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A Study on Determination of CAUSE OF DEATHS in Malaysia

NMRR-13-1369-18689 (IIR)

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Institute for Public Health
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The views expressed in this report are those of the authors alone and do not necessarily represent the opinions of the other investigators participating in the surveys, nor the view or policy of the Ministry of Health Malaysia.

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INTRODUCTION

Mortality estimates are important parameters for monitoring health and are routinely used as evidence for health policy and planning[1]. Number of deaths and mortality rates are among the simplest indicators for presenting mortality. However, in 2003 only 64 out of 115 countries had almost 100% complete coverage in their death registration[2]. Only 23 countries were classified to have high-quality death registration data, 55 of medium quality and another 20 were having low-quality data[2].

Malaysia is one of few Asian countries with long standing and functional vital registration systems. Yet till this date, the system has not generated reliable mortality statistics by age, sex and cause that are basic necessities for population health status assessment, health policy, program evaluation and epidemiological research. A recent review of the design and operational characteristics of the Death Registration system in Malaysia identified several key issues that require attention in order to strengthen components of the system to improve the availability and quality of vital statistics.

Currently, there are two systems for certification of deaths in Malaysia. Deaths in health facilities are certified as to cause by attending physicians and the National Statistics Department uses the International Classification Diseases and Health Related Problems to classify and tabulate medically certified deaths by age, sex and cause. Deaths outside hospitals are reported to the local police station by relatives of the deceased, who provide a 'lay' opinion of the cause, which is recorded at death registration. The National Statistical Department has its own classification for these lay causes for non-medically certified deaths. In the past decade, there has been an improvement in the proportion of deaths that are medically certified from 45% in 1998 to 60.9% in 2008[3].

In addition to the above, there are certain specific problems with data quality. Analysis of the data for 2008 indicates that 12.5% of medically certified deaths are coded to symptoms, signs and ill-defined conditions, with an additional 6% coded to sepsis, and other smaller percentages coded to non-specific conditions such as cardiac arrest and respiratory failure. For the non-medically certified deaths, about 60% are coded to 'old age'. These findings clearly indicate the limited potential to use the available data on causes of death from registration for health planning or epidemiological research. These may be indicative of miscoding of deaths due to lack of knowledge on medical history, inadequate diagnosis by physician leading to lack of information on the medical card or the families were unaware of the deceased medical status. These issues strongly suggests the need for urgent measures to improve the cause of death, both for medically certified death (ie: hospital death) and non-medically certified death (ie: community death).

Table 1 shows the Malaysian vital registration data for 2013, in terms of the leading causes of death for hospital deaths and community deaths. As can be seen, the quality of data on causes remains similar to

that observed in 2008, hence severely limiting the use of these data for population health assessment and health policy analysis.

Table 1 : Leading causes of deaths from vital registration data in Malaysia, 2013

Hospital Deaths	%	Non-hospital Deaths	%
Ischaemic heart disease	13.7	Ill-defined diseases	65.0
Pneumonia	12.3	Other/ill-defined heart disease	6.2
Stroke	7.0	COPD	4.1
Septicaemia	6.2	Stroke	2.9
Road traffic accidents	6.1	Other/ill-defined cancers	2.7
Other/ill-defined injuries	5.2	Diabetes	2.7
Other/ill-defined heart disease	4.6	Hypertensive diseases	2.4
Other/ill-defined respiratory disease	4.0	Ischaemic heart disease	1.7
Ill-defined diseases	3.6	Renal diseases	1.3
Renal diseases	3.3	Lung cancer	1.0
Lung cancer	2.5	Other/ill-defined respiratory disease	0.9
Other/ill-defined cancers	2.2	Colon cancer	0.9
Liver disease	1.9	Liver cancer	0.8
Gastric ulcers	1.8	Breast cancer	0.7
Perinatal conditions	1.7	Road traffic accidents	0.6
All other causes	24.0	All other causes	5.8
TOTAL DEATHS	**74103**		**68099**

There is an inherent challenge in obtaining reliable information on causes of death for community deaths that occur in the absence of medical attention. In recent times, researchers have developed and tested a household interview method known as Verbal Autopsy (VA). VA is an indirect method of ascertaining causes of death from information on symptoms, signs and circumstances preceding death, obtained from the deceased's caretakers. A standard VA tool comprises of a VA questionnaire, cause-of-death or mortality classification system and diagnostic criteria (either expert or data-derived algorithms) for deriving causes of death. Several VA studies had been conducted in different countries to determine the cause of deaths among their populations[5-8]. Cause-of-death data derived from verbal autopsy (VA) are increasingly used for health planning, priority setting, monitoring and evaluation in countries with incomplete or no vital registration systems. In some regions of the world, it is the only method available to obtain estimates on the distribution of causes of death[5].

In regard to the low quality of cause attribution for medically certified deaths, the verification of cause is more straightforward, through a review of available medical records for the deceased. Medical records of patients admitted to a hospital are generally expected to contain adequate evidence about the treatment for the condition(s) the person was suffering from prior to death and can therefore be used to help determine the causes that led to death including the underlying cause of death. Several previous studies in various countries have assessed the validity of death certification by comparing the underlying cause of death in the medical death certificate with other sources, including medical record

reviews[9-12]. These studies in general indicate that the agreement between causes of death from death certificates and those obtained using other sources vary by place and cause of death and it is necessary for such studies to be conducted periodically in each population, to identify the characteristics and patterns of misclassification by cause.

In view of the limitations in the Malaysian vital registration data, this study was designed to apply medical record review and VA methods in a national sample of deaths in 2013, in order to quantify the biases in the VR data and use the study findings to develop an estimate of the cause-specific mortality pattern for Malaysia in 2013.

OBJECTIVES

GENERAL OBJECTIVE:

The overall goal of the study is to derive cause-specific mortality rate in Malaysia for 2013

SPECIFIC OBJECTIVES:

1. To determine the underlying causes for deaths that had occurred outside hospitals using verbal autopsy procedures.
2. To determine the underlying causes for deaths that occurred in hospitals through medical record review.
3. To utilize findings from this research to derive best estimates of age-, sex-, and cause-specific mortality rates in Malaysia for 2013

METHODOLOGY

Type of Study: This is a cross-sectional nation-wide study

Study Population: All deaths that occurred in 2013.

Sample Size:
Sample size was calculated based on the article by Begg S et al[13]. Previous research had tested the sampling approach to determine the optimal sample size of deaths that will be required for mortality measurement, across a range of demographic and epidemiological scenarios. In brief, the research identified that for a population with demographic and epidemiological characteristics similar to Malaysia, a population sample that would yield approximately 11,000 deaths would enable the measurement of cause-specific mortality rates according to three broad cause groups (communicable diseases, non-communicable diseases and injuries) by 5 year age-sex groups within a 15% relative standard error[4]. When these age-groups are collapsed into broader categories (e.g adulthood = 15 to 60 years; elderly = > 60 years), then the cause-specific mortality rates are measured within considerably lesser margins of error (5-10%)[13].

Since deaths will be selected in clusters (districts), this sample size was inflated by applying a design effect of 1.25, resulting in an augmented sample of 13,750. Finally, the research team expected about 10% dropout from the household enquiry into causes of death due to migration, non-availability of respondents or refusal for participation, hence after factoring in this expected loss to follow up, a total study sample population of 15,000 deaths was required for this study.

Sampling Strategy:
The primary sampling units for selecting the study population were districts in Malaysia. There are a total of 144 districts across Malaysia. A probability proportionate to size (ie : number of deaths) approach was used to select the districts. The research team conducted the process for selecting the sample of districts for the study based on registered death in 2012 (with the assumption that the deaths in 2013 from this sample will bear similar characteristics in relation to the sampling criteria). The research team used the following criteria to test the adequacy of the characteristics of deaths registered in the sample district, in terms of national representation:

1. Age group
2. Gender
3. Proportion of Medically Certified Deaths and Non-medically Certified Deaths.

All deaths registered in the selected district were included in the study. Table 2 shows the final sample of districts selected for the study

Table 2 : Distribution of study sample by districts

No	District	Deaths	Percentages
1	Ledang	797	5.5
2	Mersing	539	3.7
3	Baling	1020	7.0
4	Machang	658	4.5
5	Jasin	891	6.1
6	Rembau	252	1.7
7	Temerloh	797	5.5
8	Balik Pulau	1189	8.2
9	Hulu Perak	546	3.8
10	Perak Tengah	680	4.7
11	Kangar	1739	12.0
12	Tawau	860	5.9
13	Bau	301	2.1
14	Bintulu	860	3.7
15	Saratok	301	2.5
16	Gombak	2083	14.4
17	Dungun	852	5.9
18	WP Labuan	241	1.7
19	WP Putrajaya	157	1.1
	TOTAL	**14497**	**100.0**

Field site preparation:

Once the district was selected, the National Registration Department provided a complete list of deaths from 01 January 2013 to 31 December 2013 in each district. Paramedical staff from health clinics were selected to function as interviewers for the verbal autopsy component and medical records staff / physicians from hospitals were selected for performing medical records abstraction and certification of causes of death, as described below.

Study material preparation:

The field work on causes of death was broadly conducted along two arms and study materials were prepared accordingly. The study methods and materials are described below:

1. Each death in the study sample will be followed up with a detailed household verbal autopsy interview conducted by a trained paramedical staff from the local district health office. The study team had reviewed standard international verbal autopsy questionnaires and adapted the same to the Malaysian context. Subsequently, these adapted questionnaires had been translated to Bahasa Malaysia (Appendix 5 & 6). The VA questionnaires are accompanied by a detailed Field Operations Manual for the interviewers and this manual had been adapted along with modifications to the questionnaire and translated into Bahasa Malaysia.

2. The second arm of the study was the review of information in medical records for those deaths which had occurred in health facilities. The information were abstracted on a special 'Medical Record Abstraction Form'; which documented the key clinical notes from the medical record, along with major laboratory and radiological diagnostic evidence, surgical notes, and treatment history. A prototype of the abstraction form and sample instructions on its use in the study was available and had been reviewed by the study team and adapted for use in this study (Appendix 4).

Pilot test:

A preliminary version of all adapted study materials had been pilot tested in a sample of approximately 100 deaths (50 medically certified and 50 non-medically certified). The pilot test assessed the feasibility and practical/logistical issues in implementation of field protocols for all aspects of data collection (household interview, medical record abstraction, physician cause of death certification). The pilot test was conducted during January 2014 to February 2014, following which any modifications to the materials as suggested from the pilot studies had been carried out, leading to the development of the final versions of the study materials.

Training:

Focussed training programs were conducted for staff involved in the following activities:

1. Verbal autopsy interviews
2. Medical record abstraction
3. Physician death certification from VA questionnaires / medical records
4. ICD coding of causes of death and selection of the underlying cause
5. Study administration including field coordination, supervision and data management

Field activities:

1. After the districts had been selected, National Registration Department (NRD) provided list of all deaths (including details of address, reporting institution and cause of death as determined at registration) that occurred in the districts for the year 2013.
2. The list of deaths was given to the nearest District Health Office. Trained verbal autopsy interviewers (attached to the District Health Office) were provided with the address details of deceased within their health clinic areas, without any mention of the cause of death in the registration database. This is to blind the interviewer from the diagnosis, so that the VA interview will be free of bias from this aspect.
3. The staff visited the family members of the deceased at their homes and conducted face-to-face interviews.
4. Completed questionnaires were returned to the District Health Office, where supervisors reviewed the completed questionnaires for any missing variables or incomplete data. Supervisors also provided field support to staff, where necessary.
5. All completed questionnaires were submitted to teams of trained physicians (public health specialists

and family medicine specialist) who reviewed the VA questionnaires and assigned causes of death in a format based on the international medical death certificate. Each questionnaire was reviewed by one physician only; with the facility for the reviewing physician to seek a second opinion, as may be necessary, on the probable cause(s) of death.

5. During the VA interview, if it is detected that the death had occurred in a health facility, the respondent will be asked for consent to review the medical record. This is in keeping with standard ethics practices in the conduct of community based health research.
6. Concurrently, all deaths in health facilities were followed up for medical record abstraction and review. List of deaths from each health institution were prepared, and trained staff reviewed and abstracted information from medical records using the study forms.
7. Completed medical record abstraction forms were reviewed by a member from a panel of medical specialists to certify the cause(s) of death using the standard international medical death certificate. Each form was reviewed by one physician only, with the facility to seek a second opinion, as may be necessary, to determine the cause(s) of death.
8. All completed cause of death certificates (from VA and Medical Records) were reviewed by trained coders, who will first assigned ICD codes from each recorded cause of death, and subsequently applied the ICD mortality rules to select the underlying cause for each death certificate.
9. The underlying causes coded to the 3 character ICD code were then aggregated to the WHO Mortality Tabulation List 1, which comprises 103 cause categories, for all subsequent descriptive and comparative analyses.

Data analysis:

To fulfil the various objectives of the study, the following analyses were carried out.

1. For the non-hospital deaths in the study sample, the underlying causes from the VA were compared with the causes recorded at registration, to understand the degree of reliability of the registration data for each cause, as measured by the kappa statistic.
2. The comparisons between VA diagnoses and registered causes for non-hospital deaths were also reviewed for the misclassification patterns of these deaths in the registration data. In particular, the patterns of reallocation by VA of deaths originally assigned ill-defined causes in the registration data were analysed by sex and age groups, to understand the systematic biases in the registration data.
3. The net misclassifications for specific cause categories were analysed in terms of overall changes in cause-specific mortality proportions for each cause between the registration data and the VA results and these revised cause-specific mortality proportions were used as a basis for subsequent analysis of mortality estimates for non-hospital deaths.
4. Similar analyses were also conducted for the sample of hospital deaths, for which the diagnoses of underlying causes of death from the review of medical records were compared with the registration diagnoses. In this analysis, the validity of the registration diagnoses for each cause was assessed in terms of sensitivity, specificity and positive predictive value, using the medical record review diagnoses as the reference standard.

5. The net misclassifications for specific cause categories were analysed in terms of overall changes in cause-specific mortality proportions for each cause between the registration data and the MR review results, and these revised cause-specific mortality proportions were used as a basis for subsequent analysis of mortality estimates for hospital deaths.
6. The revised cause-specific mortality proportions for each cause in the non-hospital and hospital components of the study sample were first weighted according to the age-sex distributions for each cause as observed in the registration data. These revised age-sex-cause proportions were then applied to the overall numbers of deaths in the registration data for each component (i.e hospital deaths and non-hospital deaths) to derive the corrected numbers of deaths by age, sex and cause, as per the study findings. Subsequently, these revised death numbers were summed across the two components to derive the preliminary national mortality estimates by age, sex and cause. Finally, standard redistribution algorithms used in the WHO Burden of Disease methodology (as were used in the Malaysian BoD 2004 study) were applied to redistribute the remaining deaths with ill-defined causes and cardiovascular and cancer garbage codes. The resultant final estimates of deaths in 2013 by age, sex and cause were analysed to derive the rank order and magnitude of leading causes of death by sex at the national level.

RESULTS

The total sample for this study was 14,497 deaths with 7487 (51.6%) deaths occurred in hospitals and 7010 were non-hospital deaths. Field data collection had successfully conducted medical record review in 5988 deaths and verbal autopsy procedure in 3724 deaths. The response rate for the survey was 67.0% (ie: at least one of the procedures was successfully conducted on the study sample,

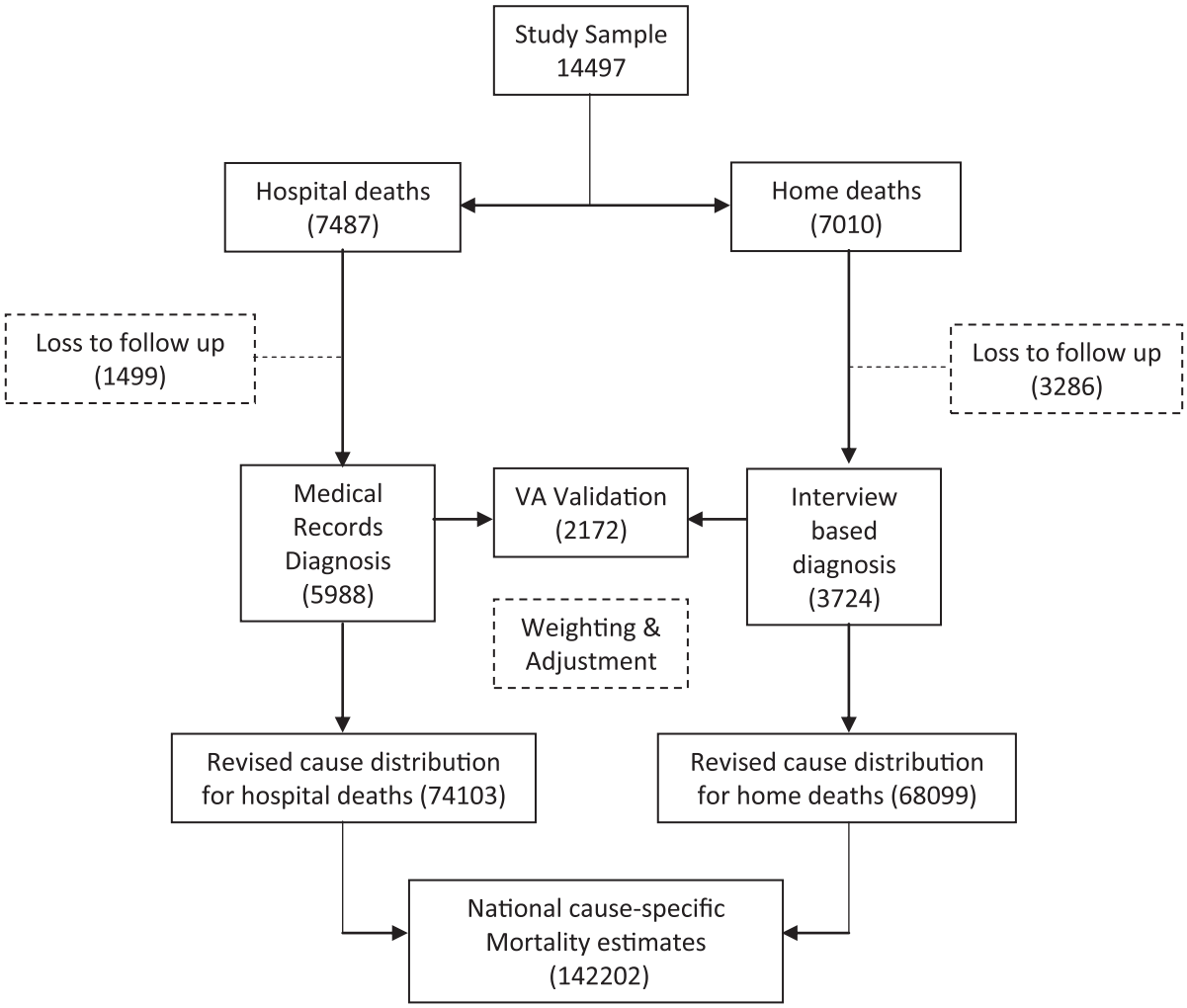

Figure 1 : Flow chart of results of data collection and approach to data analysis

From another perspective, it is also useful to understand whether the losses to follow up as shown in the above flow chart resulted in major biases in the final study sample. Figure 2 below shows a scatter plot with each dot representing the proportion of a specific cause in the vital registration data on the y axis, and its corresponding proportion as per registration diagnosis in the final recruited sample for the field study. It can be seen that for the majority of causes the proportions for Vital Registration (VR) diagnosis in the national data and in the recruited sample are very similar (along the 45◦ line), except for ill-defined causes, which seem to be over represented in the study sample (about 33%) as compared to the proportion in the national data (about 28%). Note that this graph represents the study sample combined across both hospital and non-hospital deaths.

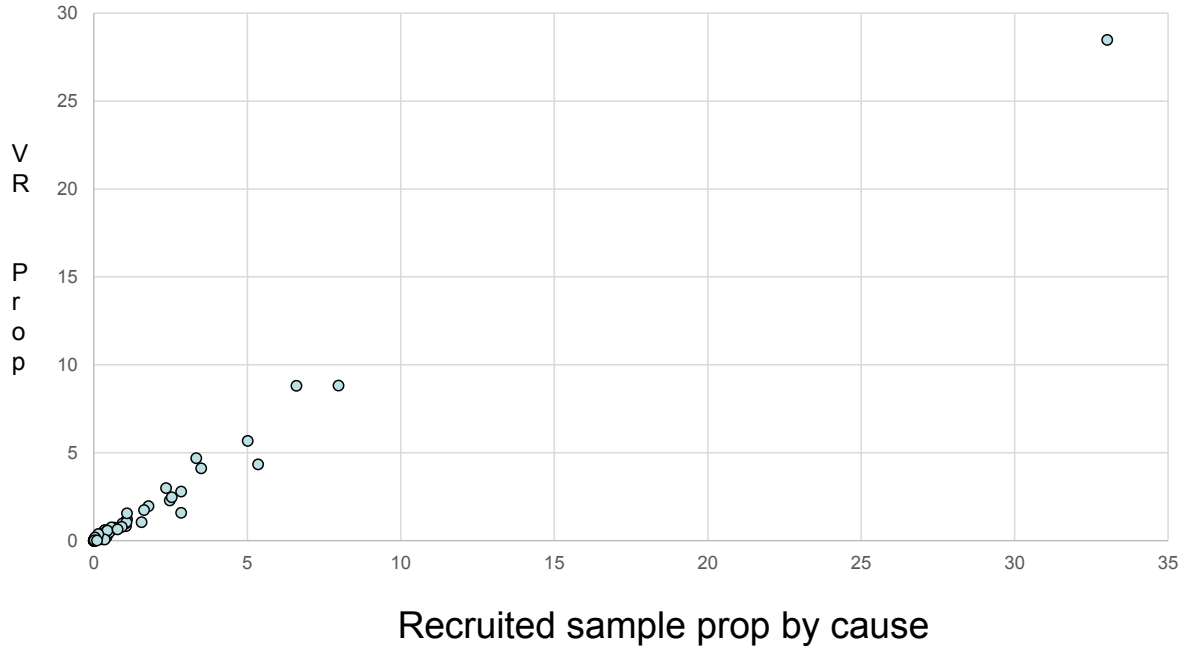

Figure 2 : Comparison of proportionate cause distributions of Vital Registration (VR) and study recruited sample deaths, Malaysia 2013

VERIFICATION OF VITAL REGISTRATION CAUSE OF DEATHS FOR NON-HOSPITAL DEATHS

The application of VA methods vastly improved the assignment of cause of deaths in the study sample compared with Vital Registration cause of deaths. In particular, the proportion of "symptoms and ill-defined conditions" causes were reduced from 65.0% to 24.9% (a reduction of almost 40%). Similar pattern were seen in diagnoses of "others" in specific categories (other heart, other external cause, other respiratory) (Table 3)

Table 3: Changes in the percentages of diagnosis in top 20 causes of death in Vital Registration (VR) using Verbal Autopsy (VA) procedure

Cause of deaths	VR (%)	VA (%)	Difference (%)
Symptoms and ill-defined conditions	64.7	24.7	-40.0
Transport accidents	4.4	6.5	2.1
Other heart diseases	4.4	2.1	-2.3
Ischaemic heart diseases	2.8	12.9	10.1
Diabetes mellitus	2.7	5.0	2.3
Cerebrovascular diseases	2.4	11.1	8.7
All other external causes	2.1	0.5	-1.6
Other malignant neoplasms	2.1	2.1	0.0
Chronic lower respiratory diseases	1.5	5.5	4.0
Hypertensive diseases	1.4	1.8	0.4
Renal failure	1.2	1.5	0.3
Trachea, bronchus and lung cancer	0.9	1.8	1.0
Pneumonia	0.8	5.2	4.4
Liver cancer	0.8	1.0	0.2
Other diseases of the respiratory system	0.6	0.2	-0.4
Accidental drowning	0.6	0.8	0.2
Other diseases of the nervous system	0.6	0.6	0.0
Breast cancer	0.5	1.2	0.7
Septicaemia	0.4	0.7	0.3
Cancer of colon, rectum and anus	0.4	2.0	1.6
Others	4.6	12.8	8.2
TOTAL	**100.0**	**100.0**	

Further analysis among ill-defined conditions in VR diagnoses showed that among males, 44.1 % of the "symptoms and ill-defined conditions" were reallocated into ischaemic heart disease (13.3%), cerebrovascular diseases (11.8%), chronic lower respiratory diseases (8.8%), pneumonia (5.5%) and diabetes mellitus (4.7%) (Table 4).

Table 4: Proportion reallocation (in %) by Verbal Autopsy (VA) to specific causes for deaths coded to ill-defined conditions (R00-R99) in the study sample for males

Cause	<50	50 - 59	60 - 69	70-79	80+	Total
Ischaemic heart diseases	16.8	23.9	17.3	10.8	10.5	13.3
Cerebrovascular diseases	2.1	12.5	9.8	14.2	12.6	11.8
Chronic lower respiratory diseases	5.3	5.7	8.7	8.6	10.5	8.8
Pneumonia	0.0	3.4	6.3	5.9	6.2	5.5
Diabetes mellitus	4.2	5.7	6.3	5.2	3.1	4.7
Other heart diseases	2.1	0.0	1.2	3.2	2.4	2.2
Cancer of colon, rectum and anus	3.2	4.5	0.8	2.0	1.9	2.0
Hypertensive diseases	0.0	4.5	1.6	1.6	2.1	1.8
Respiratory tuberculosis	0.0	0.0	2.4	1.1	2.4	1.6
Trachea, bronchus and lung cancer	1.1	1.1	1.6	1.4	1.2	1.3
Other malignant neoplasms	1.1	3.4	2.0	0.7	1.0	1.2
Renal failure	1.1	0.0	0.4	1.4	1.9	1.2
Falls	1.1	1.1	1.2	1.4	1.0	1.2
Diseases of the liver	1.1	1.1	1.2	0.9	1.2	1.1
Symptoms and ill-defined conditions	27.4	21.6	26.0	30.2	35.2	30.2
Other specified causes	33.7	11.4	13.4	11.7	7.1	12.1
TOTAL DEATHS	**95**	**88**	**254**	**444**	**421**	**1302**

Among females, similar pattern was seen with top 5 reallocation diagnoses were among those 5 diagnoses (as in male) (Table 5).

Table 5: Proportion reallocation (in %) by Verbal Autopsy (VA) to specific causes for deaths coded to ill-defined conditions (R00-R99) in the study sample for females

Cause	<50	50 - 59	60 - 69	70-79	80+	Total
Cerebrovascular diseases	12.1	15.8	14.2	15.7	12.8	14.0
Ischaemic heart diseases	9.1	12.3	10.0	9.6	8.1	9.1
Pneumonia	12.1	7.0	4.7	7.3	8.6	7.6
Diabetes mellitus	0.0	10.5	6.3	6.3	3.6	5.0
Chronic lower respiratory diseases	3.0	0.0	4.7	4.2	4.7	4.3
Other heart diseases	3.0	0.0	2.1	2.6	2.2	2.2
Hypertensive diseases	0.0	0.0	2.6	3.0	1.1	1.9
Falls	3.0	1.8	1.1	2.6	1.4	1.8
Other malignant neoplasms	3.0	3.5	2.6	1.6	1.2	1.7
Diseases of the skin	0.0	0.0	1.1	1.4	2.2	1.6
Diarrhoea / gastroenteritis of infectious origin	6.1	0.0	0.5	1.6	1.4	1.4
Trachea, bronchus and lung cancer	0.0	3.5	3.7	1.6	0.5	1.4
Cancer of colon, rectum and anus	0.0	1.8	2.6	1.2	0.9	1.3
Breast cancer	0.0	5.3	3.2	0.7	0.8	1.3
Symptoms and ill-defined conditions	27.3	26.3	25.3	33.0	42.0	35.8
Other specified causes	21.2	12.3	15.3	7.5	8.6	9.6
TOTAL DEATHS	**33**	**57**	**190**	**427**	**641**	**1348**

However, VA was unable to ascertain specific causes for about 30% to 35% of ill-defined conditions in the study sample. These may be contributed by the absence of clear symptom patterns for these deaths.

Along with the substantial reduction in the proportion of deaths originally assigned to ill-defined conditions, the study also identified several important diagnostic differences among deaths assigned by VR. Table 6 provides a summary of the extent of misclassification for the 15 leading causes of deaths assigned by VR.

In addition to ill-defined, a majority of deaths from "other" categories were also allocated to specific causes as shown by a very low kappa scores (<0.2). Other specific causes showed a fair to moderate agreement (kappa<0.6). However, the external causes of deaths (eg: transport accident) showed a substantial agreement (kappa>0.7).

Overall, the large number of deaths reclassified by VA from ill-defined conditions and "other" categories result in an increase in the proportions of deaths classified to specific causes such as ischaemic heart disease (from 2.8% to 12.9%), cerebrovascular disease (from 2.4% to 11.1%) and chronic lower respiratory diseases (from 1.5% to 5.5%).

Table 6 : Misclassification patterns suggested by Verbal Autopsy (VA) procedures among non-hospital deaths

Cause of deaths	Total Vital Registration (VR)	Agreement with VR	Assigned to other causes	Assigned from other causes	Total VA	Kappa
Symptoms and ill-defined conditions	2650	875	1775	135	1010	0.19
Transport accidents	182	181	1	85	266	0.80
Other heart diseases	181	15	166	71	86	0.09
Ischaemic heart diseases	115	80	35	448	528	0.21
Diabetes mellitus	111	42	69	163	205	0.24
Cerebrovascular diseases	100	67	33	389	456	0.21
All other external causes	87	4	83	16	20	0.07
Other malignant neoplasms	85	31	54	56	87	0.35
Chronic lower respiratory diseases	63	34	29	191	225	0.22
Hypertensive diseases	58	5	53	67	72	0.06
Renal failure	50	20	30	43	63	0.35
Trachea, bronchus and lung cancer	35	25	10	47	72	0.46
Pneumonia	34	13	21	198	211	0.09
Liver cancer	31	17	14	24	41	0.47
Other diseases of the respiratory system	26	2	24	5	7	0.12
All Other causes	288				747	
Total deaths	**4096**				**4096**	

VALIDATION OF VITAL REGISTRATION DIAGNOSIS FOR HOSPITAL DEATHS

There were 5207 medical records reviewed in this study. Table 7 is a population-level assessment of the validation characteristics and implicative insinuations of misdiagnoses for the leading causes of hospital deaths as reported in the vital registration system. Our principal interest is the reassignment of deaths, pristinely relegated to nonspecific categories in the registration data, to categorical causes of death upon medical record review.

Ill-defined causes and septicemia (which is an immediate rather than underlying cause of death) together account for virtually 9% of hospital deaths in vital registration, but on reassessment, are collectively estimated to cause about 2% of deaths.

Proportionate mortality from pneumonia, withal often the immediate rather than underlying cause of death, was decremented upon review, from 14.44% to 5.9%. Several "other" or residual categories for major disease and injury groups additionally declined substantially after review, categorically "all other external causes," "other heart diseases," and "other respiratory diseases".

The reassignment of deaths from the above nonspecific categories upon medical record review resulted in a substantial increase (20% to 75%) in the relative consequentiality of cerebrovascular disease (12.4% of all hospital deaths), ischemic heart disease (13.6%), transport accidents (6.2%), malignancy (7.8%), renal diseases (2.4%), digestive system diseases (2.7%) and genitourinary diseases (1.6%) as leading causes of deaths in Malaysian hospitals in 2013 (males and females coalesced).

In integration, the medical record review assigned deaths to several paramount causes that have not been categorized in Table 8 and are currently listed under the "Final" column as 1,966 deaths due to "other causes."

Observed sensitivity scores are low for some causes of death, due to the reassignment of deaths from nonspecific categories. Positive predictive values, on the other hand, are more indicative of the validity of registration diagnosis because they show the proportion of deaths registered from a specific cause that are actually due to that cause upon medical record review. As expected, these scores are comparatively low for the nonspecific categories but are higher for specific causes such as cerebrovascular diseases, site-specific cancers, ischemic heart diseases and transport accidents, among others. While these findings provide some confidence in cause-of-death certification and coding among registration data for these causes, it is important to understand in more detail the nature and extent of misclassification patterns in the registration data to guide remedial action.

Table 7: Validation characteristics of Medical Record (MR) review

Cause of deaths	Medical Record (MR) diagnosis	Vital Registration (VR) diagnosis	Validation scores for VR		
			Sensitivity (95% CI)	PPV (95% CI)	CSMF changes in VR (%)*
Pneumonia	458	757	0.68 (0.64,0.72)	0.41 (0.37,0.46)	65.3
Ischaemic heart diseases	716	708	0.76 (0.73,0.79)	0.77 (0.73,0.80)	-1.1
Cerebrovascular diseases	652	437	0.54 (0.50,0.58)	0.80 (0.77,0.83)	-33.0
Septicaemia	51	401	0.75 (0.63,0.86)	0.09 (0.01,0.18)	686.3
Transport accidents	325	208	0.55 (0.49,0.60)	0.86 (0.82,0.89)	-36.0
Other diseases of the respiratory system	66	196	0.42 (0.31,0.54)	0.14 (0.06,0.23)	197.0
Other heart diseases	130	186	0.48 (0.39,0.56)	0.33 (0.25,0.41)	43.1
All other external causes	80	171	0.34 (0.23,0.44)	0.16 (0.08,0.24)	113.8
Trachea, bronchus and lung cancer	151	151	0.89 (0.84,0.94)	0.89 (0.84,0.94)	0.0
Other malignant neoplasms	164	135	0.66 (0.59,0.74)	0.81 (0.75,0.87)	-17.7
Renal failure	127	129	0.41 (0.32,0.54)	0.40 (0.42,0.49)	1.6
Other diseases of the digestive system	141	125	0.45 (0.37,0.54)	0.51 (0.43,0.59)	-11.3
Breast cancer	96	98	0.96 (0.92,1.00)	0.94 (0.89,0.99)	2.1
Other genitourinary diseases	86	87	0.47 (0.36,0.57)	0.46 (0.35,0.57)	1.2
All other causes			0.60 (0.49,0.72)	0.50 (0.38,0.62)	
Total deaths	**2172**	**2172**			

Table 8: Discrepancies observed between Verbal Autopsy (VA) diagnosis and Medical Record (MR) review

Causes of deaths	Medical Records (MR) Diagnosis																
Vital Registration (VR) Diagnosis	**74**	**67**	**69**	**12**	**96**	**77**	**68**	**103**	**34**	**46**	**86**	**81**	**36**	**84**	**80**	**All other causes**	**Total**
Pneumonia (74)	311	22	87	3	8	18	19	4	7	6	13	20	1	6	4	228	757
Ischaemic heart diseases (67)	19	542	10	0	4	0	13	1	0	2	10	13	0	2	1	91	708
Cerebrovascular diseases (69)	7	13	351	1	13	1	7	1	0	0	4	3	0	1	0	35	437
Septicaemia (12)	44	14	19	38	5	6	8	2	2	7	20	17	1	20	7	191	401
Transport accidents (96)	1	1	0	0	178	0	0	26	0	0	0	0	0	0	0	2	208
Other respiratory diseases (77)	15	7	80	2	4	28	4	2	1	1	3	2	0	1	0	46	196
Other heart diseases (68)	3	39	8	0	0	2	62	1	1	0	4	2	0	2	2	60	186
All other external causes (103)	1	0	6	0	96	0	2	27	0	1	0	1	0	0	0	37	171
Lung cancer (34)	5	0	1	0	0	1	0	0	135	5	0	0	1	1	0	2	151
Other cancers (46)	1	2	1	1	0	0	0	0	3	109	1	0	0	0	0	17	135
Renal failure (86)	7	12	7	0	1	0	1	0	0	1	52	3	0	4	1	40	129
Other digestive diseases (81)	1	2	3	1	1	0	1	0	0	2	3	64	0	1	4	42	125
Breast cancer (36)	0	0	1	0	0	0	0	0	1	3	0	0	92	0	1	0	98
Other genitourinary diseases (84)	0	0	4	1	6	1	0	0	0	0	3	0	0	40	0	32	87
Liver diseases (80)	4	3	0	0	1	1	0	0	0	1	0	1	0	0	41	30	82
All other causes	39	59	74	4	8	8	13	16	1	26	14	15	1	8	7	1045	1338
TOTAL	**458**	**716**	**652**	**51**	**325**	**66**	**130**	**80**	**151**	**164**	**127**	**141**	**96**	**86**	**68**	**1898**	**5209**

VALIDATION OF VERBAL AUTOPSY PROCEDURE

The validity of the verbal autopsy (VA) in the Malaysian context is measured in the sample of deaths in hospital for which a reference diagnosis was derived from the review of medical records and a VA interview with subsequent VA diagnosis of cause of death was also achieved. Total number of sample for the validation analysis was 2,172 cases and these constituted the matched sample for the VA validation study. Table 9 divulges some interesting findings which have essential implications when used to adjust VA validation results. Firstly, sensitivity scores were good (>75%) for transport accidents and certain site-specific cancers, demonstrating that if a death is diagnosed by VA to be from these causes, it is likely to be actually due to that cause. VA displayed moderate sensitivity (50%-75%) for other leading causes of death which include ischaemic heart disease (65%) and cerebrovascular disease (59%). Sensitivity was poor (<50%) for deaths from 'other' categories, which might be expected, but was also poor for leading specific causes such as pneumonia (35%), diabetes (36%) and COPD (47%). To minimize the impact of poor sensitivity scores on the net changes to cause-specific mortality proportions, compensatory misclassification patterns were seen within the validation sample as seen in deaths due to pneumonia, although this is not the case for other causes. On the whole, VA tends to underdiagnose cerebrovascular disease, renal failure, other digestive system diseases and other malignant neoplasms while over counting for important causes such as diabetes, liver disease, COPD and respiratory tuberculosis.

The matrix in Table 10 details the misclassification patterns for important causes of death that result in these changes to cause-specific mortality proportions in the validation study sample. A very high positive predictive value (PPV) was evident in deaths caused by transport accidents, as almost all deaths classified to this by VA were confirmed upon medical review (177 out of 206 deaths). Also, only 16 deaths were classified to transport accidents from pneumonia and non-communicable diseases, indicating good sensitivity (92%). On the other hand, 72% of deaths classified to cerebrovascular disease by VA were confirmed by medical record review (170 out of 236 deaths) indicating a moderate PPV value, average sensitivity as well as an undercount by approximately 18%. However, merely 32% of deaths classified by VA to diabetes were confirmed (33 out of 102), signifying a low PPV, with the others being cases of pneumonia (13%), cerebrovascular disease (10%), and renal failure (8%) amongst other conditions. Following from this, VA overcounts deaths from diabetes by 47% as indicated by the number of deaths classified to other conditions by VA that were actually found to be due to diabetes upon MR review were not as many as the VA misdiagnoses of diabetes. It is worth taking note that despite the negligible difference in cause-specific mortality fractions from VA and MR

diagnoses for ischaemic heart disease, the matrix shows considerable misclassification, with 35% of VA diagnoses of IHD being incorrect as well as an equal proportion of deaths classified to other causes upon medical record review.

Of particular interest is the utilization of verbal autopsy procedures to validate deaths caused by cancer as evident from the medical records review (Table 11). On the whole, sensitivity scores ranged from average to good for the top 10 leading site-specific cancers. VA was especially good at discerning deaths due to breast cancer signifying a very high sensitivity score (94%) and almost all deaths classified to this were confirmed upon medical record review (32 out of 36 cases) indicating also a high PPV value of 89% with a low cause-specific mortality proportion. VA tends to overdiagnose stomach cancer, with only 43% of deaths classified by VA to this were confirmed (low PPV). The converse was seen for deaths from leukaemia, liver, pancreatic and brain cancers which were undercounted, however, deaths that were categorized by VA to these causes were verified by high PPV scores of 75%, 78%, 83% and 88% respectively. In summary, the VA validation scores derived from this study are similar to the findings from VA validation studies conducted in China and Thailand.

Table 9: Validation characteristics of Verbal Autopsy (VA) procedures for 15 leading causes of hospital deaths

Cause of deaths	Medical Record (MR) diagnosis	Verbal Autopsy (VA) diagnosis	Validation scores for VA		
			Sensitivity (95% CI)	PPV	CSMF changes in VA (%)*
Ischaemic heart diseases	311	316	0.65 (0.60,0.71)	0.64	1.6
Cerebrovascular diseases	282	236	0.60 (0.55,0.66)	0.72	-16.3
Transport accidents	193	206	0.92 (0.88,0.96)	0.86	6.7
Pneumonia	182	178	0.37 (0.30,0.44)	0.38	-2.2
Diabetes mellitus	91	102	0.36 (0.26,0.46)	0.32	12.1
Chronic lower respiratory diseases	73	99	0.48 (0.36,0.59)	0.35	35.6
Other heart diseases	48	65	0.21 (0.09,0.32)	0.15	35.4
Renal failure	80	64	0.35 (0.25,0.45)	0.44	-20.0
Other diseases of the digestive system	58	42	0.33 (0.21,0.45)	0.73	3.4
Other malignant neoplasms	60	41	0.38 (0.26.0.51)	0.45	-27.6
Respiratory tuberculosis	30	40	0.47 (0.29,0.65)	0.56	-31.7
Cancer of colon, rectum and anus	28	37	0.71 (0.55,0.88)	0.35	33.3
Breast cancer	34	36	0.94 (0.86,1.00)	0.54	32.1
Diseases of the liver	25	36	0.40 (0.21,0.59)	0.89	5.9
All other causes	677	674			
Total deaths	**2172**	**2172**			

Table 10: Discrepancies observed between Verbal Autopsy (VA) diagnosis and Medical Records (MR) review

Cause of deaths	Medical Record (MR) Diagnosis																
Verbal Autopsy (VA) Diagnosis	**67**	**69**	**96**	**74**	**52**	**76**	**68**	**86**	**34**	**81**	**46**	**5**	**30**	**36**	**80**	**All other causes**	**Total**
Ischaemic heart diseases (67)	203	24	2	13	10	8	9	7	1	2	0	0	3	0	0	34	316
Cerebrovascular diseases (69)	8	170	2	13	8	1	3	4	0	4	1	0	0	0	0	22	236
Transport accidents (96)	2	2	177	1	1	0	0	1	0	0	0	0	0	0	0	22	206
Pneumonia (74)	9	13	1	67	4	12	5	8	2	0	3	1	0	0	2	51	78
Diabetes mellitus (52)	7	7	1	8	33	4	3	5	0	3	1	1	1	1	0	27	102
Chronic lower respiratory diseases (76)	13	10	0	19	2	35	4	1	2	2	1	0	0	0	0	10	99
Other heart diseases (68)	18	2	0	10	3	1	10	1	0	1	0	0	0	0	1	18	65
Renal failure (86)	4	1	0	3	5	1	3	28	0	1	0	0	0	0	0	18	64
Trachea, bronchus and lung cancer (34)	0	1	0	3	1	1	0	0	44	0	2	2	0	0	0	6	60
Other diseases of the digestive system (81)	1	1	0	3	0	1	1	2	0	19	0	1	0	0	0	13	42
Other malignant neoplasms (46)	2	0	0	2	1	0	0	0	1	0	23	1	2	0	0	9	41
Respiratory tuberculosis (5)	2	3	0	8	1	1	0	0	0	0	0	14	0	0	0	11	40
Cancer of colon, rectum and anus (30)	1	0	0	0	1	0	0	0	1	1	6	0	20	0	0	7	37
Breast cancer (36)	0	1	0	0	0	0	0	0	0	0	1	1	0	32	1	0	36
Diseases of the liver (80)	1	1	1	2	1	0	0	0	0	4	0	1	0	0	10	15	36
All other causes	40	46	9	30	20	8	10	23	7	21	22	8	2	1	11	356	614
TOTAL	**311**	**282**	**193**	**182**	**91**	**73**	**48**	**80**	**58**	**58**	**60**	**30**	**28**	**34**	**25**	**619**	**2172**

Table 11: Validation characteristics of Verbal Autopsy (VA) procedures for selected cancer

Cause of deaths	Medical Record (MR) diagnosis	Verbal Autopsy (VA) diagnosis	Validation scores for VA		
			Sensitivity	PPV	CSMF changes in VA (%)*
Trachea, bronchus and lung cancer	58	60	75.9	73.3	3.4
Cancer of colon, rectum and anus	28	37	71.4	54.1	32.1
Breast cancer	34	36	94.1	88.9	5.9
Liver cancer	25	22	68.0	77.3	-12.0
Leukaemia	20	16	60.0	75.0	-20.0
Stomach cancer	8	14	75.0	42.9	75.0
Lip, oral cavity and pharyngeal cancer	8	11	75.0	54.5	37.5
Cervix cancer	6	8	83.3	62.5	33.3
Brain cancer	12	8	58.3	87.5	-33.3
Pancreatic cancer	8	6	62.5	83.3	-25.0

MORTALITY ESTIMATES FOR MALAYSIA, 2013

As described in the methods section, the study findings on reclassification of causes of death from the hospital as well as non-hospital deaths were used to develop adjusted cause-specific mortality estimates for Malaysia. Table 12 and Table 13 show the estimated leading causes of death for males and females in Malaysia, 2013. Ischaemic heart disease is the leading cause of death among males in Malaysia in 2013 at 15.4% with 12,656 deaths. Cerebrovascular disease and chronic obstructive pulmonary disease are second and third on the list respectively at 13.7% and 8.5%. Among females, cerebrovascular disease is the leading cause of death with 11,057 deaths, representing 18.3% of deaths among females. Ischaemic heart disease is the second leading cause of death at 12.7%.

Table 12 : Estimated Top 20 leading causes of death among Males, Malaysia. 2013

	Cause of deaths	Deaths	%
1	Ischaemic heart disease	12656	15.4
2	Cerebrovascular disease	11224	13.7
3	Chronic obstructive pulmonary disease	6942	8.5
4	Road traffic accidents	6580	8.0
5	Lower respiratory infections	6151	7.5
6	Diabetes mellitus	4042	4.9
7	Trachea, bronchus & lung cancers	2543	3.1
8	Other cardiac diseases	2091	2.6
9	Colon & rectum cancers	2042	2.5
10	Nephritis & nephrosis	1808	2.2
11	Other infectious diseases	1691	2.1
12	Other digestive diseases	1651	2.0
13	Tuberculosis	1554	1.9
14	Other malignant neoplasms	1370	1.7
15	Hypertensive disease	1299	1.6
16	Liver cancer	1230	1.5
17	HIV	1191	1.5
18	Liver diseases	1082	1.3
19	Prostate cancer	839	1.0
20	Falls	804	1.0
	TOTAL	**81941**	**100.0**

Table 13 : Estimated Top 20 leading causes of death among Females, Malaysia. 2013

	Cause of deaths	Deaths	%
1	Cerebrovascular disease	11057	18.3
2	Ischaemic heart disease	7638	12.7
3	Lower respiratory infections	6921	11.5
4	Diabetes mellitus	4321	7.2
5	Chronic obstructive pulmonary disease	2435	4.0
6	Other cardiac diseases	2132	3.5
7	Breast cancer	1959	3.3
8	Other malignant neoplasms	1645	2.7
9	Other digestive diseases	1637	2.7
10	Nephritis & nephrosis	1511	2.5
11	Hypertensive disease	1369	2.3
12	Colon & rectum cancers	1256	2.1
13	Other infectious diseases	1235	2.0
14	Road traffic accidents	1169	1.9
15	Trachea, bronchus & lung cancers	1153	1.9
16	Asthma	826	1.4
17	Other genitourinary diseases	796	1.3
18	Skin diseases	737	1.2
19	Falls	717	1.2
20	Tuberculosis	672	1.1
	TOTAL	**60621**	**100.0**

The changes between the original registration data and the final study estimates are shown in the following tables, Table 14 and Table 15, which demonstrate the impact and importance of the field research study. Ill defined cause is no longer the leading cause of death for both males and females, as previously seen from the vital registration data. Ischaemic heart disease is estimated to be the leading cause of death for males and cause 15.4% of deaths, an increase from 9.7% based on data from the vital registration. There are also other significant changes seen in the cause of death among males with stroke moving up to the second leading cause of death at 13.7% and Chronic Obstructive Pulmonary Disease as the third leading cause of death at 8.5%. There is also a large shift in Diabetes, moving up to the sixth leading cause of death from the previous fifteenth leading cause of death based on the vital registration data. Stroke, which was the fourth leading cause of death among females in the vital registration data, is the leading cause of death among females at 18.3% based on this study estimates. Ischaemic heart disease is the second leading cause of death at 12.7%. A large shift is also seen in diabetes among deaths in females, from twelveth in the vital registration data to fourth based on this study estimates. Breast cancer is the seventh leading cause of death among females at 3.3%.

Table 14 : Comparison between leading causes of death from Vital Registration (VR) data and from the field study estimates for males, Malaysia 2013

	Vital Registration (VR) Cause	%		Study Estimates	%
1	Ill defined conditions	28.0	1	Ischaemic heart disease	15.4
2	Ischaemic heart disease	9.7	2	Cerebrovascular disease	13.7
3	Lower respiratory infections	6.7	3	COPD	8.5
4	Other/ill defined heart diseases	6.2	4	Road traffic accidents	8.0
5	Road traffic accidents	5.2	5	Lower respiratory infections	7.5
6	Cerebrovascular disease	5.0	6	Diabetes mellitus	4.9
7	Other injuries	3.9	7	Lung cancers	3.1
8	Septicaemia	3.3	8	Other cardiac diseases	2.6
9	COPD	3.1	9	Colon & rectum cancers	2.5
10	Other respiratory	2.6	10	Nephritis & nephrosis	2.2
11	Other malignant neoplasms	2.2	11	Other infectious diseases	2.1
12	Lung cancers	2.1	12	Other digestive diseases	2.0
13	Nephritis & nephrosis	2.1	13	Tuberculosis	1.9
14	Hypertensive disease	1.5	14	Other malignant neoplasms	1.7

Table 15 : Comparison between leading causes of death from Vital Registration (VR) data and from the field study estimates for females, Malaysia 2013

	Vital Registration (VR) Cause	%		Study Estimates	%
1	Ill defined conditions	39.8	1	Cerebrovascular disease	15.4
2	Lower respiratory infections	6.4	2	Ischaemic heart disease	13.7
3	Ischaemic heart disease	5.7	3	Lower respiratory infections	8.5
4	Cerebrovascular disease	5.0	4	Diabetes mellitus	8.0
5	Other cardiac diseases	4.2	5	COPD	7.5
6	Septicaemia	3.4	6	Other cardiac diseases	4.9
7	Other malignant neoplasms	2.8	7	Breast cancer	3.1
8	Nephritis & nephrosis	2.7	8	Other malignant neoplasms	2.6
9	Breast cancer	2.5	9	Other digestive diseases	2.5
10	Other respiratory diseases	2.5	10	Nephritis & nephrosis	2.2
11	COPD	2.5	11	Hypertensive disease	2.1
12	Diabetes mellitus	1.8	12	Colon & rectum cancers	2.0
13	Hypertensive disease	1.6	13	Other infectious diseases	1.9
14	Other injuries	1.4	14	Road traffic accidents	1.7

DISCUSSION

The validation of the verbal autopsy was carried out using medical records as the gold standard comparison. The validation of verbal autopsy for population level is considered to be acceptable in diagnostic accuracy if the sensitivity is at least 50% and CSMF within ± 20% of the true value[14]. This study found that transport accidents, ischaemic heart diseases and cerebrovascular diseases (top 3 leading causes for hospital deaths) had good sensitivity values among the 15 top leading hospital deaths. All cancers also had sensitivity between 58.3% and 94.1%. All major causes of death had acceptable CSMF values, with exception of chronic lower respiratory diseases, other heart diseases, respiratory tuberculosis and a few types of cancers.

The results of the validation must be interpreted taking into account that the deceased in this sample are among those who died in the hospital. The response to verbal autopsy questions by the relatives therefore may have been influenced by the information received from health workers and may not have been aware of the diseases symptoms that progressed or developed during the hospitalization. This would affect their response compared to answers of relatives of deceased at home. However, there is no other practical method of carrying out this validation without these limitations.

Even though the assessment of accuracy of death certificates is problematic and inherently with some limitations, comparing the cause of death in the vital statistics for hospital deaths with a Medical Records review enables us to determine the precision of the cause of death statistics[15-16]. This study found that the ill-defined causes and residual categories to substantially reduce with the Medical Records review. The sensitivity ranged between 34% and 86%. The CSMF shows large fluctuations due to the reallocation of ill-defined causes into more specific categories.

The large changes in the ill-defined causes highlights the lack of precision and limited value of current mortality statistics obtained from our vital registration for medically certified deaths. This also highlights the duality approach required in not only obtaining more accurate cause of death for deaths outside hospitals, but also a need to improve the cause of death certification of deaths occurring within medical facilities in Malaysia. Misclassification of deaths and ill-defined causes assigned by physicians have limited value for health policy and monitoring purposes. Educating physicians who are confronted with the task of completing death certificates have been shown to significantly improve the accuracy of death certification and reduce major errors both on the short and the long term[17-18].

When VA was applied on the non-medically certified deaths in the vital registration, the high Kappa score for transport accidents shows that deaths outside hospital recorded in the vital registration are accurate for these external causes. The low Kappa score in other specific categories highlights the disagreement between VA cause of death and VR cause of death.

The use of VA to assign cause of death for deaths occurring outside the hospital was able to reduce the "symptoms and ill defined" cause, as seen in studies conducted in other countries[19]. This study found a substantial reduction around 40%, from 65.0% to 24.9%, of ill-defined cause to specific causes of death. A large proportion of the reallocated causes were into the current leading causes of death in Malaysia, such as ischaemic heart disease, cerebrovascular diseases and pneumonia. This would provide a clearer picture of the true burden of these diseases and lead towards better evidence based health planning and resource allocation by the health planners.

The mortality estimates for 2013 based on this study clearly improves the cause of death statistics. Ill defined cause is no longer the leading cause of death and has been reassigned to more specific causes. The reassignment has been seen to shift the leading causes of death among males and females. Not only are we more accurately able to quantify the burden of the leading causes of death, but also the changes seen in diseases such a Diabetes would clearly highlight the importance of prioritizing, managing and preventing this disease at all levels.

Improving the mortality statistics is vital to identify health problems, set priorities and monitor the effectiveness of current health programs. This study highlights that there is room and a need for improvement of mortality statistics in Malaysia. There are also significant changes seen in the leading causes of death when appropriate methods are used to improve the estimation. Inaccurate mortality statistics have an extensive and often unqiantifiable implication to the country, to the health care and to the economic outlook of the nation. Strengthening the mortality statistics has to be made a priority as it is the core of the public health and heathcare sector.

LIMITATIONS

Retrospective data collection is susceptible to losses to follow up as well as data collection errors. In this study, the primary caregiver of the deceased may themselves have moved residence to a different location, or coud not be contacted despite three attempts, or the deceased may have been living alone, with no surviving relative. This consequently leads to inability to conduct a VA interview and hence, no data. However, Figure 2 suggests that losses to follow up in this study were largel non-differential as to cause, hence minimising any potential biases in the study findings from this source.

In regard to data collection errors, this could arise as a result of less accurate data from family members whom might not have been the primary caregiver to the deceased during his death. In addition, verbal autopsy is also prone to recall bias as a result of poor memory on the part of the respondent. Difficulty to recall the symptoms and illness prior to death by relatives increases with the length of time since death. Since the VA interviews were done for deaths that had occurred about 12 months before the date of interview, the large gap between time of death and the VA interview potentially introduces recall bias.

Finally, bias could also occur on account of a deliberate pattern of mis-reporting of symptoms by the interviewee, on account of administrative pressures or social stigma, as may occur in the event of injury causes with medico-legal implications, or from diseases such as HIV/AIDS or tuberculosis. While the study implementation, quality control measures, and data analysis have applied suitable provisions to ensure accuracy of interpretation of study findings, keeping the limitations in mind, readers of this report should view the study results with appropriate caution.

CONCLUSION

Cause of death registration is essential as it provides us with critical information needed for health and development planning to improve the health and survival of the population[20]. VA is useful for understanding broad cause group mortality at population level. The use of VA in Malaysia is feasible and would help increase the accuracy of the vital mortality statistics in the country. Keeping in mind that VA is not intended to diagnose cause of death of individuals but as a tool to better describe the cause structure of mortality at the population level, the shortcomings of VA should not prevent us from benefiting from the cause-specific mortality information obtained through VA[21]. Application of VA on deaths outside the hospital in Malaysia would lead to more accurate cause of death of the deceased in our population. At the same time, we should also strengthen the death certification for deaths in the hospital to overall increase the accuracy of our mortality statistics. Using verbal autopsy and expansion of the vital registration will improve cause of death estimation, enable us to better understand the epidemiological transition that occurs within our society and better plan for the future health needs of the nation[22].

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Appendix 1 : Research Team Members

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Advisor :

Dr. Tahir Aris

Principal Investigator :

Dr. Mohd Azahadi Omar

Consultant :

Prof Chalapati Rao

Research Team Members :

Dr. Subash Shander Ganapathy

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Mohamad Fuad Mohamad Anuar

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Dr. Ahmad Faudzi Yusoff

Dr. Nor Saleha Bt Ibrahim Tamim

Dr. Naemah Sharifuddin

Dr. Nurliza Abdullah

Dr. S Maria Bt Awaluddin

Dr. Siti Fatimah binti Mat Hussin

Dr. Chong Zhou Lin

Dr. Mohd Kamal Ariff Bin Abdul Ghani

Dr. Jane Ling Miaw Yn

Dr Nur Liana Binti Ab.Majid

Appendix 2 : List of Data Collection Teams (Hospital)

Appendix 2 : List of Data Collection Teams (Hospital)

Liaison Officers :

Dr. Hajah Afiizah bt Abd Rahman - Hospital Sultanah Aminah

Dr. Ahmad Humaizi bin Mohamad Zakri - Hospital Queen Elizabeth II

Ahmad Syukri bin Abdullah - Hospital Kemaman

Dr. Amir bin Abdul Razak - Hospital Sultan Haji Ahmad Shah

Dr. Amir Hisyam bin Yazid - Hospital Saratok

Azyyati bt Mat Adam - Hospital Seri Manjung

Azman bin Ahmad - Hospital Tengku Ampuan Rahimah

Dr. Balkhis bt Abdullah - Hospital Sultanah Bahiyah

Che Wan Ilmiyah bt Che Wan Ahmad - Hospital Queen Elizabeth I

Dr. Chow Poh Lee - Hospital Kepala Batas

Prof. Madya. Dr. Choy Yin Choy – PPUKM

Dr. Dayang Bibi Zulaiqha - Hospital Sarikei

Dr. Delis Suzan Marshall - Hospital Seberang Jaya

Dr. Desmond Samuel - Hospital Miri

Dr. Dhani Darshan Francis - Hospital Enche' Besar Hajjah Kalsom

Dr. Dinesh Raja A/L Govindasamy - Hospital Bukit Mertajam

Dr. Emizam bin Mohamadon - Hospital Melaka

Dr. Fahmaa bt Azizi - Hospital Sik

Dr. Gayatheri Subramaniam - Hospital Baling

Dr. Girija A/P K. Kunchi Raman - Hospital Banting

Dr. Govinda Ram Prema Suhanya Muniandy - Hospital Serdang

Dr. Halim bin Sanot - Hospital Tuanku Ampuan Najihah

Hana Azira - Hospital Changkat Melintang

Dr. Hanif bin Mahmud - Hospital Tuanku Jaafar

Hazelina bt Daud - Hospital Kuala Krai

Dr. Hwang Ing Siong - Hospital Sibu

Dr. Izzah bt Ahmad - Hospital Sultanah Nora

Dr. Khazarina - Hospital Tawau

Dr. Kogulabalan A/L Goonasakran - Hospital Sultan Abdul Halim

Dr. Lam Ching Lung - Hospital Yan

Dr. Lim Zen Chia - Hospital Sungai Bakap

Maheswari A/P Kasi - Hospital Taiping

Md Azhari bin Md Zhahir - Hospital Kajang

Dr. Mohammad Faizal bin Mohd Rozali - Hospital Machang

Mohajazaini bin Mohammad - Hospital Tengku Ampuan Afzan

Mohd Isa bin Abdullah - Hospital Sultanah Nur Zahirah

Dr. Mohd Saifudin bin Ayob - Hospital Tuanku Fauziah

Mohd Yusof bin K. Mohd Ismail - Hospital Teluk Intan

Dr. Mohd Zul-Ikram bin Abd Mutalib - Hospital Kulim

Monica Abeng @ Churas Anak Edmund - Hospital Bintulu

Dr. Nasrullah bin Ismail - Hospital Setiu

Dr. Naumi bt Laboh - Hospital Lahad Datu

Dr. Nazhiyah bt Abdul Wahab - Hospital Kota Tinggi

Dr. Nirwan bin Oksa - Hospital Raja Permaisuri Bainun

Dr. Noorafidah bt Arsad - Hospital Hulu Terengganu

Noor Azlin bt Mohd Sharif - Hospital Selayang

Dr. Noreen bt Md Arus - Hospital Pakar Sultanah Fatimah

Dr. Norinawaty bt Abang Daud - Hospital Umum Sarawak

Dr. Nurlaili bt Zakaria - Hospital Tanah Merah

Dr. Nurliza bt Abdullah - Hospital Kuala Lumpur

Dr. R. Khuneesha P. Rudhakrishnan - Hospital Labuan

Dr. Raja Ahmad Reza bin Raja Lope Ahmad - Hospital Slim River

Rosli bin Hassan - Hospital Tampin

Dr. Rziq Fazzali bin Abdul Raes - Hospital Gerik

Ruziah - PPUM

Dr. Saiful Nazri bin Satiman - Hospital Raja Perempuan Zainab II

Dr. Sal bt Atan - Hospital Tangkak

Salim bin Yunus - Hospital Kuala Kangsar

Dr. Shahrum bin Haji Arshad - Hospital Jasin

Dr. Siti Azira bt Mohd Arif - Hospital Kuala Kubu Bharu

Dr. Siti Norasikin - Hospital Jengka

Dr. Siti Norbani bt Ahmad - Hospital Sultan Ismail

Siti Zamnah bt Mohamed Zaki - Hospital Sungai Buloh

Dr. Syuhada bt Hamzah - Hospital Pulau Pinang

Dr. Tan Wee Jian - Hospital Mersing

Dr. Tengku Nor Asmawati bt Tengku Mohd Nasir - Hospital Balik Pulau

Dr. Tg. Zaharah bt Tg Ibrahim - Hospital Dungun

Dr. Yong Wey Tyen - Hospital Putrajaya

Yusriyah bt Che Yaacob - Hospital Ampang
Zaini bt Mohd Nor – HUSM

Hospital Melaka :
Dr. Abd Rauf bin Kamarul Zaman
Dr. Farizah bt Othman
Dr. Goh Qing Ci
Dr. Lim Sheau Jen
Dr. Linda Lim
Dr. Misnar bt Mohd Taher
Dr. Mohamad Mahathir bin M.B. Abdul Naser
Dr. Mohd Hilmi bin Senin
Dr. Mohd Safiee bin Daud
Dr. Muhammad Nu'aim bin Mohd Azman
Dr. Noraisyah bt Mohd Apni
Dr. Norhamidah bt Taib
Dr. Nur Alfalailah bt Mohd Aris
Dr. Nur Sufiah bt Nordin
Dr. Nurliyana Johar
Dr. Ong Fen Ni
Dr. Rahmatul Mardziah bt Abdul Latip
Dr. Rhaathey Kishna
Dr. Sai Wanyi
Dr. Shanny Goh
Dr. Steve Charlin A/L Charles Maniam
Dr. Tan Shao Sze
Dr. Teo Chiang Wen
Noorbaizura bt Ramli
Norizan bt Beram

Hospital Jasin :
Dr. Gan Fei Lee
Dr. Hasmawati bt Muhammad Ismail
Dr. Mas Siti Aishah bt Masika
Dr. Masyitah bt Mat Radzi
Dr. Muhammad Hafiz bin Zulkeply

Dr. Muhd. Firdaus bin Jasmi
Dr. Nur Liyana bt Kahar
Dr. Nur Muhammad Hafiz bin Mohd Idris
Dr. Yasmin bt Mustapha
Hj. Amir bin Kassim
Nurshamira bt Mohd. Nor

Hospital Mersing :
Dr. Tang Mei Chern

Hospital Sultan Ismail :
Dr. Surya bt Marsom

Hospital Kuala Krai :
Dr. Amirr Johaniff bin Mohd Yusoff
Dr. Hajah Laila bt Abdullah
Dr. Mohamed Afiq Muizz bin Mohamed Rasidi
Dr. Mohd Abdul Ghani bin Zenul Abidin
Dr. Nabilah bt Ramli
Dr. Nik Hazlina bt Nik Hashim
Dr. Nik Mohd Faizal bin Zainal Abidin
Dr. Virmala A/P Kulathuran
Dr. Wan Mohamad Ikhuwan bin Wan Ahmad Sayuthi
Dr. Wee Siok Choon
Ku Noraini bt Ku Hassan
Mohd Azrizal bin Almi
Norhasbita bt Mohd Embi
Norlela bt Ismail
Roslina bt Mohd Yusoff
Rusmini bt Mat Deris

Hospital Machang :
Nordin bin Mat Isa

Hospital Sultan Haji Ahmad Shah :

Dr. Wong Kok Hoong

Anisah bt Mat Seman

Habibah bt mohd Basir

Norhayati bt Mohamed Sari

Norsyafiza bt Zainal Abidin

Nurul Huda bt Mohd Nawawi

Hospital Gerik :

Ainon bt Mohd Salleh

Nor Syahadah bt Ismail Ahmad

Roshafizawati bt Abd Rahman

Shazren Aida bt Sanusi

Wan Kamisah bt Wan Ahmad

Hospital Raja Permaisuri Bainun :

Dr. Adrian Gerard

Dr. Ahmad Hazwan Bin Ahmad Shushami

Dr. Buvaneshwari A/P Kandasamy

Dr. Chandan Ashok Kumar

Dr. Cheng Jing

Dr. Fara Bashar Barr

Dr. Harpreet Singh Sandhu

Dr. K. Arathi A/P Kailasam

Dr. Kartina Ariffin

Dr. Kiran Raj Sharma

Dr. Maizatul Aliaa Binti Abdul manan

Dr. Mohan A/L Brabaharan

Dr. Muhammad Firdaus Bin Madzlan

Dr. Nik Nadhrah Binti Nik Razin

Dr. Ooi Goon Keat

Dr. Rahimah Abd Rahim

Dr. Rajkumar Veerakumaran

Dr. Ramneeta Kaur

Dr. Rashid Khan Bin Shahul Hameed

Dr. Sanggeet Kaur A/P Ikbal Singh

Dr. Shoba Pathmanathan
Dr. Syed Nor Zurkarnain
Dr. Tasnim Abdul Aziz
Dr. Yeap Xin Yi

Hospital Kuala Kangsar :
Dr. Shaun De Silva

Hospital Tuanku Jaafar :
Dr. Sharifah Safoorah bt Syed Alwee Al' Aidrus
Nurul Amalina

Hospital Balik Pulau :
Dr. Jamil Ibrahim bin Nawab Rajah
Dr. Nadrah Hanisah bt Abd Rani
Hulwani bt Ismail

Hospital Putrajaya :
Zanariah bt. Abd Rahim

Hospital Kuala Lumpur :
Dr. Ahmad Hafizam bin Hasmi
Dr. Ashraf bin Ibrahim
Dr. Kastoori A/P Karuppanan
Dr. Kunasilan A/L Subramaniam
Dr. Nadia Affida bt Shamsuddin
Dr. Nurhidayah bt Mohd Yatim
Dr. Siew Sheue Feng
Dr. Sue Anida bt Azman
Dr. Tasnim bt Khalid
Halimah bt Zam Zami
Shawaluddin bin Saidon

Hospital Banting :
Dr. Sattiyasilan Raja

Hospital Bintulu :

Dr. Azyyati Hassan

Dr. Bouare Souleyman

Dr. Law Boon Tat

Dr. Lilian Boey

Dr. Naveed

Dr. Randeep Singh

Dr. Shafiee

Dr. Tracy Fuah

Hospital Umum Sarawak :

Dr. Ahmad Shafiie bin Ahmad Amran

Dr. Hanisah bt Zanal Abidin

Dr. Lau Hui Bing

Dr. Mohamad Yazid bin Shahrujie

Appendix 3 : List of Data Collection Teams (District)

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Liaison Officer :

Abdul Halim bin Abu Seman – Saratok
Dorai Juan - Bimtulu
Dr. Eric Henry – Jasin
Dr. Farizan bt Ahmad Zakil – Baling
Dr. Halipah bt Khalid – Hulu Perak
Jackson AK Ramawi – Bau
Johadi bin Ahmad – Rembau
Dr. Kalthom bt. Md Noh – Ledang
Mohd Khoza bin Mat - Dungun
Dr. Mohammad Zainie bin Hassan – Temerloh
Dr. Nor Hafizah bt Azman – Perak Tengah
Dr. Nurazlini bt Othman – Machang
Dr. Nurfatiniah bt Mukhtar – Tawau
Dr. Rahimah bt Ngah – WP Putrajaya
Dr. Sharan Jeet Kaur – Mersing
Dr. Tengku Intan Najwa – WP Labuan
Dr. Toh Ee Lyn - Gombak
Dr. Zulhizzam bin Abdullah – Kangar
Zuraini bt Nayan – Barat Daya

Pejabat Kesihatan Daerah Ledang :

Dr. Azmil bin Atiman
Dr. Nurul Aini bt Saimon
Dr. Suriani bt Sabdin
Dr. Zulaini bt Jamalludin
Adibah Hafizah bt Ismail @ Daud
Amaladhini A/P Sinatamby
Ammiruddin bin Abdullah
Arraiyannurul bt Ahman
Azizah bt Ramli
Datin Zalina bt Salleh
Faiezah bt Wahab
Faizah bt Mat Talip
Farhana bt Mispan
Fatimah bt Omar
Fauziah bt Mohd Noh
Habibah bt Husin
Hafirah bt Mohd @ Muhammad
Halimah bt Hashim
Hanifah bt Ahmad
Hisyamudin bin Haron
Hizana bt Ali
Jamaliah bt Jaafar
Jamrah bt Hashim
Johar bin Hassan
Kasinah bt Kadaya
Maizal bt Mohamed
Malini bt Husein
Mansor bin Ali
Massurah bt Rezali
Maznah bt Che Ahmad
Mohamad Rasdin
Mohd Farid bin Rahmat
Mohd Ferdaus bin Budiman
Mohd Yasin bin Samah
Mohd Zua bin Zakaria
Mohd Zulkamal bin Md Zin
Muhammad Ariff bin Bahrur Azmi
Muhammad Nashrullah
Nasriah bt Sari

Neelavathy A/P Chelliah
Nor Amiza bt Othman
Nor Muhamad Azikin bin Rabu
Nor Syazwani bt Mohd Suffian
Norain bt Ramu
Noraini bt Abdul Manaf
Noraslina bt Alias
Norazura bt Mohd Suap
Norhafiza bt Jalil
Norhafizah bt Abdul Shukor
Norhidayah bt Abu Bakar
Norizan bt Amin
Norladiawati bt Mohd Yazid
Norliza bt Rabogea
Norlizah bt Hamin
Normah bt Isa
Nurhidayah bt Jalil @ Amat
Nuril Ain bt Maliki
Nurul Asyikin bt Adalan
Nurul Hadzierah bt Samsuri
Nurul Jannah bt Daud
Nurul Syaza bt Abdul Manap
Pauziah bt Mohamad
Rahimah bt Abd Rahman
Ridzwan bin Ruslan
Roshaih bt Arshad
Rosidah bt Aris
Rosilah bt Omar
Roslina bt Jailani
Rozimah bt Sulong
Saadiah bt Abdullah
Saraswathi A/P Vaithilingam
Sarina bt Md Sidek
Shamsusillah bt Hashim
Shuhada bt Mohamad
Siti Aishah bt Maidin
Siti Fatimah bt Komari
Siti Hajar bt Enchi Sani
Siti Norzaini bt Ishak
Siti Zawani bt SH Abdullah

Suriani bt Abdullah
Syaifura Nakiah bt Samsudin
Zaiton bt Surip
Zalifah bt Kamarudin
Zamiah bt Janis

Pejabat Kesihatan Daerah Mersing :
Dr. Loges Batumelai
Dr Shashitharan K. P. Damodaran
Amirudin Othman
Azilawati Aziz
Juwita Johari @Mohamad
Muhammad Azri Muazzan Bin Abdul Aziz
Nor Amira Binti Daud
Norhafiza Ariffin
Roslan Zakaria
Shakina Mohamad Sarif
Sherydayu Itnin
Siti Zaharah Zaib
Suhaira Ismail
Yamunarany A/P Mageswaran
Zuraini Abdul Wafar

Pejabat Kesihatan Daerah Machang :
Dr. Abdah Adzimah bt Che Mohd Noor
Dr. Addina bt Mohd Baki
Dr. Ayuni bt Rameli
Dr. Hamizah bt Ismail
Dr. Mohd Azizul bin Ahmad
Dr. Nar Wei Shian
Dr. Nor Shamilah bt Ismail
Dr. Wee Shi Ning
Adawiyah bt Adam
Ang Chai In
Asnat bt Ismail
Azirose bt Che Ali
Azizah bt Dollah
Azizah bt Mohammad
Azraim bin Abdullah @ Ismail
Che Wan Kasmini bt Che Wan Ahmad

Faridah bt Othman
Fatimah bt Salleh
Hamidah bt Said
Hayyazlina bt Mohd Yunus
Hazlin Rafiza bt Harun
Intan Azlina bt Mat Seman
Junaidah bt Haron
Khatijah bt Mohamad
Komariah bt Semail
Maimun bt Yahya
Murni bt Ahmad
Noor Eliayati bt Alias
Nor Aida bt Che Harun
Nor Azida bt Che Will
Nor Hayati bt Mohamed
Nor Zalina bt M. Yusoff
Nora bt Awang
Noraini bt Mohamed
Noraslawati bt Mat Arip
Noriah bt Mohd Nor
Norsazlida bt Che Soh
Norzila bt Mohd Zain
Rahmah bt Isa
Rohani bt Ramli
Roslina bt Abd Razak
Rosmaini bt Mat Zin
Rosmaniza bt Abdullah
Rozilawati bt Ahmad
Sarfaharina bt Mat Luwi
Seripah Eshah bt Syed Mahmood
Shamsiah bt Saat
Siti Juairiah bt Wel
Siti Marhanom bt Che Kar
Siti Maznah bt Isa
Suryati bt Abdullah
Tuan Normawati bt Tuan Soh
Wan Zuraida bt Wan Sulaiman
Zaiemira bt Che Lah
Zainn bt Jusoh
Zainun bt Mat

Zairul Azlina bt Che Malim
Zaiton bt Mohamed
Zakiah bt Mohamad
Zalawati bt Yasin

Pejabat Kesihatan Daerah Rembau :
Ahmad Zakwan bin Zainal
Noremiza bt Ramlee
Rahimah bt Ismail
Ramani Ammal A/P Poomalay
Sivaraman A/L Nadaraja
Suzie bt Mohd Isa

Pejabat Kesihatan Daerah Temerloh :
Dr. Ahmad Eisa Bin Zakaria
Dr. Akramin B. Mahir
Dr. Anuar B. Mohamad
Dr. Azreena Bt. Azhari
Dr. Azuwa B. Hj Arif
Dr. Catherine Thamarai a/p Arumugam
Dr. Che Ku Mohd Syafiq Bin Che Ku Muda
Dr. Dorothy Maria a/p Anthony Bernard
Dr. Fatina Anha Bt. Fazid
Dr. Kavitah a/p Vanamohanan
Dr. Maalini a/p Ghanasekaran
Dr. Mahfudzah Sarah Bazilah Bt. Mansor
Dr. Mohammad Zainie Bin Hassan
Dr. Mohd Rusydan Bin. Hilmi
Dr. Muhammad Akasyah B. Shaharudin
Dr. Nadia Bt. Mohd Sufian
Dr. Ng Sock Wen
Dr. Ng Tze Kiat
Dr. Nur Atiqah Bt. Zahri
Dr. Nur Izzati Bt. Rani
Dr. Nurul Ashikin Binti Zasni
Dr. Praveena a/p Sivapatha Sundram
Dr. Sajidah Yusrina Bt. Zaimi
Dr. Samurah Bt. A Rahman
Dr. Shaidatul Sheeda Bt Musa
Dr. Shakir Naim Bin. Termizi

Dr. Sharipah Fotimah Bt. Syed Abdullah
Dr. Siti Norkhazirah Bt. Abdul Khatab
Dr. Siti Rasidah Bt. Abd Ghani
Dr. Siti Rohani Bt. Mohd Amin@Muhamad
Aminah Bt. Basri
Aminah Bt. Md Zali
Arinayanti bt Mohamed Hashim
Azlina Binti Ali
Azlina Bt. Mohd Ariffin
Azratul Hamiza Bt Abdul Hamid
Briget Anak Libok
Ely Sahida Binti Abdul Ghani
Elyani Binti Husain
Fatimah bt Sabdin
Fatimatunzarah bt. Mohd Radzi
Fauziah bt. Yahaya
Haizan bt Mamat
Hapsah bt Md. Nor
Hardawati Binti Alam Kubat @ Mat Kahar
Harnisuzana Bt. Mukhtar
Harzuwa Bt. Harun
Hasnita Binti Mat Isa
Jamaliah Bt. Darus
Jamiza Binti Jaafar
Maimuri bt. Abdullah
Maizatul Akma Bt. Yaccob
Maizurawati Binti Abdul Mubin
Mariam bt Ibrahim
Maslinda Bt. Awang Kechik
Maziaty bt Nordin
Musliha bt. Hj. Rais
Nasyitah Binti Sharipuddin
Nik Suriani Bt. Nik Mustaffar
Noor Asiah bt Zakaria @ Muhammad
Noor Suriati Binti Saad
Noorazuin bt Abd. Hamid
Noorlina bt Salleh
Noormajiah bt. Abd.Manaf
Nor Aini bt. Abdul Hamid
Nor Azalina bt Mohamad Ali

Nor Azean Binti Zainul Ariff
Nor Aziah bt Abd. Ghani
Nor Azlita Bt. Mohamed Yusoff
Nor Bayani bt. Tuaman
Nor Fadila Bt. Kassim
Norahani Bt. Ibrahim
Noraidah bt. Asbari
Noraini Binti Ab Rashid
Noraini bt Mat Nor
Noraini Bt. Abdul Aziz
Norazlini Binti Hassan
Norfarahana Binti Md. Mahidin
Norhaniza Binti Musa
Norhasziana Binti Zulkifly
Noriza bt Adam
Norma Bt. Othman
Norma Laili Binti Ab. Aziz
Nornadiatul Miza Bt. Yusop
Norshakila bt. Amaludin
Norsidah Bt. Sulaiman
Norsuhaida Bt. Nor Hashim
Norziah Bt. Sharif
Norzinah A/P Dondong
Nur Adawiah Binti Samsudin
Nur Ain Abdullah
Nur Nasuha Binti Mohd Noor
Nur Syafinaz Binti Hamzah
Nur Zarifah Binti Mohd Hairudin
Nuru Saindah Bt. Mohamed
Nurul Ain Binti Abdullah
Nurul Faziha Binti Zulmi
Nurul Hidayah Binti Abd Hamid
Nurulapzan Binti Mohd Jamil
Rahani bt Mohd Amin
Rodiyah Binti Abdul Majid
Rofidah Bt. Yusoof
Rohayu bt Razali
Rosimah Binti Kadir
Rosley bt. Dunuk
Roslinda bt Mustafar

Rosliza Bt. Bakar
Rosmalinda bt M. Salleh
Rosmarina Binti Yaacob
Rosnah bt. Abu Zar
Rosnah bt. Ali
Rosnizam Bt. Majid
Rozalina Binti Abdul Rahman
Rozana Hani Binti Sabarudin
Rozilawati binti Mohd Sa-ide
Rozita Bt. Lood
Rusniah Binti Laah
Rusniyati Binti Zakaria
Salina bt. Mohammed
Salmarina Binti Safari
Shahrina Bt. Sahil
Siti Aisah bt Romizan
Siti Alina Bt. Abd Rahman
Siti Mariam bt Abdullah
Siti Mashitah Bt. Akmal Hidzri
Siti Nor Saadah Bt. Mat Zahari
Siti Norbaizura bt. Abdullah
Siti Rogayah Binti Othman
Siti Shashura bt A. Shukor
Siti Suriana Bt. Abdullah
Siti Zuraida Bt. Abdullah
Sumaiyah bt Shuhaimi
Suriati Binti Mahmud
Tay Mooi Hwang
Tuan Salwana Binti Tuan Yusof
Zaiti Suhaila Binti Zakaria Nor
Zaitun Bt. Che Abas
Zamzurina Binti Abu Jalil
Zanariah Binti Basori
Zinap Bt. Mohd Petah
Zulaiha bt. Mohd Shah

Pejabat Kesihatan Daerah Barat Daya :
Dr. Cheah Kah Yang
Dr. Farinnee Bt Ahmad
Dr. Mohamed Iqbal Bin Hamzah

Dr. Ong Hoon Ngoh
Dr. Siti Sarah Azmil
AnizaYahya
Aryani Md Nor
Farhah Shaari
Hazana Hasbullah
Kalaiselvi Asoggan
Kogilawani Muniandy
Leckchumi Santhanasamy
Mohamad Rahmad Samsudin
Noor Farhana Mohd Nasir
Noorhidayah Suaaidi
Noorshahida Mohamad Noor
Noorzilawati Mohd Rozlan
Norazanani Bt Mohd Nor
Norazira Razak
NorHasliza Ahmad
Noriah Bt Mat Isa
Norlizai Md Noor
Norma Abdullah
Norma Mohd Noor
Norsiah Bt Saod
Norsiha Yusoff
Norzila Che Ali
Nurafiqah Ismail
Nurul Huda Mat Rawi
Nurul Ilyana Ibrahim
Prema Sreedewy Subramaniam
Rohani Wahab
Roshida Mat Zawazi
Roshita Rahim
Sharida Jafar
Siti Harison Bt Zakaria
Syadiah Ayob

Pejabat Kesihatan Daerah Perak Tengah :
Abdul Aliff Syafiq B Abdul Latif
Azwaniza Bt Mohd Daud
Erlina Bt Yahya
Fatimah Bt Hashim

Fatimah Bt Husin
Hamizan Bt Rafiee@Kamaruddin
Hanisah Bt Ngah Kulop
Jamilah Bt Zakaria
Kamisah Rahizan Bt Zainal Abiddin
Mimi Syahrina Bt Muhamad
Mohamad Fairus B Ismaail @Ismail
Mohd Ridzuan B Japor Sedik
Muhamad Bahtiar Bin Ahmad
Muhammad Faiz B Mohd Said
Munirah Bt Ramli
Nazatul Syahida Bt Abdul Rasyid
Nor Ashila Bt Samsuddin
Nor Dahlia Bt Ro
Nor Hanisah Bt Nawawi
Nor Syafika Bt Mohd Rathi
Noraida Bt Shamsuddin
Noranaina Bt Darus
Nur Dini Bt Saiya
Nur Munirah Bt Idrus
Nurhanum Bt Harun
Nurhidayatur Nazarah Bt Mohd Shuib
Nurlela Bt Ahmad
Nursurya Bt Jaafar
Nurul Huda Bt Hussin
Puteri Shalina Bt Jaafar
Rohaida Bt Mahmad
Roslina Bt Sepiey@Shafie
Rossimah Bt Hussin
Ruslina Bt Wahab
Sa'odah Bt Saidin
Saidatul Akmar Bt Ahmad
Sanira Bt Mustafa
Siti Azmirah Bt Mohd Nor
Siti Sarah Bt Sahidin
Suhana Bt Karim
Sutha A/P Kanapathy
Suzana Bt Musa
Tengku Nor Malini Bt Ku Yusof
Tuan Ernie Farida Bt Tuan Zainudin

Umi Kalsom Bt Iskandar
Umi Kalsom Bt Zulkefli
Zahmira Bt Mohamed Noor
Zanariah Bt Abdullah Zahid

Pejabat Kesihatan Daerah Kangar :
Dr. Abdul Karim Zaki Bin Ismail
Dr. Ahmad Nurfikri Bin Abd. Rahman
Dr. Karen Christelle
Dr. Loh Wei Chieh
Dr. Nor Bidayah Bt Supardy
Dr. Nordiana Bt Rosli
Dr. Rumaizah Bt Ahmad
Dr. Sharul Rizan Bin Ilias
Dr. Sofizah Bt Sabri
Fazilah Bt Talib @ Taib
Hartini Bt Johari
Lailatul Hana Bt Abdullah
Marizah Bt Md Zain
Mohd Aizuddin B Bahrun
Mohd Faez Effendi Bin Razan
Mohd Faizal Bin Ishak
Muhammad Nur Iman Bin Abu Osman
Muhammad Zul Hasyimi Bin Bakri
Noor Azman Bin Zainol
Nor Azah Bt Halib@ Ahmad
Nor Fatihah Bt Awang Fadzin
Norainon Bt Shamsuddin
Norhayati Nordin
Norjamiza Bt Jamil
Nurul Ashiken Bt Rosli
Rohilah Bt Dohat
Rosalinda Bt Jaya
Roshasimayati Bt Mamat
Shamsul Suzairi Bin Ahmad Shukri
Shurohyati Bt Ismail
Siti Husna Bt Ramli
Wan Rohaya Bt Wan Hamzah

Pejabat Kesihatan Daerah Tawau :

Dr Mohd Faiz Itam
Dr. Asmidar Amir
Dr. G. Navindran
Dr. Haryati Hamzah
Dr. Norbayah Sarjono
Abd. Kader Bin Abu Sari
Alexween Bin Kasamin
Angela @ Rani Binti Gustin
Arbaniah Oman
Ardan Maan
Asmiah Binti Dullah
Aysa Saley
Azizah Kassim
Darmawati Safri
Halim
Hellory Manji
Hjh Justina Simon
Ismail Bin Hj. Bakri
Jubaidah Binti Lorancio
Jumah Atoh
Kelase Binti Saliwong
KJK Mina Jalalin
Kumar
Maimunah Binti Salikan
Mazlan Bin Musi
Muhibah Harudin
Noraziaty Salleh
Nur Arilani
Nurhidayah Suhardi
Nurul Qhairunnisha Binti Amir Hassan
Paesa Nawir
Rabiatul Adawiyah Hj Kaning
Ricky Kampulin
Rita Dewi Binti Risal
Rukiah Siji
Sarimahwati Dini
Siti Khairunissa Sani
Siti Masita Binti Japri
Surayah Binti Abdul Latip

Umarkhalid Bin Musa
Yatimah Binti Kuding
Zulariel Arian

Pejabat Kesihatan Daerah Bau :
Dr. Melvin Chung Hsien Liang
Dr. Nur Liyana bt Ismail
Amieliawati bt Arip
Angela AK Rakow
Asep Ak Bagos
Daniel Alphonsus AK Sunsek
Dayang Norzian bt Awg. Rashid
Debbie Alicia Sory
Dohia Anak Rigong
Gadung Abai
Kesmed anak Sontai
Margarita AK Jimbai
Masdayanti bt Hamden
Mohamad Izzudin bin Abdullah
Nur Amira bt Mohd Radzi
Nurul Khairunnisa bt Masleh
Rona AK Pajong
Ruiz AK Jikong
Selimah AK Meru

Pejabat Kesihatan Daerah Saratok :
Dr. Shareezan Hoklai bin Sarudu
Chan Yau Siew
Eleanor Dilam Anak Jana
Isa bin Hj. Narawi
Mohammad Zainol Nuzri
Norliza bt Latif
Suib bin Jenal

Pejabat Kesihatan Daerah Dungun :
Dr. Abdul Mussawwir Bin Bakri
Dr. Ahmad Syukri Bin Mahmud
Dr. Fatin Imtithal Binti Adnan
Dr. Melissa A/P Gabriel
Dr. Mhathavi A/P Tambusamy

Dr. Nur Halesa Bin Ali
Dr. Wan Najwa Aima Binti Wan Mansor
Dr.Sarinah Binti Hamidon

Pejabat Kesihatan Daerah Labuan :
Dr. Abdul Hafiz bin Ghani
Dr. Ishvinder Singh Parmar
Dr. Wan Mohd Harith bin Wan Mustapha
Ahmad Farhan bin Sedik
Angelina Patrick
Ernawati bt Mistamiruddin
Farhana bt Nasip
Judith Anthony
Maziana bt Yunus
Mazlinah bt Razali
Norhasmida bt Mohd Daud
Rohaini bt Abd Ghani
Roshaida bt Hashim
Rubiah bt Tamin
Salinah Safiqah bt Salleh
Tiawa Ahmad

Pejabat Kesihatan Daerah Putrajaya :
Lina bt Ibrahim
Marhaida bt Mahmood
Mariati bt Abd Rahman
Mohd Baharuddin bin Mohd Zali
Nazrah bt Yusuf
Nor Suzi bt Ahmad
Rosmadia bt Mat Zain
Zulkarnain Husain

Appendix 4 : Medical Records Abstraction Form

Kajian Penyebab Kematian di Malaysia
A Study on Cause of Death in Malaysia

MEDICAL RECORD ABSTRACTION FORM
BORANG ABSTRAK REKOD PERUBATAN

INSTITUT KESIHATAN UMUM
KEMENTERIAN KESIHATAN MALAYSIA

UNTUK DIISI OLEH PENEMURAMAH

HOSPITAL

ID SI MATI

TARIKH

NAMA PEGAWAI PERUBATAN

MEDICAL RECORD DATA ABSTRACTION FORM

PATIENT DEMOGRAPHICS

Initials: _____

Date: ___/___/_____

1.1 Study ID Number: Name ☐☐☐☐☐☐☐☐ checked against Study ID Master Sheet ☐

1.2 Sex ☐ 1 Male ☐ 2 Female

1.3 Age at Death ____ years (if≥1 year) ____ months (if ≤1 year) ____ days (if < 1month)

1.4 Is case a stillbirth? ☐ → If yes, stop here (If uncertain, please continue)

1.5 Date of Birth ___/___/_____/ ☐ No Info
dd mm yyyy

1.6 Date of Death ___/___/_____/
dd mm yyyy

1.7 Residence of Deceased (as detailed as possible)

_____ Village I____I____I

_____ Island I____I____I

HOSPITAL DETAILS

2.1 Hospital Name:_____

2.1 Case Died in Hospital? ☐ 1 YES ☐ 2 NO

2.3 Date of Final / Most Recent Admission ___/___/_____/ ☐ Not Applicable
dd mm yyyy

2.4 If case died outside hospital
Date of Most recent Discharge ___/___/_____/ ☐ Not Applicable
dd mm yyyy

FEMALE DEATH

☐ Not Applicable

3.1 Was this person pregnant ☐ 1 YES ☐ 2 NO

3.2 Did the death occur within 6 weeks of either a delivery or abortion?

☐ 1 YES ☐ 2 NO

3.3 If yes to either question:
Provide details – (Include Date of Delivery, complications, single or multiple birth, child born alive etc)

_____
_____
_____
_____
_____

INJURY DEATHS ☐ Not Applicable

4.1 Intent of the injury:
☐ 1 Intentional ☐ 2 Unintentional ☐ 3 Not known / not stated

For Intentional Injuries:

4.2 Was this death: ☐ 1 Suicide ☐ 2 Homicide

For All Injuries:

4.3 Mode of death (i.e. fall / poisoning / hanging / stabbing / burn / MVA etc)

_____
_____

4.4 Describe the injuries (include body part and effect)

_____
_____
_____
_____
_____

4.5 Additional Info: (How did the injury occur?)

_____
_____
_____
_____
_____
_____
_____
_____

i.Road traffic accident – whether pedestrian or occupant of vehicle, type of vehicles involved
ii. Accidental poisoning – nature of poison, circumstances of poisoning
iii. Fall – from where, how
iv. Drowning – well, lake, river, sea
v. Burns – how (stove burst, gas cylinder, house fire, chemical burns Etc)
vi. Bite of venomous animal
vii. Other unintentional injuries such asoccupational injuries – nature ofwork, mechanism of injury etc.

NON-INJURY RELATED DEATHS
(And injury related where other disease factors were involved) ☐ Not Applicable

HISTORY, EXAMINATION, INVESTIGATION AND PROGRESS

Recent History

5.1 Clinical case summary: (please write a brief description of the presenting illness and clinical events during hospitalization in chronological sequence, culminating in either death or discharge of the patient. Include any relevant investigation results and diagnoses, as recorded by treating physicians in the case record)

5.2 Were any of the following laboratory investigations performed? (Locally or Overseas)

Test	Performed? (Tick if Yes)
Haematology	
Haemoglobin	
White cell count	
Differential leucocyte count	
ESR	
Urinalysis	
Glucose	
Albumin	
Microscopy	
Biochemistry	
Biochemistry Glucose metabolism	
Fasting plasma glucose	
2 hours post prandial plasma glucose	
Ketones	
Glycosylated haemoglobin	
Biochemistry liver function tests	
Serum bilirubin	
ALT	
AST	
Prothrombin time	
Biochemistry Renal function tests	
Blood urea	
Serum creatinine	
Electrolytes	

Test	Performed? Tick if Yes)
Biochemistry Prostate specific antigen	
Infectious disease serology	
Hepatitis B	
Hepatitis C	
HIV	
Cardiovascular diagnostics	
ECG	
Echocardiography	
Cardiac perfusion scan	
Coronary angiography	
Cardiac enzymes – CKMD	
Troponins	
Pulmonary diagnostics	
Chest x-ray	
Sputum for AFB	
AFB culture report	
Spirometry	
FEV1%	
Peak expiratory flow rate	
Ventilation perfusion scan	

5.3 Provide details of all positive test results – include dates / test type and results

_____

_____

_____

5.4 Were any of the following imaging studies performed? (Locally or Oversease)

Study	Performed?
Barium contrast radiology	
Ultrasonography	

Test	Performed?
Laparoscopy	
Endoscopy	

CT scan	
MRI	
Other x-rays (including mammography)	

Colonoscopy	
Colposcopy /hysteroscopy	

5.5 Provide details of all positive imaging results – include dates / study type and results

5.6 Describe any histopathology results (cancers, liver and renal biopsies) ☐ Not Applicable

Chronic Disease / Conditions

5.7 Did this person have a chronic disease or condition ☐ 1 YES ☐ 2 NO

5.8 What disease(s) / condition(s):

5.9 What evidence (lab tests/ diagnostics) were used to make this diagnosis (include results)

5.10 What was the earliest date in record where this disease / condition was noted?
Month / Year:

5.11 Any noted complications from the chronic condition? (Describe including date and Outcome):

5.12 Was the person taking any medication / treatment to control this disease or condition?

☐ 1 YES ☐ 2 NO

Surgery / Invasive Procedures

5.13 Was any surgery / invasive procedure performed on this person within the last 4 months?

☐ 1 YES ☐ 2 NO

5.14 If yes → Describe the procedure (include date, outcome and complications if noted)

AIDS Defining Condition

5.15 Is there a positive HIV test result on file ☐ 1 YES → ___/___/_____ ☐ 2 NO

5.16 Does the medical record show evidence of AIDS defining conditions?

Karposi sarcoma	☐ YES ☐ NO	Oropharyngealcandidiasis	☐ YES ☐ NO
Pulmonary or extrapulmonary tuberculosis	☐ YES ☐ NO	Chronic or disseminated herpessimplex	☐ YES ☐ NO
Meningitis	☐ YES ☐ NO	Generalized lymphadenopathy	☐ YES ☐ NO
Weight loss > 10% of body weight	☐ YES ☐ NO	Persistent dermatitis	☐ YES ☐ NO
Chronic diarrhea > 1 month	☐ YES ☐ NO	Neurological impairment (not	☐ YES ☐ NO
Prolonged fever > 1 month	☐ YES ☐ NO	Recurrent pneumonia	☐ YES ☐ NO
Persistent cough > 1 month	☐ YES ☐ NO	Invasive cervical cancer	☐ YES ☐ NO
History of Herpes Zoster	☐ YES ☐ NO		

END OF QUESTIONNAIRE

CAUSE OF DEATH:

Cause of death	Approximate interval between onset and death
I Disease or condition directly Leading to death* a)…… due to (or as a consequence of)	.....
Antecedent causes Morbid conditions, if any, Giving rise to the above cause, Stating the underlying Condition last b)…… due to (or as a consequence of)	……
c) …… due to (or as a consequence of)	……
d) ……	……
II Other significant conditions Contributing to the death, but Not related to the disease or Condition causing it ……..	……
……..	……
** This does not mean mode of dying e.g. heart failure, respiratory failure. It means the disease, injury, or complication that caused death*	

Assigned by:

_____

(NAME :)

(DATE :)

ICD-10 CODING

Cause of death in section :	ICD-10 Coding
Ia	
Ib	
Ic	
Id	
II	

FINAL ICD-10 CODING (BASED ON RULES AND REGULATION FOR MORTALITY CODING)

Assigned by:

_____

NAME:

DATE:

Appendix 5 : Questionnaires (Above 12 Year-Old)

INSTITUT KESIHATAN UMUM
KEMENTERIAN KESIHATAN MALAYSIA

Kajian Penyebab Kematian di Malaysia
A Study on Cause of Death in Malaysia

BORANG SOAL SELIDIK (ATAS 12 TAHUN)
QUESTIONAIRE (OBOVE 12 YEAR-OLD)

UNTUK DIISI OLEH PENEMURAMAH

PEJABAT KESIHATAN DAERAH

ID SI MATI

TARIKH TEMURAMAH

NAMA PEGAWAI PERUBATAN

RISALAH MAKLUMAT DAN BORANG PERSETUJUAN PESERTA

Arahan kepada peserta:
Sila ambil masa yang secukupnya untuk membaca dengan teliti penerangan yang diberi sebelum anda bersetuju untuk menyertai kajian ini.

1. **Tajuk Penyelidikan:**
   Kajian Penyebab Kematian di Malaysia

2. **Nama Penyelidik Utama dan Institusi:**
   Dr Mohd Azahadi Bin Omar
   Institut Kesihatan Umum, Jalan Bangsar,
   Kuala Lumpur.
   No.tel: 03-22979400
   Faks: 03-22823114

3. **Nama Penaja**:
   Institut Kesihatan Umum, Kementerian Kesihatan Malaysia

4. **Pengenalan:**

   Penentuan sebab kematian berdasarkan sistem yang standard dapat membantu pihak bertanggungjawab untuk mengukur beban penyakit yang ditanggung oleh penduduk dalam sesebuah negara. Dengan mengenal pasti jenis penyakit yang paling kerap menyebabkan kematian, pihak berwajib dapat merancang kaedah pencegahan bagi menghalang kejadian penyakit tersebut daripada berlaku. Sistem pendaftaran kematian di Malaysia masih lagi menggunapakai penentuan sebab kematian oleh pihak berkuasa setempat walaupun sebahagian besar sebab kematian telah disahkan oleh pegawai perubatan.

   Kajian ini ditaja sepenuhnya oleh Kementerian Kesihatan Malaysia dan telah mendapat kelulusan Jawatankuasa Etika dan Penyelidikan Perubatan, Kementerian Kesihatan Malaysia.

   Penyertaan anda dalam kajian ini adalah secara sukarela dan anda boleh menarik diri pada bila-bila masa. Anda juga boleh menolak dari menjawab sebarang soalan jika anda tidak mahu. Keengganan anda untuk mengambil bahagian, atau penarikan diri anda tidak akan menjejaskan sebarang manfaat perubatan atau kesihatan yang sememangnya hak anda.

5. Apakah tujuan penyelidikan ini dilakukan?

Tujuan kajian ini dijalankan adalah untuk menentukan sebab-sebab kematian berdasarkan Soal selidik autopsi lisan terhadap waris terdekat simati. Di samping itu, kajian ini juga dijalankan untuk menentusahkan Soal Selidik Autopsi Lisan sebagai satu alat yang dapat digunakan untuk menentukan sebab kematian pada peringkat komuniti.

6. Apakah manfaatnya saya menyertai penyelidikan ini?

Penyelidikan ini dapat membantu pihak bertanggung jawab dalam menentukan sebab-sebab utama yang menyumbang kepada kematian bagi penduduk di Malaysia. Ia juga dapat membantu anda dalam mengenal pasti risiko-risiko yang menyumbang kepada kematian saudara terdekat anda dan seterusnya melakukan aktiviti pencegahan dan rawatan pada peringkat awal.

7. Tempoh masa dan lokasi kajian

Kajian ini dilaksanakan di seluruh Malaysia terhadap populasi yang terpilih secara rawak. Kajian in bermula pada Mac 2014 dijangka tamat pada Disember 2014.

8. Apakah yang perlu saya lalui/lakukan sekiranya bersetuju untuk menyertai kajian ini?

Anda perlu menandatangani Borang Persetujuan Peserta yang disertakan pada muka surat terakhir risalah ini.

Anda akan melalui sesi temuramah oleh penemuramah yang telah dilatih selama 30 minit hingga 45 minit. Isi kandungan temuramah adalah berkaitan dengan tahap kesihatan simati semasa sebulan sebelum kematian dan juga sejarah kesihatan beserta faktor risiko yang berkaitan.

9. Adakah maklumat perubatan saya akan dirahsiakan?

Segala maklumat yang diperolehi dalam kajian ini akan disimpan dan dikendalikan secara **SULIT**, bersesuaian dengan peraturan-peraturan dan/ atau undang-undang yang berkenaan. Sekiranya hasil kajian ini diterbitkan atau dibentangkan kepada orang ramai, identiti anda atau simati tidak akan didedahkan.

10. Apakah kesan sampingan yang mungkin terjadi?

Tiada risiko atau keburukan jika anda menyertai kajian ini, kerana kajian ini hanya melibatkan sesi temuramah dan borang kaji selidik sahaja.

11. Bolehkah kajian ataupun penyertaan saya ditamatkan penyelidik?

Penyelidik atau penaja boleh menamatkan kajian ini ataupun menamatkan penyertaan anda dalam kajian ini pada bila-bila masa. Keputusan akan dibuat jika;

a. Demi kepentingan anda adalah baik untuk menghentikan penyertaan ini.
b. Kajian ini dibatalkan.

12. Hak untuk menarik diri

Anda berhak untuk menarik diri pada bila-bila masa. Anda juga boleh menolak dari menjawab sebarang soalan jika anda tidak mahu. Keengganan anda untuk mengambil bahagian, atau penarikan diri anda tidak akan menjejaskan sebarang manfaat perubatan atau kesihatan yang sememangnya hak anda.

13. Bayaran dan pampasan

Anda tidak akan dikenakan bayaran dan anda juga tidak akan dibayar bagi penglibatan dalam penyelidikan ini.

14. Siapakah yang perlu saya hubungi sekiranya saya mempunyai sebarang pertanyaan?

Sekiranya anda mempunyai sebarang soalan mengenai kajian ini atau memerlukan keterangan lanjut, sila hubungi ketua penyelidik Dr. Mohd Azahadi bin Omar di talian 03-22979400 .

Jika anda mempunyai sebarang pertanyaan berkaitan dengan hak-hak anda sebagai peserta dalam kajian ini, sila hubungi Setiausaha, Jawatankuasa Etika & Penyelidikan Perubatan (MREC), Kementerian Kesihatan Malaysia di talian 03-22874032

#Setelah anda memahami maklumat kajian ini dan anda berhasrat untuk menjadi peserta secara sukarela, anda perlu menandatangani Borang Persetujuan Peserta, yang disertakan.

BORANG PERSETUJUAN PESERTA

Tajuk kajian: Kajian Penentuan Penyebab Kematian di Malaysia

Dengan menandatangani di bawah, saya mengesahkan bahawa:

	Sila tandakan √ di dalam kotak
1. Saya telah diberi maklumat tentang kajian di atas secara lisan. / Saya telah membaca dan memahami segala maklumat yang diberikan di dalam risalah ini dengan jelas.	
2. Saya mempunyai masa yang secukupnya untuk mempertimbangkan penyertaan saya dalam kajian ini dan telah diberi peluang untuk bertanyakan soalan dan semua soalan saya telah dijawab dengan memuaskan.	
3. Saya faham bahawa penyertaan saya adalah secara sukarela dan boleh menarik diri daripada kajian ini pada bila-bila masa tanpa memberi sebarang sebab.	
4. Saya memahami risiko dan manfaat yang mungkin dengan kajian ini dan saya memberi keizinan saya secara sukarela untuk mengambil bahagian dalam kajian ini	
5. Saya faham bahawa pegawai penyelidik, pemantau-pemantau yang layak, auditor-auditor dan pihak berkuasa yang berkenaan mempunyai akses langsung kepada data saya untuk memastikan kajian ini dijalankan dengan betul dan data direkodkan dengan betul. Semua maklumat dan data peribadi akan dipastikan **SULIT**.	

Peserta:

Tandatangan: ……..... Nombor K/P: …….....

Nama: ……..... Tarikh: ……..….....

Penyelidik yang mengendalikan proses menandatangani borang keizinan:

Tandatangan: ……..... Nombor K/P: ……...…...

Nama: ……..... Tarikh: …….....

Saksi tidak berpihak/adil: (Diperlukan; jika subjek adalah buta huruf dan kandungan risalah maklumat pesakit disampaikan secara lisan kepada subjek).

Tandatangan: ……..... Nombor K/P: ……....….....

Nama: ……..... Tarikh: .....

RESPONDENT INFORMATION SHEET AND INFORMED CONSENT FORM

Instruction to the respondent:
Please take your time to read through and consider this information carefully before you deciding to participate voluntarily in this study.

1. **Research Title:**
   A Study on Determination of Cause of Deaths in Malaysia

2. **Name of the principal investigator and institution:**
   Dr Mohd Azahadi Bin Omar
   Institute for Public Health
   Ministry of Health
   Jalan Bangsar, Kuala Lumpur.
   No.tel: 03-22979400
   Faks: 03-22823114

3. **Name of sponsor**:
   Institute for Public Health, Ministry of Health Malaysia.

4. **Introduction:**
   Information on cause of death based on standard guideline helps the responsible authority to measure the burden of disease of people in a country. By finding the type of disease that frequently cause death, the relevant authority can initiate a programme in preventing the disease. Death Registry System in Malaysia still using cause of death given by the local authority although most of the cases have been confirmed by medical authority.

   This study is fully sponsored by Ministry of Health Malaysia and approved by Malaysian Research Ethic Committee.

   Your participation in this study is voluntary and you may withdraw at any time. You can also refuse to answer any questions if you do not want to. Your refusal to participate or withdrawal will not affect any medical or health benefit that is certainly your rights.

5. What is the purpose of the study?

This research is to find the cause of death based on Verbal Autopsy Interview session with the next of kin or the nearest relative of the deceased. Besides that, this study will validate the Verbal autopsy questionnaires as a tool for determination of cause of death in the community.

6. What is the benefit if I participating in this study?

This study helps the relevant authority to confirm the major causes of deaths in Malaysian population. It also helps you in identifying the risk factors that contribute to the death of your relative and promptly plan for an early intervention and prevention activities.

7. The duration and location of the study.

This Research will be done throughout Malaysia for the randomly selected population. It is starts on March 2014 plans to be finished by December 2014.

8. What will happen if I decide to take part?

Once you understand the study information and you wish to participate, you must sign an informed consent form which is provided at the last page of this brochure. You will be interviewed by the trained interviewer for 30 - 45 minutes. The content of the interview session will be related to the health status of the deceased a month before the death, previous medical history and the related risk factors.

9. Will the information be kept private and confidential?

All the information obtained in this study will be kept and handled in a CONFIDENTIAL manner, in accordance with applicable laws and/or regulations. When publishing or presenting the study results, your identity or the deceased identity will not be revealed.

10. What are the potential risks if I participating in this study?

There is no risk for taking part in this study as the procedure involves only an interview session.

11. Can the research or my participation be terminated earlier from the scheduled time?

Researchers or sponsors may terminate this study or terminate your participation in this study at anytime. Decisions will be made if;

a. It is in your best interest not to continue in the study.

b. This study was canceled.

12. The right to withdraw

Your participation in this study is voluntarily and you may withdraw at any time. You can also refuse to answer any questions if you do not want to. Your refusal to participate or withdrawal will not affect any medical or health benefit that is certainly yours.

13. Payment and compensation.

You do not have to pay for participating in this study; similarly no payment is available for you if you participate in this study.

14. To whom should I call if I have questions?

If you have any question regarding this research or need further information, please contact the principal investigator Dr. Mohd Azahadi bin Omar at 03-22979400 .

If you have any questions regarding your rights as the respondent in this research, please contact: Secretary of the Ethics and Medical Research, Ministry of Health Malaysia at 03-22874032.

#Once you understand the study information clearly and you wish to participate, you must sign an informed consent form.

INFORMED CONSENT FORM

Research Title: A Study on Determination of Cause of Deaths in Malaysia

By signing below, I certify that:

	Please tick and initial each box
1. I have been given information about the research orally. I have read and understand the information provided in this brochure clearly.	
2. I have had sufficient time to consider my participation in this research and was given the opportunity to ask questions and all my questions have been answered satisfactorily.	
3. I understand that my participation is voluntary and may withdraw from this study at any time without giving any reason.	
4. I understand the possible risks and benefits of this research and I voluntarily give my informed consent in this study.	
5. I understand that the research officer, qualified observers, auditors and the relevant authorities have direct access to my data to make sure the data is properly and correctly recorded. All personal information and data will be held with **CONFIDENTIAL**.	

Respondent:

Signature: ……. I/C no: …….

Name: …….. Date:……

Researchers who conduct the process of signing the consent form:

Signature: …… I/C no: ……...

Name: ……. Date: …….

Witness impartial/ fair: (Required, if the subject is illiterate and content of patient information leaflets delivered orally to subjects)

Signature: …… I/C no: …….

Name: …….. Date: ……

SEKSYEN A: LATARBELAKANG SI MATI
SECTION A: BACKGROUND OF THE DECEASED

1.1 Tarikh lahir (jika diketahui) *Date of Birth (if known)*	_ _/ _ _/ _ _ _ _ hh bb tttt
1.2 Nama si mati *Name of the deceased*	
1.3 Jantina si mati *Sex of the deceased*	1. Lelaki *Male* 2. Perempuan *Female*
1.4 Tarikh Kematian *Date of Death*	_ _/ _ _/ _ _ _ _ hh bb tttt
1.5 Umur terakhir si mati *Last known age of deceased*	_ _/ _ _/ _ _ tt bb hh
Teruskan soalan seterusnya jika berkenaan/ *Continue to the next question if relevant*.	
1.6 Status perkahwinan si mati *Marital status of the deceased*	1. Bujang S*ingle* 2. Berkahwin *Married* 3. Janda/Duda *Widow / Widower* 8. Enggan jawab *Refused to answer* 9. Tidak tahu *Don't Know.*
1.7 Tahap penddikan terakhir si mati *Completed years of education of the deceased*	1. Tiada pendidikan formal *No formal education* 2. Sekolah Rendah *Primary* 3. Sekolah Menengah *Secondary* 4. Kolej/Universiti *Tertiary* 8. Enggan jawab *Refused to answer* 9. Tidak tahu *Don't Know.*
1.8 Pekerjaan terakhir si mati *The deceased's last occupation*	1. Nyatakan/ *specify* 8. Enggan jawab *Refused to answer* 9. Tidak tahu *Don't Know.*

SEKSYEN B: LATARBELAKANG TEMURAMAH
SECTION B: BACKGROUND OF THE INTERVIEW

1.1 Bahasa yang digunakan semasa temuramah *Language being used during the interview*	
1.2 Nama penemuramah *Name of the interviewer*	
1.3 Nombor ID penemuramah *ID Number of the interviewer*	
1.4 Tarikh temujanji bagi sesi temuramah *Date of appointment for interview* Tarikh cubaan pertama : *Date of first attempt* Tarikh cubaan kedua : *Date of second attempt* Tarikh cubaan ketiga : *Date of third attempt* Tarikh temuramah berjaya dilengkapkan : *Date of successful attempt* Tarikh borang disemak oleh penyelia: *Date form checked by supervisor* Tarikh data dimasukkan ke dalam komputer (direkodkan oleh kerani data) *Data entered in computer (recorded by data entry clerk)*	
1.5 Alamat terakhir si mati *Last address of the deceased*	

1.6 Lakarkan peta (jika perlu) *Sketch a map (if needed)*	

SEKSYEN C: PERSETUJUAN
SECTION C: CONSENT

1.1 Adakah responden telah menandatangani borang persetujuan? *Did the respondent sign the consent form?*	1. Ya *Yes* 2. Tidak *No*
Jika jawab "Ya", teruskan ke 4.1. *If answer is "yes " proceed to 4.1* Jika jawab "Tidak", ucapkan terima kasih kepada responden kerana sudi meluangkan masa dan sudahi temuramah. *If answer "No" then thank the respondent for their time and end the interview.*	

SEKSYEN D: MAKLUMAT TENTANG RESPONDEN
SECTION D: INFORMATION ABOUT RESPONDENT

1.1 Nama responden utama *Name of the main respondent?*	
1.2 Alamat (jika berlainan dengan alamat terakhir si mati) *Address (if different with last address of the deceased)*	
1.3 No. Telefon *Telephone number*	
1.4 Apakah hubungan responden utama dengan si mati *What is the relationship of the main respondent to the deceased?*	1. Ibu / *Mother* 2. Bapa / Father 3. Nenek / *Grandmother* 4. Datuk / *Grandfather* 5. Makcik / *Aunt* 6. Pakcik / *Uncle* 7. Penyambut kelahiran / *Birth Attendant* 8 Lain-lain, Nyatakan / Others, specify_____ (lelaki *male*/ perempuan *female*)
1.5 No. Kad Pengenalan *IC number*	
1.6 Berapa umur responden utama *What is the age of the main respondent?*	_ _/ _ _/ _ _ tt bb hh
1.7 Tahap pendidikan (mencukupi tahun) *Level of Education (completed years)*	1. Tiada pendidikan formal *No formal education* 2. Sekolah Rendah *Primary* 3. Sekolah Menengah *Secondary* 4. Kolej/Universiti *Tertiary*
1.8 Pekerjaan / *Occupation*	Nyatakan/ *specify*
1.9 Pendapatan Bulanan Isi rumah/ *Monthly Household Income*	1. < RM2300 2. 2300-5599 3. RM > 5599 8. Enggan jawab *Refused to answer*
1.10 Adakah terdapat kehadiran orang lain semasa temuramah dijalankan *Were there other people present at the time of the interview?*	1. Ya *Yes* 2. Tidak *No*

SEKSYEN 1: RESPON "OPEN ENDED" DAN KOMEN SERTA PEMERHATIAN PENEMURAMAH

SECTION 1: OPEN ENDED RESPONSE, COMMENTS AND OBSERVATIONS FROM INTERVIEWER

ARAHAN KEPADA PENEMURAMAH: Tanya responden: "Terima kasih di atas kesabaran dalam menjawab set soalan yang memenatkan ini. Bolehkah anda merumuskan penyakit yang membawa kepada kematian saudara anda dengan menggunakan ayat anda sendiri?"
INSTRUCTIONS TO INTERVIEWER*: Say to the respondent: "Thank you for the patient responses to this exhaustive set of questions. Could you please summarize in your own words the illness leading to the death of your relative?"*

Tuliskan sebarang maklumat yang diberitahu oleh responden dengan menggunakan ayat responden sendiri. Jangan menggesa responden kecuali menanyakan sebarang maklumat untuk ditambah selepas responden selesai menjawab. Teruskan bertanya sehingga responden tiada sebarang maklumat untuk ditambah. Ketika merekod, gariskan mana-mana istilah yang kurang jelas.

Write down what the respondent tells you in his/her own words. Do not prompt except for asking whether there was anything else after the respondent finishes. Keep prompting until the respondent says there was nothing else. While recording, underline any unfamiliar terms.

Anda juga boleh menggunakan ruang ini untuk menulis komen dan pemerhatian anda tentang temuramah ini.
You may also use this space to write down your comments and observations about the interview.

SEKSYEN 1 TAMAT. TERUSKAN SEKSYEN 2: KECEDERAAN/ KEMALANGAN
SECTION 1 FINISHED. GO TO SECTION 2: INJURY/ ACCIDENT

SEKSYEN 2: KECEDERAAN / KEMALANGAN
SECTION 2: INJURY/ ACCIDENT

2.1 Adakah _____ mengalami kecederaan atau kemalangan seperti …….? *Did _____ have an injury or accident such as ____?* (Benarkan responden untuk menjawab secara spontan. Jika responden mengalami kesulitan mengenal pasti kecederaan, sila baca senarai jawapan perlahan-lahan. *Allow the respondent to answer spontaneously, If the respondent having difficulty to describe the injury, read the list slowly)*	1. Kemalangan jalan raya / *Road traffic accident* 2. Jatuh / *Fall* 3. Lemas / *Drowning* 4. Keracunan / *Poisoning* 5. Gigitan atau sengatan haiwan berbisa / *Animal bite or sting* 6. Kebakaran / *Burn* 7. Keganasan (bunuh diri, dibunuh, didera) / *Violence (suicide, homicide, abused)* 8. Lain-lain. Nyatakan / *Others. Specify*_____ 9. Tidak Tahu / *Don't know*
Jika jawapan ialah "Tidak tahu" atau "Tidak", terus ke **SEKSYEN 3 (SENARAI GEJALA).** *If "Don't know", "No" go to **SECTION 3 (SYMPTHOMS CHECKLIST).***	
2.2 Adakah kecederaan/kemalangan tersebut tidak disengajakan oleh si mati? *Was the injury or accident self-inflected?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
2.3 Adakah kecederaan/ kemalangan tersebut disengajakan oleh orang lain? *Was the injury or accident intentionally inflicted by someone else?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
2.4 Berapakah tempoh masa antara kecederaan/ kemalangan sehingga kematian? *How long did _____ survive after the injury?*	1. __ __ jam/ *hour(s)* 2. __ __ hari / *day(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Dapatkan keterangan lanjut berkenaan dengan kecederaan/ kemalangan tersebut./ *Get further information regarding the injury/ accident (Data Extraction Form)*	

SEKSYEN 3: SENARAI GEJALA
SECTION 3: SYMPTOMS CHECKLIST

3.1 Berapa lamakah _____ sakit sebelum meninggal dunia? *For how long was _____ ill before s/he died?*	1. __ __ hari / *day(s)* 2. __ __ bulan / *month(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.2 Adakah _____ mengalami demam? *Did _____ have a fever?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.3. If "Yes", go to question 3.3 Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.11 / *If "No" or "Don't know" or "Refused to answer", go to question 3.11*	
3.3 Berapa lama _____ mengalami demam? *How many days did ____ having fever?*	1. Kurang dari 24 jam/ *less than 24 hours* 2. ___ ___ hari / *day(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.4 Bagaimanakah keadaan demam tersebut? *How severe was the fever?*	1. Ringan / *Mild* 2. Sederhana/ *Moderate* 3. Teruk / *Severe* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.5 Apakah corak demam tersebut? *What was the pattern of the fever?*	1. Berterusan / *Continously* 2. Sekali-sekala / *Once a while* 3. Hanya pada waktu malam / *Only at night* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.6 Semasa mengalami demam, adakah _____ berpeluh? *During the fever, did _____ have sweating?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.7 Jika "Ya", *If "Yes"*	1. Berpeluh malam dengan banyak / *profusely night sweating* 2. Lain-lain, nyatakan/ *others, specify*: 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.8 Semasa mengalami demam, adakah _____ mengalami ruam? *During the fever, did _____ have rash?*	1. Ya /*Yes* 2. Tidak / *No* 38. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

Jika "Ya", teruskan ke soalan 3.9. If "Yes", go to question 3.9. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.11 / *If "No" or "Don't know"or "Refused to answer", go to question 3.11*	
3.9 Berapa harikah _____ mengalami ruam? *How many days did _____ having a rash?*	1. Hari / *day(s)*__ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.10 Di bahagian manakah ruam tersebut? *Where was the rash located?*	1. Keseluruhan tubuh / *whole of body* 2. Muka / *face* 3. Badan / *trunk* 4. Anggota kaki dan tangan / *limbs* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.11 Adakah _____ mengalami gatal-gatal kulit? *Did _____ have itching of skin?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.12 Adakah _____ mempunyai ulser/ kudis? *Did _____ have ulcer/ sores?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.13. If "Yes", go to question 3.13 Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.16 / *If "No" or "Don't know"or "Refused to answer", go to question 3.16*	
3.13 Di bahagian manakah kudis/ulser tersebut? *Where were the ulcer/sores located?*	1. Punggung / *buttock* 2. Kaki/ *legs* 3. Lain-lain, nyatakan/ *others, specify*: 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.14 Adakah kudis/ulser tersebut mengandungi cecair jernih atau nanah? *Did theulcer/sores have clear fluid or pus?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.15 Berapa harikah kudis/ulser mengeluarkan nanah? *How many days did the ulcer/sores ooze pus?*	1. __ __hari / *day(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.16 Adakah _____ mengalami kebas/sakit menyucuk-nyucuk di bahagian kaki? *Did _____ experience "pins and needles" in their feet?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

3.17 Adakah anggota kaki _____dipotong? *Was the limbs amputated?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.18 Adakah _____ mengalami bibir berubah warna kepada kebiru-biruan? *Did _____ have blue lips?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.19 Tiga bulan sebelum kematian, adakah _____ mengalami penurunan berat badan? *Had ___ lost weight in the three months prior to death?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.20. If "Yes", go to question 3.20. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.21 / *If "No" or "Don't know"or "Refused to answer", go to question 3.21*	
3.20 Berapa banyak penurunan berat badan tersebut? *How substantial was the loss of weight?*	1. Sedikit / *mild* 2. Sederhana / *moderate* 3. Banyak / *a lot* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.21 Adakah _____ kelihatan pucat? *Did _____ look pale?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.22 Adakah _____ mengalami kekuningan mata? *Did _____ have yellow discoloration of eyes?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.23. If "Yes", go to question 3.23. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.24 / *If "No" or "Don't know"or "Refused to answer", go to question 3.24.*	
3.23 Berapa lama _____ mengalami kekuningan mata? *For how long did _____ have the yellow discoloration?*	1. Bulan / *Month (s)__ __* 2. Hari / *Day(s)__ __* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.24 Adakah _____ mengalami bengkak di kaki *Did _____ have ankle swelling?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

Jika "Ya", teruskan ke soalan 3.25. If "Yes", go to question 3.25. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.26 / *If "No" or "Don't know"or "Refused to answer", go to question 3.26*	
3.25 Berapa lama _____ mengalami bengkak di kaki? *For how long did _____ have ankle swelling?*	1. Bulan / *Month(s)*__ __ 2. Hari / *Day(s)*__ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.26 Adakah _____ mengalami sembab pada muka? *Did _____ have puffiness of the face?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.27. If "Yes", go to question 3.27. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.28 / *If "No" or "Don't know"or "Refused to answer", go to question 3.28*	
3.27 Berapa lama _____ mengalami sembab pada muka? *For how long did _____ have puffiness of the face?*	1. Bulan / *Month(s)*__ __ 2. Hari / *Day(s)*__ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.28 Adakah _____ mengalami bengkak/sembab pada seluruh badan? *Did _____ have general puffiness of the body?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.29. If "Yes", go to question 3.29 Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.30 / *If "No" or "Don't know"or "Refused to answer", go to question 3.30*	
3.29 Berapa lama _____ mengalami bengkak/sembab di seluruh badan? *For how long did_____have general puffiness of the body*	1. Bulan / *Month(s)*__ __ 2. Hari / *Day(s)*__ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.30 Adakah _____ mengalami bengkak/ benjolan di leher? *Did _____ have lump in the neck?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.31 Adakah _____ mengalami bengkak/ benjolan di ketiak? *Did _____ have lump in the armpits?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

3.32 Adakah _____ mengalami bengkak kelenjar di pangkal peha? *Did _____ have lump in the groin?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.33 Adakah _____ mengalami batuk? *Did _____ have cough?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.34. If "Yes", go to question 3.34 Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.37 / *If "No" or "Don't know" or "Refused to answer", go to question 3.37*	
3.34 Berapa lama _____ mengalami batuk? *For how long did _____ have cough?*	1. Bulan / *Month(s)*__ __ 2. Hari / *Day(s)*__ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.35 Adakah batuk tersebut mengeluarkan kahak? *Did the cough produce sputum?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.36 Adakah _____ mengalami batuk berdarah? *Did _____ have cough blood?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.37 Adakah _____ mengalami kesukaran bernafas? *Did _____ have difficulty in breathing?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.38. If "Yes", go to question 3.38. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.42 / *If "No" or "Don't know" or "Refused to answer", go to question 3.42*	
3.38 Berapa lama _____ mengalami kesukaran untuk bernafas? *For how long did _____ have difficulty in breathing?*	1. Bulan / *Month(s)*__ __ 2. Hari / *Day(s)*__ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.39 Adakah kesukaran bernafas tersebut berterusan atau kadang- kadang? *Was the difficulty in breathing continuous or on and ff?*	1. Berterusan / *continously* 2. Kadang – kadang / *seldom* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

3.40 Pada kedudukan manakah, kesukaran bernafas semakin teruk? *In what position did the difficulty get worse?*	1. Baring / *lying flat* 2. Duduk / *sitting* 3. Sentiasa / *always* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.41 Adakah kesukaran bernafas menyebabkan _____ terjaga daripada tidur? *Did the difficulty in breathing wake ____from sleep?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.42 Adakah _____ mengalami nafas berbunyi? *Did _____ wheeze?* (Tunjukkan audiovisual / *show audiovisual*)	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.43 Adakah _____ bernafas dengan laju? *Did _____ have fast breathing?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.44. If "Yes", go to question 3.44. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.45 / *If "No" or "Don't know"or "Refused to answer", go to question 3.45.*	
3.44 Berapa lama _____ mengalami pernafasan laju/ tercunggap-cunggap? *For how long did _____ have fast breathing?*	1. Bulan / *Month(s)__ __* 2. Hari / *Day(s)__ __* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.45 Adakah _____mengalami sakit dada atau ketidakselesaan pada dada dalam masa sebulan sebelum kematian? *Did _____ experience chest pain or chest discomfort in the month of preceding death?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.46. If "Yes", go to question 3.46. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.49 / *If "No" or "Don't know"or "Refused to answer", go to question 3.49*	
3.46 Berapa lama _____mengalami kesakitan atau ketidakselesaan dada? *For how long did _____ have chest pain or discomfort?*	1. Kurang daripada 30 minit. / *less than 30 minutes* 2. 30 minit – 24 jam / *30 minutes -24 hours* 3. Lebih daripada 24 jam/ *more than 24 hours* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

3.47 Adakah _____merasa sakit dada atau tidak selesa semasa melakukan aktiviti fizikal? *Was the pain or discomfort during physical activity?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.48 Di bahagian manakah sakit atau ketidakselesaan tersebut? *Where was the pain or discomfort located?*	1. Tengah atau kiri dada / *central or left sided* 2. Bawah dada / lower chest 3. Kanan dada / *right sided* 4. Lain-lain, nyatakan / *Others, specify*_____ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.49 Adakah _____ mengalami cirit-birit? *Did _____ have more frequent loose or liquid stools than usual?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.50. If "Yes", go to question 3.50. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.51 / *If "No" or "Don't know"or "Refused to answer", go toquestion 3.51*	
3.50 Berapa lama sebelum kematian _____ mengalami cirit-birit? *For how long before death did _____ have loose or liquid stools?*	1. Hari / *day(s)*__ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.51 Adakah _____ mengalami perubahan dalam tabiat membuang air besar? *Did _____ have a change in bowel habits?* (Jelaskan kepada respoden tentang kekerapan dan ciri-ciri/ *explain to respondent regarding the frequency and nature of the stool*)	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.52 Adakah terdapat darah pada najis_____? *Was there blood in the stool?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.53. If "Yes", go to question 3.53. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.54 / *If No" or "Don't know"or "Refused to answer", go to question 3.54*	
3.53 Adakah najis berdarah sehingga ke hari kematian? *Was there blood in the stool up until death?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

3.54 Adakah _____ tidak membuang air kecil sehari sebelum kematian? *Did _____ stop urinating a day before death?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.55 Adakah _____ mengalami muntah -muntah? *Did _____ vomit?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.56. If "Yes", go to question 3.56. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.59 / *If "No" or "Don't know"or "Refused to answer", go to question3.59*	
3.56 Berapa lama _____ mengalami muntah- muntah sebelum kematian? *For how long before death did _____ vomit?*	1. Hari / *day(s)__ __* 2. Jam / *hour(s)__ __* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.57 Adakah _____ mengalami muntah darah? *Did _____vomit freshblood?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.58 Adakah muntah _____ berwarna kehitam-hitaman? *Was the vomit blackish in color?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.59 Adakah _____ mengalami kesukaran untuk menelan? *Did _____ have difficulty swallowing?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.60. If "Yes", go to question 3.60. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.63 / *If "No" or "Don't know"or "Refused to answer", go to question 3.63.*	
3.60 Berapa lama _____ mengalami kesukaran menelan sebelum kematian? *For how long before death did _____ have difficulty swallowing?*	1. Bulan/ *month(s)__ __* 2. Hari / *day(s)__ __* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.61 Adakah _____ mengalami kesukaran menelan pepejal, cecair atau kedua-dua sekali? *Was the difficulty with swallowing with solids, or both solids and liquids?*	1. Pepejal / *solid* 2. Cecair / *liquid* 3. Kedua-dua / *both* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

3.62 Adakah _____ terasa sakit semasa menelan? *Did _____ have pain upon swallowing?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.63 Adakah _____ mengalami sakit perut? *Did _____ have belly ache?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.64. If "Yes", go to question 3.64. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.66 / *If "No" or "Don't know"or "Refused to answer", go to question 3.66.*	
3.64 Berapa lama _____ mengalami sakit perut sebelum kematian? *For how long before death did _____ have belly ache?*	1. Jam / *hour(s)__ __* 2. Hari / *day(s) __ __* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.65 Adakah sakit tersebut di bahagian atas atau bawah perut? *Was the pain in the upper or lower belly?*	1. Bahagian atas perut / *upper part of the belly* 2. Bahagian bawah perut /*lower part of the belly* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.66 Adakah _____ mengalami perut yang lebih buncit/ busung daripada biasa? *Did _____ have a more than usual protruding belly?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.67. If "Yes", go to question 3.67 Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.69 / *If "No" or "Don't know"or "Refused to answer", go to question 3.69.*	
3.67 Berapa lamakah _____ mengalami perut buncit/ busung sebelum kematian? *For how long before death did _____ have a protruding belly?*	1. Bulan/ *month(s)__ __* 2. Hari / *day(s)__ __* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.68 Berapa cepatkah perut _____ menjadi buncit/ busung? *How rapidly did _____ develop the protruding belly?*	1. Bulan/ *month(s)__ __* 2. Hari / *day(s)__ __* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.69 Adakah _____ mempunyai ketumbuhan/ bengkak dalam perut? *Did _____ have any mass in the belly?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

Jika "Ya", teruskan ke soalan 3.70. If "Yes", go to question 3.70. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.72 / *If "No" or "Don't know"or "Refused to answer", go toquestion 3.72.*	
3.70 Di manakah ketumbuhan/ bengkak tersebut? *Where was the mass?* (tunjuk gambar / *show photo*)	1. Bahagian atas perut / *upper part of the belly* 2. Bahagian bawah perut /*lower part of the belly* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.71 Berapa lama _____mengalami ketumbuhan/ bengkak dalam perut sebelum kematian? *For how long before death did _____ have mass in the belly?*	1. Bulan/ *month(s)*__ __ 2. Hari / *day(s)*__ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.72 Adakah _____ mengalami sakit kepala? *Did _____ have headache?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.73. If "Yes", go to question 3.73. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.75 / *If "No" or "Don't know"or "Refused to answer", go to question 3.75*	
3.73 Berapa lama _____ mengalami sakit kepala sebelum kematian? *For how long before death did _____ have headache?*	1. Jam / *hour(s)* __ __ 2. Hari / *day(s)* __ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.74 Adakah permulaan sakit kepala berlaku secara tiba-tiba? *Was the onset of the headache sudden?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.75 Adakah _____ mengalami kekejangan leher? *Did _____ have neck stiffness?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.76. If "Yes", go to question 3.76. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.77 / *If "No" or "Don't know"or "Refused to answer", go to question 3.77*	
3.76 Berapa lama_____ mengalami kekejangan leher sebelum kematian? *For how long before death did _____ have neck stiffness?*	1. Bulan / *month(s)*__ __ 2. Hari / *day(s)*__ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

3.77 Adakah _____ pernah mengalami ketidaksedaran diri/pengsan? *Did _____ ever experience loss of consciousness?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.78. If "Yes", go to question 3.78. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.81 / *If "No" or "Don't know" or "Refused to answer", go to question 3.81.*	
3.78 Adakah tempoh ketidaksedaran diri/pengsan berlaku secara tiba-tiba atau perlahan-lahan? *Did the loss of consciousness start suddenly or slowly?*	1. Secara tiba-tiba / *suddenly* 2. Perlahan-lahan / *slowly* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.79 Berapa lama tempoh ketidaksedaran diri/ pengsan tesebut? *For how long did the loss of consciousness last?*	1. Jam / *hour(s)* __ __ 2. Hari / *day(s)* __ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.80 Adakah keadaan ketidaksedaran diri/pengsan berterusan sehingga membawa kepada kematian? *Did it continue until death?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.81 Adakah _____ mengalami tempoh kekeliruan pada keadaan sekeliling dalam masa 3 bulan sebelum kematian? *Did _____ experience a period of confusion at any time in the three months prior to death?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.82. If "Yes", go to question 3.82. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.85 / *If "No" or "Don't know" or "Refused to answer", go to question 3.85*	
3.82 Berapa lama tempoh kekeliruan tersebut? *For how long did the period of confusion last?*	1. Jam / *hour(s)* __ __ 2. Hari / *day(s)* __ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.83 Adakah tempoh kekeliruan bermula secara tiba-tiba atau perlahan? *Did the period of confusion start suddenly or slowly?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.84 Adakah tempoh kekeliruan berterusan sehingga kematian? *Did it continue until death?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

3.85 Dalam masa 3 bulan sebelum kematian, adakah_____mudah lupa terhadap perkara-perkara yang baru sahaja berlaku? *Did _____ experience forgetfulness on recent activity at any time in the three months prior to death?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.86 Adakah _____ mengalami sawan? *Did _____ have convulsion?* (Tunjukkan/ *show audiovisial*)	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.87. If "Yes", go to question 3.87. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.89 / *If "No" or "Don't know"or "Refused to answer", go to question 3.89.*	
3.87 Berapa lama sawan berlaku sebelum kematian? *For how long before death did the convulsions last?*	1. Minit /*minute(s)*__ __ 2. Jam / *hour(s)*__ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.88 Adakah _____ tidak sedarkan diri semasa mengalami sawan? *Did _____experience loss of consciousness during the convulsions?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.89 Adakah _____ pernah mengalami lumpuh? *Did _____ever have paralyzed?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 3.90. If "Yes", go to question 3.90. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab": / *If " No" or "Don't know"or "Refused to answer":* **BERHENTI. *STOP*** **Jika si mati adalah perempuan, teruskan ke SEKSYEN 4: SOALAN UNTUK PEREMPUAN** ***If the deceased was female, go to SECTION 4: QUESTION FOR FEMALE*** **Jika si mati adalah lelaki, teruskan ke SEKSYEN 5: ALKOHOL DAN TEMBAKAU** ***If the deceased was male, go to SECTION 5: ALCOHOL AND TOBACCO***	
3.90 Berapa lama _____ mengalami lumpuh sebelum kematian? *For how long did _____paralyzed prior to death?*	1. Hari / *day(s)*__ __ 2. Bulan / *month(s)*__ __ 3. Tahun /*year(s)*__ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

3.91 Anggota atau bahagian badan manakah yang lumpuh? *Which were the limbs or body parts paralyzed?* *(*Bacakan senarai mengikut urutan*/ read the choices in sequence)*	1. Sebelah kanan (tangan dan kaki) / *right sidedof the body* 2. Sebelah kiri (tangan dan kaki) / *left sided of the body* 3. Pada bahagian bawah badan / *lower part* 4. Satu kaki sahaja / *one foot only* 5. Satu tangan sahaja / *one arm only* 6. Seluruh badan / *whole body* 7. Lain-lain, nyatakan / *Others/ specify*_____ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

BERHENTI. *STOP*

Jika si mati ialah perempuan, teruskan ke SEKSYEN 4: SOALAN UNTUK PEREMPUAN
If the deceased was female, go to SECTION 4: QUESTION FOR FEMALE

Jika si mati adalah lelaki, teruskan ke SEKSYEN 5: ALKOHOL DAN TEMBAKAU
If the deceased was male, go to SECTION 5: ALCOHOL AND TOBACCO

SEKSYEN 4: SOALAN UNTUK PEREMPUAN
SECTION 4: QUESTION FOR FEMALE

4.1 Adakah _____ mempunyai bengkak atau ketulan pada payudara? *Did _____ have any swelling or lump in the breast?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.2 Adakah _____ mempunyai ulser pada payudara? *Did _____ have any ulcer in the breast?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.3 Adakah _____ mengalami rasa sakit yang teramat sangat di bahagian perut sebelum kematian? *Did _____ have a sharp pain in the belly shortly before death?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.4 Adakah _____ mengalami pendarahan pada faraj selain daripada darah haid? *Did _____ have vaginal bleeding other than her period?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.5 Adakah _____tumpah darah sejurus sebelum kematian? *Was there excessive vaginal bleeding immediately prior to death?* (Jelaskan pendarahan berlebihan kepada respoden, tunjukkan gambar kain sarung, tuala wanita/ *Explain to respondent by showing photo of sarong and pads*)	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.6 Adakah_____ mengalami lelehan faraj yang berbau bususk sebelum kematian? *Did _____ have bad smelling vaginal discharge before death*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.7 Adakah _____ mengandung semasa kematian? *Was _____ pregnant at the time of death?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 4.8. If "Yes", go to question 4.8. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.14 / *If "No" or "Don't know"or "Refused to answer", go toquestion 4.14.*	
4.8 Berapa bulan kandungan _____ sebelum kematian? *How many months was she pregnant?*	1. Bulan / *month(s)*__ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

(Jika kandungan di bawah 6 bulan, terus ke soalan 4.12/ *If the pregnancy less than 6 month, go to 4.12*) Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.14 / *If "No" or "Don't know"or "Refused to answer", go toquestion 4.14.*	
4.9 Adakah_____meninggal semasa bersalin? *Did she die while in labor?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 4.10. If "Yes", go to question 4.10. Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.11 / *If "No" or "Don't know"or "Refused to answer", go toquestion 4.11*	
4.10 Berapa lamakah tempoh sakit bersalin? *For how long she was in labor?*	1. Jam / *hour(s)__ __* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
BERHENTI, TAMAT SEKSYEN 4, TERUSKAN KE SEKSYEN 5: ALKOHOL DAN TEMBAKAU ***STOP, SECTION 4 FINISHED. GO TO SECTION 5: ALCOHOL AND TOBACCO***	
4.11 Adakah _____ meninggal dalam masa 6 minggu selepas melahirkan anak? *Did she die within 6 weeks post partum?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika jawab "Ya", BERHENTI, TAMAT SEKSYEN 4,TERUSKAN KE SEKSYEN 5: ALKOHOL DAN TEMBAKAU ***If "Yes", STOP, SECTION 4 FINISHED, GO TO SECTION 5 : ALCOHOL AND TOBACCO*** Jika "Tidak", "Tidak tahu" atau "Enggan menjawab", teruskan ke soalan 4.12. *If "No" or "Don't know" or "Refused to answer", go to question 4.12.*	
4.12 Adakah _____ meninggal semasa keguguran anak? *Did she die during an abortion?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika jawab "Ya", BERHENTI, TAMAT SEKSYEN 4, TERUSKAN KE SEKSYEN 5: ALKOHOL DAN TEMBAKAU ***If "Yes", STOP, SECTION 4 FINISHED, GO TO SECTION 5 : ALCOHOL AND TOBACCO*** Jika "Tidak", "Tidak tahu" atau "Enggan menjawab", teruskan ke soalan 4.13. *If "No" or "Don't know" or "Refused to answer", go to question 4.13.*	
4.13 Adakah _____ meninggal semasa atau dalam masa 6 minggu selepas keguguran anak? *Did she die within 6 weeks post abortion?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

Jika jawab "Ya", BERHENTI, TAMAT SEKSYEN 4, TERUSKAN KE SEKSYEN 5: ALKOHOL DAN TEMBAKAU ***If "Yes", STOP, SECTION 4 FINISHED, GO TO SECTION 5 : ALCOHOL AND TOBACCO*** Jika "Tidak", "Tidak tahu" atau "Enggan menjawab", teruskan ke soalan 4.14. *If "No" or "Don't know" or "Refused to answer", go to question 4.14.*	
4.14 Adakah dia terlewat datang haid semasa kematian?	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 4.15. *If "Yes", go to question 4.15.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" : **BERHENTI, TAMAT SEKSYEN 4, TERUSKAN KE SEKSYEN 5: ALKOHOL DAN TEMBAKAU** **If "No", "Don't know" or "Refused to answer":** ***STOP, SECTION 4 FINISHED. GO TO SECTION 5 : ALCOHOL AND TOBACCO***	
4.15 Berapa bulankah dia lewat datang haid?	1. Bulan/ *month(s)*__ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
BERHENTI. STOP. **TAMAT SEKSYEN 4, TERUSKAN KE SEKSYEN 5: ALKOHOL DAN TEMBAKAU** ***SECTION 4 FINISHED. GO TO SECTION 5: ALCOHOL AND TOBACCO***	

SEKSYEN 5: ALKOHOL DAN TEMBAKAU
SECTION 5: ALCOHOL AND TOBACCO

5.1 Adakah _____ pernah mengambil tembakau? *Did _____ ever use tobacco?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 5.2. *If "Yes", go to question 5.2.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 5.6 / *If "No" or "Don't know"or "Refused to answer", go toquestion 5.6.*	
5.2 Adakah _____ masih mengambil tembakau sebulan sebelum kematian? *Did _____still use tobacco one month prior to death?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", "Enggan menjawab" atau "Tidak tahu", terus ke soalan 5.4*/ If "Yes", "Refused to answer" or "Don't know", go to 5.4* *Jika "Tidak", terus ke soalan 5.3. If "No", go to question 5.3.*	
5.3 Berapa lama _____ telah berhenti mengambil tembakau? *For how long did _____ stopfrom using tobacco?*	1. Bulan / *month(s)*__ __ 2. Tahun / *year(s)*__ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika dijawab "bulan" atau "tahun", terus ke soalan 5.4. *If the answer is "month(s)" or "year(s)", go to question 5.4.* Jika "Tidak tahu" atau "Enggan menjawab" terus ke soalan 5.6 / *If "No" or "Don't know"or "Refused to answer" go to question 5.6.*	
5.4 Apakah jenis tembakau yang _____ ambil? *What type of tobacco products that _____ took?*	1. Rokok / *Cigarettes* 2. Paip (termasuk Shisha) / *Pipe (including shisha)* 3. Kunyah tembakau / *Tobacco chewing* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika jawapannya "Rokok", terus ke soalan 5.5. *If the answer is "Cigarettes", go to question 5.5.* Jika jawapannya "Paip" atau "Kunyah tembakau" atau "Enggan menjawab"atau "Tidak tahu", terus ke soalan 5.6*./ If "pipe" or "tobacco chewing" or "refused to answer" or "don't know", go to question 5.6*	
5.5 Berapa banyakkah rokok yang dihisap dalam sehari? *How many cigarettes did _____ smoke daily?*	1. __ __batang / *stick(s)* 1. __ __kotak / *box(es)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.6 Adakah _____ pernah mengambil minuman keras? *Did _____ ever drink alcohol?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

Jika "Ya", terus ke soalan 5.7. *If "Yes", go to question 5.7* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab", **BERHENTI, TAMAT SEKSYEN 5. TERUSKAN KE SEKSYEN 6: SEJARAH PENYAKIT KRONIK SI MATI**. */ If " No" or "Don't' know"or "Refused to answer":* ***STOP, SECTION 5 FINISHED. GO TO SECTION 6: HISTORY OF CHRONIC DISEASE OF THE DECEASED***	
5.7 Adakah _____ masih mengambil minuman keras sebulan sebelum kematian? *Did _____still use tobacco one month prior to death?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika" Ya", "Enggan menjawab" atau "Tidak tahu", terus ke soalan 5.9 */ If "Yes", "Refused to answer" or "Don't know", go to question 5.9* *Jika "Tidak", terus ke soalan 5.8. If "No", go to question 5.8.*	
5.8 Berapa lama _____ telah berhenti mengambil minuman keras? *For how long did _____ stop from drinking alcohol?*	1. Bulan / *month(s)*__ __ 2. Tahun / *year(s)*__ __ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.9 Pada pendapat anda, berapa banyakkah jumlah minuman keras yang diambil _____dalam sehari? *Would you say the amount of alcohol _____ drank daily was.....?*	1. Sedikit / *mild* 2. Sederhana / *moderate* 3. Banyak / *a lot* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
BERHENTI. STOP. **TAMAT SEKSYEN 5. TERUSKAN KE SEKSYEN 6: SEJARAH PENYAKIT KRONIK SI MATI.** ***SECTION 5 FINISHED. GO TO SECTION 6: HISTORY OF CHRONIC DISEASE OF THE DECEASED***	

SEKSYEN 6: SEJARAH PENYAKIT KRONIK SI MATI.
SECTION 6: HISTORYOF CHRONIC DISEASE OF THE DECEASED

Adakah _____ mengalami mana-mana daripada yang berikut? *Did _____ have any of the following disease?*	
6.1 Kencing manis *Diabetes mellitus*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", terus ke soalan 6.2. *If "Yes", go to question 6.2* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 6.5 / *If "No" or "Don't know"or "Refused to answer", go to question 6.5.*	
6.2 Berapa lamakah_____mengalami kencing manis? *For how long did ____ haveDiabetes mellitus*	1. _____tahun / *year(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.3 Adakah_____sedang mengambil rawatan? *Did _____ take treatment?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", terus ke soalan 6.4. *If "Yes", go to question 6.4.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 6.5 / *If "No" or "Don't know"or "Refused to answer", go to question 6.5.*	
6.4 Jika Ya, adakah_____mengambil …….? *If "Yes" did _____ take……..?*	1. Ubat / *medication* 2. Suntikan / *injection* 3. Kedua-duanya / *both* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.5 Sakit Jantung *Heart Disease*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.6 Angin Ahmar/Strok *Sroke*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.7 Darah tinggi *Hypertension*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

Jika "Ya", terus ke soalan 6.8. *If "Yes", go to question 6.8.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 6.11 / *If "No" or "Don't know"or "Refused to answer", go to question 6.11.*	
6.8 Berapa lamakah_____mengalami darah tinggi? *For how long did ____ havehypertension*	1. _____tahun/ *year(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.9 Adakah_____mengambil rawatan? *Did _____ take treatment?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", terus ke soalan 6.10. *If "Yes", go to question 6.10.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 6.11 / *If "No" or "Don't know"or "Refused to answer", go to question 6.11.*	
6.10 Jika Ya, apakah jenis rawatan? *If "Yes" did _____ take……..?*	1. Ubat Moden/ *Modern medicine* 2. Ubat Tradisional / *Traditional medicine* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.11 Masalah kolesterol tinggi *High Cholesterol*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", terus ke soalan 6.12. *If "Yes", go to question 6.12* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 6.15 / *If "No" or "Don't know"or "Refused to answer", go to question 6.15.*	
6.12Berapa lamakah_____mengalami masalah kolesterol tinggi? *For how long did ____ have High Cholesterol?*	1. _____tahun / *year(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.13 Adakah_____mengambil rawatan? *Did _____ take treatment?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", terus ke soalan 6.14. *If "Yes", go to question 6.14.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 6.15 / *If "No" or "Don't know"or "Refused to answer", go to question 6.15.*	

6.14 Jika Ya, apakah jenis rawatan? *If "Yes" did _____ take……..?*	1. Ubat Moden/ *Modern medicine* 2. Ubat Tradisional / *Traditional medicine* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.15 Obesiti/kegemukan *Obesity*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.16 Sakit buah pinggang *Renal Disease*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.17 Asma/Lelah/Semput *Asthma / COAD*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.18 Sakit sendi yang kronik *Arthritis*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.19 Nyanyuk *Dementia*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.20 Masalah kemurungan *Depression*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.21 Lain-lain masalah mental *Other mental illness*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.22 Sawan *Epilepsy*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.23 Kanser *Cancer*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

6.24 Tibi *Tuberculosis*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.25 AIDS/HIV	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.26 Lain-lain, nyatakan *Others, specify*	

BERHENTI. STOP.
TAMAT SEKSYEN 6. TERUSKAN KE SEKSYEN 7: REKOD KESIHATAN.
SECTION 6 FINISHED. GO TO SECTION 7: HEALTH RECORDS.

SEKSYEN 7: REKOD KESIHATAN.
SECTION 7: HEALTH RECORDS

7.1 Adakah kakitangan kesihatan pernah memberitahu sebab kematian _____? *Has a health worker ever told you what caused the death of _____?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", terus ke soalan 7.2. *If "Yes", go to question 7.2.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 7.3/ *If "No" or "Don't know"or "Refused to answer", go to question 7.3.*	
7.2 Apakah yang dikatakan oleh kakitangan kesihatan mengenai sebab kematian? *What did the health worker say was the cause of death?*	
7.3 Adakah _____pernah mendapatkan rawatan kesihatan? *Did _____ ever seek health care?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", terus ke soalan 7.4. *If "Yes", go to question 7.4.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 7.5/ *If "No" or "Don't know"or "Refused to answer", go to question 7.5.*	
7.4 Rekodkan nama dan alamat hospital atau pusat kesihatan dimanarawatan di ambil: *Record the hospital 's name and address where the care wassought :*	Nama Hospital: *Hospital's name*; Alamat hospital : *Hospital 's address*: Nama Hospital: *Hospital's name*; Alamat hospital : *Hospital 's address* Nama Hospital: *Hospital's name*; Alamat hospital : *Hospital 's address*
7.5 Adakah anda mempunyai rekod kesihatan yang dimiliki oleh_____? *Do you have any health records that belonged to___?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", terus ke soalan 7.6. *If "Yes", go to question 7.6.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 7.9 / *If "No" or "Don't know"or "Refused to answer", go to question 7.9*	

7.6 Bolehkah saya melihat rekod kesihatan tersebut? *May I see the health records?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
7.7 Rekodkan tarikh bagi catatan terakhir. *Record the date of the last note*	__ __ / __ __ / __ __ __ __ h h b b t t t t
7.8 Catatkan nota tersebut. *Transcribe the note*	
7.9 Adakah sijil kematian dikeluarkan? *Was a death certificate issued?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", terus ke soalan 7.10. *If "Yes", go to question 7.10.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 7.15 / *If "No" or "Don't know"or "Refused to answer", go to question 7.15.*	
7.10 Bolehkah saya melihat sijil kematian tersebut? *May I see the death certificate?*	
7.11 Rekodkan sebab kematian daripada sijil tersebut. *Record the cause of death from the certificate.* Jika hanya terdapat sebab kematian, terus ke 7.15. *If only has the cause of death, then go to question 7.15*	
7.12 Rekodkan penyebab kematian (penyakit atau keadaan) daripada sijil tersebut. *Record the first underlying cause of death from the certificate.* Jika hanya terdapat satu penyebab kematian (penyakit atau keadaan), terus ke 7.15. *If there is only one underlying cause of death, then go to question 7.15*	

7.13 Rekodkan penyebab kedua kematian (penyakit atau keadaan) daripada sijil tersebut. *Record the second underlying cause of death from the certificate.* Jika hanya terdapat dua penyebab kematian (penyakit atau keadaan), terus ke 7.15. *If there are only two underlying cause of death, then go to question 7.15*	
7.14 Rekodkan penyebab ketiga kematian (penyakit atau keadaan) daripada sijil tersebut. *Record the third underlying cause of death from the certificate.* Jika hanya terdapat tiga penyebab kematian (penyakit atau keadaan), terus ke 7.15. *If there are only three underlying cause of death, then go to question 7.15*	
7.15 Rekodkan keadaan-keadaan lain yang menyumbang kepada kematian daripada sijil tersebut. *Record the contributing cause(s) of death from the certificate.*	
TEMURAMAH TAMAT **INTERVIEW FINISHED** **TERIMA KASIH KERANA MENGAMBIL BAHAGIAN** **THANK YOU FOR YOUR PARTICIPATION**	

SEKSYEN 8: NOTA KESIMPULAN
SECTION 8: SUMMARY NOTE

Seksyen ini untuk dilengkapkan oleh pegawai perubatan dengan menyatakan ringkasan penemuan berdasarkan soal selidik yang telah dilakukan (demografi, penemuan positif dan penemuan negatif yang akan membolehkan diagnose penyebab kematian dibuat).

This section is meant for the medical officer to summarize the findings from the questionnaire (demography, positive and negative findings which will help in diagnosing the cause of death).

CAUSE OF DEATH

Cause Of Death		Approximate interval between onset and death
I	(a).....	.....
Disease or condition directly	due to (or as a consequence of)	
leading to death*		
Antecedent causes	(b).....	.....
Morbid conditions, if any,	due to (or as a consequence of)	
giving rise to the above		
cause, stating the underlying	(c).....	.....
condition last	due to (or as a consequence of)	
	(d).....	.....
II		
Other significant conditions	.....	.....
contributing to the death, but		
not related to the disease or	.....	.....
condition causing it		
*This does not mean the mode of dying e.g. heart failure, respiratory failure. It means the disease, injury, or complication that caused death		

Assigned by:

_____

(NAME:)

(DATE:)

ICD-10 CODING:

Cause of death in section:	ICD-10 Coding
1a	
1b	
1c	
1d	
1I	

FINAL ICD-10 CODING (BASED ON RULES AND REGULATION FOR MORTALITY CODING)

Assigned by:

_____

(NAME :)
(DATE :)

Appendix 6 : Questionnaires (Below 12 Year-Old)

Kajian Penyebab Kematian di Malaysia
A Study on Cause of Death in Malaysia

BORANG SOAL SELIDIK (BAWAH 12 TAHUN)
QUESTIONAIRE (BELOW 12 YEAR-OLD)

INSTITUT KESIHATAN UMUM
KEMENTERIAN KESIHATAN MALAYSIA

UNTUK DIISI OLEH PENEMURAMAH

PEJABAT KESIHATAN DAERAH

ID SI MATI

TARIKH TEMURAMAH

NAMA PEGAWAI PERUBATAN

RISALAH MAKLUMAT DAN BORANG PERSETUJUAN PESERTA

Arahan kepada peserta:
Sila ambil masa yang secukupnya untuk membaca dengan teliti penerangan yang diberi sebelum anda bersetuju untuk menyertai kajian ini.

1. **Tajuk Penyelidikan:**
   Kajian Penentuan Penyebab Kematian di Malaysia

2. **Nama Penyelidik Utama dan Institusi:**
   Dr Mohd Azahadi Bin Omar
   Institut Kesihatan Umum, Jalan Bangsar,
   Kuala Lumpur.
   No.tel: 03-22979532
   Faks: 03-22823114

3. **NamaPenaja**:
   Institut Kesihatan Umum, Kementerian Kesihatan Malaysia

4. **Pengenalan:**
   Penentuan sebab kematian berdasarkan sistem yang standard dapat membantu pihak bertanggungjawab untuk mengukur beban penyakit yang ditanggung oleh penduduk dalam sesebuah negara. Dengan mengenal pasti jenis penyakit yang paling kerap menyebabkan kematian, pihak berwajib dapat merancang kaedah pencegahan bagi menghalang kejadian penyakit tersebut daripada berlaku. Sistem pendaftaran kematian di Malaysia masih lagi menggunapakai penentuan sebab kematian oleh pihak berkuasa setempat walaupun sebahagian besar sebab kematian telah disahkan oleh pegawai perubatan.

   Kajian ini ditaja sepenuhnya oleh Kementerian Kesihatan Malaysia dan telah mendapat kelulusan Jawatankuasa Etika dan Penyelidikan Perubatan, Kementerian Kesihatan Malaysia.

   Penyertaan anda dalam kajian ini adalah secara sukarela dan anda boleh menarik diri pada bila-bila masa. Anda juga boleh menolak dari menjawab sebarang soalan jika anda tidak mahu. Keengganan anda untuk mengambil bahagian, atau penarikan diri anda tidak akan menjejaskan sebarang manfaat perubatan atau kesihatan yang sememangnya hak anda.

5. Apakah tujuan penyelidikan ini dilakukan?

Tujuan kajian ini dijalankan adalah untuk menentukan sebab-sebab kematian berdasarkan Soal Selidik Autopsi Lisan terhadap waris terdekat simati. Di samping itu, kajian ini juga dijalankan untuk menentusahkan Soal Selidik Autopsi Lisan sebagai satu alat yang dapat digunakan untuk menentukan sebab kematian pada peringkat komuniti.

6. Apakah manfaatnya saya menyertai penyelidikan ini?

Penyelidikan ini dapat membantu pihak bertanggung jawab dalam menentukan sebab-sebab utama yang menyumbang kepada kematian bagi penduduk di Malaysia. Ia juga dapat membantu anda dalam mengenal pasti risiko-risiko yang menyumbang kepada kematian saudara terdekat anda dan seterusnya melakukan aktiviti pencegahan dan rawatan pada peringkat awal.

7. Tempoh masa dan lokasi kajian

Kajian ini dilaksanakan di seluruh Malaysia terhadap populasi yang terpilih secara rawak. Kajian in bermula pada Mac 2014 dijangka tamat pada Disember 2014.

8. Apakah yang perlu saya lalui/lakukan sekiranya bersetuju untuk menyertai kajian ini?

Anda perlu menandatangani Borang Persetujuan Peserta yang disertakan pada muka surat terakhir risalah ini.

Anda akan melalui sesi temuramah oleh penemuramah yang telah dilatih selama 30 minit hingga 45 minit. Isi kandungan temuramah adalah berkaitan dengan tahap kesihatan simati semasa sebulan sebelum kematian dan juga sejarah kesihatan beserta faktor risiko yang berkaitan.

9. Adakah maklumat perubatan saya akan dirahsiakan?

Segala maklumat yang diperolehi dalam kajian ini akan disimpan dan dikendalikan secara **SULIT**, bersesuaian dengan peraturan-peraturan dan/atau undang-undang yang berkenaan. Sekiranya hasil kajian ini diterbitkan atau dibentangkan kepada orang ramai, identiti anda atau simati tidak akan didedahkan.

10. Apakah kesan sampingan yang mungkin terjadi?

Tiada risiko atau keburukan jika anda menyertai kajian ini, kerana kajian ini hanya melibatkan sesi temuramah dan borang kaji selidik sahaja.

11. Bolehkah kajian ataupun penyertaan saya ditamatkan penyelidik?

Penyelidik atau penaja boleh menamatkan kajian ini ataupun menamatkan penyertaan anda dalam kajian ini pada bila-bila masa. Keputusan akan dibuat jika;

a. Demi kepentingan anda adalah baik untuk menghentikan penyertaan ini.
b. Kajian ini dibatalkan.

12. Hak untuk menarik diri

Anda berhak untuk menarik diri pada bila-bila masa. Anda juga boleh menolak dari menjawab sebarang soalan jika anda tidak mahu. Keengganan anda untuk mengambil bahagian, atau penarikan diri anda tidak akan menjejaskan sebarang manfaat perubatan atau kesihatan yang sememangnya hak anda.

13. Bayaran dan pampasan

Anda tidak akan dikenakan bayaran dan anda juga tidak akan dibayar bagi penglibatan dalam penyelidikan ini.

14. Siapakah yang perlu saya hubungi sekiranya saya mempunyai sebarang pertanyaan?

Sekiranya anda mempunyai sebarang soalan mengenai kajian ini atau memerlukan keterangan lanjut , sila hubungi ketua penyelidik Dr. Mohd Azahadi bin OMar di talian 03-22979532 .

J ika anda mempunyai sebarang pertanyaan berkaitan dengan hak-hak anda sebagai peserta dalam kajian ini, sila hubungi Setiausaha, Jawatankuasa Etika & Penyelidikan Perubatan (MREC), Kementerian Kesihatan Malaysia di talian 03-22874032

#Setelah anda memahami maklumat kajian ini dan anda berhasrat untuk menjadi peserta secara sukarela, anda perlu menandatangani Borang Persetujuan Peserta, yang disertakan pada mukasurat terakhir risalah ini.

BORANG PERSETUJUAN PESERTA

Tajuk kajian: Kajian Penentuan Penyebab Kematian di Malaysia

Dengan menandatangani di bawah, saya mengesahkan bahawa:

	Sila tandakan √ di dalam kotak
1. Saya telah diberi maklumat tentang kajian di atas secara lisan. / Saya telah membaca dan memahami segala maklumat yang diberikan di dalam risalah ini dengan jelas.	
2. Saya mempunyai masa yang secukupnya untuk mempertimbangkan penyertaan saya dalam kajian ini dan telah diberi peluang untuk bertanyakan soalan dan semua soalan saya telah dijawab dengan memuaskan.	
3. Saya faham bahawa penyertaan saya adalah secara sukarela dan boleh menarik diri daripada kajian ini pada bila-bila masa tanpa memberi sebarang sebab.	
4. Saya memahami risiko dan manfaat yang mungkin dengan kajian ini dan saya memberi keizinan saya secara sukarela untuk mengambil bahagian dalam kajian ini	
5. Saya faham bahawa pegawai penyelidik, pemantau-pemantau yang layak, auditor-auditor dan pihak berkuasa yang berkenaan mempunyai akses langsung kepada data saya untuk memastikan kajian ini dijalankan dengan betul dan data direkodkan dengan betul. Semua maklumat dan data peribadi akan dipastikan **SULIT**.	

Peserta:

Tandatangan: ……..... Nombor K/P: ……....

Nama: …… Tarikh: ……...

Penyelidik yang mengendalikan proses menandatangani borang keizinan:

Tandatangan: ……..... Nombor K/P: ……...

Nama: ……..... Tarikh: …….

Saksi tidak berpihak/adil: (Diperlukan; jika subjek adalah buta huruf dan kandungan risalah maklumat pesakit disampaikan secara lisan kepada subjek).

Tandatangan: ……..... Nombor K/P: ……...

Nama: ……..... Tarikh: .....

RESPONDENT INFORMATION SHEET AND INFORMED CONSENT FORM

Instruction to the respondent:
Please take your time to read through and consider this information carefully before you deciding to participate voluntarily in this study.

1. **Research Title:**
   A Study on Determination of Cause of Deaths in Malaysia

2. **Name of the Principal Investigator and Institution:**
   Dr Mohd Azahadi Bin Omar
   Institute for Public Health
   Ministry of Health
   Jalan Bangsar, Kuala Lumpur.
   No.tel: 03-22979532
   Faks: 03-22823114

3. **Name of sponsor**:
   Institute for Public Health, Ministry of Health Malaysia.

4. **Introduction:**
   Information on cause of death based on standard guideline helps the responsible authority to measure the burden of disease of people in a country. By finding the type of disease that frequently causes death, the relevant authority can initiate a programme in preventing the disease. Death Registry System in Malaysia still using cause of death given by the local authority although most of the cases have been confirmed by medical authority.

   This study is fully sponsored by Ministry of Health Malaysia and approved by Malaysian Research Ethic Committee.

   Your participation in this study is voluntary and you may withdraw at any time. You can also refuse to answer any questions if you do not want to. Your refusal to participate or withdrawal will not affect any medical or health benefit that is certainly your rights.

5. **What is the purpose of the study?**
   This research is to find the cause of death based on Verbal Autopsy Interview session to the next of kin or the nearest relative of the deceased. Besides that, this study will validate the Verbal autopsy questionnaires as a tool for determination of cause of death in community.

6. What is the benefit if I participating in this study?

This study helps the relevant authority to confirm the most cause of death in Malaysian population. It is also helps you in identifying the risk factors that contribute to the death of your relative and promptly plan for an early intervention and prevention activity.

7. The duration and location of the study.

This Research will be done throughout Malaysia for the randomly selected population. It is starts on March 2014 plans to be finished on December 2014.

8. What will happen if I decide to take part?

Once you understand the study information and you wish to participate, you must sign an informed consent form which is provided at the last page of this brochure. You will be interviewed by the trained interviewer for 30 - 45 minutes. The content of the interview session will be related to the health status of the deceased a month before the death, previous medical history and the related risk factors.

9. Will the information be kept private and confidential?

All the information obtained in this study will be kept and handled in a **CONFIDENTIAL** manner, in accordance with applicable laws and/or regulations. When publishing or presenting the study results, your identity or the deceased identity will not be revealed.

10. What are the potential risks if I participating in this study?

There is no risk for taking part in this study as the procedure involved is only interview session.

11. Can the research or my participation be terminated earlier from the scheduled time?

Researchers or sponsors may terminate this study or terminate your participation in this study at anytime. Decisions will be made if;

a. At best of you, not to continue the study.
b. This study was canceled.

12. The right to withdraw

Your participation in this study is voluntarily and you may withdraw at any time. You can also refuse to answer any questions if you do not want to. Your refusal to participate or withdrawal will not affect any medical or health benefit that is certainly yours.

13. Payment and compensation.

You do not have to pay for participating in this study, similarly no payment available for you if you participating in this study.

14. To whom should I call if I have questions?

If you have any question regarding this research or need further information, please contact principal investigator Dr. Mohd Azahadi bin Omar at 03-22979532 .

If you have any questions regarding your rights as the respondent in this research, please contact: Secretary of the Ethics and Medical Research, Ministry of Health Malaysia at 03-22874032.

#Once you understand the study information clearly and you wish to participate, you must sign an informed consent form which is provided at the last page of this brochure.

INFORMED CONSENT FORM

Research Title: A Study on Determination of Cause of Deaths in Malaysia

By signing below, I certify that:

	Please tick and initial each box
1. I have been given information about the research orally. I have read and understand the information provided in this brochure clearly.	
2. I have had sufficient time to consider my participation in this research and was given the opportunity to ask questions and all my questions have been answered satisfactorily.	
3. I understand that my participation is voluntary and may withdraw from this study at any time without giving any reason.	
4. I understand the possible risks and benefits of this research and I voluntarily give my informed consent in this study.	
5. I understand that the research officer, qualified observers, auditors and the relevant authorities have direct access to my data to make sure the data is properly and correctly recorded. All personal information and data will be held with **CONFIDENTIAL**.	

Respondent:

Signature: …… I/C no: ……

Name: ……. Date: …….

Researchers who conduct the process of signing the consent form:

Signature: …… I/C no: ……

Name: …….. Date: …….

Witness impartial/ fair: (Required, if the subject is illiterate and content of patient information leaflets delivered orally to subjects)

Signature: …… I/C no: ……

Name: ……. Date: …….

SEKSYEN A: LATAR BELAKANG SIMATI

SECTION A: BACKGROUND OF THE DECEASED

1.1 Tarikh lahir (jika diketahui) *Date of Birth (if known)*	_ _/ _ _/ _ _ _ _ hh bb tttt
1.2 Nama si mati (jika berusia lebih daripada 1 bulan) *Name of the deceased (if greater than 1 month)*	
1.3 Nama ibu si mati *Name of the mother*	
1.4 Nama bapa si mati *Name of the father*	
1.5 Jantina si mati *Sex of the deceased*	1. Lelaki *Male* 2. Perempuan *Female*
1.6 Tarikh Kematian *Date of Death*	_ _/ _ _/ _ _ _ _ hh bb tttt
1.7 Umur terakhir si mati *Last known age of deceased*	_ _/ _ _/ _ _ tt bb hh
Teruskan soalan seterusnya jika berkenaan *Continue to the next question if relevant*.	
1.8 Tahap pendidikan terakhir si mati *Completed years of education of the deceased*	1. Tidak bersekolah No formal education 2. Bersekolah *Primary* 3. Enggan menjawab *Refused to answer* 8. Tidak tahu *Don't know*

SEKSYEN B: LATAR BELAKANG TEMURAMAH
SECTION B: BACKGROUND OF THE INTERVIEW

1.1 Bahasa yang digunakan semasa temuramah *Language being used during the interview*	
1.2 Nama penemuramah *Name of the interviewer*	
1.3 Nombor ID penemuramah *ID Number of the interviewer*	
1.4 Tarikh temujanji bagi sesi temuramah *Date of appointment for interview* Tarikh cubaan pertama : *Date of first attempt* Tarikh cubaan kedua : *Date of second attempt* Tarikh cubaan ketiga : *Date of third attempt* Tarikh temuramah berjaya dilengkapkan : *Date of successful attempt* Tarikh borang disemak oleh penyelia: *Date form checked by supervisor* Tarikh data dimasukkan ke dalam komputer (direkodkan oleh kerani data) *Data entered in computer (recorded by data entry clerk)*	
1.1 Alamat terakhir si mati *Last address of the deceased*	
1.2 Lakarkan peta (jika perlu) *Sketch a map (if needed)*	

SEKSYEN C: PERSETUJUAN
SECTION C: CONSENT

1.1 Adakah responden telah menandatangani borang persetujuan? *Did the respondent sign the consent form?*	1. Ya *Yes* 2. Tidak *No*
Jika jawab "Ya", teruskan ke soalan 4.1. If answer is "Yes", proceed to question 4.1 *Jika jawab "Tidak", ucapkan terima kasih kepada responden kerana sudi meluangkan masa dan sudahi temuramah. If answer "No", then thank the respondent for their time and end the interview.*	

SEKSYEN D: MAKLUMAT TENTANG RESPONDEN
SECTION D: INFORMATION ABOUT RESPONDENT

1.1 Nama responden utama *Name of the main respondent?*	
1.2 Alamat (jika berlainan dengan alamat terakhir si mati) *Address (if different with last address of the deceased)*	
1.3 No. Telefon Telephone number	
1.4 Apakah hubungan responden utama dengan si mati *What is the relationship of the main respondent to the deceased?*	1. Ibu / *Mother* 2. Bapa / Father 3. Nenek / *Grandmother* 4. Datuk / *Grandfather* 5. Makcik / *Aunt* 6. Pakcik / *Uncle* 7. Penyambut kelahiran / *Birth Attendant* 8.Lain-lain, Nyatakan / Others, specify_____(lelaki *male*/ perempuan *female*)
1.5 No. Kad Pengenalan *I.C. NO.*	
1.6 Berapa umur responden utama *What is the age of the main respondent?*	_ _/ _ _/ _ _ tt bb hh
1.7 Tahap pendidikan *Level of Education*	1.Tiada pendidikan formal *No formal education* 2. Sekolah Rendah *Primary* 3. Sekolah Menengah *Secondary* 4. Kolej/Universiti *Tertiary*
1.8 Pekerjaan *Occupation*	Nyatakan/ *specify*
1.9 Pendapatan Bulanan Isi rumah *Monthly Household Income*	1. < RM2300 2. 2300-5599 3. RM > 5599 8. Enggan jawab *Refused to answer*
1.10 Adakah terdapat kehadiran orang lain semasa temuramah dijalankan *Were there other people present at the time of the interview?*	1. Ya *Yes* 2.Tidak *No*

SEKSYEN 1: RESPON "OPEN ENDED" DAN KOMEN SERTA PEMERHATIAN PENEMURAMAH

SECTION 1: OPEN ENDED RESPONSE, COMMENTS AND OBSERVATIONS FROM INTERVIEWER

ARAHAN KEPADA PENEMURAMAH: Tanya responden: "Bolehkah anda merumuskan penyakit yang membawa kepada kematian saudara anda dengan menggunakan ayat anda sendiri?"
INSTRUCTIONS TO INTERVIEWER*: Say to the respondent: "Could you please summarize in your own words the illness leading to the death of your relative?"*

Tuliskan sebarang maklumat yang diberitahu oleh responden dengan menggunakan ayat responden sendiri. Jangan menggesa responden kecuali menanyakan sebarang maklumat untuk ditambah selepas responden selesai menjawab. Teruskan bertanya sehingga responden tiada sebarang maklumat untuk ditambah. Ketika merekod, gariskan mana-mana istilah yang kurang jelas.
Write down what the respondent tells you in his/her own words. Do not prompt except for asking whether there was anything else after the respondent finishes. Keep prompting until the respondent says there was nothing else. While recording, underline any unfamiliar terms.

Anda juga boleh menggunakan ruang ini untuk menulis komen dan pemerhatian anda tentang temuramah ini.
You may also use this space to write down your comments and observations about the interview.

SEKSYEN 1 TAMAT. TERUSKAN KE SEKSYEN 2: LATAR BELAKANG
SECTION 1 FINISHED. GO TO SECTION 2: BACKGROUND

SEKSYEN 2: LATAR BELAKANG

SECTION 2: BACKGROUND

2.1 Adakah anak tersebut merupakan anak kelahiran tunggal atau anak kelahiran kembar*? *Was the child a singleton or multiple births?*	1. Tunggal / *Singleton* 2. Kembar / *Multiple* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
* Jika dua atau lebih anak dilahirkan pada masa yang sama, ia dikira sebagai kelahiran kembar, walaupun satu atau lebih daripada bayi tersebut meninggal. Jika "kembar", terus ke soalan 2.2. Jika "tunggal", terus ke soalan 2.3. ** If two or more child born at the same time, it is called multiple pregnancies although one or more child died.* *If multiple pregnancies, go to question 2.2.* *If "singleton", go to question 2.3.*	
2.2 Adakah ini yang pertama, kedua atau seterusnya dalam urutan kelahiran? *Was this the first, second, or later in the birth order*	1. Pertama / *First* 2. Kedua / *Second* 3. Ketiga atau lebih / Third or more 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika si ibu hadir, teruskan ke soalan 2.6. If the mother present, go to question 2.6 *Jika si ibu tidak hadir semasa sesi temuramah, tanya soalan 2.3. If the mother did not present during the interview, ask question no 2.3.*	
2.3 Adakah si ibu masih hidup? *Is the mother still alive?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 2.6. *If "Yes", go to question 2.6.* Jika "Tidak", "Enggan jawab" atau "Tidak tahu", teruskan ke soalan 2.4. *If "No", go to question 2.4.*	
2.4 Adakah si ibu meninggal semasa atau selepas melahirkan anak? *Did the mother die during or after the delivery?*	1. Semasa / *During* 2. Selepas / *After* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Semasa" melahirkan, teruskan ke soalan 2.6. *If "During" delivery , go to question 2.6* Jika "Selepas" melahirkan, teruskan ke soalan 2.5. *If "After" delivery, go to question 2.5.*	
2.5 Berapa lama tempoh si ibu meninggal selepas melahirkan anak? *How long after the delivery did the mother die?* (Kurang daripada 24 jam = 00 hari. Gunakan 1 bulan = 28 hari untuk menentukan bilangan bulan */ If less than 24 hours=00 day, use 1 month = 28 days for determine the number of months*)	1. __ __ hari / *day(s)* 2. __ __ bulan / *month(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

2.6 Di manakah bayi / anak tersebut dilahirkan? *Where were the baby / child born?*	1. Hospital kerajaan / *Government hospital* 2. Lain-lain kemudahan kesihatan kerajaan / *Other governmet health facilities* 3. Hospital/klinik swasta / *Private hospital/ clinic* 4. Dalam perjalanan ke hospital atau kemudahan kesihatan lain / *on the way to hospital or other health facilities* 5. Rumah / *Home* 6. Lain-lain / *Others* _____ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
2.7 Apakah saiz bayi/ anak semasa kelahiran? *What was the baby/child's size at birth?*	1. Lebih kecil daripada biasa /*smaller than usual* 2. Seperti biasa / *as usual* 3. Lebih besar daripada biasa / *larger than usual* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
2.8 Berapa berat bayi/ anak semasa dilahirkan? *What was the weight of the baby /child at birth?*	1. __ __ __ __ gram 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
2.9 Apakah jantina bayi tersebut? *What was the baby's sex?*	1. Lelaki / *male* 2. Perempuan / *female* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
2.10 Bilakah tarikh kelahiran bayi tersebut? *What was the delivery date?*	1. _ _/_ _/_ _ _ _ hh/ bb/ tttt 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
2.11 Adakah bayi lahir hidup atau lahir mati? *Was the baby/child born alive or dead?*	1. Lahir hidup / *born alive* 2. Lahir mati / *born dead* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Lahir hidup", "Enggan jawab" atau "Tidak tahu", terus ke soalan 2.12. *If "Born alive", "Refused to answer" or "Don't know", go to question 2.12.* Jika "Lahir mati", terus ke soalan 2.16 *If "Born dead", go to question 2.16*	
2.12 Adakah bayi pernah menangis? *Did the baby ever cry?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
2.13 Adakah bayi pernah bergerak? *Did the baby ever move?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
2.14 Adakah bayi pernah bernafas? *Did the baby ever breathe?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

(Soalan ini untuk menentukan kejadian lahir mati / *This question is to elicite stillbirth*)

2.15 PENEMURAMAH SAHAJA: Rujuk soalan 2.12, 2.13 dan 2.14. Jika ketiga-tiga jawapan adalah "Tidak", tandakan "Ya" di bawah. Jika sebaliknya tandakan "Tidak"
INTERVIEWER ONLY: Please refer questions 2.12, 2.13 and 2.14. If all anwers are "No", tick Yes box, if vice versa please tick No.

LAHIR MATI/ *STILLBIRTH*

Ya/ *Yes* ☐ Tidak */ No* ☐

BERHENTI. *STOP.*

Jika jawapan anda adalah "Ya" pada 2.15, teruskan ke 2.16. ***If you answer is "Yes" at question 2.15, go to question 2.16.***
Jika jawapan adalah "Tidak" pada 2.15, teruskan ke 2.20. ***If you answer is "No" at question 2.15, go to question 2.20.***

2.16 Adakah terdapat tanda lebam atau kecederaan pada badan bayi semasa dilahirkan? *Were there any bruises or signs of injury on the baby's body at birth?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
2.17 Adakah badan bayi (kulit dan tisu) "lembik" dan menggelupas? *Was the baby's body macerated (skin and tissue was pulpy)?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

Jika "Ya", teruskan ke soalan 2.18. *If "Yes", go to question 2.18.*

Jika "Tidak", "Tidak tahu" atau "Enggan menjawab" teruskan ke **SEKSYEN 3 (SEJARAH KEHAMILAN)**
If "No" or "Don't know" or "Refused to answer", go to ***SECTION 3 (MATERNAL HISTORY)***

2.18 Adakah mana-mana pada badan bayi yang tidak normal secara fizikal semasa dilahirkan? (Contoh: bahagian badan terlalu besar atau terlalu kecil, ketumbuhan pada badan) *Was any part of the baby physically abnormal at the time of delivery?(For example , body part was too large or too small, additional growth on body)*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
2.19 Apakah yang tidak normal? *What were the abnormalities?* TANDAKAN PADA SEMUA YANG BERKENAAN (Tunjukkan gambar) *TICK ALL WHICH RELEVANT*	1. Saiz kepala sangat kecil semasa lahir *Too small head size at birth* 2. Saiz kepala sangat besar semasa lahir *Too largehead size at birth* 3. Kecacatan pada bahagian belakang kepala atau tulang belakang *Deformity at the back of head or spinal bone* 4. Lain-lain. Nyatakan_____ *Others. Specify* 8. Enggan menjawab / *Refused to answer*

BERHENTI .*STOP.*
Selepas melengkapkan 2.19, teruskan ke SEKSYEN 3 (SEJARAH KEHAMILAN).
After 2.19 completed, go to SECTION 3 (METERNAL HISTORY)

2.20 Berapakah umur bayi/ anak apabila penyakit membawa maut bermula? *How old was the baby /child when the fatal illness started?* (Kurang daripada 24 jam = 00 hari */ If less than 24 hours=00 day)*	1.__ __ hari (jika umur < 1 bulan) *days (if age < 1 month)* 2.__ __ bulan (jika umur <1 tahun) *months (if age < 1 year)* 3.__ __ tahun (umur ≥ 1 tahun) *years (if age≥ 1 year)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
2.21 Berapa lama penyakit tersebut berlanjutan? *How long did the illness last?* (Kurang daripada 24 jam = 00 hari. Gunakan 1 bulan = 28 hari untuk menentukan bilangan bulan */ If less than 24 hours=00 day, use 1 month = 28 days for determine the number of months*)	1. __ __ hari / *day(s)* 2. __ __ bulan / *month(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
2.22 Berapakah umur bayi/ anak semasa meninggal? *How old was the baby/ child at the time of death?* (Kurang daripada 24 jam = 00 hari. Gunakan 1 bulan = 28 hari untuk menentukan bilangan bulan */ If less than 24 hours=00 day, use 1 month = 28 days for determine the number of months*)	1.__ __ hari (jika umur < 1 bulan) *days (if age < 1 month)* 2.__ __ bulan (jika umur <1 tahun) *months (if age < 1 year)* 3.__ __ tahun (umur ≥ 1 tahun) *years (if age≥ 1 year)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
2.23 Di manakah bayi tersebut meninggal? *Where did the baby/child die?*	1. Hospital kerajaan / *Government hospital* 2. Lain-lain kemudahan kesihatan kerajaan / *Other governmet health facilities* 3. Hospital/klinik swasta / *Private hospital/ clinic* 4. Dalam perjalanan ke hospital atau kemudahan kesihatan lain / *on the way to hospital or other health facilities* 5. Rumah / *Home* 6. Lain-lain / *Others* _____ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
2.24 Bagi kematian di hospital atau pusat kesihatan, rekodkan nama dan alamat hospital atau pusat kesihatan tersebut: *For death occurred in hospital or health facilities, please record the hospital 's name and address:*	Nama Hospital: *Hospital's name*; Alamat hospital : *Hospital 's address*:

(**ARAHAN UNTUK PENEMURAMAH:** Catitkan umur bayi/ anak semasa meninggal dunia daripada jawapan di 2.22 di soalan 2.25 (jika ada). ***INSTRUCTION TO INTERVIEWER:*** *Choose an answer in question 2.25 according to the answer in question 2.22 (if any)*

Jika jawapan di 2.22 adalah "Enggan menjawab" atau "Tidak tahu", jawab soalan 2.25 dengan menggunakan pertimbangan anda.) *If the answer in 2.22 is" Refused to answer" or "Don't know", answer question 2.25 using your judgement.*

2.25 Tandakan umur bayi/ anak semasa meninggal.
Mark the age of baby/child at the time of death.

1. Kurang daripada 28 Hari / *Less than 28 days.*
2. 28 hari—11 tahun / *28 days – 11 years*

BERHENTI.
Jika anak tersebut kurang daripada 28 hari, teruskan ke SEKSYEN 3: SEJARAH KEHAMILAN
Jika anak tersebut adalah 28 hari—11 tahun, teruskan ke SEKSYEN 5: KEMATIAN BAYI DAN KANAK-KANAK

STOP.
If the age of baby/child less than 28 days, go to SECTION 3: MATERNAL HISTORY

If the age of baby/child 28 days – 11 years, go to SECTION 5: INFANT AND CHILD DEATH.

SEKSYEN 3: SEJARAH KEHAMILAN

(Untuk LAHIR MATI atau bayi yang berumur <28 hari semasa ia meninggal dunia)

SECTION 3: MATERNAL HISTORY

(For STILLBIRTH or baby aged <28 days at the time of death)

3.1 Adakah pada tempoh akhir kehamilan (3 bulan terakhir) dan sewaktu bersalin atau melahirkan mempunyai masalah- masalah berikut? *Was the late part of pregnancy (defined as the last 3 months), during labor or delivery complicated by any of the following problems?* *(*Baca setiap komplikasi dan tandakan yang berkenaan, baca "si ibu" jika si ibu adalah bukan responden.*/ Read each of the complication and marks the appropriate answer, Read " the mother" if the mother is not the respondent)*	1. Anda (si ibu) mengalami sawan *Did (you have / she has) seizure* 2. Anda (si ibu) mengalami tekanan darah tinggi *Did (you have / she has) high blood pressure* 3. Anda (si ibu) mengalami kekurangan darah yang teruk *Did (you were / she was) anemic* 4. Anda (si ibu) menghidap kencing manis *Did (you have / she has) Diabetes Mellitus* 5.Kepala tidak keluar dahulu semasa anak dilahirkan *Head did not come first during delivery* 6. Tali pusat keluar dahulu *Cord came first* 7. Tali pusat melilit leher anak *Cord round neck* 8. Pendarahan berlebihan *Bleeding profusely* 9. Demam semasa bersalin *Fever during labor* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.2 Berapa lama tempoh kehamilan? *How many months was the pregnancy?*	1. __ __ bulan/ *month(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika bilangan bulan diketahui, teruskan ke 3.4 /If the months is known go to question 3.4. Jika "Enggan Jawab" atau "Tidak tahu", teruskan ke soalan 3.3. *If "Refused to answer" or "Don't know", go to question 3.3.*	
3.3 Adakah kehamilan berakhir awal, tepat pada waktunya atau lewat? *Did the pregnancy end early, on time or late?*	1. Awal / *Early* 2. Tepat / *On time* 3. Lewat / *Late* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.4 Sebelum bayi dilahirkan, adakah bayi bergerak pada hari-hari terakhir? *Was the baby moving in the last few days before the birth?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.5. Bilakah kali terakhir anda (si ibu) merasakan pergerakan bayi? *When did the respondent (the mother) last feel the baby move* *(Baca "si ibu" jika si ibu bukan responden. / Read the mother if the mother is not the respondent)*	1. __ __ jam sebelum melahirkan *Hour(s)before delivery* 2. __ __ hari sebelum *Hour(s) before delivery* 3. Bayi bergerak sehingga dilahirkan *Baby was moving till delivered* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.6 Adakah ketuban pecah dengan sendirinya? *Did the water break spontaneously?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

Jika "Ya", teruskan ke soalan 3.7. *If "Yes", go to question 3.7* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 3.10 / *If "No" or "Don't know"or "Refused to answer", go to question 3.10*	
3.7 Berapa lamakah tempoh ketuban pecah sebelum sakit bersalin? *How much time before labor the water break?*	1. Kurang dari satu hari / *less than 1 day* 2. Satu hari atau Lebih / *≥ 1 days* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.8 Apakah warna cecair semasa ketuban pecah? *What was the color of the liquor when the water broke?*	1. Hijau atau coklat 2. Jernih (normal) 3. Lain-lain (Nyatakan:_____) 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.9 Adakah cecair tersebut berbau busuk? *Was the liquor foul smelling?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.10 Berapa lamakah tempoh dari mula sakit bersalin sehingga melahirkan? *How much time between the onset of labour and the delivery?*	1. __ __ jam / *hour(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.11 Adakah anda (si ibu) menerima sebarang vaksin tetanus semasa kehamilan ini? *Did the mother receive any tetanus vaccine during this pregnancy?* *(Baca "si ibu" jika si ibu bukan responden. / Read the mother if the mother is not the respondent)*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.12 Di manakah tempat melahirkan anak? *Where did the delivery occur?*	1. Hospital kerajaan / *Government hospital* 2. Lain-lain kemudahan kesihatan kerajaan / *Other governmet health facilities* 3. Hospital/klinik swasta / *Private hospital/ clinic* 4. Dalam perjalanan ke hospital atau kemudahan kesihatan lain / *on the way to hospital or other health facilities* 5. Rumah / *Home* 6. Lain-lain / *Others* _____ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
3.13 Bagi kelahiran di hospital atau pusat kesihatan, rekodkan nama dan alamat hospital atau pusat kesihatan tersebut: *If delivery occurred in hospital or health facilities, please record the hospital 's name and address:*	Nama Hospital: *Hospital's name*; Alamat hospital : *Hospital 's address*:
3.14 Siapakah yang menyambut bayi tersebut? *Who conduct the delivery?* *(Baca "si ibu" jika si ibu bukan responden. / Read the mother if the mother is not the respondent)*	1. Doktor / *Doctor* 2. Jururawat/ Bidan kerajaan / *Staffnurse/Government midwife* 3. Bidan kampong */ traditional midwife* 4. Sendiri (si ibu) *Self (the mother)* 5. Lain-lain.Nyatakan / *Others. specify*_____ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

3.15 Jika kelahiran berlaku di luar fasiliti, rekodkan nama dan alamat orang yang menyambut kelahiran: *If delivery occurred out side the health facilities, please record the name of person who conduct the delivery*	
3.16 Adakah bersalin secara……..? *Was the delivery ……..?*	1. Biasa / *normal* 2. Pembedahan Cesarean / *Caesarean Section* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

BERHENTI.

Sila rujuk kembali soalan 2.15. Jika jawapan adalah "Ya" (LAHIR MATI), teruskan ke SEKSYEN 6: REKOD PERUBATAN

Jika jawapan pada soalan 2.15 adalah "Tidak", teruskan ke SEKSYEN 4: KEMATIAN NEONATAL (UMUR < 28 HARI)

STOP.

Please refer to question 2.15. If the answer is "Yes" (STILLBIRTH), go to SECTION 6: MEDICAL RECORD. If the answer at 2.15 is "No" , go to SECTION 4: NEONATAL DEATH (AGE < 28 DAYS)

SEKSYEN 4: KEMATIAN NEONATAL (UMUR < 28 HARI)
SECTION 4: NEONATAL DEATH (AGE< 28 DAYS)

4.1 Adakah sebarang kesan lebam atau kecederaan pada badan bayi semasa bayi dilahirkan? *Were there any bruises or signs of injury on the baby's body at birth?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.2 Adakah mana-mana pada badan bayi yang tidak normal secara fizikal semasa dilahirkan? (Contoh: bahagian badan terlalu besar atau terlalu kecil, ketumbuhan pada badan) *Was any part of the baby physically abnormal at the time of delivery?(For example , body part was too large or too small, additional growth on body)*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 4.3. *If "Yes", go to question 4.3* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.4 / *If "No" or "Don't know"or "Refused to answer", go to question 4.4.*	
4.3 Apakah yang tidak normal? *What were the abnormalities?* TANDAKAN PADA SEMUA YANG BERKENAAN (Tunjukkan gambar) *TICK ALL WHICH RELEVANT*	1. Saiz kepala sangat kecil semasa lahir *Too small head size at birth* 2. Saiz kepala sangat besar semasa lahir *Too largehead size at birth* 3. Kecacatan pada bahagian belakang kepala atau tulang belakang *Deformity at the back of head or spinal bone* 4. Lain-lain. Nyatakan_____ *Others. Specify* 8. Enggan menjawab / *Refused to answer*
4.4 Adakah bayi bernafas sejurus selepas dilahirkan? *Did the baby breathe immediately after birth?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 4.5. *If "Yes", go to question 4.5.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.6. *If "No" or "Don't know"or "Refused to answer", go to question 4.6.*	
4.5 Adakah bayi mengalami kesukaran bernafas? *Did the baby have difficulty in breathing?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.6 Adakah sebarang bantuan diberikan untuk membantu bayi bernafas? *Was anything done to try to help the baby breathe at birth?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

4.7 Adakah bayi menangis sejurus selepas dilahirkan? *Did the baby cry immediately after birth?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 4.9. *If "Yes", go to question 4.9.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.8. *If "No" or "Don't know"or "Refused to answer", go toquestion 4.8.*	
4.8 Berapa lama selepas dilahirkan, bayi menangis buat kali pertama? *How long after birth did the baby first cry?* *(TANDAKAN SATU SAHAJA/ MARK ONLY ONE)*	1. Dalam 5 minit / *within 5 minutes* 2. Dalam 5-30 minit / *within 5-30 minutes* 3. Lebih daripada 30 minit / *more than 30 minutes* 4. Tiada / *None* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Tiada","Enggan menjawab" atau "Tidak tahu", teruskan ke 4.11 *If "None", "Refused to answer" or "Don't know", go to question 4.11*	
4.9 Adakah keadaan bayi menjadi tenat sehingga tidak berupaya untuk menangis? *Did the baby's condition getting worst and stop being able to cry?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 4.10 *If "Yes", go to question 4.10.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.11 / *If "No" or "Don't know"or "Refused to answer", go to question 4.11.*	
4.10 Berapakah tempoh masa di antara bayi tenat sehingga tidak berupaya untuk menangis dan waktu kematian bayi? *How long is the time between the baby stop being able to cry and the baby's death?*	1. Kurang daripada satu hari / *less than 1 day* 2. Satu hari atau lebih / *≥ 1 days* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.11 Adakah bayi boleh menyusu secara normal semasa hari pertama? *Was the baby able to suckle in a normal way during the first day of life?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 4.13. *If "Yes", go to question 4.13.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.12. *If "No" or "Don't know"or "Refused to answer", go to question 4.12.*	
4.12 Adakah bayi pernah menyusu secara normal? *Did the baby ever suckle in a normal way?*	1. Ya / *Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

Jika "Ya", teruskan ke soalan 4.13. *If "Yes", go to question 4.13.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.16. *If "No" or "Don't know"or "Refused to answer", go to question 4.16.*	
4.13 Adakah keadaan bayi menjadi tenat sehingga tidak berupaya untuk menyusu secara normal? *Did the baby's condition getting worst and stop being able to suckle in a normal way?*	1. Ya / *Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.14 Berapa lama selepas lahir, bayi berhenti menyusu secara normal? *How long after birth did the baby stopsuckle in a normal way* (Rekodkan umur bayi / *record the age of baby)*	1. __ __ hari/ days 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.15 Berapakah tempoh masa di antara bayi tenat sehingga tidak berupaya untuk menyusu secara normal dan waktu kematian bayi? *How long is the time between the baby stop being able to suckle in a normal way and the baby's death?*	1. Kurang daripada satu hari / *less than 1 day* 2. Satu hari atau lebih / *≥ 1 days* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.16 Semasa bayi sakit, adakah bayi mengalami kesukaran bernafas? *During the illness that led todeath, did the baby have difficulty in breathing?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 4.17. *If "Yes", go to question 4.17.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.19 / *If "No" or "Don't know"or "Refused to answer", go to question 4.19.*	
4.17 Pada umur berapakah bayi mula mengalami kesukaran bernafas? *At what age did the difficulty breathing start?*	1. __ __ hari / *days* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.18 Berapa hari bayi mengalami kesukaran bernafas tersebut? *For how many days did the baby having difficulty in breathing?*	1. __ __ hari / *days* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.19 Semasa bayi sakit, adakah bayi bernafas dengan laju? *During the illness that led to death, did the baby have fast breathing?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 4.20. *If "Yes", go to question 4.20.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.22 / *If "No" or "Don't know"or "Refused to answer", go to question 4.22.*	

4.20 Pada umur berapakah, bayi mula bernafas dengan laju? *At what age did the fast breathing start?*	1. __ __ hari 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.21 Berapa hari bayi mengalami pernafasan laju tersebut? *For how many days did the baby having fast breathing?*	1. __ __ hari 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.22 Semasa bayi sakit, adakah dinding dada bayi tertarik ke dalam? *During the illness that led to death, did the baby have indrawing of the chest?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.23 Semasa bayi sakit, adakah bayi mendengus? *During the illness that led to death, did the baby have grunting?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.24 Semasa mengalami penyakit yang membawa maut, adakah bayi mengalami kekejangan atau sawan? *During the illness that led to death, did the baby have spasms or convulsions?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.25 Semasa mengalami penyakit yang membawa maut, adakah bayi mengalami demam? *During the illness that led to death, did the baby have fever?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 4.26. *If "Yes", go to question 4.26.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.28. *If "No" or "Don't know" or "Refused to answer", go to question 4.28.*	
4.26 Pada umur berapakah demam tersebut bermula? *At what age did the fever start?*	1. __ __ hari /*day(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.27 Berapa hari bayi mengalami demam tersebut? *For how many days did the baby having fever?*	1. __ __ hari / *day(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.28 Semasa mengalami penyakit yang membawa maut, adakah badan bayi sejuk ketika disentuh? *During the illness that led to death, did the baby become cold to touch?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

Jika "Ya", teruskan ke soalan 4.29. *If "Yes", go to question 4.29.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.31. *If "No" or "Don't know" or "Refused to answer", go to 4.31.*	
4.29 Pada umur berapakah, badan bayi mula terasa sejuk? *At what age did the baby become cold to touch?*	1. __ __ hari /*day(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.30 Berapa harikah, badan bayi dalam keadaan sejuk? *For how many days did the baby become cold to touch?*	1. __ __ hari /*day(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.31 Semasa mengalami penyakit yang membawa maut, adakah bayi mengalami kelesuan secara tiba-tiba? *During the illness that led to death, did the baby become lethargic suddenly?* *(*selepas tempoh masa aktiviti normal bayi*/ after a period of normal activity of baby)*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.32 Semasa mengalami penyakit yang membawa maut, adakah bayi tidak bertindak balas atau tidak sedar? *During the illness that led to death, did the baby become unresponsive or unconscious?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.33 Semasa mengalami penyakit yang membawa maut, adakah bayi mempunyai bonjolan pada "ubun-ubun"? *During the illness that led to death, did the baby have a bulging fontanelle?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.34 Semasa mengalami penyakit yang membawa maut, adakah terdapat nanah di pusat bayi? *During the illness that led to death, did the baby have pus drainage from the umbilical cord stump?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.35 Semasa mengalami penyakit yang membawa maut, adakah terdapat tanda kemerahan pusat bayi? *During the illness that led to death, did the baby have redness of the umbilical cord stump?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 4.36. *If "Yes", go to question 4.36.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.37. *If "No" or "Don't know" or "Refused to answer", go to question 4.37.*	
4.36 Adakah kesan kemerahan pada pusat merebak ke kulit abdomen (perut)? *Did the redness of the umbilical stump extend onto the abdominal skin?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

4.37 Semasa mengalami penyakit yang membawa kematian, adakah bayi mempunyai benjolan yang mengandungi nanah atau mempunyai sebahagian besar kulit yang bernanah? *During the illness that led to death, did the baby have skin bumps containing pus or a single large area with pus?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.38 Semasa mengalami penyakit yang membawa kematian, adakah bayi mempunyai kudis-kudis di kulit? *During the illness that led to death, did the baby have ulcer(s) (pits)*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.39 Semasa mengalami penyakit yang membawa kematian, adakah terdapat tanda kemerahan dan bengkak pada kulit bayi? *During the illness that led to death, did the baby have an area(s) of skin with redness and swelling?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.40 Semasa mengalami penyakit yang membawa kematian, adakah mana-mana bahagian kulit bayi menjadi hitam? *During the illness that led to death, did the baby have areas of the skin that turned black?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.41 Semasa mengalami penyakit yang membawa kematian, adakah bayi mengalami pendarahan dari mana-mana bahagian? *During the illness that led to death, did the baby bleed from anywhere?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 4.42. *If "Yes", go to question 4.42.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.43. *If "No" or "Don't know"or "Refused to answer", go to question 4.43.*	
4.42 Rekodkan tempat pendarahan bayi tersebut? *Record from where did the baby bleed*:	
4.43 Semasa mengalami penyakit yang membawa kematian, adakah bayi mengalami cirit birit lebih kerap daripada biasa? *During the illness that led to death, did the baby have more frequent loose or liquid stools than usual?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 4.44. *If "Yes", go to question 4.44.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 4.45. *If "No" or "Don't know"or "Refused to answer", go to question 4.45.*	

4.44 Pada hari yang paling teruk, berapa kalikah bayi mengalami cirit-birit? *How many stools did the baby have on the worst day?*	1. ___ ___ kali / *stools* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.45 Semasa mengalami penyakit yang membawa kematian, adakah bayi mengalami muntah yang teruk? *During the illness that led to death, did the baby have severe vomiting?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.46 Semasa mengalami penyakit yang membawa kematian, adakah bayi mengalami kulit berwarna kuning? *During the illness that led to death, did the baby have yellow skin?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.47 Semasa mengalami penyakit yang membawa kematian, adakah mata bayi berwarna kuning? *During the illness that led to death, did the baby have yellow eyes?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
4.48 Adakah bayi kelihatan dalam keadaan sihat tetapi kemudian mati secara tiba-tiba? *Did the infant appear to be healthy and then just die suddenly?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
BERHENTI. **SEKSYEN 4: KEMATIAN NEONATAL (UMUR < 28 HARI) TAMAT.** **TERUSKAN KE SEKSYEN 6: REKOD PERUBATAN** **STOP.** ***SECTION 4: NEONATAL DEATH (AGE< 28 DAYS) FINISHED.*** ***GO TO SECTION 6: MEDICAL RECORD***	

SEKSYEN 5: KEMATIAN BAYI DAN KANAK-KANAK
(Untuk BUKAN STILLBIRTH dan bayi berumur >28 hari dan kanak-kanak berumur kurang 12 tahun))

SECTION 5: INFANT AND CHILD DEATH
(For NON-STILLBIRTH and infant/ child aged morer than 28 days and less than 12 years)

5.1 Adakah _____ mengalami kecederaan atau kemalangan? *Did _____ have an injuryor accident?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 5.2. *If "Yes", go to question 5.2.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 5.4. *If "No" or "Don't know"or "Refused to answer", go to question 5.4.*	
5.2 Apakah jenis kecederaan atau kemalangan tersebut? *What kind of injury or accident was it?* (Benarkan responden untuk menjawab secara spontan. Jika responden mengalami kesulitan mengenal pasti kecederaan, sila baca senarai jawapan perlahan-lahan. Allow the respondent to answer spontaneously, If the respondent having difficulty to describe the injury, read the list of answer slowly)	1. Kemalangan jalan raya / *Road traffic accident* 2. Jatuh / *Fall* 3. Lemas / *Drowning* 4. Keracunan / *Poisoning* 5. Gigitan atau sengatan haiwan berbisa/ *Animal bite or sting* 6. Kebakaran / *Burn* 7. Keganasan (bunuh diri, dibunuh, didera) / *Violence (suicide, homicide, abused)* 8. Lain-lain. Nyatakan / *Others. Specify*_____ 9. Tidak Tahu / *Don't know*
5.3 Berapa lama_____dapat bertahan selepas kecederaan atau kemalangan? *How long did ___ survive after the injury or accident?*	1. Jam/ *hour(s)*___ ___ 2. Hari / *day(s)*___ ___ 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.4 Semasa mengalami penyakit yang membawa kematian, adakah _____ mengalami demam? *During the illness that led to death, did _____ have fever?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 5.5. *If "Yes", go to question 5.5.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 5.9. *If "No" or "Don't know"or "Refused to answer", go to question 5.9.*	
5.5 Berapa lama _____ mengalami demam? *How many days did _____ having a fever?*	1. Kurang dari 24 jam/ *less than 24 hours* 2. ___ ___ hari / *day(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.6 Adakah demam panas berterusan sehingga _____ meninggal? *Did the fever continue until death?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 5.7. *If "Yes", go to question 5.7.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 5.9. *If "No" or "Don't know"or "Refused to answer", go to question 5.9.*	

5.7 Bagaimanakah keadaan demam tersebut? *How severe was the fever?*	1. Ringan / *Mild* 3. Teruk / *Severe* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.8 Apakah corak demam tersebut? *What was the pattern of fever?*	1. Berterusan / *Continously* 2. Sekali-sekala / *Once a while* 3. Hanya pada waktu malam / *Only at night* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.9 Semasa mengalami penyakit yang membawa kematian, adakah _____ mengalami cirit birit lebih kerap daripada biasa? *During the illness that led to death, did_____ have more frequent loose or liquid stools than usual?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 5.10. *If "Yes", go to question 5.10* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 5.15. *If "No" or "Don't know"or "Refused to answer", go to question 5.15.*	
5.10 Pada hari yang paling teruk, berapa kalikah _____ mengalami cirit-birit? *How many stools did _____ have on the worst day?*	1. ___ ___ kali / *stools* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.11 Berapa harikah sebelum kematian, cirit birit bermula? *How many days before death, did the frequent loose or liquid stools start?*	1. Kurang dari 24 jam / *less than 24 hours* 2. ___ ___ hari / *days* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "lebih dari 24jam", "Enggan menjawab" atau "Tidak tahu", teruskan ke soalan 5.12. *If "more than 24 hours", "Refused to answer" or "Don't know", go to question 5.12.* Jika "kurang daripada 24 jam", teruskan ke soalan 5.15. *If less than 24 hours, go to question 5.15*	
5.12 Adakah cirit birit berterusan sehingga hari kematian? *Did thefrequent loose or liquid stools continue till death?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 5.14. *If "Yes", go to question 5.14.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 5.13. *If "No" or "Don't know"or "Refused to answer", go to question 5.13.*	
5.13 Berapa lama tempoh masa sebelum kematian, _____ telah berhenti mengalami cirit birit? *How many days before death did thefrequent loose or liquid stools stop?*	1. Kurang dari 24 jam / *less than 24 jam* 2. ___ ___ hari / *days*
5.14 Adakah terdapat darah pada najis cirit birit tersebut? *Was the visible blood in the loose stool or liquids stools?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

5.15 Semasa mengalami penyakit yang membawa kematian, adakah bayi mengalami batuk? *During the illness that led to death, did _____ have a cough?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 5.16. *If "Yes", go to question 5.16.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 5.19. *If "No" or "Don't know"or "Refused to answer", go to question 5.19.*	
5.16 Berapa harikah_____ batuk? *How many days did _____ having a cough?*	1. ___ ___ hari / *day(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.17 Adakah batuk tersebut teruk? *Was the cough very severe?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.18 Adakah _____muntah selepas batuk? *Did _____ vomit after she/he coughed?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.19 Semasa mengalami penyakit yang membawa kematian, adakah _____ mengalami kesukaran untuk bernafas? *During the illness that led to death, did _____ have difficult breathing?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 5.20. *If "Yes", go to question 5.20* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 5.21. *If "No" or "Don't know"or "Refused to answer", go to question 5.21.*	
5.20 Berapa harikah, _____mengalami kesukaran untuk bernafas? *How many days did _____ have difficult breathing?*	1. ___ ___ hari / *day(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.21 Semasa mengalami penyakit yang membawa kematian, adakah _____ bernafas dengan laju? *During the illness that led to death, did _____ have fast breathing?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 5.22. *If "Yes", go to question 5.22.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 5.23. / *If "No" or "Don't know"or "Refused to answer", go to question 5.23.*	
5.22 Berapa harikah, _____bernafas dengan laju? *How many days did _____ have fast breathing?*	1. ___ ___ hari / *day(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

ARAHAN KEPADA PENEMURAMAH: Jika KEDUA-DUA 5.19 dan 5.21 adalah "Tidak", sila teruskan ke soalan 5.28 ***INSTRUCTION TO INTERVIEWER:*** *If BOTH 5.19 and 5.21 are "No" , go to question 5.28*	
5.23 Semasa mengalami penyakit yang membawa maut, adakah dinding dada_____ tertarik ke dalam? *During the illness that led to death, did ____have indrawing of the chest?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.24 Semasa mengalami penyakit yang membawa kematian, adakah bunyi pernafasan _____seperti yang berikut: *During the illness that led to death, did his/her breathing sound like any of the following?* *(*Tunjukkan setiap bunyi */ Demonstrate each sound)* (Untuk soalan 5.25 hingga 5.27/ *for question 5.25-5.27*)	
5.25*Stridor*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.26Mendengus / *Grunting*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.27Semput/ lelah / *wheezing*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.28 Semasa mengalami penyakit yang membawa kematian, adakah _____ mengalami sawan? *During the illness that led to death, did ____ experience any generalised convulsions or fits?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.29 Semasa mengalami penyakit yang membawa kematian, adakah _____ tidak sedarkan diri? *During the illness that led to death, was ____ unconscious?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 5.30. *If "Yes", go to question 5.30.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 5.31. *If "No" or "Don't know"or "Refused to answer", go to question 5.31.*	
5.30 Berapa lamakah sebelum kematian, _____ tidak sedarkan diri? *How long before death, _____became unconscious?*	1.Kurang daripada 6 jam / *less than 6 hours* 2. 6-23 jam (setengah hari) *half a day* 3. 24 jam atau lebih / ≥ *24 hours* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

5.31 Semasa mengalami penyakit yang membawa kematian, adakah _____ mengalami kejang pada leher? *During the illness that led to death, did ____have neck stiffness?* *(*Tunjukkan */ demonstrate)*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.32 Semasa mengalami penyakit yang membawa kematian, adakah _____ mengalami bonjolan pada "ubun-ubun" *During the illness that led to death, did ____ have bulging fontanelle?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.33 Dalam sebulan sebelum meninggal, adakah _____ mengalami ruam pada kulit? *During a month before he/ she died, did _____ have a skin rash?*	1. Ya /Y*es* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 5.34. *If "Yes", go to question 5.34.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 5.38. *If "No" or "Don't know"or "Refused to answer", go to question 5.38.*	
5.34 Di manakah ruam tersebut? *Where was the rash?*	1. Muka / *face* 2. Sekitar bibir/ mulut / *lips and mouth* 3. Badan/abdomen / *trunk* 5. Di mana-mana / *all over* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.36 Berapa harikah _____ mengalami ruam? *How many days did _____ have skin rash?*	1. ___ ___ hari / *day(s)* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.37 Adakah ruam tersebut mengandungi gelembung yang mengandungi cecair jernih? *Was the rash having blisters cointaining clear fluid?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.38 Semasa mengalami penyakit yang membawa kematian, adakah anggota (kaki, tangan)_____ semakin mengecil dan kurus? *During the illness that led to death, did ____'s limbs (legs, arms) getting smaller and thinner?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.39 Semasa mengalami penyakit yang membawa kematian, adakah _____ mengalami bengkak kaki? *During the illness that led to death, did ____have swollen legs or feet?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 5.40. *If "Yes", go to question 5.40.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 5.41. *If "No" or "Don't know"or "Refused to answer", go to question 5.41.*	

5.40 Berapa lamakah _____ mengalami bengkak kaki? *How many days did _____ have swollen legs or feet?*	1. __ __ hari ATAU 2. __ __ minggu 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.41 Semasa mengalami penyakit yang membawa kematian, adakah kulit _____ mengelupas secara bertompok? *During the illness that led to death, did ____'sskin flake off in patches?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.42 Adakah warna rambut _____ bertukar kemerah-merahan atau kekuning-kuningan? *Did ____'s hair change in color to a reddish or yellowish color?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.43 Adakah_____mempunyai perut yang menonjol/buncit? *Did ____ have a protruding belly?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.44 Semasa mengalami penyakit yang membawa kematian, adakah _____ mengalami masalah kurang darah atau pucat? *During the illness that led to death, did _____ suffer from "lack of blood" or pallor?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.45 Semasa mengalami penyakit yang membawa kematian, adakah _____ mengalami bengkak di bahagian ketiak/kelenjar? *During the illness that led to death, did ____have swelling in armpits?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.46 Semasa mengalami penyakit yang membawa kematian, adakah _____ mempunyai ruam putih di dalam mulut atau pada lidah? *During the illness that led to death, did ____have a whitish rash inside the mouth or on the tongue?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
5.47 Semasa mengalami penyakit yang membawa kematian, adakah_____ mengalami pendarahan dari mana-mana bahagian badan? *During the illness that led to death, did ____bleed from anywhere?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 5.48. *If "Yes", go to question 5.48.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 5.49. *If "No" or "Don't know"or "Refused to answer", go to question 5.49.*	
5.48 Rekodkan dari bahagian mana _____ mengalami pendarahan tersebut: *Record from where she/he bled:*	

5.49 Semasa mengalami penyakit yang membawa kematian, adakah _____ mengalami sebahagian kulit yang bertukar menjadi warna hitam? *During the illness that led to death, did _____ have areas of the skin that turned black?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

BERHENTI.
SEKSYEN 5: KEMATIAN BAYI DAN KANAK-KANAK TAMAT.
TERUSKAN KE SEKSYEN 6: REKOD PERUBATAN

SECTION 6: INFANT AND CHILD DEATHS IS FINISHED.
GO TO SECTION 6: MEDICAL RECORD

SEKSYEN 6: REKOD KESIHATAN
SECTION 6: HEALTH RECORD

6.1 Adakah anda/penjaga mendapatkan rawatan semasa _____mengalami penyakit tersebut? *Did you /caretaker seek any treatment when _____ had the illness?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 6.2. *If "Yes", go to question 6.2.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab", teruskan ke **SEKSYEN 7.** *If "No" or "Don't know"or "Refused to answer", go to* ***SECTION 7.***	
6.2 Di mana atau daripada siapa anda mendapatkan rawatan tersebut? *Where or from whow did you seek care?* *(*Tandakan pada mana-mana yang berkenaan*/ tick all relavants)*	1. Hospital kerajaan / *Government hospital* 2. Lain-lain kemudahan kesihatan kerajaan / *Other government health facilities* 3. Hospital/klinik swasta / *Private hospital/ clinic* 4. Pengamal tradisional / *Traditional healer* 5. Homeopati / *Homeopathy* 6. Tokoh agama / *Religious person* 7. Farmasi, penjual ubat, kedai, pasar/ *Pharmacy, medicine seller, shop, market* 8. Lain-lain / *Others* _____ 9. Enggan menjawab / *Refused to answer* 10. Tidak Tahu / *Don't know*
6.3 Rekodkan nama dan alamat hospital atau pusat kesihatan tersebut: *Record the hospital 's name and address:*	Nama Hospital: *Hospital's name*; Alamat hospital : *Hospital 's address*: Nama Hospital: *Hospital's name*; Alamat hospital : *Hospital 's address* Nama Hospital: *Hospital's name*; Alamat hospital : *Hospital 's address*:
6.4 Adakah _____ mempunyai rekod kesihatan? *Do you have any health records that belonged to the baby?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 6.5. *If "Yes", go to question 6.5.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke **SEKSYEN 7**. *If "No" or "Don't know"or "Refused to answer", go to* ***SECTION 7.***	
6.5 Bolehkah saya melihat rekod kesihatan tersebut? *Can I see the health records?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

Jika "Ya" dan responden membenarkan anda melihat rekod tersebut, sila masukkan semua data yang berkenaan. *If "Yes" and respondent allow you to see the records, please enter all relavant data.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke **SEKSYEN 7**. *If "No" or "Don't know" or "Refused to answer", go to* ***SECTION 7.***	
6.6 Rekodkan tarikh dua lawatan yang paling terkini. *Record the dates of the two most recent visits.*	1. _ _/ _ _/ _ _ _ _ hh bb tttt 2. _ _/ _ _/ _ _ _ _ hh bb tttt
6.7 Rekodkan dua berat paling terkini pada tarikh- tarikh tersebut. *Record the two most recent weights on those dates.*	1. _ _ _ _ gram 2. _ _ _ _ gram
6.8 Rekodkan tarikh nota terakhir. *Record the date of the last note?*	_ _/ _ _/ _ _ _ _ hh bb tttt
6.9 Salin/catat nota tersebut: *Transcribe the note:*	
6.10 Adakah sijil kematian dikeluarkan? *Was a death certificate issued?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 6.11. *If "Yes", go to question 6.11.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke 6.17. *If "No" or "Don't know" or "Refused to answer", go to question 6.17.*	
6.11 Bolehkah saya melihat sijil kematian tersebut? *Can I see the death certificate?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 6.12. *If "Yes", go to question 6.12.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke soalan 6.17. *If "No" or "Don't know" or "Refused to answer", go to question 6.17.*	
6.12 Rekodkan sebab kematian daripada sijil tersebut. *Record the cause of death from the certificate.* Jika hanya terdapat sebab kematian, terus ke 5.17*, If only has the cause of death, then go to question 5.17*	

6.13 Rekodkan penyebab kematian (penyakit atau keadaan) daripada sijil tersebut. *Record the first underlying cause of death from the certificate.* Jika hanya terdapat satu penyebab kematian (penyakit atau keadaan), terus ke 5.16. *If there is only one underlying cause of death, then go to question 5.17*	
6.14 Rekodkan penyebab kedua kematian (penyakit atau keadaan) daripada sijil tersebut. *Record the second underlying cause of death from the certificate.* Jika hanya terdapat duapenyebab kematian (penyakit atau keadaan), terus ke 5.17*, If there are only two underlying cause of death, then go to question 5.17*	
6.15 Rekodkan penyebab ketiga kematian (penyakit atau keadaan) daripada sijil tersebut. *Record the third underlying cause of death from the certificate.* Jika hanya terdapat tiga penyebab kematian (penyakit atau keadaan), terus ke 5.17*, If there are only three underlying cause of death, then go to question 5.17*	
6.16 Rekodkan keadaan-keadaan lain yang menyumbang kepada kematian daripada sijil tersebut. *Record the contributing cause(s) of death from the certificate.*	
6.17 Adakah ibu kandung bayi/kanak-kanak pernah membuat pemeriksaan "HIV"? *Has the child's (biological) mother ever been tested for "HIV"?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
Jika "Ya", teruskan ke soalan 6.18. *If "Yes", go to question 6.18.* Jika "Tidak" atau "Tidak tahu" atau "Enggan menjawab" teruskan ke soalan 6.19. *If "No" or "Don't know" or "Refused to answer", go to question 6.19.*	
6.18 Adakah hasil pemeriksaan tersebut positif? *Was the "HIV" test ever positive?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*
6.19 Adakah ibu kandung bayi/kanak-kanak pernah diberitahu bahawa menghidap "AIDS" oleh pekerja kesihatan? *Has the child's (biological) mother ever been told she had "AIDS" bya health worker?*	1. Ya /*Yes* 2. Tidak / *No* 8. Enggan menjawab / *Refused to answer* 9. Tidak Tahu / *Don't know*

SEKSYEN 7: NOTA KESIMPULAN
SECTION 7: SUMMARY NOTE

Seksyen ini untuk dilengkapkan oleh pegawai perubatan dengan menyatakan ringkasan penemuan berdasarkan soal selidik yang telah dilakukan (demografi, penemuan positif dan penemuan negative yang akan membolehkan diagnose penyebab kematian dibuat).
This section is meant for the medical officer to summarize the findings from the questionnaire (demography, positive and negative findings that will help in diagnosing the cause of death).

CAUSE OF DEATH

Cause Of Death		Approximate interval between onset and death
I	(a).....	.....
Disease or condition directly	due to (or as a consequence of)	
leading to death*		
Antecedent causes	(b).....	.....
Morbid conditions, if any,	due to (or as a consequence of)	
giving rise to the above		
cause, stating the underlying	(c).....	.....
condition last	due to (or as a consequence of)	
	(d).....	.....
II		
Other significant conditions	.....	.....
contributing to the death, but		
not related to the disease or	.....	.....
condition causing it		
*This does not mean the mode of dying e.g. heart failure, respiratory failure. It means the disease, injury, or complication that caused death		

Assigned by:

_____

(NAME:)

(DATE:)

ICD-10 CODING:

Cause of death in section:	ICD-10 Coding
1a	
1b	
1c	
1d	
1I	

FINAL ICD-10 CODING (BASED ON RULES AND REGULATION FOR MORTALITY CODING)

Assigned by:

_____

(NAME :)
(DATE :)

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