza A virus emerges for which there is little or no immunity in the human population, and begins to cause serious illness and then spreads easily person-to-person worldwide.

2. What are the symptoms of influenza?

- High fever (temperature more than 38ºC)
- Sore throat
- Headache
- Fatigue
- Muscle / joint ache
- Severe cough without phlegm in the beginning

Patients may also suffer from:

- Conjunctivitis
- Diarrhoea
- Shortness of breath

3. How do people get infected?

Infection is by droplets from an infected person. It occurs through close contact (less than 3 feet or 1 meter) with the infected person or contact with contaminated surfaces/objects.

4. What precautions can we take?

- Use personal protection equipment such as a face mask when in contact with patients
- Practice good personal hygiene and lead a healthy lifestyle
- Consult your doctor early if you have signs and symptoms of influenza

5. Is there any specific treatment for influenza?

NO. Treatment is only symptomatic. Late treatment may result in mortality.

6. Is the available vaccine effective against pandemic influenza?

NO! Vaccines that are currently available in the market do not give specific protection against pandemic influenza.

7. Is it safe to visit other countries during an influenza pandemic?

AVOID DOING SO! If necessary, consult the Ministry of Health before travelling.

8. What are the differences between INFLUENZA, AVIAN INFLUENZA and PANDEMIC INFLUENZA?

Influenza is the respiratory disease caused by infection with the Influenza A, B or C virus. Mode of spread is by droplets through coughing and sneezing from an infected person. The disease occurs worldwide, more common and more severe in cold and temperate countries, where it is known as a seasonal flu.

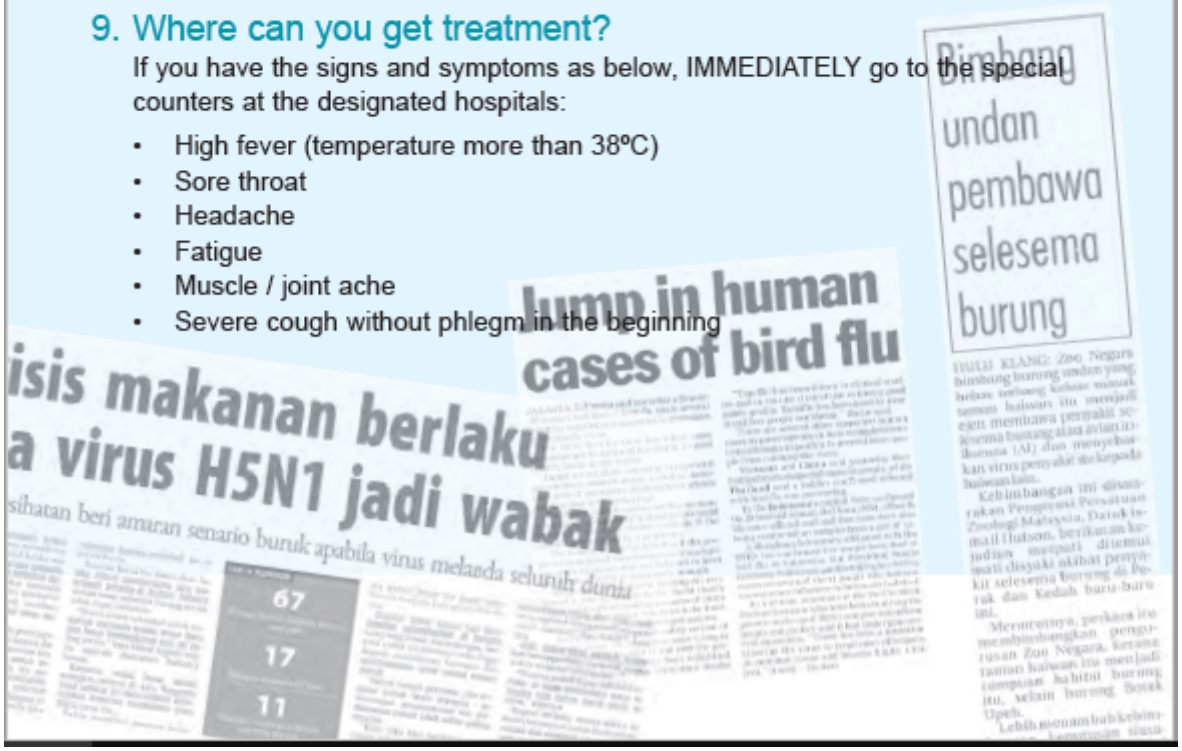
Avian Influenza also known as bird flu is a viral infection among birds and poultry. In certain conditions, these Highly Pathogenic Avian Influenza virus may infect humans causing severe symptoms and death.

The avian influenza virus may undergo rapid genetic changes. Such changes may result in a new influenza virus subtype that can infect humans and spread easily from person to person, resulting in Pandemic Influenza.

9. Where can you get treatment?

If you have the signs and symptoms as below, IMMEDIATELY go to the special counters at the designated hospitals:

- High fever (temperature more than 38ºC)
- Sore throat
- Headache
- Fatigue
- Muscle / joint ache
- Severe cough without phlegm in the beginning



10. What should you do if you are infected?

i. Cover your mouth and nose with a mask or handerchief

ii. Inform the authorities for immediate actions OR go direct to the special counters at the designated hospitals. DO NOT use public transportation!

iii. Minimize contact with other people

11. Can this disease cause death?

Risk of death is high due to complications that may arise among the children, elderly and those with other chronic diseases such as lung and heart diseases.

Be Healthy For Life

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PI.6 (versi 1), 12/2006 (BI 100,000)


PREVENT
INFLUENZA A
(H1N1)
Travelling Abroad. Precautions To Observe:
Travel to Influenza A(H1N1) affected countries
Travel to the affected countries* should be postponed. If you have to travel, please observe the following measures:
• Keep informed of the areas with outbreaks or high incidence of Influenza A(H1N1).
• Avoid crowded places.
• Avoid direct contact with Influenza A(H1N1) cases. If you need to be in close contact with cases of Influenza A (H1N1), use an appropriate protective mask.
• Observe personal hygiene at all times. Wash your hands frequently with soap and water.
• Cover your nose and mouth with tissues or handkerchief when you cough or sneeze. Dispose tissues properly. Wash your hands thoroughly with soap and water.
• If you fall ill, seek IMMEDIATE treatment.
Returning from affected countries
Observe the following measures:
• Avoid close contact with other people for 7 days.
• Seek treatment from the nearest doctor immediately if within this period you develop flu-like symptoms such as
- Fever
and any one of these;
- Cough
- Difficulty in breathing
- Sore throat
- Headache
- Body ache
• Inform the doctor that you have visited the Influenza A (H1N1) affected country/area.
*For current update of Influenza A(H1N1) affected countries/areas please refer to www.moh.gov.my or www.who.int/
Crisis Preparedness and Response Centre (CPRC)
Tel: 03 8881 0200 / 0300
MINISTRY OF HEALTH MALAYSIA
www.moh.gov.my
www.myhealth.gov.mywww.infosihat.gov.my

Wash your hands properly

1. Lather hand with soap
2. Rub your palms
3. Rub each finger and between fingers
4. Scrub nails on palms
5. Rub back of hands and between fingers
6. Wash hands with sufficient clean water
7. Dry hands with clean cloth or tissue

Practise Personal Hygiene

Wash hands often with soap. When handwashing facilities are not available, use an appropriate antiseptic hand cleaner or antiseptic towelettes.

Cover your nose and mouth with tissue or handkerchief when coughing or sneezing

Practise healthy life style including adequate sleep, eating nutritious food and keeping physically active

Ministry of Health Malaysia

INFLUENZA A(H1N1)

PROTECT YOURSELF

Wash hands

Wash your hands often with soap and water thoroughly, especially after coughing and sneezing.

Cover nose and mouth

Cover your nose and mouth with tissue or handkerchief when coughing or sneezing. Throw tissue in the trash after using.

Avoid touching your eyes, nose and mouth

Avoid touching your eyes, nose and mouth with hands. Germs may spread this way.

INFLUENZA A(H1N1) Frequently Asked Questions (FAQs)

1 *What is Influenza A (H1N1)?*

Influenza A(H1N1) is highly contagious acute respiratory disease infecting humans caused by a new virus, the result of a mutation created by the mixing of the pig, bird and human influenza virus genes.

2 *Where have the human cases occurred ?*

Current information reveal that the earliest cases infected with new virus was first reported in Mexico in April 2009. Subsequently cases are been reported from several other countries across the world.
For current updates of affected countries, please refer to www.moh.gov.my and www.who.int.

3 *What are the signs and symptoms of Influenza A (H1N1)?*

Early signs of Influenza A(H1N1) are flu-like, including fever, cough, headache, muscle and joint pain, sore throat and runny nose, and sometimes vomiting or diarrhoea.

4 *How do people become infected with Influenza A (H1N1)?*

The spread begins when infected people cough or sneeze, infected droplets get on their hands, drop onto surfaces, or are dispersed into the air. An uninfected person can breathe in contaminated air, or touch infected hands or surfaces, and thus be exposed.
This is known as the human to human transmission of Influenza A(H1N1)

5 *Is there any confirmation of transmission between pigs and humans at this point?*

No.

6 *What is the advice to infected persons ?*

- Seek medical attention and treatment from the nearest doctor.
- To prevent spread, infected persons should cover their mouth and nose appropriately when coughing and sneezing, and wash their hands regularly and thoroughly with soap and water;
- If you get sick with influenza, stay at home and limit contact with others to keep from infecting them. Avoid touching your eyes, nose or mouth since secretions from them contain the virus and can infect others
- Avoid going to crowded/public places and/or using public transport especially when you are sick or have the influenza sign and symptoms.

7 *How long can an infected person spread the Influenza A(H1N1) disease to others ?*

Person(s) with Influenza A(H1N1) virus infection should be considered potentially contagious as long as they are symptomatic and possibly for up to 7 days following the onset of the illness. Children, especially the younger ones, might potentially be contagious for longer periods.

8 *How can you protect yourself from getting infected with the disease?*

There is no vaccine currently available to protect against Influenza A(H1N1). However, there are certain actions that can help to reduce the spread of the virus:

- Avoid close contact with persons who appear unwell and have fever and cough;
- Wash your hands with soap and water thoroughly and often;
- Avoid touching your face, especially your nose and mouth, with your hands to minimize infection;
- In the event of being in an affected area, avoid crowded places and stay indoors;
- Stay informed of the situation of the disease and of the appropriate measures taken to avoid being infected;
- Practise good health habits including adequate sleep, eating nutritious food and keeping physically active.

9 *Is there a human vaccine available now to protect from Influenza A(H1N1)?*

No. Current seasonal human influenza vaccine does not provide protection from the current influenza A(H1N1) virus. It is unknown whether the seasonal vaccines can provide any cross protection to the ongoing influenza A(H1N1) virus infection in Mexico, United States of America and other affected parts of the world.

10 *Will there be a new vaccine developed for the current infection?*

Yes, WHO is currently working towards development of such a vaccine. According to WHO, it would take about 4 to 6 months to manufacture.

Crisis Preparedness and Response Centre/CPRC,
Ministry of Health Malaysia
Tel: 03-88810200
03-88810300
cprc@moh.gov.my
www.moh.gov.my

ROLES OF PARENTS AND COMMUNITY

- ✓ Ensure all children in the community are fully immunised according to schedule.
- ✓ If a child is not vaccinated, encourage the parents to do so immediately.
- ✓ Infected children should be isolated so that they do not infect other children in the community.
- ✓ Avoid bringing children who are sick to public places including day-care centres or school.

WHOOPING COUGH (PERTUSSIS)

VACCINE IS SAFE
AND
CAN SAVE
YOUR CHILD'S LIFE

Kempen Penggalakan imunisasi
Lindungi anak kita. Lindungi dunia mereka. Dapatkan IMUNISASI.

For further information, please contact the nearest health clinic or hospital, or refer to our website www.infosihat.gov.my or www.myhealth.gov.my

Published by :
Ministry of Health Malaysia
www.infosihat.gov.my • www.myhealth.gov.my

WHAT IS WHOOPING COUGH?

✓ A respiratory infection caused by *Bordetella pertussis* bacteria

HOW DOES IT SPREAD?

- ✓ Through respiratory droplets when coughing, sneezing, speaking and kissing
- ✓ Through direct contact with contaminated surfaces such as toys or hands
- ✓ Through an infected person with symptoms

SIGNS AND SYMPTOMS

✓ **Starts with mild symptoms**
- Fever
- Runny nose
- Sneezing
- Cough

✓ **After 1-2 weeks**
- Severe coughing (*whoop!!*) especially at night

✓ **Continuous coughing may lead to:**
- Vomiting
- Difficulty in breathing
- Cyanosis (turning blue)
- Inability to sleep
- Loss of appetite

COMPLICATION OF WHOOPING COUGH

✓ **Mild complications**
- Rupture of blood vessel of membrane of the eye (conjunctival haemorrhage)
- Middle ear infection
- Loss of appetite causing dehydration

✓ **Serious complications**
- Lung inflammation (pneumonia)
- Lack of oxygen supply to the brain due to continuous coughing may lead to:
  - Seizures or convulsions
  - Abnormal brain function (encephalopathy)
  - Death

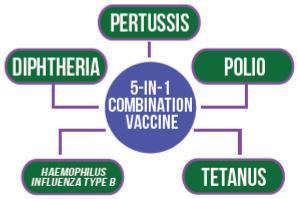
INFECTION IN BABIES AND CHILDREN BELOW 1 YEARS OLD IS VERY DANGEROUS

PREVENTION

- Complete 5 in 1 vaccination
- When you are having symptoms
  - Wear a mask
  - Practice cough etiquette
  - Practice social distancing
- Wash your hands properly, especially if taking care of young children:
  - Before holding next baby
  - After changing diapers
  - Before breastfeeding or feeding your child

WHOOPING COUGH VACCINATION

✓ **Whooping Cough Containing Vaccination**



✓ **Immunisation Schedule**

Dose 1	at 2 months
Dose 2	at 3 months
Dose 3	at 5 months
Dose 4	at 18 months

- Immunisation is safe
- Side-effects are usually mild. Example: pain and swelling at injection site, rash, influenza and fever. They are self - limiting
- If there are side effects, bring your child to the clinic/hospital **IMMEDIATELY**
- If your child expriences side effects, bring him/her to the clinic/hospital **IMMEDIATELY**

PREVENTION

- Immunisation with rubella containing vaccines such as MMR (measles, mumps and rubella).

Immunisation schedule	
Dose 1	at 9 months
Dose 2	at 12 months

Children born before 1st July 2015 need to follow the previous immunisation schedule in which Dose 1 is given at 12 months old and Dose 2 at 7 years old (to be continued until year 2022)

- MMR immunisation is safe and the side-effects are usually mild and self-limiting. Example, pain and swelling at injection site, rash, influenza or fever.
- Continuously monitored by the Drug Control Authority, Ministry of Health Malaysia.
- If there are side effects, bring your child to the clinic/hospital IMMEDIATELY.

ROLES OF PARENTS AND COMMUNITY

- Ensure all children in your community are protected with rubella containing vaccine at 9 months and 12 months
- If a child is not vaccinated, encourage the parents to do so immediately
- Infected children should be isolated so that they do not infect other children in the community
- Avoid bringing children who are sick to public places including day-care centres or school.

Kempen Penggalakan imunisasi
Lindungi anak kita, Lindungi dunia mereka, Dapatkan IMUNISASI.

For further information, please contact the nearest health clinic or hospital,
or refer to our website
www.infosihat.gov.my / www.myhealth.gov.my

RUBELLA

ENSURE YOUR CHILD RECEIVE COMPLETE IMMUNISATION

Published By :
Health Education Division
Ministry of Health Malaysia

WHAT IS RUBELLA?

Rubella or "German measles" is a disease caused by *Rubella* virus.

The infection is usually mild with fever and rash.

SYMPTOMS AND SIGNS OF RUBELLA

In children, the symptoms typically last within 2 – 3 days:

- Rash that starts on the face and spreads to the rest of the body
- Low grade fever

Older children and adults may also have swollen glands and flu before the rash appears. Aching joints may also occur.

About 50% of infected persons are asymptomatic

TREATMENT

There is no specific treatment for Rubella.

HOW DOES IT SPREAD?

- Through respiratory droplets (coughing or sneezing)
- Infection can spread 7 days before onset of rash
- Asymptomatic patients can still spread the disease.

HOW SERIOUS IS RUBELLA?

In children, Rubella is usually a mild disease. However, serious problems such as brain infection or bleeding problems may occur.

Rubella infection is most dangerous for pregnant women as it can cause miscarriage or birth defects (cataract, blindness, deafness, mental retardation and heart defects)


HEALTH ALERT
From
Ministry of Health, Malaysia
on
Severe Acute
Respiratory
Syndrome
SARS

1 What is Severe Acute Respiratory Syndrome (SARS)?

Since February 2003, the World Health Organisation (WHO) has reported outbreaks of severe forms of pneumonia in Guangdong province of China, Hanoi and Hong Kong.

Since then, similar cases have been reported in many other countries. This pneumonia is now known as **Severe Acute Respiratory Syndrome (SARS)** . The illness is characterized by initial flu-like symptoms (rapid onset of high grade fever more than 38.5 °C, muscle ache, sore throat, cough and headache); followed by difficulty in breathing and may progress to a severe form of pneumonia and even death. The illness is associated with history of travel to the above affected areas or close contact with persons who had been diagnosed with SARS.

2 What is the cause of SARS?

The cause is still unknown.

3 Is it contagious, and how is it spread?

Yes, it is contagious. It is spread through close contact (history of having cared for, having lived with, having had face to face contact with or having had contact with respiratory secretions of a probable case).

4 How soon will someone become ill after getting infected?

At the moment, the exact incubation period is unknown, but based on current available information, the most probable period is within 2 weeks.

5 Who are at risk?

Persons who have recently visited the affected areas or have been in close contact with cases of SARS.

6 Which are the high risk countries?

According to WHO report, these are Guangdong province (China), Hong Kong (China), Hanoi (Vietnam).

Recently similar cases have been reported in Singapore, Thailand, Philippines, Indonesia and Canada.

7 Do we have cases here?

There are no reported cases so far.

8 How is SARS diagnosed?

Diagnosis is based on clinical illness, history of recent travel to high risk areas or history of close contact with persons with SARS.

9 Can it be treated?

At the moment, there is no specific treatment. However, if you have recently returned from affected areas and have flu-like symptoms, you should consult your doctor.

10 What should I do to protect myself?

You are advised to avoid travel to affected areas, unless absolutely necessary. Avoid contact with known cases, but if you need to be in close contact with cases, you are advised to practice good personal hygiene and use an appropriate protective mask.

11 Is there a vaccination for SARS?

There is no specific vaccination.

12 Can I travel to China, Hong Kong, Vietnam and other affected areas?

It is advisable to avoid travel to affected areas, unless absolutely necessary.

Disease Control Division, Ministry of Health Malaysia
Level 2, Block A, Health Office Complex
Jalan Cenderasari
50590 Kuala Lumpur, Malaysia

TUBERCULOSIS

HOW TO PREVENT TB?

- BCG vaccination provides good protection to the child from dangerous forms of TB
  - Newborn
  - School children : Standard 1 (if no scar)
- If you have cough lasting for 2 weeks or more, see the doctor as soon as possible.
- Family members and others who are in close contact to TB patients are advised to do the necessary examination.

GENERAL ADVISE

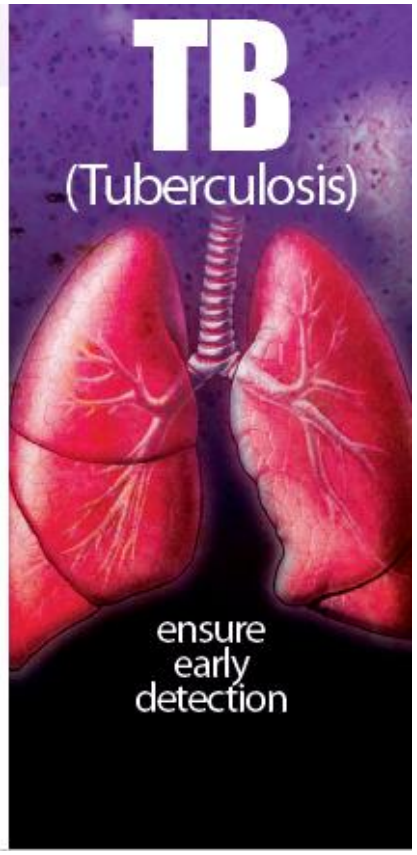
- Allow plenty of sunlight into your house because sunlight kills TB germs in the air.
- Good ventilation prevents TB from spreading. Open all your house windows during the day.
- Practice a healthy lifestyle and take a balanced diet.

FACILITIES AVAILABLE

Sputum examination and treatment of TB is available free of charge at all government hospitals and health clinics.

Published by Health Education Division and Disease Control Division, Ministry of Health Malaysia in cooperation with Institute of Respiratory Medicine

KKM/097/09/2003 (B)



TUBERCULOSIS

WHAT IS TB?

Tuberculosis is a dangerous infectious disease. It causes suffering and also death if left untreated.

Tuberculosis is caused by tiny germs called Tubercle Bacilli which usually attacks the lungs. It can also affect other parts of the body such as the brain, bones, lymph nodes, kidneys and skin.

- Brain
- Bone
- Lungs
- Gland
- Skin
- Kidney

SIGNS & SYMPTOMS OF PULMONARY TB

- Cough lasting for 2 weeks or more
- The sputum may be blood-stained
- Fever, often with sweating, usually in the evening or at night
- Loss of weight and appetite
- There may be chest pain especially on coughing or deep breathing
- Getting tired easily and feeling weak

HOW TB SPREADS?

TB is an airborne disease. TB germs are spread through the air in tiny droplets discharged in a cough by a person suffering from active Tuberculosis of the lungs or also known as pulmonary TB. Anyone who breathes in these tiny droplets which contain TB germs is at risk of being infected and contracting the disease.

HOW TO DIAGNOSE TB?

If you have the signs and symptoms of TB, you must get:

- Your sputum tested, and/or
- A chest x-ray at the nearest health centre or hospital

TREATMENT OF TB BY THE DOTS STRATEGY

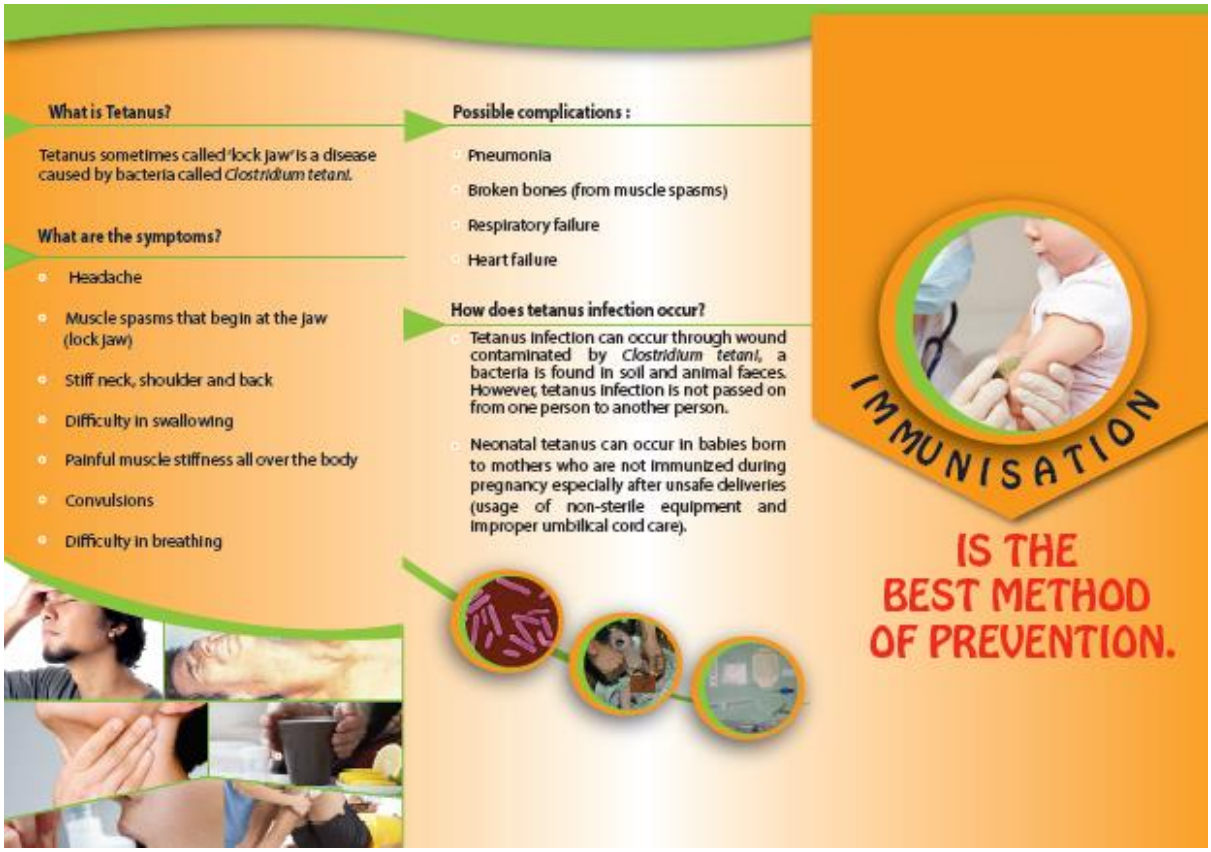
DOTS (Directly Observed Treatment-Shortcourse) strategy has been highly recommended by the World Health Organization.

DOTS strategy:

- Patient should take medication for 6 months
- It consists initially of daily treatment for 2 months and the medicines taken in the presence of trained medical staff.
- This is followed by treatment administered two times a week for 4 months which is taken under supervision by a trained observer.

If this treatment is followed regularly the patient can be cured completely


Tetanus Immunisation for infants and children
Vaccine used is a 5-in-1 combination (diphtheria, tetanus, pertussis, polio, haemophilus influenzae type B.
Immunisation schedule:
Dose 1 at 2 months
Dose 2 at 3 months
Dose 3 at 5 months
Dose 4 at 18 months
Booster Dose at 7 years
Vaccine is safe and effective. All doses should be taken.
TETANUS IMMUNISATION FOR ADULTS
If you are at risk of infection, you should get a booster dose (if previous dose is more than 5 years ago).
Treatment :
Antitoxin
Antibiotics
Surgical treatment of infected area
imunisasi
For further information, please contact the nearest health clinic or hospital, or refer to our website
www.infosihat.gov.my or
www.myhealth.gov.my
Published By :
Ministry of Health Malaysia
www.infosihat.gov.my - www.myhealth.gov.my
TETANUS
(LOCK JAW)
Easily Preventable


What is Tetanus?
Tetanus sometimes called 'lock jaw' is a disease caused by bacteria called Clostridium tetani.
What are the symptoms?
Headache
Muscle spasms that begin at the jaw (lock jaw)
Stiff neck, shoulder and back
Difficulty in swallowing
Painful muscle stiffness all over the body
Convulsions
Difficulty in breathing
Possible complications :
Pneumonia
Broken bones (from muscle spasms)
Respiratory failure
Heart failure
How does tetanus infection occur?
Tetanus infection can occur through wound contaminated by Clostridium tetani, a bacteria is found in soil and animal faeces. However, tetanus infection is not passed on from one person to another person.
Neonatal tetanus can occur in babies born to mothers who are not immunized during pregnancy especially after unsafe deliveries (usage of non-sterile equipment and improper umbilical cord care).
IMMUNISATION
IS THE BEST METHOD OF PREVENTION.

Prevention

Wash vegetables and fruits with clean water before eating them

Clean all dishes using detergent and clean water

Store/prepare food on clean table, above the ground level

Use proper toilet

Wash hands with soap and clean water after using the toilet, before eating and preparing food

Drink boiled water

Clean your house surroundings and dispose rubbish properly

Choose clean food premises when eating out

Cover all food from flies, other insects and rodents

Use tongs and proper utensils to take food

SEEK EARLY TREATMENT
if you have
SIGNS AND SYMPTOMS OF
TYPHOID

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Health Education Division
Ministry of Health Malaysia
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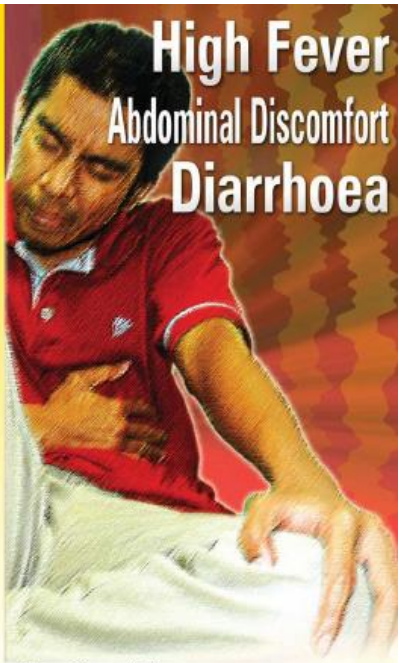

High Fever
Abdominal Discomfort
Diarrhoea

It Can Be

TYPHOID

TYPHOID

Salmonella typhi

TYPHOID is an infectious disease caused by a type of bacteria known as Salmonella typhi. These germs are found in urine and feaces of the infected individuals and typhoid carriers.

Typhoid carrier is a person infected by the Typhoid germs but does not show signs or symptoms of Typhoid disease.

HOW IS TYPHOID TRANSMITTED?

- Typhoid is spread by eating food or drinking water which is contaminated with feaces / vomitus of Typhoid patients / carriers.Typhoid germs can contaminate water supply if improper/insanitary toilets are used
- Flies transmit the typhoid germs from Typhoid carriers' faeces to exposed or uncovered food
- Typhoid can be transmitted through hands which are contaminated by the faeces of Typhoid patients/carriers if not washed before eating or preparing food

SIGNS AND SYMPTOMS

- Severe headache
- Abdominal discomfort
- Dysentery followed by diarrhoea
- Prolonged high fever for 3–4 weeks
- Rashes on the body
- Sunken eyes
- May become unconscious and mumble

DANGERS OF TYPHOID

- Patient may take weeks to recover
- Patient may experience internal bleeding
- Typhoid can infect the heart and may cause death

EARLY TREATMENT CAN SAVE LIVE

Appendix B

Concordance Lines of Influenza

Index	File	Left	Node	Right
1	21 Influen	a certain location or country. WHAT IS	INFLUENZA	PANDEMIC? Influenza pandemic occurs when influenza infects
2	21 Influen	location or country. WHAT IS INFLUENZA PANDEMIC?	Influenza	pandemic occurs when influenza infects a large
3	21 Influen	IS INFLUENZA PANDEMIC? Influenza pandemic occurs when	influenza	infects a large part of the world
4	21 Influen	that can cause epidemic and pandemic. The	influenza	virus is spread through droplets from the
5	22 Ris_Bas	PANDEMIC	INFLUENZA	What you need to know KEEP YOUR
6	23 Ris_Infl	can cause epidemic and pandemic outbreak. The	influenza	virus is spread through droplets from the
7	23 Ris_Infl	people in a certain location or country.	INFLUENZA	PANDEMIC An influenza pandemic occurs when influenza
8	23 Ris_Infl	certain location or country. INFLUENZA PANDEMIC An	influenza	pandemic occurs when influenza infects a large
9	23 Ris_Infl	INFLUENZA PANDEMIC An influenza pandemic occurs when	influenza	infects a large portion of the world's
10	23 Ris_Infl	vaccine does not give protection against pandemic	influenza	virus. Published by: Ministry of Health Malaysia
11	24 Ris_Par	PANDEMIC	INFLUENZA	What you need to know INFLUENZA: What
12	24 Ris_Par	If You Experience Signs And Symptoms Of	Influenza	During A Pandemic Situation Pandemic influenza is
13	24 Ris_Par	Of Influenza During A Pandemic Situation Pandemic	influenza	is a widespread occurrence of the influenza
14	25 Ris_FA(	PANDEMIC	INFLUENZA	What you need to know FREQUENTLY ASKED
15	25 Ris_FA(	ASKED QUESTIONS (FAQ) 1. What is pandemic	influenza?	A pandemic is a global disease outbreak.
16	25 Ris_FA(	pandemic is a global disease outbreak. An	influenza	pandemic occurs when a new influenza A
17	25 Ris_FA(	An influenza pandemic occurs when a new	influenza	A virus emerges for which there is
18	25 Ris_FA(	6.Is the available vaccine effective against pandemic	influenza?	NO! Vaccines that are currently available in
19	25 Ris_FA(	do not give specific protection against pandemic	influenza.	7.Is it safe to visit other countries
20	25 Ris_FA(	safe to visit other countries during an	influenza	pandemic? AVOID DOING SO! If necessary, consult
21	25 Ris_FA(	travelling. 8. What are the differences between	Influenza,	Avian Influenza and Pandemic Influenza? Influenza is
22	25 Ris_FA(	What are the differences between Influenza, Avian	Influenza	and Pandemic Influenza? Influenza is the respiratory
23	25 Ris_FA(	differences between Influenza, Avian Influenza and Pandemic	Influenza?	Influenza is the respiratory disease caused by
24	25 Ris_FA(	between Influenza, Avian Influenza and Pandemic Influenza?	Influenza	is the respiratory disease caused by infection
25	25 Ris_FA(	from person to person, resulting in Pandemic	Influenza.	9. Where can you get treatment? If
26	09 Avian I	AVIAN	INFLUENZA	WHAT YOU NEED TO KNOW Bird flu
27	09 Avian I	YOU NEED TO KNOW Bird flu (Avian	Influenza)	WHAT IS BIRD FLU? Bird Flu or
28	09 Avian I	IS BIRD FLU? Bird Flu or Avian	Influenza	is a type of contagious disease that
29	10 Avian I	Avian	Influenza	(Bird flu) 1. Avian Influenza Avian Influenza
30	10 Avian I	Avian Influenza (Bird flu) 1. Avian	Influenza	Avian Influenza (AI) or bird flu is
31	10 Avian I	Influenza (Bird flu) 1. Avian Influenza Avian	Influenza	(AI) or bird flu is a type
32	10 Avian I	of contagious disease infecting poultry and birds.	Influenza	virus type A causes Avian Influenza. This
33	10 Avian I	birds. Influenza virus type A causes Avian	Influenza.	This virus has many subtypes. The H5N1
34	10 Avian I	Symptoms Signs and symptoms of the Avian	Influenza	are High fever (exceeding 38) Sore throat
35	21 Influen	infection rises during winter. WHAT IS AVIAN	INFLUENZA?	Avian influenza or bird flu is a
36	21 Influen	during winter. WHAT IS AVIAN INFLUENZA? Avian	influenza	or bird flu is a contagious disease
37	23 Ris_Infl	be able to understand and differentiate: AVIAN	INFLUENZA	Avian influenza or bird flu is a
38	23 Ris_Infl	to understand and differentiate: AVIAN INFLUENZA Avian	influenza	or bird flu is a contagious disease
39	25 Ris_FA(	travelling. 8. What are the differences between	Influenza,	Avian Influenza and Pandemic Influenza? Influenza is
40	25 Ris_FA(	What are the differences between Influenza, Avian	Influenza	and Pandemic Influenza? Influenza is the respiratory
41	25 Ris_FA(	differences between Influenza, Avian Influenza and Pandemic	Influenza?	Influenza is the respiratory disease caused by
42	25 Ris_FA(	between Influenza, Avian Influenza and Pandemic Influenza?	Influenza	is the respiratory disease caused by infection
43	25 Ris_FA(	is known as a seasonal flu. Avian	Influenza	also known as bird flu is a
44	25 Ris_FA(	In certain conditions, these Highly Pathogenic Avian	Influenza	virus may infect humans causing severe symptoms
45	25 Ris_FA(	causing severe symptoms and death. The avian	influenza	virus may undergo rapid genetic changes. Such
46	09 Avian I	contagious disease that infects poultry and birds.	Influenza	virus type A causes Bird Flu. This
47	10 Avian I	of contagious disease infecting poultry and birds.	Influenza	virus type A causes Avian Influenza. This
48	10 Avian I	birds. Influenza virus type A causes Avian	Influenza.	This virus has many subtypes. The H5N1
49	18 INFLUE	mixing of the pig, bird and human	influenza	virus genes. 2. Where have the human
50	18 INFLUE	A (H1N1) disease to others? Person(s) with	Influenza	A (H1N1) virus infection should be considered
51	18 INFLUE	does not provide protection from the current	influenza	A(H1N1) virus. It is unknown whether the
52	18 INFLUE	provide any cross protection to the ongoing	influenza	A(H1N1) virus infection in Mexico, United States
53	21 Influen	due to the emergence of a new	influenza	virus and the victims do not have
54	21 Influen	to fight that particular strain of virus.	Influenza	virus can spread through droplets of liquid
55	21 Influen	is a contagious disease caused by the	Influenza	Virus. a. Influenza Virus There are 3
56	21 Influen	disease caused by the Influenza Virus. a.	Influenza	Virus There are 3 subtypes of Influenza
57	21 Influen	infects both animals and humans. Type A	influenza	virus mutates (genetic change) to produce a
58	21 Influen	change) to produce a new more dangerous	influenza	virus that can cause epidemic and pandemic.
59	21 Influen	that can cause epidemic and pandemic. The	influenza	virus is spread through droplets from the
60	21 Influen	in the beginning None/mild Frequent Severe Severe	Influenza	virus A, B or C Common cold
61	23 Ris_Infl	INFLUENZA What you need to know	INFLUENZA	VIRUS Influenza Influenza or flu is a
62	23 Ris_Infl	What you need to know INFLUENZA VIRUS	Influenza	Influenza or flu is a contagious disease
63	23 Ris_Infl	you need to know INFLUENZA VIRUS Influenza	Influenza	or flu is a contagious disease caused
64	23 Ris_Infl	is a contagious disease caused by the	influenza	virus a. Influenza Virus There are 3
65	23 Ris_Infl	disease caused by the influenza virus a.	Influenza	Virus There are 3 types of influenza
66	23 Ris_Infl	Influenza Virus There are 3 types of	influenza	virus, namely A, B and C. All
67	23 Ris_Infl	and C. All types can infect human.	Influenza	virus A is the most dangerous as
68	23 Ris_Infl	mutate to produce a new more novel	influenza	virus that can cause epidemic and pandemic
69	23 Ris_Infl	can cause epidemic and pandemic outbreak. The	influenza	virus is spread through droplets from the
70	23 Ris_Infl	Headache Moderate to severe Mild Cause Virus	influenza	A, B or C Adenovirus, Rhinovirus, Parainfluenza

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71	23 Ris_Infl	to the emergence of a new novel	influenza	**virus** which the population does not have
72	23 Ris_Infl	vaccine does not give protection against pandemic	influenza	**virus**. Published by: Ministry of Health Malaysia
73	24 Ris_Par	a new and novel strain of the	influenza	**virus** A surfaces and most of the
74	25 Ris_FA(	An influenza pandemic occurs when a new	influenza	A **virus** emerges for which there is
75	25 Ris_FA(	respiratory disease caused by infection with the	Influenza	A, B or C **virus**. Mode of
76	25 Ris_FA(	In certain conditions, these Highly Pathogenic Avian	Influenza	**virus** may infect humans causing severe symptoms
77	25 Ris_FA(	causing severe symptoms and death. The avian	influenza	**virus** may undergo rapid genetic changes. Such
78	21 Influen	It can also infect humans. WHAT IS	INFLUENZA	**EPIDEMIC**? Influenza epidemic occurs when there is
79	21 Influen	also infect humans. WHAT IS INFLUENZA **EPIDEMIC**?	Influenza	**epidemic** occurs when there is an outbreak
80	21 Influen	change) to produce a new more dangerous	influenza	virus that can cause epidemic and pandemic.
81	21 Influen	that can cause **epidemic** and pandemic. The	influenza	virus is spread through droplets from the
82	23 Ris_Infl	mutate to produce a new more novel	influenza	virus that can cause **epidemic** and pandemic
83	23 Ris_Infl	can cause **epidemic** and pandemic outbreak. The	influenza	virus is spread through droplets from the
84	23 Ris_Infl	and birds. It can also infect human.	INFLUENZA	**EPIDEMIC** An influenza epidemic is an outbreak
85	23 Ris_Infl	can also infect human. INFLUENZA **EPIDEMIC** An	influenza	**epidemic** is an outbreak of influenza among
86	23 Ris_Infl	An influenza **epidemic** is an outbreak of	influenza	among the people in a certain location
87	09 Avian I	YOU NEED TO KNOW **Bird flu** (Avian	Influenza)	WHAT IS BIRD FLU? Bird Flu or
88	09 Avian I	IS BIRD FLU? **Bird Flu** or Avian	Influenza	is a type of contagious disease that
89	09 Avian I	contagious disease that infects poultry and birds.	Influenza	virus type A causes **Bird Flu**. This
90	10 Avian I	Avian	Influenza	(**Bird flu**) 1. Avian Influenza Avian Influenza
91	10 Avian I	Avian Influenza (**Bird flu**) 1. Avian	Influenza	Avian Influenza (AI) or **bird flu** is
92	10 Avian I	Influenza (Bird flu) 1. Avian Influenza Avian	Influenza	(AI) or **bird flu** is a type
93	18 INFLUE	mixing of the pig, bird and human	influenza	virus genes. 2. Where have the human
94	21 Influen	infection rises during winter. WHAT IS AVIAN	INFLUENZA?	Avian influenza or **bird flu** is a
95	21 Influen	during winter. WHAT IS AVIAN INFLUENZA? Avian	influenza	or **bird flu** is a contagious disease
96	23 Ris_Infl	be able to understand and differentiate: AVIAN	INFLUENZA	Avian influenza or **bird flu** is a
97	23 Ris_Infl	to understand and differentiate: AVIAN INFLUENZA Avian	influenza	or **bird flu** is a contagious disease
98	25 Ris_FA(	is known as a seasonal flu. Avian	Influenza	also known as **bird flu** is a
99	18 INFLUENZA A WASH YOUR HANDS.txt		INFLUENZA	**A (H1N1)** Protect yourself Wash hands Wash
100	18 INFLUE	keeping physically active. Ministry of Health Malaysia	Influenza	**A (H1N1)** Frequently Asked Questions (FAQs) 1.
101	18 INFLUE	Frequently Asked Questions (FAQs) 1. What is	Influenza	**A (H1N1)**? Influenza A (H1N1) is highly
102	18 INFLUE	(FAQs) 1. What is Influenza A (H1N1)?	Influenza	**A (H1N1)** is highly contagious acute respiratory
103	18 INFLUE	4. How do people become infected with	Influenza	**A (H1N1)**? The spread begins when infected
104	18 INFLUE	known as human to human transmission of	Influenza	**A (H1N1)**. 5. Is there any confirmation
105	18 INFLUE	long can an infected person spread the	Influenza	**A (H1N1)** disease to others? Person(s) with
106	18 INFLUE	A (H1N1) disease to others? Person(s) with	Influenza	**A (H1N1)** virus infection should be considered
107	26 Cegah_	Prevent	INFLUENZA	**A. (H1N1)** Travelling Abroad. Precautions To Observe:
108	26 Cegah_	be in close contact with cases of	Influenza	**A (H1N1)**, use an appropriate protective mask. *
109	26 Cegah_	the doctor that you have visited the	Influenza	**A (H1N1)** affected country/area. For current update
110	21 Influen	influenza situation in Malaysia According to studies,	influenza	infection **occurs** in Malaysia all year round.
111	21 Influen	It can also infect humans. WHAT IS	INFLUENZA	EPIDEMIC? Influenza epidemic **occurs** when there is
112	21 Influen	also infect humans. WHAT IS INFLUENZA EPIDEMIC?	Influenza	epidemic **occurs** when there is an outbreak
113	21 Influen	a certain location or country. WHAT IS	INFLUENZA	PANDEMIC? Influenza pandemic **occurs** when influenza infects
114	21 Influen	location or country. WHAT IS INFLUENZA PANDEMIC?	Influenza	pandemic **occurs** when influenza infects a large
115	21 Influen	IS INFLUENZA PANDEMIC? Influenza pandemic **occurs** when	influenza	infects a large part of the world
116	23 Ris_Infl	people in a certain location or country.	INFLUENZA	PANDEMIC An influenza pandemic **occurs** when influenza
117	23 Ris_Infl	certain location or country. INFLUENZA PANDEMIC An	influenza	pandemic **occurs** when influenza infects a large
118	23 Ris_Infl	INFLUENZA PANDEMIC An influenza pandemic **occurs** when	influenza	infects a large portion of the world's
119	25 Ris_FA(	pandemic is a global disease outbreak. An	influenza	pandemic **occurs** when a new influenza A
120	25 Ris_FA(	An influenza pandemic **occurs** when a new	influenza	A virus emerges for which there is
121	09 Avian I	AVIAN	INFLUENZA	WHAT YOU NEED TO **KNOW** Bird flu
122	09 Avian I	YOU NEED TO **KNOW** Bird flu (Avian	Influenza)	WHAT IS BIRD FLU? Bird Flu or
123	22 Ris_Bas	PANDEMIC	INFLUENZA	What you need to **know** KEEP YOUR
124	23 Ris_Influenza_BI_web.txt		INFLUENZA	What you need to **know** INFLUENZA VIRUS
125	23 Ris_Infl	INFLUENZA What you need to **know**	INFLUENZA	VIRUS Influenza Influenza or flu is a
126	23 Ris_Infl	What you need to **know** INFLUENZA VIRUS	Influenza	Influenza or flu is a contagious disease
127	23 Ris_Infl	you need to **know** INFLUENZA VIRUS Influenza	Influenza	or flu is a contagious disease caused
128	24 Ris_Par	PANDEMIC	INFLUENZA	What you need to **know** INFLUENZA: What
129	24 Ris_Par	PANDEMIC INFLUENZA What you need to **know**	INFLUENZA:	What You Need To **Know** And Do
130	25 Ris_FA(	PANDEMIC	INFLUENZA	What you need to **know** FREQUENTLY ASKED
131	09 Avian I	AVIAN	INFLUENZA	WHAT YOU **NEED** TO KNOW Bird flu
132	22 Ris_Bas	PANDEMIC	INFLUENZA	What you **need** to know KEEP YOUR
133	23 Ris_Influenza_BI_web.txt		INFLUENZA	What you **need** to know INFLUENZA VIRUS
134	23 Ris_Infl	INFLUENZA What you **need** to know	INFLUENZA	VIRUS Influenza Influenza or flu is a
135	23 Ris_Infl	What you **need** to know INFLUENZA VIRUS	Influenza	Influenza or flu is a contagious disease
136	24 Ris_Par	PANDEMIC	INFLUENZA	What you **need** to know INFLUENZA: What
137	24 Ris_Par	PANDEMIC INFLUENZA What you need to **know**	INFLUENZA:	What You **Need** To Know And Do
138	25 Ris_FA(	PANDEMIC	INFLUENZA	What you **need** to know FREQUENTLY ASKED
139	26 Cegah_	Avoid crowded places. * Avoid direct contact with	Influenza	A(H1N1) cases. If you **need** to be
140	10 Avian I	Symptoms Signs and **symptoms** of the Avian	Influenza	are High fever (exceeding 38) Sore throat
141	18 INFLUE	What are the sign and **symptoms** of	Influenza	A(H1N1)? Early signs of Influenza A(H1N1) are
142	18 INFLUE	when you are sick or have the	influenza	sign and **symptoms**. 7. How long can
143	23 Ris_Infl	both have similar symptoms, the **symptoms** for	influenza	are more severe and may cause life
144	24 Ris_Par	If You Experience Signs And **Symptoms** Of	Influenza	During A Pandemic Situation Pandemic influenza is
145	24 Ris_Par	TO KNOW THE SIGNS AND **SYMPTOM**S OF	INFLUENZA	The **symptoms** of influenza will emerge without
146	24 Ris_Par	AND SYMPTOMS OF INFLUENZA The **symptoms** of	influenza	will emerge without us knowing or realising
147	24 Ris_Par	ARE EXPERIENCING THE SIGNS AND **SYMPTOMS** OF	INFLUENZA	If you are experiencing any signs and
148	24 Ris_Par	experiencing any signs and **symptoms** of the	influenza	disease, you are advised to: • Take
149	25 Ris_FA(	worldwide. 2. What are the **symptoms** of	influenza?	• High fever (temperature more than 38ºC)

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150	25 Ris_FA(	if you have signs and **symptoms** of	influenza.	5.Is there any specific treatment for influenza?
151	25 Ris_FA(	causing severe **symptoms** and death. The avian	influenza	virus may undergo rapid genetic changes. Such
152	18 INFLUE	from Influenza A(H1N1)? No. Current seasonal human	influenza	**vaccine** does not provide protection from the
153	21 Influen	What is the difference between antiviral and	influenza	**vaccine**? Antiviral is a medicine for treating
154	21 Influen	administered as a precaution. Vaccination uses the	influenza	**vaccine** available in the market to protect
155	23 Ris_Infl	places. e. What is the role of	influenza	**vaccine**? The influenza **vaccine** is administered as
156	23 Ris_Infl	is the role of influenza **vaccine**? The	influenza	**vaccine** is administered as a preventive vaccination.
157	23 Ris_Infl	administered as a preventive vaccination. The seasonal	influenza	**vaccine** available in the market may protect
158	23 Ris_Infl	immunity yet to fight. The available seasonal	influenza	**vaccine** does not give protection against pandemic
159	25 Ris_FA(	6.Is the available **vaccine** effective against pandemic	influenza?	NO! Vaccines that are currently available in
160	09 Avian I	IS BIRD FLU? Bird Flu or Avian	Influenza	is a **type** of contagious disease that
161	09 Avian I	contagious disease that infects poultry and birds.	Influenza	virus **type** A causes Bird Flu. This
162	10 Avian I	of contagious disease infecting poultry and birds.	Influenza	virus **type** A causes Avian Influenza. This
163	10 Avian I	birds. Influenza virus **type** A causes Avian	Influenza.	This virus has many subtypes. The H5N1
164	21 Influen	infects both animals and humans. **Type** A	influenza	virus mutates (genetic change) to produce a
165	27 Whoop	tion Vaccine (diphtheria, tetanus, pertussis, polio, haemophilus	influenza	**type**) B. Immunisation schedule Dose 1 at
166	30 Tetanu	combination (diphtheria, tetanus, pertussis, polio, haemophilus	influenza	**type**) B. Dose 1 at 2 months.
167	21 Influen	body through the respiratory tract. b. Is	influenza	and common **cold** the same? No. Even
168	21 Influen	may cause life-threatening complications. Comparison between	influenza	and the common **cold** Symptom Fever Fatigue
169	21 Influen	public places when having a **cold** or	influenza.	
170	23 Ris_Infl	body through the respiratory tract. b. Is	influenza	and common **cold** the same? No. Even
171	23 Ris_Infl	may cause life threatening complications. Comparison between	influenza	and the common **cold**: Symptom Influenza (Flu)
172	23 Ris_Infl	between influenza and the common **cold**: Symptom	Influenza	(Flu) Common **cold** Fever High. Normally above
173	21 Influen	a certain location or **country**. WHAT IS	INFLUENZA	PANDEMIC? Influenza pandemic occurs when influenza infects
174	21 Influen	location or **country**. WHAT IS INFLUENZA PANDEMIC?	Influenza	pandemic occurs when influenza infects a large
175	23 Ris_Infl	people in a certain location or **country**.	INFLUENZA	PANDEMIC An influenza pandemic occurs when influenza
176	23 Ris_Infl	certain location or **country**. INFLUENZA PANDEMIC An	influenza	pandemic occurs when influenza infects a large
177	21 Influen	occurs when there is an **outbreak** of	influenza	among people in a certain location or
178	23 Ris_Infl	can cause epidemic and pandemic **outbreak**. The	influenza	virus is spread through droplets from the
179	23 Ris_Infl	can also infect human. INFLUENZA EPIDEMIC An	influenza	epidemic is an **outbreak** of influenza among
180	23 Ris_Infl	An influenza epidemic is an **outbreak** of	influenza	among the people in a certain location
181	25 Ris_FA(	pandemic is a global disease **outbreak**. An	influenza	pandemic occurs when a new influenza A
182	18 INFLUE	mixing of the pig, bird and **human**	influenza	virus genes. 2. Where have the human
183	18 INFLUE	known as **human** to **human** transmission of	Influenza	A (H1N1). 5. Is there any confirmation
184	18 INFLUE	human vaccine available now to protect from	Influenza	A(H1N1)? No. Current seasonal **human** influenza vaccine
185	18 INFLUE	from Influenza A(H1N1)? No. Current seasonal **human**	influenza	vaccine does not provide protection from the
186	23 Ris_Infl	and C. All types can infect **human**.	Influenza	virus A is the most dangerous as
187	23 Ris_Infl	and birds. It can also infect **human**.	INFLUENZA	EPIDEMIC An influenza epidemic is an outbreak
188	23 Ris_Infl	can also infect **human**. INFLUENZA EPIDEMIC An	influenza	epidemic is an outbreak of influenza among
189	21 Influen	due to the emergence of a **new**	influenza	virus and the victims do not have
190	21 Influen	change) to produce a **new** more dangerous	influenza	virus that can cause epidemic and pandemic.
191	23 Ris_Infl	mutate to produce a **new** more novel	influenza	virus that can cause epidemic and pandemic
192	23 Ris_Infl	to the emergence of a **new** novel	influenza	virus which the population does not have
193	25 Ris_FA(	pandemic is a global disease outbreak. An	influenza	pandemic occurs when a **new** influenza A
194	25 Ris_FA(	An influenza pandemic occurs when a **new**	influenza	A virus emerges for which there is
195	25 Ris_FA(	Such changes may result in a **new**	influenza	virus subtype that can infect humans and
196	18 INFLUE	human vaccine available now to protect from	Influenza	A(H1N1)? No. Current **seasonal** human influenza vaccine
197	18 INFLUE	from Influenza A(H1N1)? No. Current **seasonal** human	influenza	vaccine does not provide protection from the
198	23 Ris_Infl	administered as a preventive vaccination. The **seasonal**	influenza	vaccine available in the market may protect
199	23 Ris_Infl	immunity yet to fight. The available **seasonal**	influenza	vaccine does not give protection against pandemic
200	25 Ris_FA(	is known as a **seasonal** flu. Avian	Influenza	also known as bird flu is a
201	21 Influen	body through the respiratory tract. b. Is	influenza	and **common** cold the same? No. Even
202	21 Influen	may cause life-threatening complications. Comparison between	influenza	and the **common** cold Symptom Fever Fatigue
203	23 Ris_Infl	body through the respiratory tract. b. Is	influenza	and **common** cold the same? No. Even
204	23 Ris_Infl	may cause life threatening complications. Comparison between	influenza	and the **common** cold: Symptom Influenza (Flu)
205	23 Ris_Infl	between influenza and the **common** cold: Symptom	Influenza	(Flu) **Common** cold Fever High. Normally above