RAPID ASSESSMENT

OF NATIONAL CIVIL REGISTRATION AND VITAL STATISTICS SYSTEM

A case study of Thailand

UNITED NATIONS ESCAP
Economic and Social Commission for Asia and the Pacific

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Rapid Assessment of National Civil Registration and Vital Statistics Systems:

A case study of Thailand

By

Thai Health Information Standards Development Center (THIS)
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Rapid Assessment of National Civil Registration and Vital Statistics Systems: A case study of Thailand

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Preface

Vital statistics provide essential information for monitoring the progress towards achieving the United Nations Millennium Development Goals (MDGs). Well-functioning and reliable civil registration and vital statistics systems (CRVS systems) are not only needed for national development, monitoring and evaluation systems, but also for organizations to plan and manage their operation and programs. Well-functioning civil registration systems are the best data source for reliable vital statistics. However, more than half of the countries around the world do not have CRVS systems or, if they do, they do not function well. The United Nations (UN) and the World Health Organization (WHO) recognize and are aware of this issue and are facilitating member countries to evaluate and improve their CRVS systems.

In 2011, WHO and the University of Queensland, Australia, developed a standard tool called, "Strengthening practice and systems in civil registration and vital statistics: A Resource Kit ", in order to strengthen CRVS systems. WHO and many UN organizations, such as the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), encourage and assist member countries to use this tool.

CRVS systems have existed in Thailand for many decades, but have not been systematically evaluated. Therefore, an assessment was a key step to understanding the status of the current system and identifying areas that need improvement. The Thai Health Information Standards Development Center (THIS) and other key stakeholders, such as the Ministry of Public Health, National Statistics Office, and Ministry of Interior, came together to evaluate the CRVS system using the WHO Rapid Assessment of National Civil Registration and Vital Statistics Systems tool.

This report outlines the methodology and findings from this rapid assessment. It contains three main sections: chapter one describes the background and history of Thailand's CRVS system; chapter two describes the assessment objectives, the tool and evaluation process; and the final chapter provides an analysis of results and recommendations.

It is hoped that the assessment will be informed Thai policy makers, administrators and others involved in CRVS of the system's strengths and weaknesses and hope to gain their support for further improvment system.

Thai Health Information Standards Development Center (THIS)
Affiliated organization of Health Systems research Institute (HSRI)

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This report presents the results of a comprehensive assessment of the national Civil Registration and Vital Statistics (CRVS) system of Thailand. Valuable inputs and comments to each question from the tool were provided by key stakeholders in the CRVS, namely, Ms. Apinya Ounruen, Ms. Tippawan Jitrat, and Mr. Susorod Pungboon from The Bureau of Registration Administration (BORA) of the Ministry of Interior (MOI), Ms. Chujit Nacheewa, and Ms. Orapin Saprhon from The Bureau of Policy and Strategies (BPS) of the Ministry of Public Health, and Ms. Pattama Amornsirisombul, and Ms. Orawan Suthangkul from the National Statistics Office (NSO) of the Ministry of Information Communication and Technology and Dr. Kanitta Bundhamcharoen from The International Health Policy Program (IHPP).

Appricitation to Economic and Social Commission for Asia and the Pacific (ESCAP) which support the budget for this project and important contributions were also provided by participants from other institutes, including the Thai Health Information Standards Development Center (THIS) of the Health System Research Institute (HSRI), the National Health Security Office (NHSO), the Institute for Population and Social Research of Mahidol University and the Office of the National Economic and Social Development Board (NESDB).

This report documents a comprehensive assessment of the Thailand CRVS system. It is a continued process recommended from the rapid assessment. This will require the continuing participation of all stakeholders, further strengthening the network and collaboration between actors in the CRVS system. Conducting a comprehensive assessment and implementing the recommendations should increase the quality of information used in the development of national health policies and plans.

Acronyms

CRVS	Civil registration and vital statistics
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
ICD-10	International statistical classification of diseases and related health problems, 10th revision
MOI	Ministry of Interior
MOPH	Ministry of Public Health
NHSO	National Health Security Office
WHO	World Health Organization

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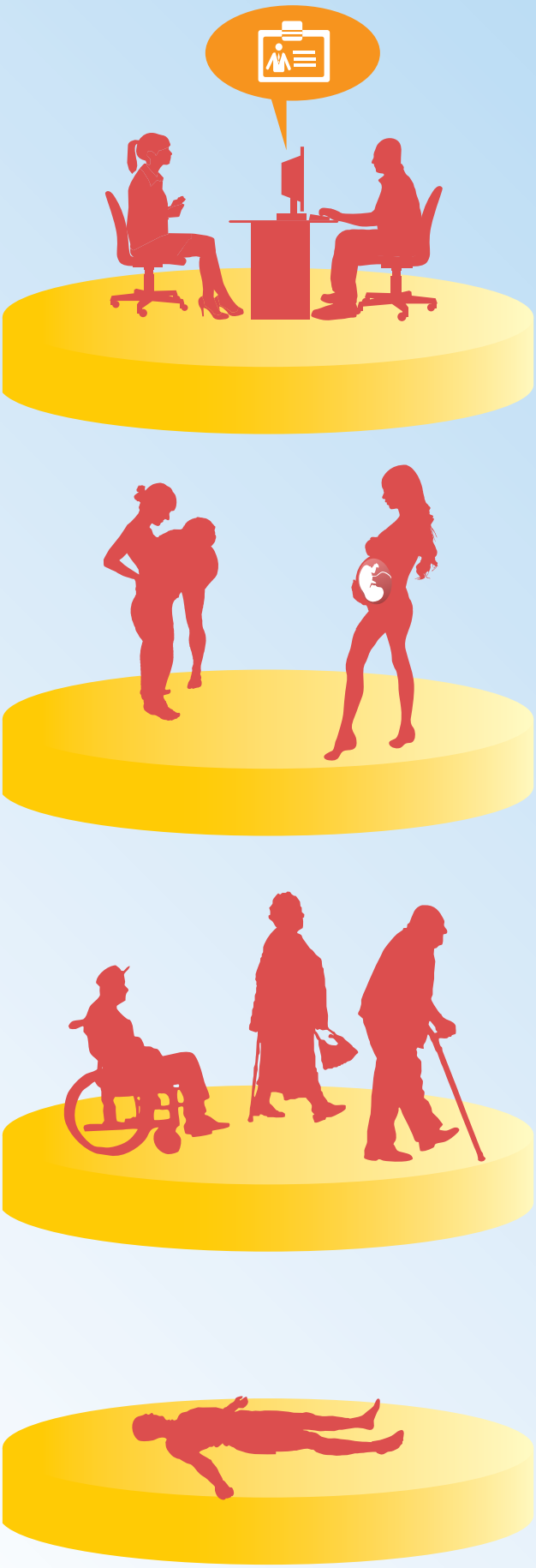
REGISTER SYSTEM

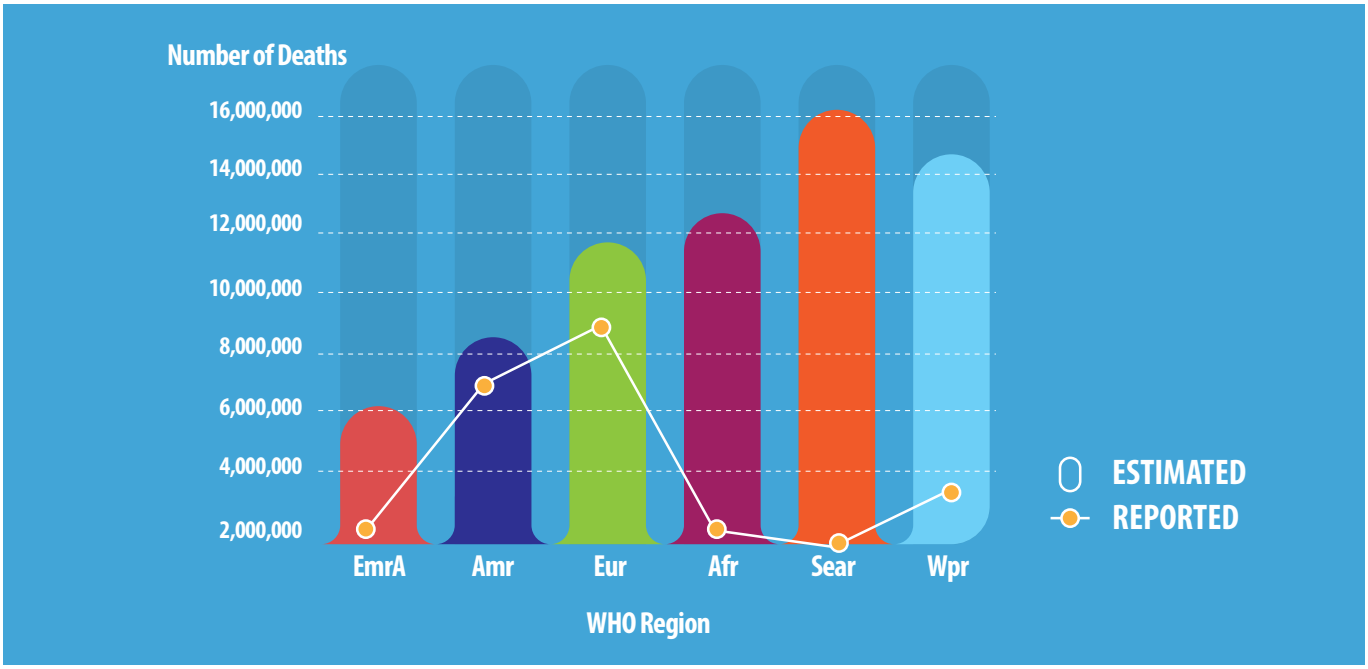


1 INTRODUCTION

Civil registration systems are used to record vital events such as births, deaths, and marriages. They have the potential to serve as the main data source for national vital statistics. However, in many developing countries, civil registration and vital statistics systems are weak or nonexistent and, as a result, key demographic, fer tility and mortality statistics are not available on a continuous basis and do not cover the total population. Vital statistics are the cornerstone of a country's health information system.

As **Figure 1** shows, data from 2007 show a huge gap between the estimated versus reported deaths in South East Asia (SEAR) compared to other regions of the world.

FIGURE. 1 REP ORTE D DEATH S VER SUS ESTIMATE D DEATH S, 2007



Thai civil registration system has evolved since its establishment a century ago. During the past three decades, the system has evolved from manual paper based registration system to electronic centralized and online system. Currently, all provincial registration offices and almost all of the district registration offices are online with the central civil registration system. Thai vital statistics has been much improved since 1996 when the civil registration system of Ministry of Interior (MOI) has provided electronic death and birth data directly to the vital statistics management process of the Ministry of Public Health (MOPH). Due to the country universal health care coverage, which has been implemented when the national health insurance act was promulgated in 2002, the insurance reimbursement administrative data of the majority of in-hospital patients which contain standard coded diseases data and status at discharge are now available. The data are being used to enhance the quality of country vital statistics.[2]

This paper aims to describe overview of Civil Registration and Vital Statistics (CRVS) systems of Thailand and results obtained with the rapid assessment (RA) tool of national civil registration and vital statistics systems jointly developed by the WHO and the University of Queensland in Australia.

OVERVIEW OF CIVIL REGISTRATION AND VITAL STATISTICS SYSTEM OF THAILAND

Thai civil registration system has evolved since its establishment a century ago. During the past three decades, the system has evolved from manual paper based registration system to electronic centralized and online system. Thai vital statistics has been much improved since 1996 when the civil registration system of the MOI has provided electronic death and birth data directly to the vital statistics management process of the MOPH. Standard data set for public health insurance reimbursement are being used to enhance the quality of country vital statistics. Although, the records of birth and death are accurately collected with these collaborative systems, Thailand is still challenged with the quality of cause of death (COD) information. The completeness is reasonably high except the early infant death (age less than one year old). Unfortunately, the major gap of this system is the remaining high proportion of ill-defined and misclassified causes of death. The accuracy of the cause of death is compromised because 60-70% of the deaths occurred outside hospitals and be classified as natural cause of death by head of the village and civil registration officers who have not any medical background.[2]

Thailand has passed long experience in civil registration and maintains a continuous and sustainable system, operating by central administration. The electronic files of the population kept at the computer center are arranged according to the population identification number. The record for every person in the file contains all information taken from population register, birth and death certificates sent from the registration offices throughout the country are transferred to and kept at the Computer Centre for Civil Registration.

The country's civil registration system is effective. When compares with total population from national census in the year 2000, the civil registration system captured 95 percents of the total population. Although counting the number of birth and death in country is effective, the quality of information regarding the cause of death (COD) is quite low. There is high proportion of ill-defined and misclassified cause of death.

There are many reasons of the low quality COD. One of them is the limitation of physicians and health professional's skill on specifying COD from chain of illness. This challenge is now mitigated by in-services training about specifying COD to physicians and health professionals and also the incorporation of the knowledge into pre-service training curriculum.

There are many reasons of the low quality COD. One of them is the limitation of physicians and health professional's skill on specifying COD from chain of illness. This challenge is now mitigated by in-services training about specifying COD to physicians and health professionals and also the incorporation of the knowledge into pre-service training curriculum.

Other reason of low quality COD is that 60-70% of the deaths occurred outside hospitals. COD information in death certificate is provided by relative of deceased to village registrar who has no health or medical background. As the result, a large number of COD information in civil registration system is ill-defined and questionable. Thailand is using individual health care services data in the DRG system to validate and improve COD information. This can be done because of the unique citizen ID system and the availability of inpatient data in standards form from almost all hospitals.

Due to the citizen unique ID is available in both death registration system and the insurance reimbursement databases; we are able to map information from DRG system, which provides morbidity information of the patients who later die after discharge from hospitals, with the death registry. Using the morbidity information (discharge diagnosis) from administrative data, we can validate and collect cause of death of the deceased.

The maternal mortality ratio (MMR) implies the risk of death a woman faces once she has become pregnant. It is one of the important nation's health indicators. Calculation of the MMR needs number of maternal deaths as the numerator and total number of live births as the denominator and it must be done every year. Many countries in the world, including Thailand, are facing unreliable MMR. In Thailand there are many MMR reporting figures that are not consistent depend on the sources of data. One of the methods used for making the reliable estimate for Thailand MMR is the reproductive age mortality studies (RAMOS), which is considered a costly and time-consuming method. For this reason, it is unlikely for any country to conduct RAMOS effectively every year. Taking advantage of having citizen unique ID and the available of inpatient DRG data, we are able to map data from life birth and death of women in reproductive age in civil registration with admissions of reproductive age women. By mapping these two data source, it enables Thailand to estimate more accurate MMR as compare to RAMOS.[4]

REVIEWING THE COUNTRY CIVIL REGISTRATION AND VITAL STATISTICS SYSTEM

2

OBJECTIVES

1. Evaluate the current situation of the civil registration and vital statistics system in Thailand using the WHO assessment framework.
2. Identify gaps in functioning and the quality of the vital statistics, identify potential areas for improvement and develop recommendations for policymakers.
3. Promote collaboration and networking between stakeholders in the CRVS system.

OVERVIEW OF RAPID ASSESSMENT TOOL AND ITS APPLICATION [5]

This assessment tool has been produced in parallel with the development of the World Health Organization (WHO) document Improving the quality and use of birth, death and cause-of-death information, which provides guidance for a standards-based review of country practices in civil registration and vital statistics.

The WHO, working with the University of Queensland in Australia, developed a comprehensive guide to support countries who wish to improve their civil registration and vital statistics systems. During the guide's development and field-testing phase, countries suggested that, before undertaking the detailed review, it would be useful to first carry out a rapid assessment to quickly evaluate the strengths and weaknesses of the current system. The results of this rapid assessment could then be used to make the case for a more detailed assessment.

This rapid assessment tool has therefore been developed to accompany the comprehensive guide, and countries are advised to apply it before undertaking a full review of their systems. It is available as both text and a spreadsheet, for ease of compilation of data. Both tools have been extensively peer reviewed by technical experts, and field tested in three countries.

The rapid assessment tool consists of 25 questions about how the civil registration and vital statistics systems function. The questions are grouped into 11 areas:

1 legal framework for civil registration and vital statistics;
2. registration infrastructure and resources;
3. organization and functioning of the vital statistics system;
4. completeness of birth and death registration;
5. data storage and transmission;
6. International statistical classification of diseases and related health problems (ICD) compliant practices and certification within and outside hospitals;
7. practices affecting the quality of cause-of-death data;
8. ICD coding practices;
9. coder qualification and training, and quality of coding;
10. data quality and plausibility checks; and
11. data access, dissemination and use.

TABLE 1: SCORING OF SCENARIOS FOR RAPID ASS ESS MENT

Scenario	A	B	C	D
Score	3	2	1	0

The group should discuss and score all questions. If a particular scenario does not precisely define the situation in a country, the scenario most closely describing current practice is selected. A comments section is provided to enable respondents to provide additional detail or points of clarification for future reference. Total numeric scores are then converted into percentages. The spreadsheet version of the assessment questions will automatically calculate the scores and convert the absolute numbers into a percentage score. The spreadsheet tool can be downloaded from *http://www.who.int/healthinfo/en/.*

Based on the score obtained, the functioning of the national system can be situated.
Table 2 shows the ratings for the range of possible scores, and outlines the action required for each rating.

It is clear from Table 2 that countries with ratings below 65% will have much to gain from the careful application of the comprehensive WHO guide, and that even in countries with a score of 65–84%, the comprehensive review will be useful in identifying specific weaknesses.

A central tenet of the assessment approach is that the rapid assessment should be completed through a process of discussion among all group members leading to a common view on the issue. Thus, the purpose of the assessment is not simply to answer a question and decide on a score, but rather to engage in discussion on the possible weaknesses and strengths of the system, which will then be explored more fully in applying the full WHO guide, where necessary.

In some countries, the civil registration system is not the main vehicle for generating certain vital statistics, especially causes of death. Other mechanisms used include sample registration systems (e.g. India), disease surveillance points (e.g. China) and data collection through ministries of health (e.g. many countries in Latin America and the Caribbean). In such settings, it is important to distinguish between statistics derived from the civil registration system and those derived from alternative sources. This should be noted in the comments section of the questionnaire; because the rapid assessment is based on the premise that civil registration systems are the best source of vital statistics.

TABLE 2: SCORES, RATINGS AND ACTIONS REQUIRED FOR RAPID ASSESSMENT

Score (%)	Rating	Actions required
<34	Dysfunctional	System requires substantial improvement in all areas
35–64	Weak	Many aspects of the system do not function well, and multiple issues require attention
65–84	Functional but inadequate	System works but some elements function poorly and require attention; specific weaknesses of the system should be identified by completing the comprehensive review
85–100	Satisfactory	Minor adjustments may be required in an otherwise well-functioning system

ASSESSMENT PROCESS

Thailand's CRVS system assessment processes are done by The Thai Health Information Standards Development Center (THIS) of the Health System Research Institute (HSRI) in collaboration with other participants from stakeholders in Thailand including The Bureau of Policy and Strategies of the MOPH, The Bureau of Registration Administration of the MOI, The National Statistical Office of Ministry of Information Communication and Technology, The International Health Policy Program (IHPP), the National Health Security Office (NHSO), The Institute for Population and Social Research of Mahidol University, and The Office of the National Economic and Social Development Board (NESDB).

The first workshop to assess Thai CRVS using the RA tool by the stakeholders was held at the THIS office on July 12, 2012. The Thai translated version of RA tool was reviewed. The following workshop was held again on August 14, 2012. Participants from others organizations, i.e., The Institute for Population and Social Research of Mahidol University, and The Office of the National Economic and Social Development Board (NESDB), were invited to join the second workshop. Results from the first workshop were reviewed. The participants have recommended continuing to apply the comprehensive assessment tool.

FIGURE 2: THE FIRST RAPID ASSESSMENT CRVS WORKSHOP.

FIGURE 3: THE SECOND RAPID ASSESSMENT CRVS WORKSHOP.

FIGURE 4: THE FIRST NATIONAL CRVS WORKSHOP IN NOVEMBER 2012.

RESULTS AND RECOMMENDATIONS 3

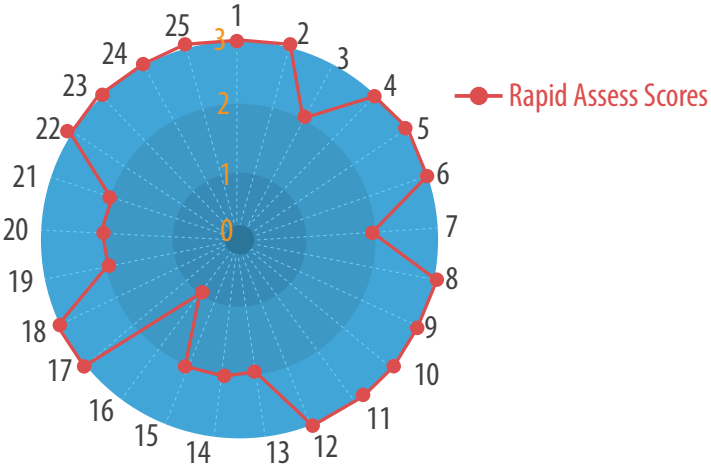
Finding of the review

The average scores from the Rapid Assessment by stakeholders in Thailand are summarized in Table 8. The results show that in five of the eleven areas of the assessment, Thailand have obtained the top score of 3.00. . The remaining five assessment areas have room for improvement. The average scores of the assessment of the area: "Practices affecting the quality of cause-of-death data" are the lowest, at 1.5 out of the possible 3.00 score. The scores from the 25 questions listed in the RA tool are plotted in a diagram shown in figure 6. The overall score from the assessment is 86.67 %, i.e. "Satisfactory" which means that "Minor adjustments may be required in an otherwise well- functioning system."

TABLE 3: AVERAGE SCORES FROM THE RAPID ASSESSMENT BY 11 MAIN AREAS

Rapid assessment grouping areas	Average Scores
Legal framework for civil registration and vital statistics	2.67
Registration infrastructure and resources	3
Organization and functioning of the vital statistics system	2.5
Completeness of registration of births and deaths	3
Data storage and transmission	3
ICD-compliant practices and certification within and outside hospitals	2
Practices affecting the quality of cause-of-death data	1.5
ICD coding practices	3
Coder qualification and training, and quality of coding	2.5
Data quality and plausibility checks	2
Data access, dissemination and use	3
Total Scores (From 75):	**65**
Average scores:	**2.56**
Score (%):	**86.67**

FIGURE 5: SCORES BY 25 QUESTIONS LISTED IN THE RAPID ASSESSMENT



DETAILS OF THE SCORES ARE DESCRIBED DIVIDED INTO 11 MAIN AREAS IN THE FOLLOWING SECTIONS.

I. LEGAL FRAMEWORK FOR CIVIL REGISTRATION AND VITAL STATISTICS (QUESTION 1 – 3)

Assessment for the area of 'Legal framework for civil registration and vital statistics' consists of three questions (question 1 – 3). The results for Thailand for these questions are listed in table 4. The average score of this assessment area is 2.67, where the lowest score is obtained in question 3.

TABLE 4 : LIST OF SCORES IN THE AREA OF 'LEGAL FRAMEWORK FOR CRVS'

Legal framework for civil registration and vital statistics		2.67
1. Does the country have legislation that states that birth and death registration is compulsory?	A. Yes – the country has adequate and enforced legislation on civil registration, stating that registration of births and deaths is compulsory	3
2. Does the country have regulations that oblige all medical establishments to report all vital events to the vital statistics system within a given time?	A. Yes – all medical establishments (public, private, social insurance, others) report these events to the vital statistics system in a timely manner	3
3. Does the country have legislation that states that death has to be certified by cause, and specifies who can certify the cause of death?	B. Cause of death must be indicated on the death certificate but it is not specified who can certify the cause	2

1. Does the country have legislation that states that birth and death registration is compulsory?

   Yes. The first Civil Registration Act was enacted in 1909 and there have been several revisions since then. The most recent revision was in 2011. The registration act states that birth and death registration is compulsory.

2. Does the country have regulations that oblige all medical establishments to report all vital events to the vital statistics system within a given time?

   Yes. The Ministry of Public Health issued regulations which state that all medical establishments have to report vital events, which occurs occurred in their facilities to the central office in a timely manner.

3. Does the country have legislation that states that death has to be certified by cause, and specifies who can certify the cause of death?

   The legislation does not enforce that death has to be certified by cause or specifies who can certify the cause of death. However, there are two type of death certificate depending on place of dead, details as described in the overview of CRVS of Thailand section.

II. REGISTRATION INFRASTRUCTURE AND RESOURCES (QUESTION 4 - 6)

The assessment within the area of 'registration infrastructure and resources' consists of three questions (question 4 – 6). The results for Thailand in this assessment area are listed in table 5. The score for every question in this assessment area is 3.00.

TABLE 5 : LIST OF SCORES IN THE AREA OF 'REGIST RATION INFRAST RUCTURE AND RESOURCES'

Registration infrastructure and resources		3.00
4. Are there adequate numbers of civil registration offices or registration points to cover the whole country?	A. Yes – the country has sufficient places where citizens can register births and deaths	3
5. Do civil registration offices have adequate equipment to carry out their functions (for example, forms, telephones, photocopiers and computers)?	A. Yes – necessary supplies such as forms, paper and pens are adequate, and equipment such as telephones, photocopiers, and computers is widely available	3
6. Have registrars received training to carry out their functions?	A. Yes – all registrars have received adequate training	3

Comments for each question are given below.

4. Are there adequate numbers of civil registration offices or registration points to cover the whole country?

   The primary registration units are located in municipality offices and in the district offices in every district. Thailand has 2,481 registration units, which cover all of the country. In addition, there are hospitals in every district that can provide birth and death certificates when birth or death occur in a hospital.

5. Do civil registration offices have adequate equipment to carry out their functions (for example, forms, telephones, photocopiers and computers)?

   All local registrar units have computer systems that can connect to the national system in the central office which means that all vital events can be updated online. Furthermore, related systems in other ministries, e.g., the MOPH, national health security office, and the revenue department of the ministry of finance, can access related civil data from the civil registration system.

   However, there are problems related to human resources, i.e., the lack of registrar personnel. This is a particular problem at district offices, since appointing new officers require approval of the positions from the central office. On the other hand, local administration offices which function under a decentralized policy are more flexible in hiring new staff.

6. Have registrars received training to carry out their functions?

   Capacity building for registrar officers is provided by the central office on a yearly basis. In order to ensure an appropriate size of the class, the nationwide registrar officers are divided into seven different classes, each class covering one geographical area. A week long training course is given to each of the seven areas.

   Due to changes of staff, there may be a need to provide additional training sessions during the fiscal year.

III. ORGANIZATION AND FUNCTIONING OF THE VITAL STATISTICS SYSTEM (QUESTION 7 - 8)

Assessment for the area of 'Organization and functioning of the vital statistics system' consists of two questions (question 7 – 8). The results for Thailand in this area are listed in table 6. The average score is 2.5, where the question with the lowest score is question 7.

TABLE 6 : LIST OF SCORE S IN THE AREA OF 'ORGANIZATION AND FUNCTIONING OF THE VS SYSTEM'

Organization and functioning of the vital statistics system		2.50
7. How well do the different government agencies and departments responsible for civil registration and vital statistics systems collaborate? (These include departments of health, civil registration and local government, statistics, and others)	B. Although there is no formal interagency committee, the agencies involved have regular meetings to identify and resolve problems	2
8. Can the vital statistics system generate both national and sub national statistics on births and deaths each year?	A. Yes – annual statistics are generated on births, deaths, and causes of death by sex and age at both national and sub national levels	3

Comments for each question are described below.

7. How well do the different government agencies and departments responsible for civil registration and vital statistics systems collaborate? (These include departments of health, civil registration and local government, statistics, and others)

   Although there is substantial collaboration between stakeholders, official collaboration is not sufficient. It is recommended to set a national committee to develop a strategy for a CRVS system. This includes ensuring monitoring and evaluation as well as providing a formalized mechanism between all stakeholders to ensure sustainable development of the CRVS system.

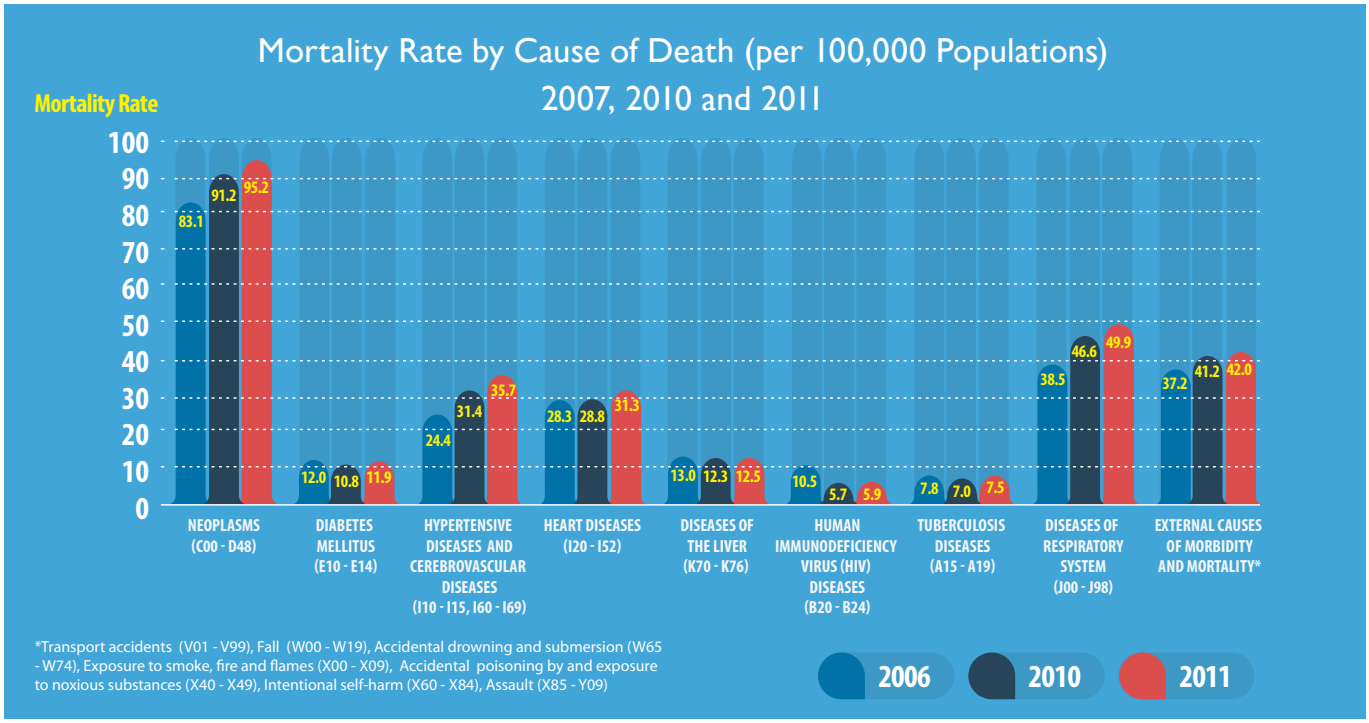
8. Can the vital statistics system generate both national and sub national statistics on births and deaths each year?

   The responsible organizations generate both national and sub national statistics on births and deaths, i.e., the MoI Bureau of Registration Administration publishes civil registration reports classified by provinces, while the MoPH Bureau of Policy and Strategy publishes annual vital and health statistics classified by gender, age, and provinces. Examples of these reports are shown in Table 12 and Figure 7.

TABLE 7 : NUMBER OF BIRTHS AND DEATHS IN THA ILAN D

Year	Live births			Crude Birth Rate	Deaths			Crude Death Rate
	Total	Male	Female		Total	Male	Female	
2539 (1996)	994,118	486,202	457,916	15.8	342,643	208,950	133,693	5.7
2540 (1997)	897,604	461,916	435,688	14.8	300,323	181,884	118,439	5.0
2541 (1998)	897,201	461,837	435,364	14.7	310,534	181,592	128,942	5.1
2542 (1999)	754,685	389,285	365,400	12.3	362,607	213,432	149,175	5.9
2543 (2000)	773,009	397,523	375,486	12.5	365,741	213,907	151,834	5.9
2544 (2001)	790,425	407,400	383,025	12.7	369,493	213,298	156,195	6.0
2545 (2002)	782,911	403,397	379,514	12.5	380,364	219,480	160,884	6.1
2546 (2003)	742,183	382,621	359,562	11.8	384,131	221,962	162,169	6.1
2547 (2004)	813,069	418,361	394,708	13.0	393,592	225,027	168,565	6.3
2548 (2005)	809,485	416,474	393,011	13.0	395,374	225,622	169,752	6.4
2549 (2006)	793,623	409,231	384,392	12.7	391,126	222,811	168,315	6.2
2550 (2007)	797,588	410,921	386,667	12.7	393,255	222,170	171,085	6.3
2551 (2008)	784,256	404,043	380,213	12.4	397,327	224,090	173,237	6.3
2552 (2009)	765,047	394,555	370,492	12.1	393,916	222,815	171,101	6.2
2553 (2010)	761,689	392,098	369,591	12.0	411,331	232,791	178,540	6.5
2554 (2011)	795,031	409,699	385,332	12.4	414,670	235,189	179,481	6.5

FIGURE 6 : MORTALITY RATE BY CAUSE OF DEATH



Source: Public Health Statistics A.D. 2011, Bureau of policy and stratergy, ministry of public health

IV. COMPLETENESS OF REGISTRATION OF BIRTHS AND DEATHS (QUESTION 9 - 10)

The assessment for the area of 'Completeness of registration of births and deaths' consists of two questions (question 9 – 10). The results for Thailand in this assessment area are listed in table 8. Both questions obtained the maximum score of 3.00.

TABLE 8 : LIST OF SCORES IN THE AREA OF 'LEGAL COMPLETENESS OF REGISTRATION OF BIRTHS AND DEATHS'

Completeness of registration of births and deaths		3.00
9. According to the most recent evaluation, how complete is birth registration in your country?	A. A recent evaluation (that is, in the last 10 years) showed that completeness of birth registration was 90% or higher (specify the date and method used to calculate completeness, and who calculated it)	3
10. According to the most recent evaluation, how complete is death registration in your country?	A. A recent evaluation (that is, in the last 10 years) showed that completeness of death registration was 90% or higher (specify the date and method used to calculate completeness, and who calculated it)	3

Comments for each question are described following table below.

9. According to the most recent evaluation, how complete is birth registration in your country?

   According to the latest population survey by the National Statistics Office from 2005 to 2006, 96.7% of all births were registered.

10. According to the most recent evaluation, how complete is death registration in your country?

    According to the latest population survey by the National Statistics Office from 2005 to 2006, 95.2 % of all deaths

V. DATA STORAGE AND TRANSMISSION (QUESTION 11 - 12)

The assessment for the area of 'Data storage and transmission' consists of two questions (question 11 – 12). For Thailand the results in this assessment area are listed in table 9. The score of both questions in this area is 3.00.

TABLE 9 : LIST OF SCORES IN THE AREA OF DATA STORAGE AND TRANSMISSION

Data storage and transmission		3.00
11. How are birth and death records transmitted from local and regional offices to a central storage in the capital city?	A. All information is exchanged electronically from local to regional offices, then to a central office	3
12. What procedures are in place to ensure that all local and regional offices report to the central office within agreed times?	A. There is an agreed schedule for reporting to the central office, with reporting deadlines taken	3

Comments for each question are described below.

11. How are birth and death records transmitted from local and regional offices to a central storage in the capital city?

    The civil registration system has been recorded using a computer system since 1982, so birth and death records can be transmitted from local offices to the central office online in real-time. The central data storage is located in the Phathumtani province, while the information service office is located in Bangkok.

12. What procedures are in place to ensure that all local and regional offices report to the central office within agreed times?

    Standard data transmission procedures between local offices and central office have been set. Some procedures are automatically performed by the computer systems, so data are accurately and timely recorded.

VI. ICD-COMPLIANT PRACTICES AND CERTIFICATION WITHIN AND OUTSIDE HOSPITALS (QUESTION 13 - 14)

The assessment for the area of 'ICD – compliant practices and certification within and outside hospitals' consists of two questions (question 13 – 14). The results for Thailand in this assessment area are listed in table 10. The score for both questions in this assesment area is 2.00.

TABLE 10: LIST OF SCORE S IN THE AREA OF 'ICD -COMPLIANT PRA CTICES AND CERTIFICATION WITHIN AND OUTS IDE HOSPITALS'

ICD-compliant practices and certification within and outside hospitals		2.00
13. Does the country use the standard International form of medical certificate of cause of death for reporting?	B. The form is always used when deaths occur in health facilities, but is not generally used outside	2
14. When medical certification of cause of death is rare, is verbal autopsy routinely used to determine the cause of death? (This question does not apply to countries where all deaths generally are medically certified as part of civil registration. Countries in this category should give themselves a score of 3)	B. Verbal autopsy using the international standard tool is progressively being introduced but is not currently in general use	2

Comments for each question are described below.

13. Does the country use the standard International form of medical certificate of cause of death for reporting?

    Two types of death certificates are used, i.e., for death in hospital, and death outside hospital. The former case uses the standard form of the WHO as shown in the following page, while in the case of a death outside the hospital, an official form from the MOI is used.

INTERNATIONAL FORM OF MEDICAL CERTIFICATE OF CAUSE OF DEATH

Cause of death	**Approximate interval between onset and death**
I Disease or condition directly (a) …… Leading to death* due to (or as a consequence of) Antecedent causes (b) …… Morbid conditions, it any, due to (or as a consequence of) Giving rise to the above cause. ……... Stating the underlying Condition last ...……...(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 the mode of dying, e.g. heart failure, respiratory failure. It means the disease, injury, or complication that caused death.	……

14. When medical certification of cause of death is rare, is verbal autopsy routinely used to determine the cause of death? (This question does not apply to countries where all deaths generally are medically certified as part of civil registration. Countries in this category should give themselves a score of 3)

The verbal autopsy tool applied in Thailand was modified from the WHO version to meet the context of health and disease in the country. In 2011, a project to use the modified verbal autopsy tool for registrar officers and health personnel was piloted in 15 provinces, i.e., Ubonrachatani, Umnardchareon, Mahasarakam, Phayao, Chaingrai, Maehongson, Kampangphet, Nakhonsawan, Rachaburi, Surattani, Samutprakarn, Rayong, Phataloong, Roiet, and Phisanulok. The project was extended to further 5 provinces, i.e., Srisaket, Yasothon, Ranong, and Chumporn.

VII. PRACTICES AFFECTING THE QUALITY OF CAUSE-OF-DEATH DATA (QUESTION 15 - 16)

The assessment for Thailand in the area of 'Practices affecting the quality of cause-of-death data' consists of two questions (question 15 – 16). The results in this assessment area for Thailand are listed in table 11. The average score of this area is 1.50, where the lowest scoring question is question 16, which scores 1.00.

TABLE 11: LIST OF SCORES IN THE AREA OF 'PRACTICES AFFECTING THE QUALITY OF CAUSE-OF-DEATH DATA'

Practices affecting the quality of cause-of-death data		1.50
15. What training do doctors receive for certifying the cause of death?	B. No special training in the ICD or death certification is included in the medical curriculum, but all medical students learn about the ICD and death certification during their internshipss	2
16. What percentage of causes of death in your country are classified as "Ill-defined and unknown causes of mortality" (as defined in Chapter XVIII of ICD-101)?	C. 20–39%	1

Comments for each question are described below.

15. What training do doctors receive for certifying the cause of death?

There is no specific course on cause of death in the Medical curriculum. However, some medical schools do provide short course to medical students and interns. There is only one institute, i.e., Kanchanabhishek Institute of Medical and Public Health Technology, where training on cause-of-death is part of the curriculum.

16. What percentage of causes of death in your country are classified as "Ill-defined and unknown causes of mortality" (as defined in Chapter XVIII of ICD-101)?

According to the Thai health statistics report, the percentage of cause-of-death defined with the ICD10 codes between R00 to R99 to all deaths in 2011 was 34.5%. The percentages from 2007 to 2011 are shown in the following table below.

Unknown causes of mortality	2007	2008	2009	2010	2011
Percentage of ICD10 = R00 – R99 to all deaths	38.23%	37.90%	38.00%	37.61%	34.50%

Source: Thai health statistics, 2011

The COD coding competency among physicians and health professionals still needs improvement. MOPH has been working on these challenges in many ways. The manual of medical certificate of cause of death based on ICD-10 has been developed as a tool for educating health professionals. The manual has been distributed to hospitals and health centers nationwide to explain how to report causes of death.

Tools that help health professionals diagnose cause of death such as verbal autopsy is being implemented in many provinces. Health services administrative data (in-hospital morbidity data) are being used to validate the COD information and complement the calculation of maternal mortality rate (MMR).

VIII. CD CODING PRACTICES (QUESTION 17)

The assessment for the area of 'ICD coding practices' consists of only one question (question 17). The result for this quesion is listed in table 12. The question obtained a score of 3.00.

TABLE 12: LIST OF SCORES IN THE AREA OF 'ICD CODING PRACTICES'

ICD coding practices		3.00
17. In your country, is cause of death coded according to a national language version of the ICD?	A. Yes – ICD coding is done using a national language version of the ICD or a nationally agreed international language	3

Comment question 17 is described below.

17. In your country, is cause of death coded according to a national language version of the ICD?

ICD coding is done using a national language version of the ICD or a nationally agreed international language. ICD10 coding has been implemented in Thailand since 1990 when the social security scheme was established. Implementing the concept was greatly improved with the universal health coverage policy implementation in 2002. Since then all hospital claims are required to have ICD10 coding along with other health information in order to apply the DRG (Diagnosis-Related-Group) reimbursement.

IX. CODER QUALIFICATION AND TRAINING, AND QUALITY OF CODING (QUESTION 18 - 19)

The assessment for the area of 'Coder qualification and training, and quality of coding' consists of two questions (question 18 – 19). The results for Thailand in this assessment area are listed in table 13. The average score for this area is 2.5.

TABLE 13: LIST OF SCORES IN THE AREA OF CODER QUALIFICATION AND TRAINING, AND QUALITY OF CODING

Coder qualification and training, and quality of coding		2.50
18. What qualifications do mortality coders have for coding mortality in accordance with ICD principles and rules?	A. Mortality coders must pass a formal test following a compulsory and intensive ICD-training course; additional courses are offered as needed.	3
19. What quality assurance procedures are in place for checking the coding?	B. National evaluation of a random sample of coded certificates takes place occasionally to monitor the quality of the coding.	2

Comments for each question are described below.

18. What qualifications do mortality coders have for coding mortality in accordance with ICD principles and rules?

Mortality coders in hospitals are required to pass the Medical Record Librarian School, currently merged with the Kanchanabhishek Institute of Medical and Public Health Technology. Here they have been taught to code mortality in accordance with ICD principles and rules.

19. What quality assurance procedures are in place for checking the coding?

Although there are qualified coders in hospitals, the coding is on service-based diagnosis. Cause-of-death coding is done in the central office of the MOPH. MOPH have purposive sampling when checking the quality of data.

X. DATA QUALITY AND PLAUSIBILITY CHECKS (QUESTION 20 - 21)

The assessment for the area of 'Data quality and plausibility checks' consists of two questions (question 20 – 21). The results obtained for Thailand in this assessment area are listed in table 14. The score for both questions in this area is 2.00.

TABLE 14: LIST OF SCORE S IN THE AREA OF 'DATA QUALITY AND PLAUSIBILITY CHECKS'

Data quality and plausibility checks		2.00
20. What consistency and plausibility checks on fertility and mortality levels are carried out before the data are released?	B. Checks on overall levels of fertility and mortality derived from vital statistics data are undertaken by calculating rates and comparing these to earlier time series	2
21. What consistency and plausibility checks are applied to data on cause of death?	B. Routine checks of the consistency of patterns in cause of death are made to ensure that mortality from any disease group does not vary significantly from year to year, and that any fluctuations can be explained	2

Comments for each question are described below.

20. What consistency and plausibility checks on fertility and mortality levels are carried out before the data are released?

    There are routine checks on fertility and mortality levels by longitudinal comparing the statistics value only, no comparison to other sources.

21. What consistency and plausibility checks are applied to data on cause of death?

    Consistency and plausibility checks on cause of death are conducted by officers of the bureau of policy and strategy at the MOPH. Checking processes may include random checks in some provinces, or audits of the coding.

XI. DATA ACCESS, DISSEMINATION AND USE (QUESTION 22 - 25)

The assessment for the questions within the assessment area of ' Data access, dissemination and use' consists of four questions (question 22 – 25). The results for Thailand in this assessment area are listed in table 15. The average score of this area is 3.00, i.e., every question has achieved the top score of 3.00.

TABLE 15: LIST OF SCORE S IN THE AREA OF 'DATA ACCESS, DISSEMINATION AND USE'

Data access, dissemination and use		3.00
22. Does the country publish or make available annual numbers of births disaggregated by sex, age and geographical or administrative region?	A. Yes - annual data on births are published by all three disaggregations (sex, age and geographical or administrative region) Please indicate name of publication or web address where these data can be found	3
23. Does the country publish or make available annual numbers of deaths disaggregated by sex, age and geographical or administrative region?	A. Yes - annual data on deaths are published by all three disaggregations (sex, age and geographical or administrative region). Please indicate name of publication or web address where these data can be found	3
24. What is the delay between the reference year and the time when detailed national statistics on cause of death, classified by sex and age, are made available to the public?	A. Less than 2 years	3
25. How are data on vital events used for policy and programme purposes? (The group should discuss actual examples of where vital registration data are used)	A. Data on births, deaths, and causes of death are widely used for socioeconomic planning and for monitoring the health status of the population, including the use of data on cause of death for public health purposes	3

Comments for each question are given below.

22. Does the country publish or make available annual numbers of births disaggregated by sex, age and geographical or administrative region?

    Annual reports on public health statistics, including births, classified by gender, age, region, and provinces are published through the website of the bureau of policy and strategy under the MOPH.

23. Does the country publish or make available annual numbers of deaths disaggregated by sex, age and geographical or administrative region?

    Annual reports on public health statistics, including deaths, classified by gender, age, region, and provinces are published through the website of the bureau of policy and strategy under the MOPH.

24. What is the delay between the reference year and the time when detailed national statistics on cause of death, classified by sex and age, are made available to the public?

    It usually takes less than two years.

25. How are data on vital events used for policy and programme purposes? (The group should discuss actual examples of where vital registration data are used)

    Reports and data on vital events are always widely used for planning in many ministries especially for health policy and plans, e.g., to promote campaigns on preventing diseases with high mortality rate. It usually takes less than two years.

CONCLUSIONS

Through the application of the WHO/University of Queensland Rapid Assessment tool of national civil registration and vital statistics systems to assess the current situation in Thailand, it was found that although CRVS systems in Thailand have been computerized and include high coverage of registration, there are some space for improvement especially in relation the registration of cause of deaths. The overall score from the assessment is 86.67 % rated as "***Satisfactory***" which means ***"Minor adjustments may be required in an otherwise well – functioning system."***

The results shown that five of the eleven main assessment areas have the highest possible score of 3.00. The average scores in the area of ***"Practices affecting the quality of cause-of-death data"*** are the lowest, at 1.5 out of 3.00.

The remaining five areas have some room for improvement. These five areas are:

- Legal framework for civil registration and vital statistics
- Organization and functioning of the vital statistics system
- ICD – compliant practices and certification within and outside hospitals
- Coder qualification, and training, and quality of coding
- Data quality and plausibility checks

Considering detail of scores in the RA tool, the lowest score is 1.0 of question 16 because the percentage of causes of death classified as ***"Ill - defined and unknown causes of mortality"*** is high at 20 - 39%. Eight of the rest questions, question 3, 7, 13 -15, and 19 -21, got the score 2.0, so they should be improved.

RECOMMENDATION ON CRVS SYSTEM DEVELOPMENT

Vital statistics provide important indicators for monitoring the progress of countries towards United Nation Millennium Development Goals (MDGs). Well - functioning and reliable civil registration and vital statistics systems (CRVS systems) are not only needed for the countries development monitoring and evaluation system, but is also used by countries' organizations to plan and manage their operation and developmental programs. The main challenge for the CRVS system implementation in Thailand is collaboration between stakeholders from various ministries, e.g., the Ministry of Interior (MOI), the Ministry of Public Health (MOPH), and the Ministry of Information and Communication Technology (MICT). The best solutions to CRVS system development would be to establish a formal network of collaboration between stakeholders, to establish training modules/curriculums for health personnel, and to apply appropriate procedures and methods for consistency and plausibility checks on data on fertility and mortality as well as cause of deaths.

The Thai civil registration system has evolved since its establishment a century ago. During the past three decades, the system has developed from a manual paper based registration system to an electronic centralized and online system. Currently, all provincial registration offices and almost all of the district registration offices are online connected with the central civil registration system. Thai vital statistics has been significantly improved over time. Since 1996 the civil registration system of Ministry of Interior (MOI) has provided electronic death and birth data directly to the vital statistics management process of the Ministry of Public Health (MOPH). The country universal health care coverage, has been implemented since the national health insurance act was promulgated in 2002. Due to this, the insurance reimbursement administrative data of the majority of in-hospital patients, containing standard coded diseases data and status at discharge, are now available. The data is being used to enhance the quality of country vital statistics. Thailand has long time experience in civil registration and maintains a continuous and sustainable system, operated by the central administration. The electronic files of the population are arranged according to the population unique identification number and kept at the computer cente.

The WHO rapid assessment tool consists of 25 questions about how the civil registration and vital statistics systems function. The questions are grouped into 11 assesment areas. Thailand's assessment was completed by the Thai Health Information Standards Development Center (THIS) of the Health System Research Institute (HSRI) in collaborated with other participants from stakeholders in Thailand including the Bureau of Policy and Strategies of the MOPH, the Bureau of Registration Administration of the MOI, the National Statistical Office of the Ministry of Information Communication and Technology, the International Health Policy Program (IHPP), the Institute for Population and Social Research of Mahidol University, the Office of the National Economic and Social Development Board (NESDB), and the National Health Security Office (NHSO). The results shows that five of the eleven assessment areas achieve the top possible score of 3.00. The average scores of "Practices affecting the quality of cause-of-death data" is the lowest, at 1.5 out of 3.00 score. The remaining five areas have gaps for improvement. The overall score of the result is 86.67%, which is rated as "Satisfactory" which means "Minor adjustments may be required in an otherwise well-functioning system."

CHALLENGES WITH THE CRV S SYST EM OF THAILAND

1. Quality of cause of death (COD) information: According to Thailand's Health Statistics report in 2011, registered deaths that have cause of death as symptoms or signs (R00 – R99 of the WHO ICD-10 code) has decrease from 38.23% in 2007 to 34.50% in 2011. However, it should be reduce to less than 10%, according to the WHO guideline.

2. There is a high percentage of outside hospital deaths: The accuracy of the cause of death is compromised because 60-70% of the deaths occurred outside hospitals and are often classified as 'natural cause of death' by the head of the village and civil registration officers who do not have a medical background.

POLICY RECOMMENDATIONS

Short-tem policies (1-2 years)	Reponsible organization(s)
1. Establish a network of collaboration between stakeholders in CRVS systems to improve the quality of the system and increase long-term utilization of the system not only for government but also for consumers and public.	All organizations: • Ministry of Interior (MOI), • Ministry of Public Health (MOPH), • National Statistics Office, MICT, • The Office of the National Economic and Social Development Board (NESDB)
2. Increase the number of staff that can identify cause of death outside hospitals	• Ministry of Interior (MOI), • Ministry of Public Health (MOPH)
3. Establish routine mechanism to evaluate data quality and feed back for continuous improvement. Establish standard procedure to consistency and plausibility checks on fertility and mortality levels as well as cause of deaths should be carried out before the data are released.	• ministry of interior (MOI), • ministry of public health (MOPH)

Medium term policies (3 years and beyond)	Reponsible organization(s)
1. Secure maintenance and continuous infrastructure development to increase accessibility and availability of the system.	All organizations
2. Establish training modules or curriculums for health personnel and registrars	• Ministry of Interior (MOI), • Ministry of Public Health (MOPH)
3. Identify appropriate procedures and methods, e.g., verbal autopsy, for consistency and plausibility checks on fertility and mortality as well as cause of deaths	• Ministry of Interior (MOI), • Ministry of Public Health (MOPH)
4. Promote other channels to identify cause of death, e.g., Tele-medicine	All organizations
5. Promote data use among stakeholders to increase awareness and validity of the data.	All organizations

APPENDIX:
THE QUESTION OF RAPID ASSESSMENT

RAPID ASSESSMENT QUESTIONS
LEGAL FRAMEWORK FOR CIVIL REGISTRATION AND VITAL STATISTICS

1. Does the country have legislation that states that birth and death registration is compulsory?	
A	Yes – the country has adequate and enforced legislation on civil registration, stating that registration of births and deaths is compulsory
B	Yes – the country has legislation on civil registration stating that registration of births and deaths is compulsory but it is in need of amendments
C	Yes – legislation exists but it is not enforced
D	No – there is no law that makes it obligatory to register births and deaths
2. Does the country have regulations that oblige all medical establishments to report all vital events to the vital statistics system within a given time?	
A	Yes – all medical establishments (public, private, social insurance, others) report these events to the vital statistics system in a timely manner
B	Yes – regulations exist but not all medical establishments report the events
C	No – regulations only cover public medical establishments
D	No – no regulations exist
3. Does the country have legislation that states that death has to be certified by cause, and specifies who can certify the cause of death?	
A	Yes – cause of death must be indicated on the death certificate according to International statistical classification of diseases and related health problems (ICD) rules and procedures, and can only be certified by a medical doctor
B	Cause of death must be indicated on the death certificate but it is not specified who can certify the cause
C	Cause of death must be indicated but only broad categories of cause are necessary, and the (non-medical) registrar or another local official is usually the certifier
D	No – it is not necessary to indicate the cause of death on the death certificate or at any stage of the registration of death

REGISTRATION INFRASTRUCTURE AND RESOURCES

4. Are there adequate numbers of civil registration offices or registration points to cover the whole country?	
A	Yes – the country has sufficient places where citizens can register births and deaths
B	Urban areas are well covered but there is only partial coverage of rural areas
C	Only the urban areas are well covered
D	No – only the capital city has registration offices
5. Do civil registration offices have adequate equipment to carry out their functions (for example, forms, telephones, photocopiers and computers)?	
A	Yes – necessary supplies such as forms, paper and pens are adequate, and equipment such as telephones, photocopiers, and computers is widely available
B	Supplies such as forms, paper and pens are generally available everywhere, but there are widespread shortages of telephones, photocopiers and computers
C	In peripheral offices, supplies are often short, and only the central or provincial offices have telephones, photocopiers and computers
D	No – availability of both supplies and equipment is a problem in all civil registration offices
6. Have registrars received training to carry out their functions?	
A	Yes – all registrars have received adequate training
B	All registrars receive some training but the training is insufficient, and skills and knowledge are largely acquired on the job
C	Most registrars (particularly in smaller offices) receive only on-the-job training
D	No – lack of training is a serious problem and has a negative effect on the functioning of civil registration

ORGANIZATION AND FUNCTIONING OF THE VITAL STATISTICS SYSTEM

7. How well do the different government agencies and departments responsible for civil registration and vital statistics systems collaborate? (These include departments of health, civil registration and local government, statistics, and others)	
A	The involved agencies collaborate very well and there is an interagency committee to ensure that the civil registration and vital statistics systems interact seamlessly
B	Although there is no formal interagency committee, the agencies involved have regular meetings to identify and resolve problems
C	There is no interagency committee, which delays efforts to resolve problems and can lead to serious data quality issues and bottlenecks (e.g. in data transfer)
D	There is little interagency collaboration, with the various agencies functioning independently, resulting in problems such as duplication of work and inconsistencies in the estimates derived from vital statistics issued by each agency
8. Can the vital statistics system generate both national and subnational statistics on births and deaths each year?	
A	Yes – annual statistics are generated on births, deaths, and causes of death by sex and age at both national and for all subnational levels
B	Annual statistics on births and deaths by sex and age are generated at national and subnational levels, but statistics on cause of death by sex and age are only available nationally
C	The vital statistics system can only generate births and deaths by sex and age for reporting regions and not for the whole country; cause of death data are obtained only from hospitals
D	No – the information collected by the civil registration system is not compiled for statistical purposes

COMPLETENESS OF REGISTRATION OF BIRTHS AND DEATHS

9. According to the most recent evaluation, how complete is birth registration in your country?	
A	A recent evaluation (that is, in the last 10 years) showed that completeness of birth registration was 90% or higher (specify the date and method used to calculate completeness, and who calculated it)
B	A recent evaluation showed that completeness of birth registration was between 70% and 89% (specify the date and method used to calculate completeness, and who calculated it)
C	A recent evaluation showed that completeness of birth registration was between 50% and 69% (specify the date and method used to calculate completeness, and who calculated it)
D	Either – a recent evaluation showed that less than 50% of all births were registered (specify the date and method used to calculate completeness, and who calculated it or – there has not been a recent evaluation of the completeness of birth registration
10. According to the most recent evaluation, how complete is death registration in your country?	
A	A recent evaluation (that is, in the last 10 years) showed that completeness of death registration was 90% or higher (specify the date and method used to calculate completeness, and who calculated it)
B	A recent evaluation showed that completeness of death registration was between 70% and 89% (specify the date and method used to calculate completeness, and who calculated it)
C	A recent evaluation showed that completeness of death registration was between 50% and 69% (specify the date and method used to calculate completeness, and who calculated it)
D	Either – a recent evaluation showed that less than 50% of all deaths were registered (specify the date and method used to calculate completeness and who calculated it) or – there has not been a recent evaluation of the completeness of death registration

DATA STORAGE AND TRANSMISSION

11. How are birth and death records transmitted from local and regional offices to a central storage in the capital city?	
A	All information is exchanged electronically from local to regional offices, then to a central office
B	Paper copies are sent from local offices to the regional office and processed there for electronic transmission to the central office
C	The system is still mainly paper based, with copies sent from local offices to the regional office, where they are scanned, then sent to the central office for processing
D	Paper copies are used throughout the system to transfer birth and death records to a central storage facility
12. What procedures are in place to ensure that all local and regional offices report to the central office within agreed times?	
A	There is an agreed schedule for reporting to the central office, with reporting deadlines taken seriously and closely monitored – it is rarely necessary to send out reminders
B	An agreed schedule for reporting to the central office exists and this is largely adhered to – delays in local and regional offices are usually communicated to the central office
C	Although there is a schedule of reporting from local and regional offices, this is not strictly adhered to and there is currently little that the central office can do to ensure the timely transfer of data
D	The local and regional offices report to the central office with erratic timelines, and there is little effort by the central office to encourage more timely and regular reporting
13. Does the country use the standard International form of medical certificate of cause of death for reporting?	
A	Yes – the form is always used by doctors to certify cause of death
B	The form is always used when deaths occur in health facilities , but is not generally used outside health facilities
C	The form is used to certify death only in major hospitals
D	No – the form is not used for certifying causes of death
14. When medical certification of cause of death is rare, is verbal autopsy[1] routinely used to determine the cause of death? (This question does not apply to countries where all deaths generally are medically certified as part of civil registration. Countries in this category should give themselves a score of 3)	
A	Yes – verbal autopsy is routinely applied to certify death using the international standard tool[2] or a similar questionnaire based on this
B	Verbal autopsy using the international standard tool is progressively being introduced but is not currently in general use
C	Verbal autopsy is used but is not based on the international standard tool
D	Verbal autopsy is not routinely used to determine cause of death in cases where the death is not certified by a physician

PRACTICES AFFECTING THE QUALITY OF CAUSE-OF-DEATH DATA

15. What training do doctors receive for certifying the cause of death?	
A	All medical students are introduced to the ICD during their studies, and are taught how to certify cause of death and correctly complete the medical death certificate
B	No special training in the ICD or death certification is included in the medical curriculum, but all medical students learn about the ICD and death certification during their internships
C	No special training in the ICD or death certification is included in the medical curriculum, and only limited on-the-job training is available during internships
D	No training or on-the-job instructions in the ICD and death certification is given to doctors
16. What percentage of causes of death in your country are classified as " Ill-defined and unknown causes of mortality" (as defined in Chapter XVIII of ICD-10[1])?	
A	<10%
B	10–19%
C	20–39%
D	40% or more

ICD CODING PRACTICES

17. In your country, is cause of death coded according to a national language version of the ICD?	
A	Yes – ICD coding is done using a national language version of the ICD or a nationally agreed international language
B	ICD coding is done, but no national language version of the ICD is available, which makes the coders' task more difficult
C	ICD coding is done according to a short list in the national language
D	No – the ICD is not used

CODER QUALIFICATION AND TRAINING, AND QUALITY OF CODING

18. What qualifications do mortality coders have for coding mortality in accordance with ICD principles and rules?	
A	Mortality coders must pass a formal test following a compulsory and intensive ICD-training course; additional courses are offered as needed
B	Mortality coders are given a short training course in the ICD and pass a basic test. Complex issues are learnt on the job from more experienced coders
C	New coders are instructed by more experienced coders; new coders are given the ICD volumes and expected to learn on the job
D	New coders are provided with minimal instructions from other coders and receive incomplete ICD materials
19. What quality assurance procedures are in place for checking the coding?	
A	A national regulatory procedure is in place to periodically review the quality of coded certificates, and feedback is given to coders so they can improve if necessary
B	National evaluation of a random sample of coded certificates takes place occasionally to monitor the quality of the coding
C	Quality evaluation is left to local supervisors who check the work of individual coders on an ad hoc basis
D	No procedures exist and no evaluations of the quality of coding have been carried out

DATA QUALITY AND PLAUSIBILITY CHECKS

20. What consistency and plausibility checks on fertility and mortality levels are carried out before the data are released?	
A	Checks on overall levels of fertility and mortality derived from the vital statistics data are made routinely by calculating rates and comparing these over time; rates are also compared to data derived from other sources, such as censuses and surveys
B	Checks on overall levels of fertility and mortality derived from vital statistics data are undertaken by calculating rates and comparing these to earlier time series
C	Checks are limited to computer programmes that simply look for compilation errors before the data are published
D	New coders are provided with minimal instructions from other coders and receive incomplete ICD materials
21. What consistency and plausibility checks are applied to data on cause of death?	
A	In addition to checking the stability of patterns in cause of death over time, the proportion of ill-defined and unknown deaths is routinely monitored, and the age and sex patterns for major causes of death are checked for plausibility
B	Routine checks of the consistency of patterns in cause of death are made to ensure that mortality from any disease group does not vary significantly from year to year, and that any fluctuations can be explained
C	Checks are limited to automated checks for compilation and data entry errors
D	There are no consistency and plausibility checks routinely carried out on data for cause of death

DATA ACCESS, DISSEMINATION AND USE

22. Does the country publish or make available annual numbers of births disaggregated by sex, age and geographical or administrative region?	
A	Yes - annual data on births are published by all three disaggregations (sex, age and geographical or administrative region) Please indicate name of publication or web address where these data can be foundy
B	Annual data on births are published according to any two disaggregations
C	Annual data on births are available but disaggregated by sex only
D	No annual statistics on birth are published
23. Does the country publish or make available annual numbers of deaths disaggregated by sex, age and geographical or administrative region?	
A	Yes - annual data on deaths are published by all three disaggregations (sex, age and geographical or administrative region). Please indicate name of publication or web address where these data can be found
B	Annual data on deaths are published according to any two of the above disaggregations
C	Annual data on deaths are available but disaggregated by sex only
D	No annual statistics on death are published
24. What is the delay between the reference year and the time when detailed national statistics on cause of death, classified by sex and age, are made available to the public?	
A	Less than 2 years
B	More than 2 years but less than 3 years
C	More than 3 years but less than 5 years
D	5 years or more
25. How are data on vital events used for policy and programme purposes? (The group should discuss actual examples of where vital registration data are used)	
A	Data on births, deaths, and causes of death are widely used for socioeconomic planning and for monitoring the health status of the population, including the use of data on cause of death for public health purposes
B	Data on births and deaths are used for reporting on health-related indicators such as the Millennium Development Goals and other national health-related goals, but cause - specific data are rarely used for public health purposes
C	Only data on births are used for reporting on some indicators, such as fertility
D	Data from the civil registration and vital statistics systems are not routinely used for policy and programme purposes

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