

## **Appendix IV Proceeding**

This thesis includes research results have been submitted for oral presentation in the 5th International Conference on Public Health among Greater Mekong Sub-Regional Countries, 28–29 September 2013 at University of Public Health, Yangon, Myanmar. The presentation title was “Estimating Deaths from Injury Causes in Thailand Based on the 2005 Verbal Autopsy Study”. This conference aimed to strengthen collaboration on addressing public health challenges among the countries of the Greater Mekong Sub-region (GMS) comprising Cambodia, China, Laos, Thailand, Vietnam and Myanmar. And it was to provide opportunities and to share the research, experiences and best practices on public health within the GMS Countries. The theme of this conference was “Evidence-based Health Policy: Current Status and Future Prospects”. My presentation was organized in health information system sessions. Acceptance letters, the details of presented abstract including cover and certificate are shown in this appendix.

**Estimating deaths from injury causes in Thailand  
based on the 2005 Verbal Autopsy study**

Nuntaporn Klinjun, MSc (Public Health)<sup>1</sup>,

Apiradee Lim, MSc, PhD<sup>1</sup>, and Kanitta Bundhamcharoen, DDS, MA, PhD,<sup>2</sup>

**Abstract**

Injuries are a leading cause of death throughout the world. Many of these deaths are predictable and preventable, but a major obstacle to this is incorrect data on cause of death. A Verbal Autopsy study for Thailand in 2005 by the SPICE project was carried out to investigate the causes of death by gender, age group and province to determine the actual causes of deaths recorded in the Vital Registration system. Thus, this study used the number of deaths recorded in Thai 2005 Verbal Autopsy study to estimate the number of deaths from transport accidents, other accidents and intentional injuries as classified by the International Statistical Classification of Diseases and Related Health Problem (ICD-10).

**Objective:** To create model based on data from Verbal Autopsy data for estimating injury caused deaths from the Vital Registration database in Thailand, and to correctly estimate the corresponding number of injury cause deaths in Thailand from 1996 to 2009.

**Method:** This study was based on all reported Thai deaths from 1996 to 2009 and a sample of 9,644 Verbal Autopsy reports obtained from the Thai Ministry of Public

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<sup>1</sup> Department of Mathematics and Computer Science, Faculty of Science and Technology, Prince of Songkla University, Pattani Campus, Thailand

<sup>2</sup> International Health Policy Program, Ministry of Public Health, Nonthaburi, Thailand

**Corresponding Author:**

Apiradee Lim, Department of Mathematics and Computer Science, Faculty of Science and Technology, Prince of Songkla University, Pattani Campus, Thailand 94000.

Tel: +66-81-9577625. E-mail: api\_45@hotmail.com

Health. Logistic regressions were used to model injury-related deaths classified by province, gender-age group and combination of Vital Registration cause groups and location of death (in hospital or out hospital). The receiver operating characteristic (ROC) curve was used to validate the logistic regression models which match the number of reported injury deaths to the number predicted by the model. Data were also divided into and analyzed by 3 time periods.

**Results:** Verbal Autopsy assessed transport accidents, other accidents and intentional injuries accounted for 546 (5.7%), 341 (3.5%) and 276 (2.9%) of sample deaths, respectively. The logistic regression models, based on the Thai 2005 Verbal Autopsy study, to estimate numbers of deaths in Thailand in 2005 from these three cause groups obtained estimates substantially greater than in the Vital Registration reported database multiples of 2.14, 1.28 and 1.60, respectively for males, and 2.23, 2.11 and 1.41 for females. These models provide an accurate measure for predicting the possibility of the three cause groups, as false positive error rates were 1.4%, 2.0% and 1.0%, respectively with sensitivity of 76.0%, 45.7% and 66.7%. Results from the model reveal that transport accident deaths have higher under-report biases which are increasing over time and smaller gender differences than other injury deaths and intentional injury deaths. The under-reporting of all injury caused deaths has increased over the 14-year period.

**Conclusion:** These three models can accurately allocate deaths into cause groups by gender, age- group and province, even though the correct cause of death for individuals (particularly for reported as ill-defined or unknown cause) is uncertain. Our statistical method confirms that Verbal Autopsy data can be used to estimate injury deaths from Vital Registration reports.

**Key words:** Injury deaths, Verbal Autopsy, Vital Registration, Estimating model, Logistic regression



# 5<sup>th</sup> INTERNATIONAL CONFERENCE ON PUBLIC HEALTH AMONG GMS COUNTRIES

Evidence-based Health Policy: Current Status and Future Prospects

Venue : National Theater  
University of Public Health  
University of Medicine (1)

28 - 29 September, 2013





**5<sup>th</sup> International Conference on Public Health  
among Greater Mekong Sub-Regional Countries**  
28-29 SEPTEMBER, 2013



UNIVERSITY OF PUBLIC HEALTH, YANGON, MYANMAR

**LETTER OF INVITATION**

**Nuntaporn Klinjun**  
PhD Student,  
Department of Mathematics and  
Computer Science,  
Faculty of Science and Technology,  
Prince of Songkla University,  
Thailand

Date: 10 August, 2013

On behalf of the Organizing Committee, it is a great pleasure for me to inform you that your abstract entitled 'Estimating Deaths from Injury Causes in Thailand Based on the 2005 Verbal Autopsy Study' has been reviewed and accepted for ORAL presentation at 5<sup>th</sup> International Conference on Public Health among Greater Mekong Sub-regional Countries at University of Public Health, Yangon, Myanmar on 28 – 29 September, 2013. Therefore you are cordially invited to participate in the above mentioned conference. Exact date and time of oral presentation will be announced later.

Yours sincerely,

Professor Dr Nay Soe Maung  
Rector of University of Public Health  
Chairman of Organizing Committee, 5<sup>th</sup> ICPHGMS  
Postal address: Corner of Bogyoke Aung San Road and Myoma Kyaung Road, Latha  
Township, Yangon, Myanmar 11131  
website: <http://www.uph-myanmar.org>  
e-mail [naysoemg26@gmail.com](mailto:naysoemg26@gmail.com)  
Off Ph +951 395207, Fax +951 395212

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# Certificate of Presentation

This certificate is awarded to  
**Nuntaporn Klinjun**

in recognition of presentation in

**"5<sup>TH</sup> INTERNATIONAL CONFERENCE ON PUBLIC HEALTH AMONG GMS COUNTRIES"**

28th - 29th September, 2013  
Yangon, Myanmar



Prof. Nay Soe Maung  
Rector  
University of Public Health  
Yangon, Myanmar

Prince of Sankara University  
Prattani Campus  
ICPHIMS 2013

**Appendix V**

Trainee at the Australian National University

Prince of Songkla University  
Pattani Campus



Joint Seminar Series:  
National Centre for Epidemiology and Population Health  
Australian Primary Health Care Research Institute

## Statistical methods for estimating transport accident mortality patterns in Thailand

Nuntaporn Klinjun, PhD candidate, a visiting student from Thailand

Thursday 12<sup>th</sup> June 2014, 12:30-1:30pm

Bob Douglas Lecture Theatre, Building 62 NCEPH (entrance on Eggleston Road)



I am an Occupational Trainee at NCEPH for the period May-October 2014. I am on study leave from my role as a Public Health Technical Officer at the Office of Disease Prevention and Control, Songkhla, Thailand. In this position I am responsible for the injury surveillance system and transport accident investigation in seven provinces of southern Thailand.

I am also a Ph.D student at the Prince of Songkla University, Pattani campus, on the topic "Statistical Methods for Transport Accident Mortality Patterns in Thailand". My thesis develops a technique for using unreliable cause of death data entered in the vital registration (VR) database by comparing it with the more reliable cause of death data from verbal autopsy (VA) reports. The utility of the VA and the VR data can be substantially improved by applying appropriate statistical methods developed in my thesis.

### Abstract:

This research aimed to develop a model using a verbal autopsy (VA) study in 2005 to estimate transport accident deaths from VR data and to explore patterns of transport accident mortality rates in Thailand from 2004 to 2009. Logistic regression was used in the model classified by province, gender-age group and VR cause-location group. Poisson regression was used to explore patterns of transport accident mortality by gender-age group and province-year group.

The logistic regression model fits the VA data quite well with sensitivity 73.8%. The estimated transport accident deaths in 2004 to 2009 are 2.2 times higher than the VR data. The mean of the estimated transport accident mortality rate was 34.5 per 100,000 population and peaked among males aged 20-29 years. The patterns of the transport accident mortality rates by the Poisson regression model were separated into nine region-year groups. The lowest with slightly decreasing trend was found in Bangkok.

The statistical methods used in this study can be applied to available mortality data for other causes of deaths and in other countries where national VR data are of low quality and supplementary reliable data are available.

ANU College of Medicine,  
Biology & Environment

Enquiries:  
vasoontara.yieng@anu.edu.au; matthew.kelly@anu.edu.au





Australian  
National  
University

7 January 2014

Contact: Tina Salapatas  
Telephone: (02) 6125 5944  
Visitor Number: U5551128

**Tina Salapatas**  
Human Resources Officer

Human Resources – Science Administration Group  
ANU College of Medicine, Biology and Environment; and  
ANU College of Physical and Mathematical Sciences  
Building 131, JCSMR Building  
CANBERRA ACT 0200 AUSTRALIA

Telephone: +61 2 6125 5944  
E-mail: [jaq.hr.garran@anu.edu.au](mailto:jaq.hr.garran@anu.edu.au)  
[www.anu.edu.au](http://www.anu.edu.au)

CRICOS Provider No. 00120C

Ms Nuntaporn Klinjun  
Department of Mathematics and Computer Science  
Faculty of Science and Technology  
Prince of Songkla University  
PATTANI CAMPUS  
THAILAND 94000

Dear Ms Klinjun

It is with great pleasure that I invite you to accept status as an Occupational Trainee at The Australian National University (the University) for the period 1 April 2014 to 31 October 2014. Please note that this offer does not constitute an offer of employment with the University.

You will hold this status within the The National Centre for Epidemiology and Population Health, Research School of Population Health, ANU College of Medicine, Biology and Environment unless otherwise determined. Professor Adrian Sleigh will oversee your activities on behalf of the University.

During the period of your visit you will be conducting research and undertaking collaborative work with members of academic staff in the National Centre for Epidemiology and Population Health. You will not be required to undertake any formal teaching.

As a status holder you are welcome to make use of the University's library resources in addition to any other resources made available to you by your host College.

The University will assist you in finding suitable rental accommodation through the University Accommodation Services (UAS). University House also provides short-term hotel style accommodation. *Attachment 1* of this letter of invitation includes more information about finding suitable accommodation.

## Visa Requirements

To visit Australia you will need to apply for a subclass 402 "Training and Research" Visa (Occupational Trainee stream). The University is an approved Occupational Trainee sponsor. You must lodge your application with the Department of Immigration and Citizenship's Adelaide Occupational Trainee Processing Centre. In your visa application form you will need to provide the following information:

- the University's Sponsorship Application ID: 1520549879
- Sponsorship approval date: 25 June 2012
- Australian Business Number: 52 234 063 906
- Copy of the Sponsor approval letter – attached.

You will be required to pay a visa application charge when you lodge your visa application. For more information on this visa please see: <http://www.immi.gov.au/visas/temporary-visa/402/> .

## Insurance

During your period of status with the University, you will be covered under our volunteer insurance policies, which include cover for: personal accident; public liability; professional indemnity; and employment practices. You may wish to establish whether you are covered by your home institution for workers compensation and/or (investigate supplementary private insurance.

International status holders are not covered for travel or health insurance and are encouraged to seek private insurance arrangements prior to the commencement of their status arrangement with the University. Some countries do have reciprocal health care agreements with Australia, which provide some limited coverage, generally for emergency situations. To establish if you are eligible for these arrangements and the level of cover provided, please visit the *Medicare Australia* website: <http://www.medicareaustralia.gov.au/public/migrants/visitors/index.jsp> .

As a status holder you will be subject to the University's policies, which may be viewed on the University's website<sup>1</sup>. I particularly draw your attention to the Code of Conduct, Conflict of Interest and Intellectual Property<sup>2</sup> policies. As part of these terms and conditions, the University may by notice acquire intellectual property you create which is related to your appointment as provided in the Intellectual Property policy in effect from time to time. You and the University may agree special terms to apply to such intellectual property at the commencement of your appointment.

Any public statements made by you during your visit must acknowledge your status with the University and not imply any representation of your views as being those of the University. You will not have authority to speak on behalf of or represent the University unless agreed beforehand with the College Head in your host area.

Should you have any questions or queries about these policies during your visit I encourage you to discuss them with your University contact.

The University values the contributions which are made by visitors and wishes to have a permanent record of them. It would be greatly appreciated if you could provide a short report of achieved work at the conclusion of your stay with the University. In addition to giving this account of the work in which you were involved, you may also wish to include comments on any other matters of interest to the University.

The University reserves the right to withdraw this status at any time prior to its expiry date.

<sup>1</sup> <http://info.anu.edu.au/policies/index.asp> (University Policies)

<sup>2</sup> [http://policies.anu.edu.au/policies/intellectual\\_property\\_ownership\\_protection\\_and\\_commercialisation/policy](http://policies.anu.edu.au/policies/intellectual_property_ownership_protection_and_commercialisation/policy)

This is necessarily a formal letter but please be assured that it is with great pleasure that the University offers this status.

Please confirm your acceptance of this invitation by signing and returning a copy of this letter to the contact officer.

Yours sincerely



**Lisa Cousins**  
Human Resources Manager

**ACCEPTANCE OF OFFER (DO NOT DETACH)**

I, Ms Nuntaporn Klinjun, have read the above offer of visiting status and understand the terms and conditions contained therein. I hereby accept status of The Australian National University under these conditions.

Signed: นางนันทปORN คลินจุน Date: 9 Jan 2014

**Enclosures to be completed and returned to the contact officer:**

- One copy of the invitation letter
- Certified copy of passport
- Certified copy of valid visa

**Further enclosures for your information:**

- Copy of invitation letter for your records
- Form 1402 – Application for a Training and Research visa
- Outline of Research activity / Structured Training plan
- ANU Sponsorship approval letter – Occupational Trainee Stream
- Visa Checklist

**Attachment 1**

## ANU ACCOMODATION INFORMATION

### ANU Rental Properties

ANU owns a small number of rental properties in Canberra as "staging" accommodation to new ANU staff and visiting fellows. As our rental properties are 'staging' accommodation we offer 3 to 12 months stays depending on the length of your appointment.

T: 02 6125 1100

E: [rental.uas@anu.edu.au](mailto:rental.uas@anu.edu.au)

W: <http://accom.anu.edu.au/UAS/978/178.html>

### Liversidge Court Apartments

An apartment complex located on the ANU campus made up of studio, one and two bedroom self-contained apartments. Run similar to a hotel, the apartments can be booked for a short term stay (1 night) or a longer term stay (up to 3 months).

T: 02 6125 1100

E: [reservations.uas@anu.edu.au](mailto:reservations.uas@anu.edu.au)

W: <http://accom.anu.edu.au/UAS/979/189.html>

### University House

University House is a full serviced 105 room hotel located on the ANU campus. Guests can choose from a wide variety of room styles including standard rooms, superior suites, two bedroom apartments with fully-equipped kitchen, and a suite purpose-built for wheelchair access and functionality.

T: 02 6125 5276

E: [UniHouse@anu.edu.au](mailto:UniHouse@anu.edu.au)

W: <http://www.anu.edu.au/unihouse/>

### Casual Accommodation in Student Residences

Over summer (late November - early February) there are a number of Student Residences that offer accommodation on a casual basis. Bookings are made through the individual residences so you will need to contact them directly for information about availability and rates. During the school year the majority of the student residences are full with long term residents and cannot offer short term accommodation.

#### Fenner Hall

T: 02 6125 9000

E: [fenner@anu.edu.au](mailto:fenner@anu.edu.au)

W: <http://www.fenner.anu.edu.au/Fenner/6.html>

#### Toad Hall

T: 02 6125 6060

E: [toad.hall@anu.edu.au](mailto:toad.hall@anu.edu.au)

W: <http://uaw.anu.edu.au/Toad/Home.html>

#### Ursula Hall

T: 02 6125 6200

E: [accommodation.ursula@anu.edu.au](mailto:accommodation.ursula@anu.edu.au)

W: <http://ursula.anu.edu.au/Ursula/12.html>

#### Burgmann College

T: 02 6125 6100

E: [casual.accommodation@burgmann.anu.edu.au](mailto:casual.accommodation@burgmann.anu.edu.au)

W: <http://burgmann.anu.edu.au/>

#### UniLodge

T: 02 6194 5000

E: [unilodge.anu@unilodge.com.au](mailto:unilodge.anu@unilodge.com.au)

W: <http://www.unilodge.com.au/Canberra/ANU/>