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National Health and Medical Research Council

PROCEEDINGS

2016 NAFOSTED - NHMRC JOINT NETWORKING SYMPOSIUM FOR HEALTH AND MEDICAL RESEARCHERS

November 29 | Hanoi, Vietnam

2016 SYMPOSIUM

PROCEEDINGS OF

2016 NAFOSTED – NHMRC JOINT NETWORKING SYMPOSIUM FOR HEALTH AND MEDICAL RESEARCHERS

WELCOME MESSAGE FOR THE SYMPOSIUM 2016

Dear colleagues and scientists,

On behalf of the Local Organizing Committee, it is my great pleasure to welcome you to attend the 2016 NAFOSTED – NHMRC Joint Networking Symposium to be held at Army Hotel in Hanoi, Vietnam.

This Symposium is the initial event under a framework of Memorandum of Understanding which was signed in December 2015, between National Foundation for Science and Technology Development (NAFOSTED), Ministry of Science and Technology (MOST) , Vietnam and National Health and Medical Research Council (NHMRC), Australia. This Symposium will discuss specific topic themes to inform a mutually agreed call for grant research projects. The second symposium will be held in Australia.

The main objective of 2016 Symposium is to provide an international forum for the exchange of information on the progress of building project proposals in Health and medical fields, specifically: Infectious diseases, Mother and Child care and Public Health. It is also an important objective of this meeting to promote mutual interaction among participants as well as two organizations.

Hanoi is the capital of Vietnam and is known for its tropical beautiful weather and traditional culture. You will be warmly welcomed with the Old Quarters, street food, unique views and nice weather during the Symposium.

I would like to express my sincere appreciation to all the participants, exhibitors, supporting organizations and all the committee members who will make 2016 Symposium successful. With these strong support, we are sure 2016 Symposium will be beneficial and fruitful to all the participants, and you will enjoy Hanoi.

We are looking forward to meeting you in Hanoi, Vietnam, in November 2016.

Dr. Pham Dinh Nguyen

Chair

Organizing Committee

National Foundation for Science and Technology Development

A MESSAGE FROM THE NATIONAL HEALTH & MEDICAL RESEARCH COUNCIL (NHMRC)

Australia has for many years recognized the value of contributing to international efforts in science and technology. Involvement in international collaborative activities allows countries contribute to, share in, and benefit from, the work of the global research community in addressing global health challenges.

NHMRC acknowledges that no single country has the resources, skills and capacity to address all health and medical research challenges and therefore encourages and supports international collaborative efforts through a wide variety of initiatives and partnerships.

NHMRC is proud to promote and support Australian researcher participation at the 2016 NAFOSTED-NHMRC Joint Networking Symposium. This symposium is the first official activity under the signed Memorandum of Understanding between NAFOSTED and NHMRC, which aims to promote ongoing Vietnamese-Australian scientific cooperation between researchers in our two countries.

It is our hope is that this symposium will help to identify capacities and complementarities in Vietnam and Australia and foster strong linkages for future researcher collaborations in fields of common scientific interest.

The city of Hanoi provides an ideal setting for this significant event and, on behalf of the NHMRC and Australian participants, I extend my sincere thanks to NAFOSTED and to the Local Organizing and Program Committees for their tireless efforts to bring together this symposium and for their warm hospitality.

Dr. Tony Willis

Executive Director

Research Programs Branch

National Health and Medical Research Council

PREFACE

Few years ago, the Ministry of Science and Technology of Vietnam created The National Foundation for Science and Technology Development (NAFOSTED) in order to promote the scientists, especially young scientists to involve more deeply in the basic sciences, and through the research outcome they will publish the data in the international journals.

The NAFOSTED also develop bilateral cooperation with various foundations in the world to support the scientific collaboration and exchange, such as FWO (Belgium), DFG (Germany), RCUK and The UK Academies (United Kingdom) and other partners. One of the subjects supported by NAFOSTED is life sciences; part of the support focused on medical, pharmaceutical and biomedical research. In June 2016, The National Foundation for Science and Technology Development, Vietnam and The Australian National Health and Medical Research Council (NHMRC) signed the Memorandum of Understanding in Canberra, Australia for cooperation and supported the medical and biomedical research and collaboration between the scientists in the two countries.

The two sides decided to organize first joint symposium in Hanoi in November 2016, with the aim to bring together the scientists from the two countries in the field of infectious diseases, public health and maternal and child health to have chances to exchange the research ideas, experiences and the future plan for collaboration. There is always a need for research in the area of infectious diseases, public health and maternal and child health. During last more than 10 years from the beginning of the 21st century until now we have seen many outbreak of the emerging and reemerging infectious diseases such as SARS, avian influenza H5N1, pandemic influenza H1N1, and recently MERS, Ebola and ZIKA. While the infectious diseases heed no national borders, sharing information and experimental material across the border is not always easy. There are also needs to do research for non-communicable diseases, which are causing serious problem worldwide such as diabetes, cancer, hypertension and etc. We need to enhance the research activities related to the maternal and child health, one example is the relationship between ZIKA infection and microcephaly, and other gaps need to be filled.

I am confident that through the symposium many research ideas will be discussed and shared and that the scientists from the two countries can work together with the support from NAFOSTED and NHMRC.

Finally, I sincerely hope that many ambitious scientists and researchers will participate in the NAFOSTED-NHMRC symposium and grow into international leaders in the fields of infectious diseases, public health and maternal and child health research.

Prof. Dang Duc Anh

Chair

Program Committee

LOCAL ORGANIZING COMMITTEE

Dr. Pham Dinh Nguyen

Vice Director

National Foundation for Science & Technology Development

Prof. Dang Duc Anh

Director

National Institute of Hygiene and Epidemiology

MSc. Truong Thi Thanh Huyen

National Foundation for Science & Technology Development

MSc. Nguyen Hai Yen

National Foundation for Science & Technology Development

Ms. Phung Thi Hiep

National Foundation for Science & Technology Development

Ms. Cao Hanh Quyen

National Foundation for Science & Technology Development

PROGRAM COMMITTEE

Prof. Dang Duc Anh
Director
National Institute of Hygiene and Epidemiology

A/Prof. Nguyen Linh Toan
Head of Department of Pathophysiology
Vietnam Military Medical University

A/Prof. Nguyen Thi Van Anh
Vice Director of Key Laboratory of Enzyme and Protein Technology
University of Science- Vietnam National University_Hanoi

A/Prof. Nguyen Vu Trung
Vice Director
National Hospital of Tropical Diseases

A/Prof. Le Huu Song
Vice Director
108 Military Central Hospital

A/Prof. Dinh Thi Phuong Hoa
Former Vice Director of Mother & Child Health Department, Ministry of Health
Consultant at Research Institute of Child Health (National Children's Hospital)

A/Prof. Le Thi Minh Huong
Vice Director
National Children's Hospital

Dr. Nguyen Thi Thi Tho
Deputy Director of Community Health and Preventive Network Coordination
National Institute of Hygiene and Epidemiology

Prof. Nguyen Tran Hien
National Institute of Hygiene and Epidemiology

A/Prof. Le Thi Huong
Director of the Institute for Preventive Medicine and Public Health
Hanoi Medical University

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8.30 – 8.50 Welcome speeches

NAFOSTED Representative

Dr. Tony Willis, Executive Director, Research Programs Branch, NHMRC

8.50 – 9.50 Public Health keynotes

8.50 – 9.20: Public health challenges and research orientation in Vietnam

Prof. Nguyen Tran Hien, National Institute of Hygiene and Epidemiology

9.20 – 9.50: Collaboration and innovation on public health interventions to reduce salt

Dr. Jacqui Webster, The George Institute for Global Health

9.50 – 10.20 Tea break

10.20 – 11.20 Infectious Diseases keynotes

10.20 – 10.50: The infectious diseases in Vietnam: current situation, challenges and solutions for control

Prof. Nguyen Van Kinh, National Hospital of Tropical Diseases

10.50 – 11.20: Influenza in a Vietnam community cohort: Who, When, Why and can we improve vaccination?

Dr. Annette Fox (Marsh), The University of Melbourne

11.20 – 12.20 Mother-Child Care keynotes

11.20 – 11.50: Maternal and child health in Viet Nam - priorities beyond the Millennium Development Goals

A/Prof. Dinh Thi Phuong Hoa, Research Institute for Child Health, National Children's Hospital

11.50 – 12.20: Research Partnership with Vietnam to improve maternal and child health

Prof. Jonathan Morris, Kolling Institute of Medical Research

12.20 – 13.00 Lunch time

Session 1: Public Health

Moderators: A/Prof. Le Thi Huong, Dr. Lien Anh Ha Do

13.00 – 13.30: Type 2 diabetes and cardio-metabolic risk factors after gestational diabetes in Southern Vietnam: a prospective cohort study

Dr. Do Van Dung, University of Medicine and Pharmacy at Ho Chi Minh city

13.30 – 14.00: Enhancing patient safety: learning from adverse events

Dr. Reema Harrison, University of New South Wales

14.00 – 14.30: Socioeconomic inequalities in self-reported chronic non-communicable diseases in urban Hanoi, Vietnam

Dr. Vu Duy Kien, Hanoi School of Public Health

14.30 – 15.00 Tea break

15.00 – 15.30: Respiratory Syncytial Virus infection in term and preterm infants in Vietnam

Dr. Lien Anh Ha Do, Murdoch Children's Research Institute

15.30 – 16.00: Healthy life for elderly people in Vietnam

Dr. Nguyen Thi Thi Tho, National Institute of Hygiene and Epidemiology

16.00 – 16.30: LGBT in Vietnam: A Population of Significance for Public Health

Dr. Le Minh Giang, Hanoi Medical University

16.30 – 17.00: Evaluation of the Vietnamese A6 Mortality Reporting System: All-Cause Mortality

A/Prof. Le Tran Ngoan, Hanoi Medical University

Session 2: Mother-Child Care

Moderators: A/Prof. Le Thi Minh Huong, Prof. Fiona Russell

13.00 – 13.30: Does post-hospital discharge Kangaroo Mother Care improve growth and development in low-birthweights infants in Vietnam?

Prof. Fiona Russell, The University of Melbourne

13.30 – 14.00: Association of HLA with disease progression among HIV-1 infected Vietnamese children

Dr. Pham Viet Hung, National Children's Hospital

14.00 – 14.30 Tea break

14.30 – 15.00: Epigenetic inheritance and Epilepsy

Dr. Bui Chi Bao, University of Medicine and Pharmacy at Ho Chi Minh city

15.00 – 15.40: Prevalence of sensitization to food allergens and challenge proven food allergy in Hanoi, Vietnam

A/Prof. Hoang Thi Lam, Hanoi Medical University

Session 3: Infectious Diseases

Moderators: A/Prof. Le Huu Song, A/Prof. Nguyen Vu Trung, Prof. Warwick Britton

13.00 – 13.25: Interdisciplinary approach to reduce zoonotic transmissions of antimicrobial resistant bacteria and pathogen from food animal production chains in community in Vietnam

Dr. Ngo Thi Hoa, Oxford University Clinical Research Unit, Ho Chi Minh city

13.25 – 13.50: Strengthening tuberculosis control through a research partnership between Australia and Vietnam

Dr. Grey Fox, University of Sydney

13.50 – 14.15: Investigate the alterations of immune activation markers in HIV-infected children treated with Anti-Retroviral Therapy

Dr. Dang Vu Phuong Linh, Hanoi School of Public Health

14.15 – 14.40: New tools to improve tuberculosis control in Vietnam

Prof. Warwick Britton, Centenary Institute, University of Sydney

14.40 – 15.10 Tea break

15.10 – 15.35: Molecular characteristics of measles and rubella viruses in Vietnam

Dr. Do Phuong Loan, National Institute of Hygiene and Epidemiology

15.35 – 16.00: Translating the use of molecular techniques into non-invasive diagnosis: the focuses on sepsis diagnostics and HBV related early liver cancer surveillance

Dr. Ngo Tat Trung, 108 Military Central Hospital

16.00 – 16.25: Heat Pulse Extension PCR for unbiased amplification of nucleic acids

Dr. Ho Huu Tho, Vietnam Military Medical University

16.25 – 16.50: Next-Generation Sequencing Reveals Frequent Opportunities to know about Hepatitis C Virus genetic diversities and clinical applications in Vietnam

Dr. Le Thi Hoi, National Hospital of Tropical Diseases

17.00 – 17.30 CONCLUSION

KEYNOTES

Public health priorities/challenges and research orientation in Vietnam

Nguyen Tran Hien

National Institute of Hygiene and Epidemiology, Hanoi, Vietnam

Abstract

Health status of the Vietnamese people has substantially improved in recent years, as evidenced by trends in basic health indicators such as average life expectancy, maternal and child mortality and child malnutrition. In the past five years, average life expectancy of the Vietnamese people has improved, rising annually by about one tenth of a year, from 72.9 years in 2010 to 73.3 years in 2015 (70.7 in males and 76.1 in females). the maternal mortality ratio in 2015 was estimated at about 58.3/100 000 births. The IMR fell from 44.4 infant deaths per 1000 live births in 1990 to 15.3 in 2010 and 14.7 in 2015. The U5MR declined from 58.0 child deaths per 1000 live births in 1990 to 23.8 in 2010 and 22.1 in 2015. The underweight malnutrition rate of children under age 5 has continued its steady downward trend over the past 5 years, from 17.5% in 2010 to 14.1% in 2015. Although the share of disease burden and mortality caused by infectious disease, maternal and neonatal conditions and nutritional disorders has declined in recent years, the number of deaths and disease burden caused by these conditions remain high. Vietnam has been identified as a hot spot for emerging infectious diseases, with potential for pandemic outbreak. The rising non-communicable diseases (NCD) burden is occurring in a context where morbidity and mortality from communicable disease, maternal, neonatal and nutritional disorders remain high, causing a double burden of disease.

Keywords: public health, health priority, challenges, research orientation, Vietnam

Short bio:

Professor Nguyen Tran Hien was Director of the National Institute of Hygiene and Epidemiology (NIHE) (2005-2015), a leading scientific research institute in Vietnam in epidemiology, medical microbiology, immunology and molecular biology, and vaccine development. Before joining NIHE, Prof. Hien had been Hanoi Medical University faculty for more than twenty five years and had extensive experiences in curriculum development and academic management. Prof. Hien was also the Chairman of the Department of Epidemiology and Director of the Center for HIV/AIDS Research and Training of Hanoi Medical University. He was also fulfilling other functions such as: Vice-Chairman, National Committee of Prevention and Control of Human Avian Influenza and Pandemic; President, Vietnam Association of Preventive Medicine; Vice-Chairman, Committee of Science and Technology, Ministry of Health, Vietnam; Manager of the National Expanded Program of Immunization.

Professor Nguyen Tran Hien graduated from Hanoi Medical College in 1978. He completed 2 years (1986-1988) of postgraduate training in epidemiology and clinical immunology at the National Institute for Lung Diseases and Tuberculosis in Berlin, Germany. He obtained a Master of Public Health in health development at the Royal Tropical Institute, Amsterdam, The Netherlands (1992-1993), and in 2002, he completed a Ph.D. at Free University, Amsterdam, The Netherlands. Dr. Hien was also a Fogarty fellow at University of California, Los Angeles (UCLA), US. Dr. Hien has a great deal of experience in the surveillance and prevention and control of HIV/AIDS and other emerging and re-emerging diseases in Vietnam. He is author and co-author of more than 70 papers published in international journal. Professor Nguyen Tran Hien is now the senior expert at NIHE and President, Vietnam Association of Preventive Medicine.

Collaboration and innovation on public health interventions to reduce salt

Jacqui Webster

The George Institute for Global Health, Sydney/New South Wales, Australia

Abstract

My research focusses on optimising the impact of population-wide programs to reduce dietary salt intake. Estimates based on the recent Global Burden of Disease study indicate that 1/10 deaths globally are related to excess salt consumption. National strategies to reduce population salt intake have been identified as a cost effective way of preventing chronic diseases. My work aims to understand how best to implement effective salt reduction programs in different settings and for different population groups. Through a combination of systematic reviews of both controlled trials and "real world" interventions, and a parallel program of implementation science research projects, we are adding to the evidence to support improved program implementation throughout the world. Our comprehensive global review identified salt reduction programs in 75 countries. However, more robust evaluations are needed to understand what's working and why and how to effectively translate lessons to low and middle income countries. A recent Cochrane review demonstrated that that national population-wide programs are more likely to be effective if they are multi-faceted and include policy changes to improve the food environment (e.g. targets for salt levels in foods). In both Australia and Vietnam we have collaborated on community interventions to test the COMBI approach to changing behaviour and managed to reduce salt consumption by about 1 gram. The challenge now for both countries is how to scale up from successful trials to sustainable population-wide interventions. The key to success is collaborative innovative multi-institutional strategies with strong government leadership and clear mechanisms for monitoring progress.

Short bio

Dr Webster is an NHMRC Career Development Fellow and Director of the World Health Organization (WHO) Collaborating Centre for Population Salt Reduction at the George Institute for Global Health, and holds a conjoint Senior Lecturer position at the University of Sydney. Her primary research interests are NCD prevention, particularly through salt reduction strategies, working with the food industry to improve food and health, and public health advocacy. As Director of the WHO CC, Dr Webster has a remit to support countries to achieve the WHO targets for salt reduction through facilitating the exchange of information and providing support and advice on strategy development, monitoring and evaluation. Dr Webster previously visited Vietnam at the invitation of the Vietnamese Ministry of Health in May 2012 and has since been involved in preliminary work to measure salt intake and a successful pilot behavioural change (COMBI) intervention to reduce salt. Dr has authored several international reviews of salt reduction initiatives and regularly contributes to national and international policy development. Dr Webster is currently co-Chair of the World Hypertension League's Science of Salt Advisory Group.

The infectious diseases in Vietnam: current situation, challenges and solutions for control

Nguyen Van Kinh

National Hospital of Tropical Diseases, Hanoi, Vietnam

Abstract

Current situation: In Vietnam, the prevention of the disease has actively implemented with no current major epidemic and achievement of promptly stopping the transmission of Ebola, H7N9, Mers-CoV. The Zika cases are detected up to 65 but basically controlled ... The expanding immunization coverage is maintained above 90%, especially, the completion of the vaccination campaign against measles - rubella reached 98.2% rate; Other endemic diseases such as hand, foot and mouth diseases, rabies, encephalitis viruses and the disease in cattle, pigs and poultry such as infectious due to *Streptococcus suis*, influenza A (H5N6), (H5N1) at risk to humans have all basically controlled. However, Dengue fever (dengue) has increased the number of cases compared to the year 2014 and 2015.

Challenges: Although no cases of influenza A (H7N9), MERS-CoV, Ebola or plague are recorded, many diseases have chances to imported in Viet Nam because of the exchange activities, the international integration of commerce and tourism. Up to now, there are 65 Zika cases have been detected but the number of cases trend to rise. The group of diseases caused by the viruses, the disease having no preventive vaccine, no specific treatment, and vector-born diseases transmitted from animals to humans tend to increse in the country, especially those areas with the largest population movements, deep and remote areas.

Solutions for control: We strengthen direct prevention of infectious diseases at all levels with detailed planning schemes for 100% of the local building guarantee. Our strategies includes that 100% disease emerging and epidemic outbreaks are early detectected, reported and controled and over 90% of staff in prevalence all levels are trained. 100% subjects cross the border are strictly monitored and inspected to avoid disease invasion. We maintain adequate immunization rates above 95% with the safest level in immunization activities.

Keywords: infectious diseases, challenges, emerging diseases

Short bio

Assoc. Prof Kinh is the Director of National Hospital for Tropical Diseases (NHTD) in Vietnam as well as a senior lecturer, Head of Infectious Diseases Department at the Hanoi Medical University, and Chair of Vietnam Infectious Diseases Society and HIV/AIDS treatment Sub-committee, Ministry of Health (MOH). Since 2009 until present, he has been participating Southeast Asia Infectious Disease Clinical Research Network and his role is site investigator from NHTD. He has been expanding many projects in Vietnam including HIV/AIDS care and treatment projects and activities, hepatitis B, C, co-infection of HIV and Hepatitis B, Dengue, Influenza, sepsis, respiratory infection…He has received numerous research grants from Vietnam national research funds and foundation, from Ministry of Science and Technology, Ministry of Health, NIH from U.S., Vietnam-Japan Cooperative Research for Prevention of Drug-Resistant HIV-1 Transmission in Vietnam, research on Nutritional status of HIV-positive and HIV-negative injection Drug Users in Hanoi, Vietnam under National Institute on Drug Abusen between TUFTS university and NHTD. He has published more than 100 papers in internation journals, authored 10 books. He has received a visiting professor position in Oxford University since 2016. He is also involved in several clinical trials at NHTD with MSD, Gilead. He is a chair of the scientific committee and IRB of the NHTD.

Influenza in a Viet Nam community cohort: Who, When, Why and can we improve vaccination?

Le Quynh Mai[1], Le Nguyen Minh Hoa[2], Hoang Vu Mai Phuong[1], Pham Quang Thai[1], Nguyen Le Khanh Hang[1], Tran Nhu Duong[1], Le Thi Thanh[1], Nguyen Thanh Duong[3], Ian Barr[4], Peter Horby[2], Heiman FL Wertheim[2], Juliet Bryant[2], Dang Duc Anh[1], H Rogier van Doorn[2], Annette Fox[2,5]

[1]*National Institute of Hygiene and Epidemiology, Hanoi, Viet Nam*

[2]*Oxford University Clinical Research Unit and Wellcome Trust Major Overseas Programme, Hanoi, Viet Nam*

[3]*Ha Nam Preventive Centre, Ha Nam, Viet Nam*

[4]*WHO Collaborating Centre for Research and Reference on Influenza, Peter Doherty Institute for Infection and Immunity, Melbourne, Australia.*

[5]*Department of Microbiology and Immunology, The University of Melbourne, Peter Doherty Institute for Infection and Immunity, Melbourne, Australia.*

Abstract

Influenza causes occasional pandemics and frequent epidemics with substantial global disease burden. Unlike most vaccines, influenza vaccines are updated frequently to account for virus mutation, necessitating annual vaccination. Better vaccines/vaccination strategies are needed because effectiveness is moderate to poor, even when vaccine strains match circulating strains. Effects of pre-existing immunity on vaccine effectiveness are highly variable and poorly understood. We established a community cohort comprising 270 random households from Ha Nam, Viet Nam to investigate immunity and effects of prior infection, and to provide epidemiological data that can inform vaccine policy in Viet Nam. Continuous active surveillance for influenza-like-illness (ILI), defined as fever and cough or sore throat, and serology on cross-sectional blood samples spanning seasons were used to detect infection and illness. 88% of participants were infected at least once in five-years, and 62% were infected more than once (0.3 infections/person/season). Less than 20% of infections caused ILI. Protection increased significantly with pre-season hemagglutination inhibiting antibody (HI) titre, the only current correlate of protection. Protection also increased significantly with pre-season neuraminidase inhibiting (NI) titre, making it an important additional correlate for vaccine evaluation. Infection boosted HI titres to current and prior infecting strains indicating that the "memory" cells that make antibodies to prior strains also recognize the new strain. Titres were highest to the earliest strains encountered and declined with each subsequent strain. We are currently investigating how infections, detected during the past 8 years of cohort participant investigation, impact upon the protective antibody response to vaccination, and will utilize cellular and molecular analysis of B cells to understand the basis for variation in antibody responses and the impact of memory B cells.

Keywords: Influenza, Epidemiology, Immunity, Vaccination

Short bio

Dr Annette Fox trained in immunology and public health, and has extensive experience in virology, serology and molecular biology. Annette studied for her PhD at The University of Melbourne, and initiated novel research on innate immunity and transplantation during her post-doctoral position at The Walter and Eliza Hall Institute. From 2001-2005, she led studies on tuberculosis immunity in The Gambia for the UK Medical Research Council. In 2006, Dr Fox joined the Oxford University Clinical Research Unit (OUCRU) in Hanoi, Vietnam, where she developed a program of research on influenza and dengue immunity, pathogenesis and transmission. She joined the University of Melbourne, Department of Microbiology and Immunology in November, 2013 and initiated collaborative studies with OUCRU Viet Nam and the National Institute of Hygiene and Epidemiology Viet Nam. This includes an NHMRC funded project on effects of prior infection on immune responses to influenza vaccine. Her goal is to contribute to understanding the complex human immune response to variant influenza strains, and to the development of improved influenza vaccination strategies. http://orcid.org/0000-0002-0565-7146

Maternal and child health in Viet Nam - priorities beyond the Millennium Development Goals

Dinh Thi Phuong Hoa

Ministry of Health, Hanoi, Vietnam

Abstract

Maternal and child health has for long been one of the top priorities of the Vietnamese Government strategy on the people' health care. As the results, impressive achievement in maternal and child health has been made. During the period from 1990 – 2015, maternal mortality reduced from 233 to 58.3 per 100.000 live births and the under-five mortality rate reduced from 58 to 19.3 per 1000 live births. As a consequence, Viet Nam was amongst one of 10 countries to achieving Millennium Development Goal 4 (reducing child mortality by two thirds) and Millennium Development Goal 5a (reducing maternal mortality by three quarters) by 2015. Key strategies to achieve the goal included implementation of safe motherhood programmes, increase coverage of immunization and improve nutrition.

However, the achievements made are neither equally distributed across the country nor between different ethnic groups or between different layers of socioeconomically groups. Ethnic minorities and the poor are groups are left behind whilst the country as a whole is undergoing economic development. Currently, access to quality healthcare services is for example limited in remote and mountainous areas, resulting in maternal and child mortality rates 3-4 times higher in those areas compared to the rest of the country.

Furthermore, more than 70% of the infant deaths occurs during the neonatal period and the burden of stillbirth deaths (foetal death on or after 22 completed weeks of gestation) is to a large degree unknown.

The pressing priorities for the coming years should thus include to reduce the current inequities in maternal and child health, improving neonatal survival, as well as studying stillbirths and implementating of interventions aimed at its reduction.

Short bio

A/Prof. Dinh Thi Phuong Hoa is a trained paediatrician and has been involved in maternal and child health care. She worked as a clinician in National Children's Hospital for more than 20 years. After that her work, roles and responsibilities has gradually towards focusing more on research, capacity building and policymaking. She used to be Vice-Director of Maternal and Child health Department in Ministry of Health and responsible for child health care activities in the country, lead the developing the national guidelines for newborn health. She has also co-authored a number of textbooks in paediatrics and public health.

Associate Professor Hoa has been involved in international collaborative work with researchers from China, Bangladesh, Australia, UK, and Sweden etc. and involved in research activities with WHO, UNICEF, GTZ, UNFPA in Vietnam. She has been director of projects funded by Pathfinder International, Ipas, JICA and Save the Children. She has published 67 articles in International and National Journals.

She has also experienced in teaching, being supervisor for PhD, master students in Hanoi school of Public Health as well as being national facilitator for child health programs including Control for Diarrheal disease, nutrition, Breast feeding, Integrated Management of Childhood Illnesses (IMCI) and newborn care at different levels of health facilities in the country.

Her current focus of research lies within researching aspects of equality in underserved areas of the country in the continuum of care and Consultant for Vietnam Ministry of Health in child and newborn health.

Research Partnership with Vietnam to improve maternal and child health

Jonathan Morris

Kolling Institute of Medical Research, University of Sydney, Sydney/New South Wales, Australia

Abstract

The future wellbeing of a nation is determined by its maternal and child health. As Vietnam transitions into a middle-income country it faces issues of inequity and the rise in non-communicable conditions associated with greater affluence. Teams working through the University of Sydney's Hoc Mai Foundation have travelled to Vietnam for over 10 years to help build research capacity in maternal and child health and to perform research relevant to the challenges that Vietnam faces. Active research partnerships exist across the country and from community, primary care to tertiary level to achieve comprehensive understanding and enable locally appropriate interventions. Our practical clinical research programs focus on the development of study protocols addressing priority research questions identified by the participants.We will provide examples of the outputs from the programme as well as two examples other collaborative research projects. The first is a qualitative study that explores ways to improve health literacy amongst ethnic minority groups in the rural Dien Bien province where maternal and infant mortality rates are up to 5 times higher than those in metropolitan areas. The second study is a prospective cohort study that established the incidence of gestational diabetes amongst a cohort of >2000 women birthing in Ho Chi Minh city. Applying the newly recommended IADPSG criteria would result in over 20% of the birthing population being identified as having gestational diabetes. The implications of these findings for resources and birth outcomes and further international research collaboration will be discussed

Short bio

Professor Jonathan Morris is currently the Director of the Kolling Institute which unites research and education with patient care and community wellbeing. He is a Maternal Fetal Medicine Specialist with an active clinical role in the management of women with high risk pregnancies, and has a special interest in supporting women who suffer the loss of a child through stillbirth. He has a keen interest in improving patient care, health service efficiency and enabling research through the use of data.

PUBLIC HEALTH

[OP#1] Type 2 diabetes and cardio-metabolic risk factors after gestational diabetes in Southern Vietnam: a prospective cohort study

Do Van Dung[1], Nguyen Hoang Phung[1], Andy Lee[2]

[1] *University of Medicine and Pharmacy at Ho Chi Minh city, Vietnam*

[2] *Curtin University, Australia*

Abstract

Gestational diabetes mellitus (GDM) affected approximately 22 million women worldwide. Women with GDM are prone to subsequent type 2 diabetes (T2D) and cardio-metabolic diseases. Previous studies have been undertaken mainly in high-income countries. The prevalence of GDM in Vietnam is increasing and already at 20%. Breastfeeding and maternal adiposity have been associated respectively with lower and higher rates of T2D following GDM. However, evidence is lacking on the ways these two factors may modify GDM with future T2D and cardio-metabolic events among Vietnamese mothers.

The aim of this study is to investigate the associations between GDM and postpartum T2D and cardio-metabolic disorders, considering the potentially modifying effects of breastfeeding and changes in maternal adiposity.

The study will build on an ongoing cohort study of maternal lifestyle and nutritional status in relation to pregnancy and childbirth in Ho Chi Minh City. The baseline survey of 820 pregnant women recruited during March-August 2016 had been completed. Two follow-ups (at 12 and 24 months postpartum) will be conducted. Biochemical analyses of blood samples (e.g., glucose, HbA1c, insulin, lipids), and adiposity measurements using Dual-energy X-ray absorptiometry, will be performed at an accredited laboratory. Lifestyle and dietary exposures will be assessed using an interviewer-administered questionnaire.

Keywords: Gestational diabetes mellitus, Breastfeeding, maternal adiposity, cohort study

Short bio

I was a medical doctor by training from Vietnam, and earned my MPH degree and PhD in Epidemiology from London School of Hygiene and Tropical Medicine and University of Medicine and Pharmacy at Ho Chi Minh City (UMP), respectively. I am now the Vice-President of UMP and Dean of Public Health Faculty of this university, taking the responsibility for the faculty and curriculum development.

I am a contributor of 6 Vietnamese textbooks in epidemiology and health promotion, project planning and medical statistics. I have also authored and co-authored over 60 papers, of which 20 were published in international peer-reviewed journals.. Moreover, I serve as members of several Advisory Boards, namely Journal of Medicine and Pharmacy of Ho Chi Minh City, Executive Committee of Respiratory Society of Vietnam (Chair of the Scientific Committee), Executive Committee of Vietnam Preventive Medicine Association. I have acted as principal investigators and collaborators of many research projects through collaboratively working with many universities, organizations and institutes in Vietnam and abroad such as Australia, United States, Sweden and Japan.

[OP#2] Enhancing patient safety: learning from adverse events

Reema Harrison

University of New South Wales, Sydney/New South Wales, Australia

Abstract

An adverse event in healthcare describes “an injury related to medical management, in contrast to complications of disease.” There is a growing body of evidence to suggest that clinicians who directly or indirectly contribute to the occurrence of an adverse event can experience psychological effects that disrupt their professional and personal lives and their ability to deliver high quality, safe care. Patient safety is at risk in the immediate aftermath of an incident, when a clinician’s ability to manage other patients may be impaired. In the following days and weeks, stress, anxiety and sleep disturbance may affect clinical decision making, job performance and colleague relationships. In the longer term, safety culture and the ability to learn from adverse events is threatened if clinicians are reluctant to discuss their mistakes. Other safety-critical sectors (like aviation) recognize that front line staff will only speak up if they feel supported to do so and have confidence that they will be treated fairly and that their reports will be used for learning. Studies of this phenomenon are from western health systems, the United States in particular, where several programmes have been established to support clinicians to learn from mistakes and prevent their reoccurrence. We have no knowledge of doctors’ experiences or needs beyond western contexts and therefore how to address these. Using an existing validated instrument which has been refined for the Vietnamese health setting, we are currently undertaking a survey of physician’s and nurse’s experiences of adverse events.

Short bio

Dr Reema Harrison is an Applied Health Psychologist with interests in quality and safety in healthcare and systematic review. Reema has a BSc (hons) Psychology, MSc Health Psychology and PhD in the psychology of patient safety all from the University of Leeds (UK). Her specific research interests are the psychological impact of involvement in medical errors on health professionals and patients, incident disclosure regarding adverse events in health care, promoting learning from adverse safety events in healthcare, the use and quality of clinical supervision and mentorship in relation to enhancing patient safety, and exploring quality and patient safety issues in developing countries in South-East Asia. Reema works as a Senior Lecturer in the School of Public Health and Community Medicine, with teaching responsibilities relating to clinical governance and patient safety that reflect her research interests.

[OP#3] Socioeconomic inequalities in self-reported chronic non-communicable diseases in urban Hanoi, Vietnam

Vu Duy Kien[1,2,3], Hoang Van Minh[1,2], Kim Bao Giang[2,4], Amy Dao[5], Lars Weinehall[3], Malin Eriksson[3] and Nawi Ng[3]

[1] Center for Population Health Sciences, Hanoi School of Public Health, Hanoi, Vietnam;
[2] Center for Health System Research, Hanoi Medical University, Hanoi, Vietnam;
[3] Unit of Epidemiology and Global Health, Department of Public Health and Clinical Medicine, Umeå, Sweden;
[4] Institute for Preventive Medicine and Public Health, Hanoi Medical University, Hanoi, Vietnam;
[5] Department of Sociomedical Sciences, Mailman School of Public Health, Columbia University, New York, NY, USA

Abstract

The study measures and decomposes socioeconomic inequalities in the prevalence of self-reported chronic non-communicable diseases (NCDs) in urban Hanoi, Vietnam. A cross-sectional survey of 1211 selected households was carried out in four urban districts in both slum and non-slum areas of Hanoi city in 2013. The respondents were asked if a doctor or health worker had diagnosed any household members with an NCD, such as cardiovascular diseases, chronic respiratory, diabetes or cancer, during last 12 months. Information from 3736 individuals, aged 15 years and over, was used for the analysis. The concentration index (CI) was used to measure inequalities in self-reported NCD prevalence, and it was also decomposed into contributing factors. The prevalence of chronic NCDs in the slum and non-slum areas was 7.9% and 11.6%, respectively. The CIs show gradients disadvantageous to both the slum (CI = −0.103) and non-slum (CI = −0.165) areas. Lower socioeconomic status and aging significantly contributed to inequalities in the self-reported NCDs, particularly for those living in the slum areas. The findings confirm the existence of substantial socioeconomic inequalities linked to NCDs in urban Vietnam. Future policies should target these vulnerable areas.

Keywords: Inequality; non-communicable diseases; decomposition; urban; Vietnam

Short bio

Dr. Kien works as a coordinator and researcher for the Center for Health Population Sciences, Hanoi University of Public Health. He also serves as a coordinator of the Demographic Epidemiologic Surveillance System in Chi Linh, Hai Duong (CHILILAB). He got a medical doctor degree in Hanoi Medical University in 2001, and completed the Master of Public Health in University of Bergen, Norway in 2006. He obtained his PhD in the field of epidemiology and public health from Umea University, Sweden in 2016. He has published 11 papers in the international peer-reviewed journals, contributed to developing some books on research methodology and data analysis. His research focuses on urban health, inequalities in health outcomes and behavior risk factors, healthcare utilization, catastrophic health expenditure, impoverishment, and health system. He developed and implemented several research projects with international universities or institutes. He also provided consultancies to international organizations.

[OP#4] Respiratory Syncytial Virus infection in term and preterm infants in Vietnam

Lien Anh Ha Do

Murdoch Children's Research Institute, Melbourne/Victoria, Australia

Abstract

Respiratory syncytial virus (RSV) is the leading cause of acute respiratory infections (ARIs) in paediatric populations worldwide, 91% hospitalizations occurred in developing countries. No RSV vaccine is yet available while >10 candidates are now entering human trials, including a maternal vaccine currently in a Phase III trial. The WHO predicts, in the next 5-10 years, RSV vaccines will be licensed for use in pregnant women and/or young infants. An urgent need to fill the knowledge gaps of RSV molecular, immunological, clinical epidemiology in Vietnam and other low- and middle-income countries is now required. We aim 1) to estimate RSV incidence during the first 2 years in term infants and preterm infants (high-risk group); 2) to determine appropriate clinical outcome assessment endpoints for RSV infection; 3) to understand RSV molecular characteristic, protective and immune-pathogenic responses in these two populations. Molecular diagnostics, next generation sequencing, conventional virology techniques and advanced immunological platforms will be used to address study aims. Data from this study will 1) contribute to better implications of vaccines according to RSV strains circulating in the region, 2) enable the Government of Vietnam to predict the impact of a future vaccination policy and 3) build the evidence-base to undertake definitive trials of RSV vaccines. Our group is currently undertaking several vaccine trials in Ho Chi Minh City, Vietnam in collaboration with the Pasteur Institute and Children Hospitals 2. Our proposed research program will integrate clinical and laboratory research skills and will build a strong respiratory research group for Vietnam.

Short bio

I graduated as a medical doctor from the University of Medical Science, Ho Chi Minh City, Viet Nam in 2001. I was awarded a scholarship by University training programmes of Agence Universitaire de la Francophonie (AUF) -Association of Universities of the Francophonie and Embassy of France in Vietnam to pursue Immunology and Microbiology MSc at Victor Segalen University, Bordeaux, France from the Department of Life Science(2003-2005). My Msc project involved molecular epidemiological investigations of HIV subtypes and polymorphism of the nef gene in clinical isolates of HIV-1. After graduating in 2005, I was recruited to the Pasteur Institute of Ho Chi Minh City as a research scientist in the Virology Department, where I worked on HIV and Viral Hepatitis projects. In September 2006, I joined the Oxford University Clinical Research Unit (OUCRU) in Ho Chi Minh City, and worked initially on immunology (T cell response) of avian influenza A/H5N1. In 2008-2013, my research concentration shifted to human respiratory syncytial virus (RSV) infections in infants and small children in Viet Nam and encompasses (molecular) epidemiological, clinical, virological and host expression profile studies in Hospital for Tropical Diseases, Children Hospital 1 and 2, Ho Chi Minh City, Vietnam. I have now joined the Pneumococcal Research Group at Murdoch Children's Research Institute (MCRI), Australia to pursue my work in RSV research as a postdoctoral scientist.

[OP#5] Healthy life for elderly people in Vietnam

Nguyen Thi Thi Tho

National Institute of Hygiene and Epidemiology, Hanoi, Vietnam

Abstract

Vietnam has officially become an aging population phase since 2011 with the proportion of > 60 year old people was 9.9%. In 2013, this proportion increased to 10.5% with 9.4 million people aged more than 60 years old. While life expectancy is increasing, healthy life conditions for the elderly have not been improved. A study conducted in 2010 showed that 95% the elderly has at least one disease/disorder, of which the majority was non- communicable diseases.

Overall, there is still lack of nationally representative data profile to illustrate a comprehensive picture on the health status of elderly population in Vietnam. As a result, insufficient investments have been made. Health system is not well prepared to meet the increasing requirement of elderly people. Additionally, health workers aren't equipped with appropriate knowledge and skills to manage the common conditions of elderly people. More over, self-care of the elderly is not considered a most important concept to understand, especially in within the context of the health risks associated with it as well as of illness and disease prevention.

The proposed study is to address priority issue of the elderly care in Vietnam with following objectives: i) to describe health status of elderly people in Vietnam; ii) to evaluate a technology-based package for empowering community to elderly care; and iii) to evaluate a blended training package for health workers. The findings will provide scientific evidence to advocate for increased investment for, and effective packages for improving practice of community and health workers on elderly health care.

Short bio

Thi Tho Nguyen Thi, MD. Ph.D. is currently working for the National Institute of Hygiene and Epidemiology (NIHE). She is in-charge of the Unit of Maternal and Child health, and the Unit of Non-communicable diseases control and prevention.

She obtained the Medical doctor degree, specializing in pediatric, and Ph.D. degree in public health. She has collaborated with different institutions, universities and international partners in conducting several research initiatives related to different areas of public health. Within health policy, Dr. Thi Tho works on risk adjustment, comparative effectiveness research, and health program impact evaluation. She also involve in teaching, both under-graduate and post-graduate. She is the author and co-author of several books, articles in international and national journals.

Currently, her work is centered around non- communicable diseases, maternal & child health, and immerging public health issues such as climate change…She focuses in vulnerable groups and hard to reach areas. She is also interested in research that looks for the causative relationship between non- communicable diseases and life style, as well as genetic factors. She will also continue her work on applying Information- Communication- Technology, such as M-health, E-learning platform, in public health study.

[OP#6] LGBT in Vietnam: A Population of Significance for Public Health

Le Minh Giang

Hanoi Medical University, Hanoi, Vietnam

Abstract

Over the past decade, Lesbian Gay Bisexual and Transgender (LGBT) people in Vietnam are becoming more visible in public spaces, including national forums, popular media and everyday life. However, little is understood about their health-related issues. This presentation will review what is known from international and domestic publications about health-related issues of LGBT populations and show that paying attention to these issues is of significance for public health in Vietnam. The review particularly focuses on infectious diseases such as HIV, sexually transmitted diseases, and hepatitis. Evidence of other health issues such as substance abuse, mental health, stigma and violence will also be examined in order to provide insights into social and health vulnerability of these populations. The presentation will describe current research infrastructure at Hanoi Medical University, including a sexual health clinic for gay men and a research team with strong records of doing research with and about men who have sex with men in Vietnam. Examples include is the largest cohort study to identify 2 incidence of HIV, STIs and hepatitis C among men who have sex with men in Hanoi, and an implementation study that is still in the planning stage to evaluate Pre-Exposure Prophylaxis (PrEP) in several urban centers. It will conclude by offering insights into opportunities to collaborate and explore on issues that are of shared interests and concerns.

Short bio

After undergraduate training in medicine at Hanoi Medical University, Dr. Le Minh Giang pursued his Master and PhD training in Medical Anthropology and Sociomedical Sciences at Columbia University in the US. Over the past ten years, Dr. Giang has collaborated with US-based investigators to develop eight research and training grants funded by the US National Institutes of Health (NIH) in the areas of HIV, sexually transmitted infections (STIs) and substance abuse in Vietnam. He is currently the Co-PI of a R01 grant focusing on improving screening and access to treatment of STIs among men who have sex with men and the PI of a R21 grant focusing on the roles of the family in caring for HIV positive IDUs. Most recently, he has received a grant award by the French Agency for Research on HIV and Hepatitis (ANRS) to study the social determinants of late presentation to HIV care in Ho Chi Minh City, Vietnam. Through these research and training grants, Dr. Giang has developed the Center for Research and Training on HIV/AIDS (CREATA) at Hanoi Medical University to become a center of excellence for research, training and clinical services in the areas of sexual health and substance abuse for marginalized populations. He has mentored 15 junior researchers and staff at the Center to acquire Master and PhD training in public health, social sciences, and social work from universities abroad (Australia, US, France and the Netherlands). He has published more than 80 articles in peer-reviewed journals, both domestic and international, including such journals as Sexually Transmitted Infections, International Journal of Drug Policy, Archives of Sexual Behavior and Vietnam Journal of Preventive Medicine (English version). He currently is the Associate Professor and Chairperson of Department of Global Health at the Institute of Preventive Medicine and Public Health of Hanoi Medical University and the Technical Chief of the Center for Research and Training on HIV/AIDS (CREATA).

[OP#7] Evaluation of the Vietnamese A6 Mortality Reporting System: All-Cause Mortality

Mark Stevenson[1], Dang Viet Hung[2], Thanh Huong Hoang[2], Luong Mai Anh[2], Tu Nguyen Thi Hong[2], and Ngoan Le Tran[3]

[1] *The University of Melbourne, Melbourne, Australia;*

[2] *Ministry of Health, Hanoi, Vietnam;*

[3] *Hanoi Medical University, Hanoi, Vietnam*

Abstract

There has been no systematic evaluation of Viet Nam's A6 mortality reporting system. An evaluation was undertaken in 3 provinces (Bac Ninh, Lam Dong, Ben Tre) in Viet Nam. Deaths identified in the A6 system were compared with deaths identified by an independent consensus panel to determine the percentage completeness of the A6 system. Verbal autopsies (VAs) were conducted for all identified deaths from the consensus panels, and the sensitivity and positive predictive value of the A6 system was assessed. The sensitivity of the A6 system varied depending on the cause of death, with the sensitivity of the system being excellent for injury (sensitivity = 75.4%), cancer (sensitivity = 66.9%), and circulatory diseases (sensitivity = 63.1%). The A6 mortality reporting system performs well in relation to its completeness and classification of 3 leading causes of death—namely, circulatory disease, cancer, and injury. With further enhancements and ongoing support from government and donor agencies, the A6 system will be a valuable resource in the country.

Keywords: Evaluation, education, epidemiology, public health, health informatics

Short bio

1998 -2003: Ph.D., Department of Clinical Epidemiology, Univ. of Occupational and Environmental Health (UOEH), Kitakyushu, Japan. Major: Epidemiology; Degree: Ph.D. 1987 -1990: Residency at the Hanoi Medical University, Vietnam. Major: Epidemiology and Occupational Medicine. 1981 -1987: M.D., Hanoi Medical University, Vietnam. Major: Medicine; Degree: Medical Doctor. August 2013 to June 2017: Visiting Scientist in the Department of Nutrition of Harvard T.H. Chan School of Public Health of Harvard University.

Grant awarded: Australian development research awards 2007 funding round: Evaluating and enhancing the national mortality reporting system in Vietnam. PIs Markstevenson (Australia) and Le Tran Ngoan (Viet Nam). My research work has been funded through various resources (as a Principle Investigator (PI), Co-PI and Co-Investigator) from Japanese Government Grants; Australia Government Grants; WHO's Grants; National Cancer Control's Grants in Vietnam. My major teaching effort has been as an Instructor and a Lecturer in Cancer Epidemiology, Occupational Cancer, Diet and Cancer, Population Health, Occupational Health and Safety and Public Health. Mortality registration of all causes of death, especially due to cancer, injury, vascular heart diseases, and other non-communicable diseases for national wide of 63 provinces/cities of Vietnam. Strong experiences in statistical programming with EXCEL, STATA, and SAS in analyzing large prospective cohort studies of Nurses' Health Study, Health Professionals Follow-up study at the Harvard T.H. Chan School of Public Health and cohorts study in Japan and Vietnam; in analyzing large case-control studies in Vietnam on stomach and colorectal cancers. Lifetime member of UICC, Member of Asian Pacific Organization

[P#1] Hue Institute for Community Health Research: a sustainable model to support evidence based planning and management in health care

Michael Dunne[1,2] and Vo Van Thang[1,2]

[1] *Queensland University of Technology, Brisbane, Australia;*

[2] *Institute for Community Health Research, Hue University of Medicine and Pharmacy, Hue, Vietnam*

Abstract

The Hue Institute for Community Health Research (ICHR) at Hue UMP in Vietnam is based on collaboration, since 2011, between the UMP, Health Departments in central and highlands regions, and Queensland University of Technology (QUT). The primary objective of the ICHR is to improve the quality of scientific evidence to promote community health.

ICHR researchers lead studies across a range of health problems, facilitate research projects suggested by provincial health services, and provide introductory to advanced training and technical support for researchers based in community health services and the university. We have active links with many Vietnamese and international universities and Non-Government Organisations.

Three principles are applied to ensure the ICHR makes a useful and sustainable contribution:
i/ There should be local guidance, national relevance, and diverse regional and global partnerships
ii/ Collaboration should be multi-layered and multi-disciplinary
ii/ The practical and scientific outcomes should be disseminated widely and often
We briefly describe current strategies to ensure sustainability, outline our work with Vietnamese and Australian PhD students and give examples of the main scientific outcomes to date. More information is available at: http://iccchr-hue.org.vn.

Keywords: Community Health, Hue, Central Vietnam

Short bio

Michael Dunne is a psychologist and Professor of Social Epidemiology at Queensland University of Technology in Brisbane. He is Co-director of the Hue Institute for Community Health Research. He also collaborates closely with Hanoi Medical University and Hanoi School of Public Health. The main focus of his research in recent years has been on community mental health and the impact of childhood violence and adversity. With colleagues in Hanoi he has also contributed to research into social and psychological dimensions of HIV/AIDS and antiretroviral therapy adherence. He has supervised 21 Vietnamese doctoral graduates and current students since 2004. Michael has published 180 journal articles and chapters, many of which are based on research in Vietnam. He collaborates with UNICEF and colleagues in the ASEAN region, China and the USA regarding child protection research. At QUT, he teaches International Health, Epidemiology and Health Sociology

A/Prof. Vo Van Thang is a Director of ICHR, Dean of Faculty of Public Health at Hue University of Medicine and Pharmacy, and an Adjunct Professor of Queensland University of Technology (QUT), Australia. He has participated as a lecturer in postgraduate training for universities internationally including the Netherlands, Italy and Australia. He is the author or co-author of more than 100 scientific research papers nationally and internationally and has experience in supervising many postgraduate student projects (7 PhDs) in public health and medical education, and he regularly mentors students from universities and organization internationally (Australia, the Netherlands, the US; among which there 60 Bachelors of public health and Social work students). He is a founding leader in the Sub-Mekong Regional Public Health Network, he has enabled active collaborators between Hue UMP and many universities in the US, UK, Sweden, China, Japan, Cambodia, Myanmar, Laos, Thailand and Malaysia...

[P#2] Current status of psychotherapy serevices delivery in Vietnam provincial psychiatric hospitals in 2015

Nguyen Thi Mai Hien, Dang Hoang Minh, Bahr Weiss

The International Centre, Vietnam office, Hanoi, Vietnam

Abstract

The objective of the study was to understand what and how psychotherapy services provided to people with mental disorders in provincial psychiatric hospitals of Vietnam. 834 health care providers with university degree and above at 38 provincial psychiatric hospitals in Vietnam were engaged in the study through filling in the self-report questionnaires. The results showed that 41.7% of the studied providers reported to apply psychotherapy in which medical doctor account for highest percentage of 62%, nurses accounting for 18% and psychologists for 13%. 73.9% of those who reported the psychotherapy services as rational talk and explanation. The therapy objective of helping patients to comply with the practitioners' prescriptions accounted for the highest proportion, 58.9%. The model of psychotherapy services provided at provincial psychiatric hospitals in Vietnam is medical model characterized by the followings: medical doctor diagnosed the patient on the basis of symptoms and prescribes pharmacological or psychological therapy. The psychotherapy aims to reduce symptoms and to promote patients to comply with the prescriptions. The interpersonal relationship in therapy is doctor as experts to determine the treatment process and patients as followers. Psychotherapy applied in Vietnam provincial psychiatric hospitals is different from psychotherapy introduced in the world. Psychotherapy intervention is conducted by staff without certification on clinical psychology. The psychotherapy services reported by the staff are those of rational explanations, life advice and working at hospital. The therapists mostly explained about mental illness, advised patients on overcoming life obstacles, assigned patients some work to do at the hospital. There is no structure for the psychotherapy process. The psychotherapy is integrated in the patient examination sessions at patients' room for about 30 minutes with a total of 3 sessions. The biggest obstacles for development of the psychotherapy in the hospitals are a lack of skillful human resources on clinical psychology. The reasons are unavailability of pre-service and in-service training facilities for clinical psychology, no professional code of clinical psychologists, no technical guidelines on psychotherapy, no supportive supervision, and no list of prices for psychotherapy services developed for health insurance reimbursement or user fees that will be a big motive for implementation of psychotherapy.

Keywords: Psychotherapy services, inpatient mental health care settings, psychiatric hospital, mental health services, psychological service delivery

Short bio

Dr. Nguyen Thi Mai Hien graduated from Hanoi Medical University in 1994 as a medical doctor. In 2007, she attained her PhD in medicine specializing in health organization and public health in HMU as well. From 2013 to 2015, she has taken part on master course in clinical psychology co-organized by Hanoi National University and Vanderbilt University of USA and other courses in Mental Health Leadership Programs. Since 2013, she has been holding an honorary research fellow at Center for International Mental Health (CIMH), University of Melbourne, with the focus areas of research, training and international collaboration for promoting mental health. She has 16 years of experiences in working for various official development assistant projects in health. From 2010 to 2015, she worked as Director of the Community Based Mental Health Care Management Program funded by an USA based NGO of Atlantic Philanthropies Organization (AP) and executed by the Vietnam Veterans of America Foundation. Her qualifications include project planning, budgeting and management, monitoring & evaluation systems, health indicators, health systems development, health research, mental health. Since July 2015, she has taken a role as Director of the Disability Project called Moving Without Limits funded by USAID and executed by the IC.

[P#3] Habitual tea consumption reduces prostate cancer risk in Vietnamese men: a case-control study

Dong V. Hoang[1,2], Andy H. Lee [1], Ngoc Minh Pham [1,3], Dan Xu[4], Colin W. Binns[1]

[1] *School of Public Health, Curtin University, Perth, Australia.*
[2] *National Institute of Hygiene and Epidemiology, Hanoi, Vietnam.*
[3]*Thai Nguyen University of Medicine and Pharmacy, Thai Nguyen City, Vietnam.*
[4] *Faculty of Health Sciences, Curtin University, Perth, Australia.*

Abstract

Background: There was an upward trend of prostate cancer (PCa) in Vietnam, but no published study has investigated modifiable factors associated with this form of cancer. This case-control study aimed to ascertain the relationship between habitual tea consumption and the prostate cancer risk. Materials and Methods: Two hundred and fifty-three incident patients with histologically confirmed PCa and 419 (340 community-based and 79 hospital-based) controls, frequency matched by age, were recruited in Ho Chi Minh City during 2013-2015. Information on frequency, quantity and duration of tea drinking, together with demographics, habitual diet and lifestyle characteristics, was obtained from face-to-face interviews using a validated and reliable questionnaire. Logistic regression analyses were performed to assess the association between tea consumption variables and the PCa risk. Results: The control subjects reported higher tea consumption levels in terms of cumulative exposure, frequency and quantity of tea drank than the PCa patients. After accounting for potential confounding factors, increasing tea consumption was found to be associated with reduced risk of PCa, the adjusted odds ratio (95% confidence interval) being 0.52 (0.35, 0.79) and 0.30 (0.18, 0.48) for participants drinking 100-500 ml/day and >500 ml/day, respectively, compared to those drinking <100 ml/day. Significant inverse dose-response relationships were also observed for years of drinking and number of cups consumed daily ($p < 0.01$). Conclusions: Habitual tea consumption is associated with a reduced risk of PCa for Vietnamese men.

Keywords: Case-control study, epidemiological, prostate cancer, tea drinking, Vietnam.

Short bio

Dr. Hoang graduated as a medical doctor from Hanoi Medical University in 2004 and started working at Epidemiology Department, National Institute of Hygiene and Epidemiology (NIHE), Hanoi, Vietnam in late 2005. Between 2010 and 2016, he did his master and then PhD study (in applied epidemiology and biostatistic) at Curtin University, Australia. His PhD disertation research was an investigation into the association between habitual consumption of tea and coffee, and the risk prostate cancer among Vietnamese men. The study found that habitual tea consumption was associated with reduced risk of prostate cancer in Vietnam, while coffe was not. Since March 2016, he has been working as the Epidemiology team leader for the the Eliminate Dengue Project in Vietnam. This project is a component of the Global Eliminate Dengue Program led by Monash University, Australia

[P#4] Habitual tea consumption reduces risk of type 2 diabetes in Vietnamese adults

Nguyen Thanh Chung [1], Tran Nhu Duong [1], Ngu Duy Nghia [1], Nguyen Thi Thi Tho[1], Tran Quang Binh[1], Andy Lee [2].

[1]*National Institute of Hygiene and Epidemiology, Hanoi, Vietnam*
[2]*School of Public Health, Curtin University, Perth, WA, Australia*

Abstract

Background and Objectives: The association between tea consumption on type 2 diabetes risk remains inconclusive in Asian populations. The present case-control study aimed to investigate whether habitual tea consumption is associated with the risk of T2D among Vietnamese adults.
Method and Study Design: A hospital-based case-control study was conducted during 2013-2015 in Vietnam to ascertain the relationship between habitual tea consumption and the risk of type 2 diabetes. A total of 599 newly diagnosed diabetic cases (aged 40-65 years) and 599 hospital-based controls, frequency matched by age and sex, were recruited. Information on frequency, quantity and duration of tea drinking, together with demographics, habitual diet and lifestyle characteristics, was obtained from direct interviews using a validated and reliable questionnaire. Unconditional logistic regression analyses were performed to assess this association.
Results: The control patients reported higher tea consumption levels than the cases in terms of duration, frequency and quantity of tea drunk. After accounting for confounding factors, increasing tea consumption was found to be associated with a reduced risk of type 2 diabetes; the adjusted odds ratio (95% confidence interval) being 0.66 (0.49, 0.89) for participants drinking >300 ml/day, relative to those drinking <175 ml/day. Significant inverse dose-response relationships were also observed for number of cups consumed daily and years of tea drinking (p<0.01).
Conclusions: We found that habitual green tea consumption is associated with a reduced risk of type 2 diabetes among Vietnamese adults.

Key words: case-control study, green tea, tea consumption, risk factors, type 2 diabetes

Short bio

Chung Nguyen obtained his PhD in Curtin University in 2016 and currently a staff of Department of Epidemiology, National Institute of Hygiene and Epidemiology. He published 6 articles international peer-reviewed scientific journals, one book chapter, and some papers in domestic journal. He is interested in doing high quality research related to risk and protective factors and genetic areas of type 2 diabetes mellitus in Vietnam. He has rich experience in doing the international collaborative projects; particularly with United States National Institute of Health, and Centers for Disease Control and Prevenetion. Recently he has conducted a study to evaluate risk factors and protective factors of type 2 diabetes in Vietnamese adults under the suppervision by Australian researchers. Genes are known as unmodifiable risk factors for type diabetes, however, it plays an important role in the interaction with environmental factors to cause this disease demonstrated in the literature. Little information is known for Vietnamese population for genetic profile. Therefore, he will focus on studies related to molecular epidemiology of type 2 diabetes to better understanding the etiology of this disease among the Asian background persons.

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[P#5] Need of occupational therapy in Vietnam: an evidence based for the OT network development

Do Chi Hung[1], Louise Farnworth[2], Cao Thi Thu Hoa[1], Mai Thi Tuyet[1]

[1]Department of Community Based Rehabilitation, Hanoi University of Public Health, Vietnam

[2]Department of Occupational Therapy, Monash University.

Abstract

Background: Occupational therapy is a holistic approach that enables consumers to engage or return to their occupation, particularly the ones that are meaningful and valued by them. By offering a wide range of services such as occupational analysis, occupation adaptation, enablement skills clients are motivated to participate in their potential occupational of life, fostering health and well-being. About 6.1 million people in Vietnam aged 5 years and over live with one or more disability in seeing, hearing, walking or cognition, accounting for 8% of total population. It is estimated that one-third (2 million) of this population are in need of occupation therapy services. Unfortunately, occupational therapy services is a new notion for both health care workers and community with a minimal amount of services offered or provided by various health care facilities. We found no report on occupational therapy in Vietnam.

Objectives: the aim of this study was to (1) investigate the needs of occupational services among adult with disabilities at the age of 18 to 45; (2) describe the access to the occupational therapy services of persons with disabilities and (3) explore the potential capacity to provide occupational therapy services of rehabilitation system and training.

Method: This is a cross-cutting design using both quantitative and qualitative method. The sample will be selected with multiphace cluster technique covering six different biographical areas throughout Vietnam. People with disabilities (PWD) aged 18 to 45 and health staff will be the research participants. The Rehabilitation Department of Hanoi University of Public Health will collaborate with the network of rehabilitation institutions and alumni to implement the study. The data collected will be analysed with SPSS or STATA software.

Results: The study result will show the capacity to perform ADL and IADL of persons with disabilities and this implies about their need of occupational therapy, including supportive instruments. The access to occupational therapy of PWDs will also describe with the information of service availability and affordability. We will explore the factors that associated to PWDs' needs and access to OT services. On the other hand, the knowledge, attitude and practice of health staff in rehabilitation system on OT will be mentioned and its associated factors will be taken into account. The study report expected to show qualitative findings on the OT resources of rehabilitation institution and system and the training capacity of Medical training institutions in Vietnam.

Recommendation: The findings gathered in the research will provide policy-makers with the evidence on the need to develop occupation service system in Vietnam.

Keywords: occupational therapy, occupational therapy service, needs of occupational therapy, accessibility of occupational therapy.

Short bio

PhD Do Chi Hung graduated from Hanoi Medical University in 1987, took PhD degree in 2007 and is currently the Head of Rehabilitation Department, E hospital and head of Department of Community Based Rehabilitation, Hanoi University of Public Health. He has conducted several researches on the clinical techniques and physical therapy for people with low back pain. He participated in community based rehabilitation training courses including training persons with disabilities how to do ADL/IADL that considered as training on occupational therapy.

[P#6] Health and economics impacts of hospitalised injuries in Vietnam

Ha Nguyen[1], Rebecca Ivers[2], Stephen Jan[2], Cuong Pham[3]

[1] *School of Health Sciences, University of South Australia, Australia*
[2] *The George Institute for Global Health, University of Sydney, Australia*
[3] *The Center for Injury Policy and Prevention Research, Hanoi School of Public Health, Vietnam*

Abstract

Background: Injury is a serious public health issue in Vietnam, accounting for approximately 35,000 deaths and millions of hospitalisations annually. However, understanding of the economic burden of injury and its impact on individuals and their households is very limited. This study fills in the gap by estimating the extent of the adverse economic outcomes on individuals and their households during hospitalisation and over the 12 months following discharge, and identifies the factors associated with these outcomes.

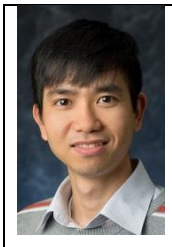
Method: Employing a prospective cohort design, 892 people hospitalised for injury were recruited consecutively from Thai Binh General Hospital in Vietnam in 2010 and followed-up for 12 months. All out-of-pocket costs incurred and income lost by injured persons and their caregivers associated with care and treatment of their injuries during hospitalisation and follow-up at 1, 2, 4 and 12 months were reported. Data on quality of life (QoL), measured by the Health Utilities Index (HUI), were collected at the participants' home at 1, 2, 4 and 12 months after discharge. Outcomes were: i) costs, including expenses for care and treatment of injuries (direct costs), and productivity losses (indirect costs); ii) catastrophic expenditure, when direct costs exceed 40% of household's remaining income after expenditure for basic subsistence needs; iii) injury induced impoverishment, when household's income after injury costs was below the poverty line; and iv) quality of life (QoL) score. Generalised estimating equation models were used to examine the association of demographic and injury characteristics with cost, QoL scores which were repeatedly measured over time. Catastrophic expenditure and impoverishment were assessed as binary outcomes by modified Poisson models.

Results: The mean total costs at 12 months post-discharge were US$ 804, nearly 1.2 times the annual average income. Injuries that incurred highest costs were falls (US$ 950), road traffic injuries (RTIs) (US$ 794) and burns (US$ 742). At 12-month follow-up, 63.7% of participants faced catastrophic expenditure and 26.9% became impoverished. The QoL scores were worst at the first follow-up (mean score=0.45) and progressively improved over time. The largest improvement was observed between the first and second month after discharge. Factors associated with higher costs over time were generally also those associated with higher risk of catastrophic expenditure and impoverishment. These include older age, female gender, lower income, external cause as road traffic injuries or falls, higher severity level, principal injured region as upper extremities, lower extremities, and longer hospitalisation. Factors statistically significantly associated with lower QoL scores were female-gender, external cause as fall, higher severity score, principal injured region as other than face and having comorbidities.

Conclusion: Injuries impose an enormous health and economic burden on injured persons and their families in Vietnam. The ongoing burden associated with continuing care and treatment as well as reduced productivity, particularly for those with long term injuries, magnifies the burden for those already in crisis. In terms of health impacts, even for those having the lowest levels of severity, the loss in QoL score is also significant. These highlight the need for increasing efforts of injury control and prevention in Vietnam.

Keywords: injury, costs, catastrophic expenditure, impoverishment, quality of life

Short bio



Ha Nguyen obtained his PhD from the University of Sydney and currently a research fellow in the Health Economics and Social Policy Group, School of Health Sciences, the University of South Australia. Ha is also holding an adjunct position in the Injury Division, the George Institute for Global health, the University of Sydney, Australia. Before joining the University of South Australia, I had nearly ten years working in the Centre for Injury Policy and Prevention Research and the Department of Epidemiology, Hanoi School of Public Health in Vietnam. Ha have had 14 publications in international peer reviewed journals, with 8 being the first author. Ha has particular interest in looking for evidence of the economic and health burden of disease and injuries in the population.

MOTHER-CHILD CARE

[OP#8] Does post-hospital discharge Kangaroo Mother Care improve growth and development in low-birthweight infants in Vietnam?

Khu Thi Khanh Dung[1], Tran Thi Ly[1], Yin Bun Cheung[2], Fiona Russell[3,4]

[1] *National Children's Hospital, Hanoi, Vietnam*

[2] *Center for Quantitative Medicine, Duke-NUS Medical School, Singapore*

[3] *Department of Paediatrics, The University of Melbourne, Melbourne, Victoria, Australia*

[4] *Murdoch Children Research Institute, The Royal Children's Hospital, Melbourne, Victoria, Australia*

Abstract

Low birthweight (LBW, <2500 grams (g)) and prematurity are major contributors to neonatal death. Hypothermia is common in LBW and premature newborns and is a risk factor for neonatal death. In low- and middle-income countries (LMIC) financial and human resources to provide newborn care are limited and hospitals are often overcrowded, exposing vulnerable newborns to hospital acquired infections. In addition, these small infants are at risk of poorer neurodevelopment. High impact, low-cost interventions that care for otherwise well LBW/premature newborns in the community, that reduce neonatal morbidity and mortality, and improve neurodevelopment are urgently required.

Kangaroo Mother Care (KMC), where a LBW newborn is secured to the mother's chest to facilitate skin-to-skin contact, prevents hypothermia and regulates physiology. WHO recommends KMC in neonatal units, as it reduces hospital mortality, but additional trials are needed to show its effectiveness at home.

In the Sustainable Development Goal era which focuses on both surviving and *thriving*, the inclusion of early childhood development programs to optimize the full potential of individuals is vital for a society's wellbeing and economic development. For children to reach their optimal development, secure attachment and maternal wellbeing are crucial components. There are very few studies describing the additional potential neurodevelopmental benefits of KMC. If KMC reduces maternal depression and improves bonding, the neurodevelopment of the infant should also be improved. In this study, we will evaluate the impact of post-hospital discharge, community based KMC on infant growth and neurodevelopment in a population of healthy newborns <2500 g. In addition, we will measure the additional potential benefits on breastfeeding rates, maternal postnatal depression, and maternal-infant bonding.

Aims: To compare healthy neonates <2500g who receive KMC post-hospital discharge from NHP, with newborns who receive standard post-discharge care for weight, breastfeeding, maternal depression, and maternal-infant bonding, at one and 3 months post-discharge; and child development at 2 years of age.

Methods: This is an open-label RCT. ***Intervention:*** KMC until a weight of 2500g, or standard care post-hospital discharge care. ***Procedures****:* Weight at discharge, then weekly for 4 weeks and monthly for 2

months. Questionnaires to measure maternal depression and maternal-infant bonding at discharge, and one and 3 months post-discharge; the Bayley Scale of Infant and Toddler Development assessment at 24 months corrected age. ***Sample size:*** 85 per group are required to show a 0.5 SD difference (~10% difference, estimated from the literature) in mean weight between groups at one month, with 90% power and with 5% two sided type I error rate. We estimate ~20% loss to follow up, so the total sample size is 220.

Keywords: kangaroo mother care; low birthweight, prematurity

Short bio

I am a paediatrician with qualifications in public health and epidemiology. I am Principal Research Fellow, Centre for International Child Health, (WHO Collaborating Centre for Research and Training in Child and Neonatal Health), Dept. of Paediatrics, The University of Melbourne, and the Murdoch Childrens Research Institute. My research focuses on translation. My research addresses high priority research gaps in international child health including pneumococcal vaccine schedules, vaccine impact evaluations, and improving newborn outcomes. I work closely with WHO and government Ministries in the region to ensure translation of findings. I am a member of the Melbourne Medical School Research Committee and engagement with the Asia-Pacific region is a strategic priority.

I was awarded the two highest research prizes in Australia for early in career researchers; one for paediatrics (Young Investigator Award, Royal Australasian College of Physicians, 2001) and the other in public health (Early in Career Researcher, Public Health Association of Australia, 2008) for research I had performed in pneumococcal vaccinology and epidemiology for my PhD. In addition, I was awarded the Chancellor's and Dean's Prize for Excellence in a PhD thesis, The University of Melbourne. Findings from my PhD contributed to WHO's policy change to alternative pneumococcal vaccination schedules.

I lead studies to evaluate alternative, novel surveillance methods to determine the indirect effects of pneumococcal vaccine in Lao PDR, Mongolia and PNG, funded by the Bill & Melinda Gates Foundation; and vaccine impact evaluations in Fiji, funded by Australian Aid. I have performed >20 consultancies for WHO, UNICEF, and Australian Aid on child health policy and vaccine preventable disease epidemiology and vaccine impact evaluation, in Africa and the Asia-Pacific.

I graduated from Hanoi Medical University in 2007 and started working in Neonatal Intensive Care Unit - National Children's Hospital from 2008 until now. There I have seen so many babies born with poor health conditions such as prematurity, asphyxia, infections. My desire is that all babies in Vietnam could receive good care from the beginning - even prior to conception. In 2013 I had a chance to work with A/Professor Fiona Russell (The University of Melbourne) on a project relating to Neonatal Jaundice. In 2014-2015, I undertook Master of Public Health degree in Flinders University with a minor thesis on how Australian GP assessing their clients' alcohol consumption under Dr Emma Miller's and Dr George Tsourtos' supervision, from whom I have learnt so much about research method and data analysis. The proposal of Evaluating community based Kangaroo Mother care that I would like to present in this conference has also developed under the great supports of A/Professor Fiona Russell and A/Professor Khu Thi Khanh Dung (National Children's Hospital).

[OP#9] Association of HLA with disease progression among HIV-1 infected Vietnamese children

Hung Viet Pham, Azumi Ishizaki, Lam Van Nguyen, Yen Thi Le, Dung Thi Khanh Khu, Hiroshi Ichimura

Microbiology Department, National Children Hospital, Ha Noi, Viet Nam

Department of Infectious Diseases, National Children's Hospital, Ha Noi, Viet Nam

Department of Viral Infection and International Heath, Graduate School of Medicine, Kanazawa University, Kanazawa city, Ishikawa, Japan

Abstract

Understanding of immunological fundamental among HIV-infected people is need for further treatment and monitoring. Methods: HLA profile of 113 HIV-infected children was analyzed to detect protective alleles such as B*27, B*57, Cw*06 or risk rapid disease progression (B*07, B*08, Cw*04, Cw*07). Treatment response was defined by viral load to differentiate success with failure. A previous study about HLA pattern of Vietnamese was used to compare out finding with general adult population. Result: A*02:07, C*03:02, high risk B*07, high risk Cw*07 are significantly more prevalent in HIV-infected children than reference population. The protective allele B*27 was detected in all virological success but none of failure, and more prevalent in HIV-infected children than reference population. The protective allele B*57 was not different between virological failure and success, and neither in comparison with reference population. Conclusion: although antiretroviral therapy could suppress HIV, but HLA profile still had association with infection and treatment outcome.

Short bio

Dr. Hung VP obtained his PhD from Graduate School of Medicine, Kanazawa University, Japan, by 2013. He started working at Microbiology Department, Vietnam National Children Hospital since 2004, with most interest in clinical virology. He was member of several groups such as Department of MTC Karolinska Institute, SEAIRN, Department of Viral Infection-Kanazawa University, for research of HIV and other infections. His interest includes transmission, treatment monitoring, and host factors that induced outcome of microbial infections. He also actively works as interpreter/translator in English for medical science. He was first author in two papers published in 2015, and co-author of 12 papers since 2008. He and colleagues had received research grant from NAFOSTED for study immune-escape of HIV among Vietnamese children.

[OP#10] Improving target identification of epilepsy variations: an integration of genome and epigenome

Chi-Bao Bui [1], Rodney Lea[2], Larisa Haupt[2], Van Linh Nguyen[1], Thu Hang Thi Do[3], Lyn Griffiths[2]

[1]*Center for Molecular Biomedicine, University of Medicine and Pharmacy at Ho Chi Minh city, Viet Nam*

[2]*Genome Informatics Programme, Genomics Research Centre, Institute of Health and Biomedical Innovation, Queensland University of Technology, QLD, Australia*

[3] *Faculty of Human genetics, School of Medicine, National University of Hochiminh city, Viet Nam*

Abstract

Epilepsy is a common and debilitating neurological condition characterised by severe seizures. Risk of epilepsy is influenced by both environmental and genetic factors. On going genetic studies are improving our understanding of the genetic basis of epilepsy but there remains a large amount of unexplained risk. DNA methylation is an important epigenetic mechanism that can be both inherited or modified by environment. For these reasons methylomic variation has great potential to influence risk of epilepsy.The advent of next generation sequencing (NGS) technologies has opened up new and exciting opportunities to study DNA methylation on a genome-wide scale. This proposal aims to strengthen existing research collaboration between the Genomics Research Centre (GRC), QUT, Brisbane, Australia and The Centre for Molecular Biomedicine (CMB), UMP, HCMC, Vietnam. Complementary capacities in epilepsy genetics (CMB) and NGS-based genomics (GRC) have already led to development of DNA diagnostic tests for epilepsy and translation to clinical application. This new proposal will be a logical extension of this work and will involve investigating a growing cohort of epilepsy patients (~100) and their mothers ascertained via CMB cohort. It will also involve performing DNA methylation analysis using allele-specific NGS technology and inheritance modelling techniques established at GRC. By studying mother-child sharing of DNA methylation variants researchers can begin to dissect the relative role of genetic and environment factors in epilepsy risk, and as such design more effective diagnostic and treatment strategies for epilepsy.

Keywords: epilepsy, epigenome, genome, maternity, methylation

Short bio

Dr Chi-Bao Bui obtained his MSc-PhD study in South Korea and then postdoc in Queen Mary University of London. He returned his country and now is a Head of the Neuroscience Lab in The Centre for Molecular Biomedicine, and a genetic counselor at Children Hospital 2 at the University of Medicine and Pharmacy in Ho Chi Minh City (HCMC). Most of his substantial research achievements have been in functional genomics for pediatric neurology in Vietnam including epilepsy and neuroblastoma. Both studies were funded by NAFOSTED of Vietnam 2012 and 2014. With these establishment of the studies in human genome, he recognised a need to develop an innovative program for the centre to ensure it functioned as a high quality research facility. In 2015, he was awarded an Endeavour fellowship to Queensland University of Technology with the main aim of gaining knowledge and skills to assist his home institution's mission of implementing project-based learning in translational medicine program for the women and children diseases in developing countries including Vietnam.

[OP#11] Prevalence of sensitization to food allergens and challenges proven food allergy in Hanoi, Vietnam

Hoang Thi Lam[1], Nguyen Thi Mai Huong[1], Le Thi Minh Huong[2], Le Thi Huong[3], Dianne Campbell[4]

[1]Department of Allergy and Clinical Immunology, Hanoi Medical University
[2]Department of Allergy, Immunology and Rheumatology, National Children's Hospital.
[3]Institute for Preventive Medicine and Public Health, Hanoi Medical University
[4]Department of Infection and Immunology, Westmead Hospital

Abstract

Food allergy is an abnormal reaction of **immune response** to **food**. It is more common in children than adults and appears to be increasing in frequency. In the developed countries, about 4% to 8% of people have at least one food allergy. In America, the Centers for Disease Control and Prevention reported approximately 50 percent increase in food allergy among children from 1997 to 2011. On the other hand, the prevalence of food allergies in Asia is also low compare to other developed countries. Only 0.67% in Korean infants had food allergy. In Singaporean there was 0.64% children had food allergy, and 0,43% in Filipino children. Not only different in prevalence of food allergy, the pattern of food caused of allergic symptoms is not similar between countries too. In European countries, allergy to cow milk is a major problem with its prevalence comes from 1.9% in Finland to 5% in Norway. In Asia (Hong Kong, Singapore, Thailand), shellfish is the most leading cause of adult food-induced anaphylaxis. In a pilot study, among 1000 adults, conducted in 2016, there was 10% of study population answered they had food allergy symptoms. The most common food caused of allergy reactions was selfish. While food allergy appears to be increasing, there is a lack of quality comparative data. The aim of the study is to know exactly the number and the pattern of food allergies among pre-school children in northern Vietnam.

The study will be performed in Hanoi. The study subjects will be Pre-school children age from 2-6 years old. We would like to carry out a cross sectional study with 10,000 children from from the list of up to 10 government pre-schools for questionnaire survey. If the children have any food allergic symptoms, the skin prick test to food allergens will be done after one month. Provocation test to suspicious food will be done if the children had positive skin prick test. The interview questionnaire use the recently developed from ISAAC and questionnaires that used for the studies that conducted at Westmead Hospital in Australia and the National Pediatric Hospital in Vietnam. The ethical issue will be approved by Committee of Hanoi Medical University.

Keywords: food allergy, children, skin prick test, food challenge, prevalence

Short bio

A/Prof. Hoang Thi Lam is a lecturer at Department of Allergy and Clinical Immunology, Hanoi Medical University. She has published more than 50 papers, among of them 6 papers are in international refereed scientific journals. She also contributed to one chapter book about 'Allergy and Immunology diseases" that published 3 years ago by Medical publisher.

She finished Hanoi Medical University in 1996, as a Medical Doctor. She obtained her hospital resident from Hanoi Medical University in 2000. In 2006, she registered PhD student at Unit of Lung and Allergy Reseach, IMM, Karolinska Institutet. She defended her thesis in 2011. She received research grant from European Respiratory Society for three months fellowship at Gothenburg University in 2013. She also had one month as a scientist visitor at Sydney University, Australia.

She is active in scientific communities, serving as a Scientific Advisor of European Respiratory Society College. She is a Head of Allergy and Clinical Immunology Department, Hanoi Medical University. She is also a physical doctor at Center of Allergy and Clinical Immunology, Bachmai hospital.

[P#7] Learning Clubs for Women's Health and Infant Development in Rural Vietnam: Program development, pilot testing and scaling up phase.

Trang Nguyen[1,2], Jane Fisher[2], Thach Tran[1], Ha Tran[1], Tuan Tran[1]

[1]*Training Center for Community Development (RTCCD), Hanoi, Vietnam*

[2]*Jean Hailes Research Unit, Monash University, Australia.*

Abstract

***Background**:* There are eight major risks to optimal early childhood development in developing countries which were partially addressed. In Vietnam, pregnant women in rural areas experience high rates of these risks that lead to anemia, stunting and low cognitive development among their infants.

***Aims**:* (1) To develop a comprehensive integrated primary care intervention and culturally adapt the intervention for a community with low literacy in Vietnam; and (2) To evaluate the acceptability, feasibility of a pilot-testing in rural Vietnam.

***Methods**:* A stepped approach has been taken to the project, with three phases: (1) Development in English of a comprehensive primary care intervention drawing on existing evidence: Learning Clubs for Women and Infants; (2) Translation and cultural adaptation of the intervention materials for participants and facilitators; and (3) Pilot-testing in three rural communes in Hanam province, Vietnam. All activities have been undertaken by a multidisciplinary group, which includesVietnamese and international experts and local agencies.

***Results**:* A community-based psycho-social educational program has been developed and culturally adapted to address eight risk factors for early childhood development with twenty-four sessions. The intervention was found to be acceptable and feasible by the clubs' participants and facilitators. The model fits well into the strategic context of the health service system, education system, Women's Union and local authorities.

***Conclusions**:* The model was shown to be suitable and appropriate to the rural context in Vietnam for health promotion for early childhood development. Once evaluated at scale it could be considered for inclusion in the essential health package.

Keywords: Learning Club, early child development, Women's union staff

Short bio

Ms Trang Nguyen achieved her master degree from the University of Melbourne and currently is a PhD student in Monash University, Australia. She has published around 6 publications in peer-review journal articles. She has background in public health with more than ten year experience in research and project management, especially in community -based mental health. She is a experienced users of qualitative and quantitative data management and analysis technique. Having passion in working with community to promote early child development through non-professional staff. She worked in an international team including Monash University, University of Melbourne Australia and Research and Training Center for Community Development, Vietnam for more than eight years. The team together has received funds from Australian Resuscitation Council and National Health and Medical Research Council (NHMRC) for conducting two cohort studies in rural Vietnam to promote perinatal mental health and child development.

[P#8] Health and burden of care of mothers who has a child with

Ho Lam Hong[1], Nguyen Thi Minh Thuy[1], Helen Berry[2], Tran Quy Cat et all[1]

[1]The Center of Research and action for comprehensive health, Hanoi, Vietnam
[2]Altitude Consulting Pty Ltd

Abstract

Introduction: Literature review showed that having CWD was a financial burden to the family and that limited mother's resources, capacity, job opportunity and promotion and exhausted their health. The mothers who has CWD has more stress, and family burden than the mother who has non disable children. It is said that family and service support not only brought positive results to mother's health but also do the better child development. Few researches mentioned this issue in Vietnam where there was about 1.4% children under 6 years old who are disabled and fewer studies have addressed the maternal health and the burden of mother who has CWD.

Aim: The objectives of the proposed study are: (1) to assess the physical, psychological and social health of the mothers who have CWD (2) to assess mother's burden of CWD care; (3) to explore family support in CWD and (4) to describe the access of the services that support to CWDs and their mothers.

Method: The case-control study will be used with mix methods (quantitative and qualitative) and research participants are mothers of CWDs, family members and health staff. We will collect data and compare between the groups of mothers who have disabled and non-disable children under 6 years old in the aspects of health (physical, psychological and social), burden of care, family support in child care and access to child services. The sample will be selected among different social context (mountainous, rural and urban regions). The data will be input into computer and analyzed by SPSS. Chi square, t test, anova and regression techniques will be used to show the differences between two groups.

Result: The study report will firstly shows a picture of maternal health of two groups: mothers with and without CWDs in the health conditions such as BMI and sickness, psychological depression, community participation/connection, job opportunity and promotion… The second result will demonstrate the burden level of child care and it explore how vulnerable the mothers of CWDs is compared with those of non-disable ones. The family support in child care in eating, playing, health care and ADL will be thirdly measured in two groups to find the differences. Lastly the result will present the accesses to child care/treatment services of children as well as the access to psychological services, support/self-help groups and advice services to mothers. The result will also identify the relation between mothers' health, burden of care, family support and accesses to services. We also determine the factors that influenced the health, burden of care, family support and access to services of mother who has CWDs.

Conclusion: It is expected that the study findings will provide with reliable and concrete evidences to emphasize the vulnerability of mothers with CWDs and the manners how to improve their health and well-being.

Keywords: Mothers' burden of care, mothers' health, family support, mother's community social participation.

Short bio

Ho Lam Hong received the pedagogical bachelor degree from Leningrad University, Russia in 1980 and completed her PhD in 2002 at the Institute of Education Sciences. She has worked in the preschool education field in Vietnam since 80s with 5 years of experience as a preschool teachers (1980-1985) and 30 years working as researcher in preschool education such as curriculum development, teaching methods, special education… Dr. Hong has been the PI of 7 researches (4 at ministerial level) and participated in 12 other ones, took part in the development of MoeT materials such as competencies of preschool teachers, training materials for preschool teachers. She were aslo the consultant for many NGOs working in the field of preschool education. She retired in 2012 and became the Director of CRACH.

[P#9] Detection of genetic disorders in several human diseases

Huy-Hoang Nguyen, Thi Kim Lien Nguyen, Thi Thanh Ngan Nguyen, Ngoc-Lan Nguyen, Thu-Hien Nguyen, Van-Tung Nguyen, Van-Hai Nong

Institute of Genome Research, Vietnam Academy of Science and Technology, Hanoi, Vietnam

Abstract

Many human diseases including congenital adrenal hyperplasia, aldosterone synthesis disorder and autism spectrum disorder show complex inheritance that requires sophisticated analysis. By changing a gene's instructions encode a protein, a mutation can cause the protein to malfunction or to be missing entirely. Therefore, genetic variations in disease-related genes are increasing importance for accurate diagnosis. By using DNA sequencing, multiplex ligation-dependent probe amplification (MLPA) and whole-exome sequencing (WES), we found numerous of abnormalities in the target genes such as over 10 mutations in the *CYP21A2*, *CYP11B1, CYP11B2* and *KCNJ5* genes of metabolic disorder patients; 84 potential SNP involved in exomes of autism spectrum disorder patients. Especially, influence of mutations in *CYP11B1/CYP11B2* gene on enzyme function was evaluated by checking expression of a gene carrying the mutation of the CYP11B1/CYP11B2 in the COS-1 cells. Detection of genetic disorders combine to disease manifestations will help the doctors to have accurate diagnostics and an effective treatment for the patients.

Keywords: Mutation, *congenital adrenal hyperplasia, aldosterone synthesis disorder, autism spectrum disorder, intellectual disability*.

Short bio

Huy-Hoang Nguyen has completed his Ph.D. in Biochemistry and Molecular Biology, Saarland University, Germany in 2008. He worked as a postdoctoral research fellow at Saarland University from 2008-2009 and 2011. He is the director of Institute of Genome Research, Vietnam Academy of Science and Technology. Since 2015 he has been an Associate Professor at the Graduate University of Science technology. His research interests are in the areas of molecular biology in agricultural sciences and gene mutation in relation to human diseases. He has published more than 60 papers in reputed journals and has been serving as an editorial board member of Journal Biochemical Genetic, Vietnam Journal of Biotechnology. Has received many research grants from the Ministry of Science and Technology of the Socialist Republic of Vietnam, National Foundation for Science and Technology Development, Ministry of Industry and Trade of the Socialist Republic of Vietnam, Vietnam Academy of Science and Technology to support his work genetic diseases in human. He has served as a member in scientific council of the Institute of Genome Research. He has substantial expert testimony experience in genetic variation of steroid metabolism disorders and genetic diseases in human for deduces such as nephrotic syndrome, aldosterone synthesis disorder, congenital adrenal hyperplasia, autism spectrum disorder and intellectual disability.

[P#10] Microvesicles derived from Alde-Low EPCs support the wound healing capacity of AT-MSCs

Tran Cam Tu [1,2], Toshiharu Yamashita [2], Toshiki Kato [2,3], Masumi Nagano [1], Trinh Nhu Thuy [1], Hiromi Hamada [4], Fujio Sato [5], Kinuko Ohneda [6], Osamu Ohneda [1]

[1]University of Tsukuba, Japan; [2]Institute of Tropical Biology, VAST, Viet Nam; [3] Ph.D Program in Human Biology, School of Intergrative and Global Majors, University of Tsukuba; [4] Department of Obsterics and Gynecology; [5] Department of Cardiovascular Surgery, University of Tsukuba; [6] Laboratory of Molecular Pathophysiology, Faculty of Pharmacy, Takasaki University of Health and Welfare, Japan.

Abstract

Mesenchymal stem cells (MSCs) are defined as multipotent cells that can give rise to various kinds of differentiated mesenchymal cells. They are considered to be useful for clinical therapy. However, the big issue of MSC therapy are the inability of MSCs to reach the appropriate tissues or sites with high efficiency and engraftment after transplantation.

In this study, we investigated how adipose tissue-derived MSCs (AT-MSCs) improve their homing ability after intravenous injection. We previously found that human endothelial progenitor cells with low aldehyde dehydrogenase activity (Alde-Low EPCs) are suitable for the treatment of ischemic tissues.

We initially transfected MVs derived from Alde-Low EPCs (EMVs) to human AT-MSCs, which were originally unable to cure ischemic tissues by intravenous transplantation. Remarkably, AT-MSC transfected EMVs dramatically repaired the ischemic skin flap compared with AT-MSC derived-MV (MMVs) transfected AT-MSCs or control AT-MSCs. We then found that the expression of CXCR4, an important chemokine receptor for cell migration, was highly elevated in EMV-transfected AT-MSCs. Moreover, AT- MSCs transfected with EMVs, but not control AT-MSCs, migrated to wound sites after intravenous injection. Consequently, $CD45^+$ inflammatory cells were successfully recruited at the wound sites after the injection of EMV-transfected AT-MSCs.

These results demonstrate that EMVs are a useful source to improve the homing ability and wound healing ability of MSCs at the wound sites

Keywords: Endothelial progenitor cells, microvesicles, migration, CXCR4, adipose tissue derived mesenchymal stem cell.

Short bio

I start to study about stem cell biology since 2007. At first, I investigated how to isolation and culture embryonic stem cell from mouse and human. After that, I interested in human adult stem cell. Among the adult stem cells, mesenchymal stem cells have been considered as an excellent material for regenerative medicine because of their self-renew ability, broad differentiation potential, wide accessibility and lack of ethical concerns. Thus I focused to investigate function of endothelial progenitor cells in treatment of ischemic diseased as well as mesenchymal stem cell therapy. I obtained my PhD from University of Tsukuba and currently a member of the Department of Animal Biotechnology, Institute of Tropical Biology – VietNam Academy of Science and Technology.

I continue to study the function of stem/progenitor cell in specific field that are angiogenesis and investigated how functional EPCs (Alde-Low EPCs) as well as their microvesicles (MVs) contribute to ischemic tissue repair and to clarify the key molecules that are involved in the recovery from tissue damage.

[P#11] Evaluation of the effectiveness of an online e-Learning platform for empowering adolescents to healthy behavior practices

Luu Phuong Dung

National Institute of Hygiene and Epidemiology, Hanoi, Vietnam

Abstract:

Young people represent a large population in Vietnam. The effective investment in Vietnamese youth plays a crucial role for the equitable and sustainable development of the country. Limited researches have shown that Vietnamese youth is characterized by a low level of knowledge and understanding of their health risk behavior in term of unhealthy diets, physical inactivity and alcohol consumption and tobacco use, which are variable associated with an increased risk of non-communicable diseases when they become adult Meanwhile, non-communicable diseases are now the leading cause of death, with causing 71% of the total burden of disease in Vietnam, including 60.1% of all deaths. The study will aims to evaluate the effectiveness of an online e-Learning platform for empowering adolescents to healthy behaviors. E-Learning platform will be designed for adolescents, teachers and their parents. For teachers, this platform will be used for developing materials and TOT to consolidate and reinforce children's skills, knowledge and understanding related to health risk behaviors. For adolescents, the platform will be useful materials suited for them to self study with the support of their teachers in school environment and their parents at home. There are 4 sections in each module of this platform, which are: i) 'Read', providing the basic knowledge about issues of concern, risk behavior - related diseases, detection and prevention, management and relevant references; ii) 'Observation' including vivid video, attractive images storytelling; iii) 'Practice', providing short decision making games and short tests to fortify children's knowledge; and iv) 'Evaluation', which assess knowledge and progress of children. During 6 months of the first phase, an online e-Learning platform for adolescents, teachers and parents toward adolescent health practices will be developed. In the second phase, a quasi-experimental study will be carried out in school environment in order to evaluate the effectiveness of this platform among adolescents. School children who participate in the study (either from intervention or control schools) will be monitoring and followed up in 12 months. Teachers and parents also take part in this study to better their capacity on child healthcare through blended training and they also play crucial roles to support children's activities among school, family and community. The findings will determine the efficacy of an online e-Learning platform for school-based health promotion intervention to formulation better health strategies for adolescents as well as to develop better surveillance system for non-communicable diseases prevention in Vietnam.

Keywords: School health, health behaviors, non-communicable diseases, e-learning platform.

Short bio

Dr. Luu obtained her Medical Doctor degree from Hanoi Medical University and completed her MPH in 2014 from Flinders University in South Australia. From 2007 up to now, she is currently a researcher of Department of Community Health and Network Coordination, National Institute of Hygiene and Epidemiology. She has contributed to 16 papers in national and international refereed scientific journals. She is interested in doing high quality research related to risk and protective factors that contribute to common health problems in community in general and related to mother and child health in particular. She also has experience in doing the international collaborative projects; particularly researches related to child health. Being passionate about technology and diversity in tech, in 2010 she and the team adapted an eLearning tool called ICATT (**I**ntegrated Management of Childhood Illness **C**omputerized **A**daptation and **T**raining **T**ool) developed by the World Health Organization to meet Vietnam-specific requirements for child under five health risks and helps scale up IMCI training, which is one of the key strategies of the drive to improve child health. Wishing to continue applying technology to enhance learning, she wants to cooperate with other researchers who are interested in the same areas to develop eLearning platform for health education, thereby improving child health in the near future Vietnam.

[P#12] Study on pregnant arsenic exposure of newborns in Ha Nam in 2013 - 2014

Ta Thi Binh, Doan Ngoc Hai, Pham Van Tuan, Nguyen Thi Huyen, Nguyen Khac Hai
National Institute of Occupational and Environmental Health, Hanoi, Vietnam

Abstract

Arsenic contamination of ground water and public health has become the global concern, especially pregnant women and newborns. Study on between two groups: 100 newborns, children of women exposed to arsenic during pregnancy and 50 newborns in control group purposed to assess prenatal arsenic exposure, since their fetus. The results indicated that the mean of total arsenic concentration in urine of exposed women was 94.25 µg/L ± 33.96, control women was 22.27 µg/L ± 10.74, statistically significant difference at $p < 0.001$. The mean of As concentration in infants' hair of exposed group (0.51µg/g) was much higher than the control group (0.3µg/g), $p<0.01$. The mean concentration of As in cord blood of exposed group (6.81µg/L) was clearly higher than the control group (3.62µg/L) significant at $p <0.001$. There is a close relationship between arsenic exposure in the mother and their newborns: As concentration in infants' hair and cord blood of the high exposed mothers was higher than those of low exposure and much higher than those of control group at $p <0.01$. This study of infants exposed to arsenic in the fetus suggested that the further research on the status of child health in prenatal arsenic exposure in Vietnam is needed.

Keywords: Arsenic exposure, Hanam, newborn.

Short bio

Prof. Nguyen Khac Hai Profession MD – an Occupational and Environmental Health senior in the field of study on Occupational and Environmental Health, particular environmental toxicology. He has study to assess genetic damange when exposure radio, carcinogen chemicals…He has the lectures about occupational diseases including the poisoning diseases, occupational lung diseases, diseases caused by physical agents…in University, Military Medical Academy, Hanoi Medical School, National Institute of Hygiene and Epidemiology (NIHE), National Institute of Occupational and Environmental Health (NIOEH). He has set up Guidelines, Directions, Program, Standards such as Develop the National Guidelines on diagnosis, monitoring and protection of the Arsenicosis, Setting up the environmental monitoring program for health care facilities in the period 2009-2015, Develop the National Guidelines on Diagnosis of Occupational Diseases. He has collaborated with Columbia Unversity, Washington University UK, Korea occupational and Safety Health Agency (KOSHA), Chulabhorn Research Institute (CRI), Thailand in research of his profession.

Mrs. Binh, a researcher, is working at Biochemistry – Environmental Toxicology laboratory, Department of Medical Testing and Environmental Analysis, NIOEH. She has conducted the studies on biological monitoring to assess of chemical exposure to public health and workers such as lead, mercury, arsenic, cadmium, benzene, toluene exposure. She has studied cytogenetic damage, chromosome aberration and gene variation caused by carcinogen agents. She has taken part as a coordinator of some international and national project about pregnant arsenic exposure by arsenic contamination in ground water in Vietnam. In the future, she want to develop the advance techniques on determination metabolism in biological samples, cellular and molecular response when expose with toxic chemicals.

[P#13] Advancing knowledge translation for perinatal health: the Perinatal Knowledge Into Practice (PeriKIP) project in Cao Bang province.

Lien PL[1], Hoa DP[1,2], Eriksson L[3], Tu TT[1], Nga NT[1], Wallin L[4,5], Persson L-Å[3], Hoa TN[6], Trang TH[1], Bergström A[3,7]

[1] *Research Institute for Child Health, Vietnam*
[2] *Hanoi School of Public Health, Vietnam*
[3] *Dept of Women's and Children's Health, Uppsala University, Sweden*
[4] *Dept of Neurobiology, Care Sciences and Society, Karolinska Institutet, Sweden*
[5] *School of Health and Social Studies, Dalarna University, Sweden*
[6] *Cao Bang Provincial Reproductive Health Center, Vietnam*
[7] *Institute for Global Health, University College London, UK*

Abstract

Background: Despite improvements in child survival the last two decades, neonatal mortality and stillbirths still remains a challenge. The Neonatal Knowledge Into Practice (NeoKIP) project tested the effect of local stakeholder groups applying the Plan-Do-Study-Act method focusing on newborn health in Quang Ninh province and resulted in reducing neonatal mortality by half. Similar to other community-based initiatives, the group identified that further reduction needs quality of care improvement also at higher levels of the health system. The current project aims to investigate the feasibility of the NeoKIP intervention across the health system.
Methods: This is a 12 months before and after study. Stakeholder groups will be formed in all communes (n=48) and hospitals (n=5) in Nguyen Binh, Ha Quang and Phuc Hoa district and at Cao Bang provincial hospital. Village health workers will report pregnancies and birth outcomes using mobile phones. Knowledge surveys and observations focusing on perinatal health will be undertaken amongst health workers.
Results: Expected results include an understanding of the feasibility of the intervention and its effect on knowledge and practice in the continuum of care.
Conclusions: The project responds to the need of a community and health facility intervention with the potential of health system integration for sustained effects.

Keywords: The Perinatal Knowledge Into Practice, mobile phones, perinatal health, Cao Bang province

Short bio

Ms Lien's background is Public Health and she graduated Master degree in 2012 at Hanoi School of Public Health. Whilst she was undertaking her master studies she was intensively involved in a project titled "*Access to social services and health services-needs and barriers for migrant workers in Vietnam*" which was funded by the National Center for Research Capacity North – South Switzerland and the Institute of Tropical Public Health Switzerland. After graduation, she has been working at the Research Institute for Child Health in the Vietnamese National Children's Hospital. She also took part in several research projects, such as the follow-up study of the Neonatal health - Knowledge into Practice (NeoKIP) aimed to investigate the sustainability of the effect the NeoKIP intervention had on neonatal mortality rate (2014, funded by the Swedish Research Council) and the Evidence for Policy and Implementation project (2012-2013, funded by the Swedish International Development Cooperation Agency).

Currently, she has involved in the Perinatal Knowledge Into Practice project in Cao Bang province from 2015. The title of project is "Feasibility of a multilevel health system intervention applying participatory groups to improve neonatal and perinatal health and survival".

[P#14] Food security and malnutrition status among children in mountainous areas of Vietnam

Do Nam Khanh[1], Le Thi Huong[1], Tran Xuan Bach[1], Danielle Gallegos[2]

[1] *Hanoi Medical University- Vietnam,*

[2] *Queensland University of Technology - Australia*

Abstract

Malnutrition is one of the major problems associated with inadequate food security. According to World Bank Report, in Vietnam, the rate of poverty fell from 58 percent in 1993 to 14.5 percentin 2012. However, child malnutrition in Vietnam is still high (average of 23%) and a significant public health concern. In addition, the distribution of malnutrition in Vietnam is not equal across the region, with the rate of malnutrition in mountainous areas higher than that of other plain areas. Particularly those age under 60 months which are inadequate and do not meet the nutrition requirement for both energy and nutrient consumption. However, data relating to the association between food insecurity and child nutrition in Vietnamese mountainous population is limited and the findings are mixed. Hence, to adequately understand the prevalence and impact of inadequate food security on Vietnamese children residing in mountainous areas it is important to examine the situation and relationship of food security and it's potential adverse effects (e.g. stunting) as suggest an intervention model of utility the available food at the local areas and propose to apply nutrition insurance for children under 5 years old.The research has following objectives:

1. To asssess the food security and food patterns in households and communities in 3 provinces of Vietnam
2. To assess the stunting related factors among children under 5 years old.
3. Evaluate the effectiveness of interventions via using home-made nutritional supplements to the nutritional status of children under five years old.

Keywords: food security, malnutrition, mountainous, 5 years old.

Short bio

After graduated bachelor degree of Public health in 2008, I was selected as a lectuer at Hanoi Medical University (HMU). Since 2012, I studied Master of Public Health and Diploma of Public Administration at the Australian National University (with Australian Development Scholarship), and then I went back to the HMU to work as a lecturer at Department of Nutrition & Food Safety- Institute for Preventive Medicine and Public Health. I have participated in about 20 studies related to preventive medicine, public health, nutrition & food safety and medical education with researchers/ expert of Hanoi Medical University, Ministry Health, WHO office in Vietnam, National Institute of Nutrition, Vietnamese Medicine and Pharmaceutical Universities, Vietnam Netherland Project, etc. I had eight scientific articles and I had supervised for 10 bachelor medical students at the HMU with different research topics related to public health, nutrition and food safety. Curently, I am developing a collaboration research between HMU and Queensland University of Technology (Australia) with the topic "Food security and malnutrition status among children in mountainous areas in Vietnam". In the future, as a lecturer/researcher at Department of Nutrition and Food Safety, HMU, I will focus to study on community nutrition (under nutrition, over nutrition, micro-nutrient deficiencies in vulnerable people in Vietnam), mother/child nutrition problems, food safety and public health nutrition problems which will play important roles in teaching for the first Bacherlor of Nutrition Program in Vietnam.

INFECTIOUS DISEASES

[OP#12] Interdisciplinary approach to reduce zoonotic transmission of antimicrobial resistant bacteria and pathogen from food animal production chains in community in Vietnam

Ngo Thi Hoa

Oxford Univeristy Clinical Research Unit, Ho Chi Minh, Vietnam

Abstract

Zoonotic infectious diseases, including antimicrobial resistant (AMR) bacteria in agriculture, are an emerging global public health concern. Southeast Asia in general, and Vietnam in particular, is the epicenter for zoonotic infection with several outbreaks reported and is home to rapidly growing human and animal populations. The animal production systems and food consumption habits in Vietnam put the country at high risk of zoonotic infections. The vivid example is the common infections with S*treptococcus suis* in acute bacterial meningitis adult patients. Other examples include avian influenza and food-born zoonotic (FBZ) infections. This interdisciplinary programme has investigated the prevalence of potential zoonotic antimicrobial resistant bacteria and the zoonotic pathogen, *S. suis*, in the animal food production chain in Mekong Delta. The data and results will be shared with the studied participants in the on-going qualitative study to improve awareness of the food animal occupational exposed communities towards zoonotic infections. The ultimate objective 2 of this project is to employ local research based evident in improving perception of participants and local communities towards potential zoonotic transmission, which would initiate a change in high-risk activities in zoonotic high risk communities. This could also serve as a model to replicate elsewhere in Asia and globally.

Short bio

Dr Ngo Thi Hoa is a molecular microbiologist and Head of the Zoonoses group at Oxford University Clinical Research Unit, Vietnam (OUCRU). She completed her PhD training at Royal Holloway, University of London, UK. She did her 1st postdoctoral training at Yale University, USA with the Wellcome Trust Fellowship. She returned to Vietnam in 2005 and has worked at OUCRU. Her current research interests includes understanding the impact of the use of antimicrobial agents in agriculture to public health, how a pathogen can transmit from animals to humans, so called zoonotic transmission, and how we can prevent this transmission and infection are her research intertests. She has established an extensive collaborative network with several key human and animal health organisations and institutions in the provinces, regional and national level, as well as to communities in Vietnam and Myanmar. She is PI and co-I of several international and national funded projects with the focus on zoonosis and AMR. She currently supervises four PhD students and 3 MSc students. She is visiting lecturer at University of Science, HCMC and Nguyen Tat Thanh University, HCMC. She is author and co-author of over 60 peer reviewed publications.

[OP#13] Strengthening tuberculosis control through a research partnership between Australia and Vietnam

Greg Fox

Central Clinical School, University of Sydney, Sydney, New Souh Wales, Australia

Abstract

Background: Tuberculosis (TB) is a major public health challenge for Vietnam, with 130,000 people affected each year. Despite a strong network of TB clinics, substantial gaps exist in case-detection and treatment. Multi-drug resistant TB also has a major social and economic cost – with over 2,000 patients treated for the disease annually. Vietnamese migrants are also the second highest source country or TB in Australia, making enhanced TB control in Vietnam a top priority for domestic TB elimination.Methods: Sydney University has built a strong research partnership with the Vietnam National TB Program and the Ministry of Health, culminating in three multi-centre studies of TB prevention and detection. The ACT2 study (APP 632781, 2010-2015) was a cluster randomised controlled trial in 8 Provinces that recruited 25,000 contacts. The study showed contact investigation to be feasible and associated with increased case detection. The ACT3 study (APP1045236, 2013-18) is a community-wide screening study in rural Vietnam that has screened over 40,000 people using PCR-based diagnostics. The study showcases the potential for rapid reductions in TB incidence in Vietnam. The VQUIN MDR-TB Trial (APP1081443, 2015-20) is a clinical trial evaluating levofloxacin for the prevention of multi-drug resistant TB. This trial is currently scaling up throughout 10 Provinces. Conclusions:The partnership between Sydney University and the Vietnam National TB Program demonstrates the potential for strong research collaboration in infectious disease control between the two countries. Our research infrastructure and established network throughout Vietnam provides a strong footing for ongoing projects and bilateral research capacity building.

Short bio

Dr Greg Fox is an Australian Respiratory Physician and epidemiologist whose research focuses upon global tuberculosis (TB) control and clinical trials. He lived in Vietnam for four years while undertaking his PhD with Sydney University, during which time he helped to establish an NHMRC-funded randomized controlled trial of contact investigation for TB that enrolled over 35,000 participants in 8 Provinces. This was conducted in partnership with the Vietnam National TB Program. Dr Fox completed a CJ Martin post-doctoral fellowship in clinical trials and epidemiology at McGill University in Canada. Dr Fox leads NHMRC-funded trials in Vietnam focusing upon the prevention of drug-resistant TB (V-QUIN MDR Trial), strengthening the management of chronic lung disease (in partnership with the Global Alliance for Chronic Disease) and enhancing detection of TB in the community (the ACT3 study). In collaboration with the Vietnam National TB Program, the Woolcock Institute is currently conducting studies in 11 Provinces throughout the country, with offices in Hanoi, Ho Chi Minh City and Ca Mau Province.

Dr Fox contributes to capacity building in research in Vietnam, as Faculty for an annual week-long research training program. Now entering its seventh year, the MECOR research training program has equipped over 120 early and mid-career researchers with skills in lung disease research. The program is conducted in partnership with the Vietnam Association for Tuberculosis and Lung Disease, and program brings together Faculty from Australia, Vietnam, Canada and the USA. Dr Fox currently serves as a Respiratory Physician and Clinical Academic at Sydney's Royal Prince Alfred Hospital.

[OP#14] Investigate the alterations of immune activation markers in HIV-infected children treated with Anti-Retroviral Therapy

Dang Vu Phuong Linh

Public Health Centre Laboratory, Hanoi University of Public Health, Hanoi, Vietnam

Abstract

The proposed proposal: We are currently interested in studying the alteration of immune activation markers in HIV infected children treated with Anti-Retroviral Therapy (ART) for developing the prognosis marker for treatment response. Treatment failure was defined as failure of viral load or failure of immune response reflected by CD4 T cell counts. Numbers of researchers believe that immune activation plays one of the most important roles in treatment response as patients with limited immune activation levels tend to response better to treatment. In addition, the activation-induced cell death has been found to occur most frequent during the course of HIV infection and the increased viral load is often correlated to the elevated levels of CD4 T cell counts. Therefore, we propose that the immune activation markers might appear before the decreased CD4 T cell counts and increased HIV viral load; and thus can serve as the prognosis markers for treatment response. The current study will be a case-control study and utilize blood samples collected every six months following the initiation of ART from Responders and Non-responders during 36 month following up. The blood samples will be analysed with the activation markers from both cell surface markers and soluble cytokines.

Keywords: Immunology, HIV, infectious disease, Molecular Biology

Short bio

Dr Dang, Vu Phuong Linh has earned Bachelor of Medical Science at The University of Sydney, Australia in 2005 and PhD in Immunology at The Karolinska Institutet, Sweden in 2011. In her thesis, she has investigated the impairment of B cell trafficking and differentiation during HIV-1 infection. After completing the PhD degree, Dr Dang has come back to Vietnam and started working at Hanoi University of Public Health, where, she has continued to work in the field of HIV immunology and received two grants from Hanoi University of Public Health and Nafosted (National Foudation for Science and Technology, Ministry of Science and Technology) as Principal Investigator. In the project, Dr Dang would like to study the alteration of immune activation markers and the appearance immune-escape mutations of HIV virus in HIV infected children treated with ART for developing the prognosis marker for treatment response in HIV infected children. Dr Dang has collaborated with National Hospital of Pediatrics and Kanazawa University in the above projects and would like to develop further collaboration especially with Australian scientists in the field of HIV immunology.

[OP#15] New tools to improve tuberculosis control in Vietnam.

Warwick Britton AO

Centenary Institute, University of Sydney, Newtown/New South Wales, Australia

Abstract

Background:Tuberculosis (TB) is major cause of mortality and morbidity globally, with multi-drug resistant (MDR) TB an increasing challenge. Despite an effective National TB Program (NTP), TB continues to be public health problem resulting 130,000 new patients per annum and significant socio-economic loss in Vietnam. The new END-TB program of WHO calls for three pillars for TB control: intensified TB treatment strategies, societal commitment to end TB, and research to develop new tools to accelerate the rate of decline of TB. This includes country-specific public health research to optimize TB control and biomedical research to develop new drugs, vaccines and diagnostic tests. Research Methods:At the University of Sydney we are developing new vaccines and drugs against TB, and assessing new biomarkers to aid TB control. Biomarkers may be used as diagnostic tests, correlates of response to therapy, and predictors of progression from latent TB infection (LTBI) to active TB. In collaboration with the NTP, we are undertaking three RCT to improve case detection and preventive therapy for contacts of MDR-TB patients. As part of one RCT of community screening, we have identified new TB patients and their contacts with LTBI or no evidence of TB infection. This provides the opportunity to evaluate different biomarkers (including plasma protein and miRNA levels and blood transcriptional responses) for their potential to distinguish between subjects with active TB and LTBI or uninfected individuals. Conclusion:This partnership will allow new strategies to be developed to aid TB control in Vietnam and opportunities for research training and collaboration to the mutual benefit of both countries.

Short bio

PhD, MB, BS, BSc(Med), FAHMS, FRACP, FRCP, FRCPA

Warwick Britton is Bosch Professor of Medicine and Professor of Immunology at the University of Sydney and head of the Tuberculosis Research Program at the Centenary Institute. He has longstanding interests in the immunology and control of tuberculosis and leprosy, including the development of novel vaccines and drugs. He is principal investigator on the NHMRC-funded Centre for Research Excellence in Tuberculosis Control: from Discovery to Public Health Policy and Practice. This Centre includes research collaborations on the role of active case finding and community screening for tuberculosis in Vietnam, host susceptibility to tuberculosis infection, genetic epidemiology and drug resistance.

[OP#16] Molecular characteristics of measles and rubella viruses in Vietnam

Do Phuong Loan, Trieu Thi Thanh Van, Nguyen Thi Mai Duyen, Le Thi Quynh Mai

National Institute of Hygiene and Epidemiology, Hanoi, Vietnam

Abstract

Measles and rubella are the major causes of rash fever in children in developing countries, especially congenital rubella syndrome (CRS) in infants even though they are vaccine preventable diseases. In Vietnam, while measles vaccine was well-developed and widely used in children with more than 90% coverage, rubella-containing vaccines were only introduced in supplementary immunization activities to target groups. In 2017, Vietnamese domestic measles-rubella combined vaccine is going to be introduced in National Expanded Immunization Program. However, measles and rubella outbreaks occurred in cycle in which the most recent measles outbreak occurred in 2013-2014 with more than 15,800 cases and that of rubella occurred in 2011 with more than 7,200 cases and 292 CRS infants. Measles and rubella suspected cases were detected by the rash fever surveillance system in which NIHE is responding for 28 cities/provinces in the North and two sub-national laboratories in Highland and Central of Vietnam. Using ELISA to detect measles/rubella and CRS cases, virus genotyping is very important for epidemiological source tracking, elimination documentary preparation. While H1 measles virus has been circulating predominantly in the North, D8 measles virus was predominant in the South. Rubella virus genotype 2B kept circulating in Vietnam for nearly 10 years and there was no difference in circulating genotype in the North and the South. However, rubella virus evolved in two different sub-genotypes with the replacement occurred in 2010. The evolution of measles and rubella viruses in Vietnam fitted well with the global evolution of measles and rubella viruses. Genetic characteristics of Vietnamese measles and rubella viruses were the most closely related to Chinese and Japanese viruses circulating in the same period.

Keywords: measles, rubella, Vietnam

Short bio

I am working in Virology Department in National Institute of Hygiene and Epidemiology, Hanoi, Vietnam. In 2015, I completed my PhD course in Nagasaki University, Japan on rotaviruses with the emphasis on molecular characteristics of human rotavirus and interspecies transmission of rotavirus from animal to human.

From 2007 to 2013, I worked on Japanese Encephalitis virus, Banna Virus and new-emerging encephalitis viruses. I also participated in producing JEV MAC-ELISA (IgM capture enzyme-linked immune-sorbent assay) kit which has been widely using in Vietnam. Since 2013, I moved to study on viruses causing febrile illnesses with skin rashes such as measles, rubella. My laboratory is one of two reference laboratories belonging to WHO lab-network on measles and rubella.

In the future, I planned to develop Vietnamese domestic ELISA kit to detect measles and rubella IgM antibody which will be provided to laboratories in the surveillance network as well as diagnostic laboratories in hospitals. I am also going to expand my research on other viruses causing rash and fever (parvovirus B19, varicella), mumps and oncolytic virotherapeutic using measles vaccine strain.

[OP#17] Translating the use of molecular techniques into non-invasive diagnosis: the focuses on sepsis diagnostics and HBV related early liver cancer surveillance

Ngo Tat Trung[1], Phan Quoc Hoan[1], Le Huu Song[1], Nguyen Linh Toan[2]

[1] *108 Military Central Hospital, Hanoi, Vietnam*

[2] *Vietnam Military Medical University, Hanoi, Vietnam*

Abstract

Focus I. Sepsis diagnostics

For patients suffering from blood sepsis, molecular techniques (for instant PCR) for diagnostics of causative pathogens directly from whole blood holds promise to provide fast and proper treatment. However, the multiplex PCR based detection art is still confronted by many challenges; of that, the most important factor is the inhibitory effect of abundant human DNA, or the evolutionary conserved DNA sequence between human and bacteria. The latter one can be a risk for primer mis-pairing hence raising uncapabilities for PCR reaction to detect pathogen's genetic materials or giving false positive data. To circumvent this problem, various technological combinations have been integrated into commercial diagnostics kits to deplete human DNA priority to the identification PCR assays. However, the current commercial Kits work with upper limits of blood input and require methylated DNA specific chromatographic columns or freshly patented enzyme, which make the investment for human DNA depleting Kits and the related accessories become hardly to be accepted in lower income community.

One ongoing direction in our lab (presented in the recent study), is to establish a method for enrichment of bacterial DNA by selective degradation of human DNA prior to isolation of bacterial DNA. We use a combination of detergent lysis of host cells followed by a rapid alkaline degradation of the released DNA, followed by neutralization and then centrifugation of remaining bacterial cells. The DNA recovered in this pellet has significantly reduced host DNA. Additionally, we also utilized a 16S rRNA based real-time PCR screening algorithm to differentiate Gram-positive and Gram-negative bacteria as well as the family of Enterobacteriaceae.

Focus III: Translating the use circulating microRNA into the surveillance of HBV infected hepatocellular carcinoma

So far alphafetoprotein (AFP) is still widely accepted as a single serum biomarker marker involved in the definition of HCC. However, recent meta-analysis showed its poor performance in differentiating HCC from healthy people or other HBV infected liver disease. On the other hand, the use of ultrasound – a - low-cost imaging method, relies on the operators' skills, tumor size and the background of patients with other co-developed diseases.

MicroRNAs (miRNAs) are non-coding RNAs that regulate gene expression and play important roles in a variety of cellular functions. Recently, miRNAs were also identified in serum and plasma as biomarkers for several neoplastic diseases including hepatocellular carcinoma (HCC). However, previously proposed circulating miRNAs panels seems to be ethnics specific, there is no consensus in term of individual miRNA molecules used in the reported panels, additionally, the combinational use of serological AFP and previously reported microRNA panels have not been comprehensively evaluated.

[OP#18] Heat Pulse Extension PCR for unbiased amplification of nucleic acids

Ho Huu Tho

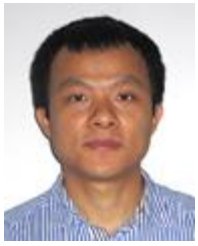
Department of Genomics, Biomedical & Pharmaceutical Applied Research Centre, Vietnam Military Medical University, Hanoi, Vietnam

Abstract

We have introduced multiple heat pulses in the extension step of a PCR cycling protocol to generate a novel amplification technology (HPE-PCR), which temporarily destabilize secondary structures, in order to enhance DNA polymerase extension over GC-rich sequences. These secondary structures have been thought to block the DNA polymerase during the extension step, leading to decreased amplification efficiency. Different GC rich target sequences in the human genome, extremely long Fragile X GGC repeats and Myotonic Dystrophy type 1 CTG repeats have been used as models to develop and validate this novel technology. The HPE-PCR also improves the balance of amplification efficiencies between different sequences in a nucleic acid library, such as in library amplification for Next Generation Sequencing.

Keywords: un-biased amplification; PCR efficiency; next-generation sequencing; nucleic acid library.

Short bio



Tho Huu Ho is a young Vietnamese medical doctor, who has recently finished the doctoral degree at Helsinki University, Finland and just come back to Vietnam Military Medical University (VMMU) in Hanoi, Vietnam to continue his research. He is now a senior researcher at the Department of Genomics, Biomedical Pharmaceutical Applied Research Centre (VMMU). His team focuses on the development of different novel technologies for amplification of nucleic acids with difficult sequences (extremely long, GC rich and repetitive), which is useful for unbiased amplification of nucleic acid library, such as in next generation sequencing. Another focus of his team is to develop novel technologies for detection of low abundance nucleic acid sequences with superior sensitivity for highly demanding applications, such as early detection of cancer, drug resistance and blood screening for infectious diseases

[OP#19] Next-Generation Sequencing Reveals Frequent Opportunities to know about Hepatitis C Virus genetic diversities and clinical applications in Vietnam

Le Thi Hoi, Nguyen Vu Trung, Nguyen Nguyen Huyen, Nguyen Van Kinh

National Hospital of Tropical Diseases, Hanoi, Vietnam

Abstract

The genome of the hepatitis C virus (HCV) exhibits a high genetic variability. This remarkable heterogeneity is mainly attributed to the gradual accumulation of mutational changes, whereas the contribution of recombination events to the evolution of HCV remains controversial so far. Next-generation sequencing (NGS) has been used to assess the large connected networks of intra-host HCV variants, the transmission, and the genetic relatedness between cases and it is a powerful tool with applications in molecular epidemiology studies, viral transmission, outbreak investigations, immune escape and drug resistance.

In the pilot study in 2016 at National Hospital for Tropical Diseases, Vietnam, HCV genotyping and sub-genotyping was performed by sequencing NS5B region of virus genome by NGS system Miseq from Illumina and analyzed by DeepCheck HCV software from ABL. The concordance between NGS and CE was also tested on 57 whole blood samples from 57 patients. 55 samples were genotyped by CE and 02 were failed by CE. The result shows that 100% genotyping result by NGS is concordant to CE (55/55) and 96.36% (53/55) sub-genotyping result are concordant with CE. Two samples having disconcordant results show that the disconcordance occur among subtype having similar genome sequence. The sensitivity of NGS is relatively high. The technology allows the genotype determination prevalence percentage around 1%. With the cut-off of 6.18% (only genotype with prevalence percentage of 6.18% and above was called real genotype) 5 out of 57 samples were reported with more than one genotype. No drug resistant variants were reported within 57 samples.

Keywords: HCV, genotype, whole genome sequencing

Short bio

Dr. Le Thi Hoi obtained her PhD from the University of Greifswald. Currently she is working at the laboratories of the National Hospital of Tropical Diseases. She is a leader of research group on Applications of NGS Technologies in diagnosis of infectious diseases caused by hepatitis viruses, enterovirus, multidrug resistant bacteria… With support of Illumina company, she has finished a pilot project on using NGS to determine HCV genotype and quasispecies, low-abundance antiviral drug-resistance mutations. She is a PI of the project on enterovirus funded by the Hanoi department of science and technology. She has published one article on application of whole genome sequencing of EV71 circular in Vietnam 2012. She is also a key researcher on several studies in collaboration with CDC (Project in Enhancing capacity of HIV Surveillance and Laboratory in Vietnam, Role: project coordinator), with IMCJ (International Medical Center of Japan) (Projects in Drug resistance of HIV, in HBV, HCV and HIV coinfection, in renal failure in ARV treatment), with TreatAsia (projects in HIV and HCV coinfection). She is also involved in several clinical trials at NHTD with MSD, Gilead. She is a member of the scientific committee of the NHTD.

[P#15] Melioidosis in North Central Part of Vietnam: a Series of Cases Detected after Raising Awareness and Introducing a Simple Laboratory Algorithm

Trinh Thanh Trung

Institute of Microbiology and Biotechnology, Vietnam National University, Hanoi, Vietnam

Abstract

Vietnam is probably highly endemic for melioidosis but cases reported from the country are both limited and restricted to southern and northern parts. In June 2015, we conducted training courses at five general hospitals in north central provinces in order to raise awareness of the disease and to introduce a simple laboratory identification for *Burkholderia pseudomallei*. Until the end of the year, 77 *B. pseudomallei* strains confirmed by a specific TTSS1 real-time PCR assay and *recA* sequencing analysis were isolated from 70 patients. Clinical data showed that 32 (45.7%) patients were from Ha Tinh province, 16 (22.8%) patients from Nghe An province, 7 (10.0%) patients from Quang Binh province, 7 (10.0%) patients from Quang Tri province and 5 (7.2%) patients from Hue city. The peak of cases (32.8%) was detected in October and most of the cases (68.6%) were admitted in September, October and November. Mean age of patients was 43.6 years (SD ± 19.5; range 1 - 90) with 7 children < 18 years. On admission, septicaemia with pneumonia was the most common clinical presentation. Suppurative parotitis was manifested in 2 (28.6%) children. Known risk factors for the disease were detected in 35 (50.0%) patients and diabetes was recorded in 19 (27.2%) patients. In 58 (82.8%) septicaemic patients, mortality rate was 31.0% (n=18). No death occurred in non-septicaemic patients. This is the first report of a series of melioidosis cases detected in north central part of Vietnam. Further introduction of the method to other parts of the country is needed to understanding of the true prevalence of the disease throughout Vietnam.

Short bio

Trung received bachelor degree in Microbiology from Hanoi University of Science, Vietnam National University. He then studied at Institute of Medical Microbiology, Greifswald University, Germany and successfully defended his PhD thesis entitled "*Burkholderia pseudomallei* in Northern Vietnam: environmental detection and molecular characterization of strains" under the supervision of professor Ivo Steinmetz. Now, Trung is leader of bacterial group at Vietnam Type Culture Collection, Institute of Microbiology and Biotechnology, Vietnam National University. He is strongly involved into the collaborative project named "Research Network on Melioidosis and *Burkholderia pseudomallei* - RENOMAB" funded by Vietnam and Germany. His current researches mainly focus on distribution of *B. pseudomallei* in the environment and the prevalence of melioidosis in different regions in Vietnam.

[P#16] An online, secure nationwide registry for Anti-Microbial Resistance (AMR) in Vietnam

Nguyen Vu Trung[1,2], Le Thi Hoi[1], Nguyen Van Kinh[1]

[1]*National Hospital for Tropical Diseases, Hanoi, Vietnam*

[2]*Hanoi Medical University, Hanoi, Vietnam*

Abstract

Antimicrobial resistance (AMR) is firmly recognised as a global health threat requiring global action. However, much work remains to translate global strategies to combat AMR into national policy and action. In low-and middle-income countries where vulnerable healthcare systems require investment within constrained budgets, AMR may not be prioritised, and indeed equitable versus restricted access to antibiotics present a conflicting challenge. The Ministry of Health, Vietnam (MOH) issued a National Action Plan on AMR in June 2013 and other guidelines, regulations supported by the WHO, CDC, Oxford University Clinical Research Unit-Ha Noi (OUCRU) and the National Hospital of Tropical Diseases (NHTD). Although many activities on AMR surveillance have been carried out since 1998 with the initial program named Antimicrobial Sensitivity Testing Study (ASTS), a nationwide source of data, monitoring trends in antimicrobial resistance among from humans, retail meats, and animals are still lacking.

The National Antimicrobial Resistance Monitoring System will be a collaboration among hospitals, local public health departments, and international partners. This national public health surveillance system tracks changes in the antimicrobial susceptibility of certain medically important bacteria found in ill people. The System helps protect public health by providing information about emerging bacterial resistance, the ways in which resistance is spread, and how resistant infections differ from susceptible infections. An online, secure nationwide registry for AMR in Vietnam is necessary to disseminate timely information on antimicrobial resistance to promote interventions that reduce resistance among medically important bacteria. It is also to conduct research to better understand the emergence, persistence, and spread of antimicrobial resistance.

Keywords: online, registry, Anti-Microbial Resistance, Vietnam

Short bio

Assoc. Prof. Nguyen Vu TRUNG, MD obtained his PhD from the Karolinska Institute, Stockholm, Sweden in 2005 and currently, Vice Director of NHTD, Head of Department of Microbiology, Head of Department of Clinical Microbiology and Parasitology, Faculty of Medical Technology, Hanoi Medical University. He has published more than 50 papersin international refereed scientific journals. He has received many grants from Government, Ministry of Health, Ministry of Sicence and Technology and from international Funds. His research interest is mainly about the infectious diseases and much more about the antimicrobial resistance of bacteria. He is joining and become a member of Executive Committee on AMR of Vietnam.

[P#17] A new-generation biochip combined loop-mediated isothermal amplification and solution-phase electrochemical detection for real-time monitoring Hepatitis B virus (HBV)

Bui Quang Tien[1], Nguyen Thy Ngoc[2], Nguyen Thai Loc[3], Vu Thi Thu[2], Tran Dai Lam[4]

[1]*Military Academy of Logistics, Hanoi, Vietnam*

[2]*University of Science and Technology of Hanoi, Vietnam Academy of Science and Technology, Hanoi, Vietnam*

[3]*Asian Institute of Technology, Pathumthani, Thailand*

[4]*Graduate University of Science and Technology, Vietnam Academy of Science and Technology, Hanoi, Vietnam.*

Abstract

Biochip is ideal for rapid online detection of blood pathogens. In this work, we present a new-generation fluid-handling biochip for electrochemical real-time monitoring nucleic acid amplification. The device rendered loop-mediated isothermal amplification (LAMP) and real-time electrochemical detection (RT-EC) based on the intercalation between LAMP amplicon and redox indicator. The whole diagnostic process was completed within 70 min. Our platform offers a fast and easy tool for quantification of viral pathogens with less time-consuming and limited risk of all potential cross-contamination.

Keywords: real-time, LAMP (loop-medicated isothermal amplification), HBV (hepatitis B virus), intercalation, electrochemical, biochip

Short bio

Assoc. Prof. Dr. TRAN Dai Lam received his Bachelor's degree of Chemistry from Belarussian State University, Minsk in 1994. In 2003, he obtained his PhD degree of Physical Chemistry from University of Paris VII-Denis Diderot. He was appointed Associated Professor in 2009. He joined Vietnam Academy of Science and Technology in 2009 as a Principal scientist and Head of Laboratory for Biomedical Nanomaterials, Institute of Materials Science (IMS), Vietnam Academy of Science and Technology (VAST), Hanoi, Vietnam. Previously, he spent several years at Hanoi University of Science (HUST) as the Head of Department of General and Inorganic Chemistry (1998-2009). He is now Vice-Director of Graduate University of Science and Technology (GUST), Vietnam Academy of Science and Technology (VAST), Hanoi, Vietnam. His research interest focuses on development of hybrid nanomaterials and electrochemical biosensing systems for applications in biomedical, environmental and food safety. He has published more than 100 in international refereed scientific (ISI) journals.

[P#18] Problems and Computational Methods in Personalized Medicine

Duc-Hau Le

Thuyloi University (formerly Water Resources University), Hanoi, Vietnam

Abstract

Personalized medicine is a medical procedure that stratifies patients into different groups with specific treatments relied on their predicted response or risk of disease. To support researches in personalized medicine and manufacture viral vaccines and other products of biotechnology (e.g., drug), cell lines from tumors of patients are grown. Cell line is a cell culture developed from a single cell and therefore consisting of cells with a uniform genetic makeup and under controlled conditions. With rapid growth of biomedical and clinical data, many computational methods have been proposed to identify candidate disease-associated cellular components, to predict novel targets of drugs, to predict response of drugs, or to repurpose the use of drug for other diseases, etc… Specially for personalized medicine, computational methods have been proposed to classify patients into different subtypes according to genomic, epigenomic profiles and/or drug responses on cell lines or patient tumors, and therefore able to predict response of untested drugs, drug synergy as well as to identify predictive genomic features and treatment for each group of patients. In this poster, I introduce problems in personalized medicine and review computational methods for such the problems. In addition, I enumerate data resources for personalized medicine researches

Keywords: Personalized Medicine, Precision Medicine, systems pharmacology, drug response, computational methods

Short bio

Associate Professor Duc-Hau Le obtained PhD degree in Bioinformatics in 2012 in Republic of Korea. At early research career, he mostly focused on analysis of dynamical and structural properties of biological networks, then he gradually applied such network-based analyses to prioritization of candidate disease-associated cellular components. After that, he approached the problem by machine learing-based methods by formulating it as a prediction problem. Recently, he has additionally targeted to drug-related problems such as prediction of drug-target interactions and drug response prediction based on molecular data by both network- and machine learning-based methods. In parallel, he has been developed bioinformatics tools supporting biologists and clincical researchers in analysis of biological networks and prediction of disease-associated genes. So far, he has been published more than twenty papers in well-recognized journals and conferences, nine of those are in ISI-indexed journals. In addition, he has been collaborating with international institutes such as Bioinformatics Institute - Ghent University – Belgium, Complex systems computing laboratory - University of Ulsan – Republic of Korea, and Institute of Cancer and Genomic Sciences - University of Birmingham - United Kingdom.

[P#19] Molecular Epidemiology of Rotaviruses and Noroviruses Detected in Vietnamese Children with Acute Gastroenteritis between 2012 and 2015

Hoa-Tran Thi Nguyen[1], Hung Manh Vu[1], Trang Thi Thu Nguyen[1], Anh Thi Hai Dao[1], Anh The Nguyen[1], Toyoko Nakagomi[2], Osamu Nakagomi[2], Nguyen Thi Hien Thanh[1]

[1]Department of Virology, National Institute of Hygiene and Epidemiology, Hanoi, Vietnam;

[2]Department of Molecular Epidemiology, Graduate School of Biomedical Sciences, Nagasaki University, Nagasaki, Japan

Abstract

As part of the WHO-supported rotavirus surveillance in Vietnam, the Enterovirus Laboratory in National Institute of Hygiene and Epidemiology, Hanoi, Vietnam collected 6281 stool specimens from children aged <5 years with diarrhoea in sentinel hospitals between 2012 and 2015. Of 2833 (45.1%) specimens determined to be rotavirus-positive, 1193 were G and P genotyped. G1P[8] was predominant genotype, accounting for 87.78% of genotyped specimens in 2011-2013. However, in 2014-2015, there was a increase in prevalence of genotypes G2P[8] and G8P[8], collectively accounting for 44.36% of genotyped strains while G1P[8] accounted for 38.7%. Rare genotypes, including G4P[4], G4P[6], G8P[4], and G8P[14] were also detected. Further analysis using Polyacrylamide Gel Electrophoresis releaved that all strains of G2P[4] and G8P[8] and recently isolated strains of G1P[8] possessed short-RNA profiles, suggesting that they carried DS-1-like background. The prevalence of rotavirus strains of genotypes G1P[8], G3P[8], and G8P[8] with short-RNA profiles has been reporting in other countries worldwide. Further genetic and evolutionary analyses are required to understand the evolutionary process by which the rotavirus strains with short-RNA profiles establishing their successful spread in human population.

The recent norovirus seasons recorded the emergence of new recombinants of the capsid and polymerase genotypes, with a global dominance of GII.Pe/GII.4 Sydney 2012 and GII.P17/GII.17 in Asian countries. However, the number of papers reporting the distribution of both polymerase and capsid genotypes circulating among children is scarce with none from Vietnam. Therefore, we also determined the capsid and polymerase genotypes of noroviruses for 350 stool samples selected by systematic random sampling from those 6281 stool specimens. Noroviruses were detected in 99 (28.3%) of 350 specimens. The polymerase and capsid genotype combinations of GII.Pe/GII.4 Sydney 2012 and GII.P21/GII.3 were co-dominant, contributing to a high proportion (87%) of recombinants among circulating noroviruses. GII.4 Den Haag 2006b prevailed in 2012 and was replaced by GII.4 Sydney which prevailed between 2013 and 2015 and GII.4 variants evolved in the same fashion in Vietnam as in other countries. Unlike neighbouring countries where the predominance of GII.P17/GII.17 was reported, only one GII.P17/GII.17 strain was detected in 2015. Continued surveillance of noroviruses causing acute gastroenteritis is necessary to monitor the activity of GII.4 Sydney variants and that of GII.P17/GII.17 noroviruses in the paediatric patients in Vietnam.

Study on biogeography of noroviruses in different geographical regions, including Vietnam and Australia, is also important to understand the mechanism on migration and persistence of noroviruses in population.

Keywords: rotavirus, norovirus, acute gastroenteritis.

Short bio

Dr Hoa-Tran started to work in Enterovirus laboratory-NIHE since 2003. She obtained the PhD degree in 2013 and have been working in Enterovirus laboratory-NIHE until now. She has more than 13 years working on infectious viruses including respiratory viruses, poliovirus, enterovirus serotypes, noroviruses, and rotaviruses..., and has good skills at both basic and molecular diagnosis techniques for viruses. She can confidently conduct genetic analyses including phylogenetic analysis, recombination analysis, homology modeling....using bio-information software. During the past 5 years, she published 5 papers on molecular epidemiology of noroviruses and rotaviruses in international journals. She interests in molecular mechanisms driving evolution, migration, persistence, virullence, and susceptibility of entero and enteric viruses. She also interests in developing molecular methods for laboratory diagnosis and in vaccine development against the viruses.

[P#20] The Emerging Neglected Tropical Zoonoses (ENTZ) in Vietnam: status, challenges, current and future research implementation

Thanh Hoa Le[1], Nga Thi Bich Nguyen[1], Khue Thi Nguyen[1], Huong Thi Thanh Doan[1], Do Trung Dung[2], Donald McManus[3], Robin Gasser[4], Malcolm Jones[5], David Blair[6]

[1] *Institute of Biotechnology; Vietnam Academy of Science and Technology, Hanoi, Vietnam*
[2] *Department of Parasitology, National Institute of Malariology, Parasitology and Entomology, Hanoi, Vietnam*
[3] *Queensland Institute of Medical Research, Brisbane, Australia*
[4] *The University of Melbourne, Victoria, Australia*
[5] *The University of Queensland, St Lucia, Brisbane, Australia*
[6] *James Cook University, Townsville, Australia*

Abstract

Both common **nematodes** and **platyhelminths**, including those belonging to the phylum **Platyhelminthes** (**Trematoda**: Fasciolidae/ Paragonimidae/ Opisthorchiidae/ Heterophyidae/ Echinostomatidae; and **Cestoda**: Taeniidae; Diphyllobothriidae etc) plus their inter-species **hybrid forms;** and the phylum **Nematoda** (Toxocaridae; Ancylostomatidae; Onchocercidae; Gnathostomatidae; Heterakidae etc), have been increasingly reported in Vietnam and worldwide, posing a critical impact on public health for epidemiological control. All life-cycle forms of the ENTZ (eggs, metacercariae, cercariae, adults) are associated with our lives and their forms found in soils/stools/sputum/fishes/crabs/animals/snails are difficult to be discriminated by morphology. Genomic analysis of, primarily preferable to, **mitochondrial DNA** (mtDNA) of the targeted species, termed as **molecular mito-genomics,** provides reliable tools used for species **diagnosis/detection**, taxonomic **identification**; and for development of sensitive **diagnostic** kits, which are crucial for epidemiologists to work out controlling strategies.

For common species of the ENTZ, selected genetic **markers** could be applied for identification of their eggs-developmental forms and adult worms from human hosts (human cases); their metacercariae from intermediate hosts (infected animals and fishes/crabs) and cercariae from snails or in soils, if any. Diagnostic kit(s) developed will be used to simplify detection of human and animal cases/outbreaks for the common soil-transmitted and food-borne particular zoonotic species. By obtaining data from the common ENTZ species, we expect: i) to map **geographical distribution** and dynamically, spatially, temporally **spread** over Vietnam and neighboring countries; ii) to solve **taxonomic position**, **diagnosis/identification/ clarification** and **confirmation** of the **natural hybridization** (introgression) among zoonotic trematodes or nematodes, if any, respectively; iii) to additionally obtain data for providing **directions for diagnosis/epidemiological** studies and **control** of increasing number of the ENTZ in Vietnam and worldwide; iv) To **publish** in a range from our achievements, enhancing the understandings on the ENTZ.

Keywords: zoonoses, mitochondrial, neglected, diagnosis, epidemiology

Short bio

Prof. Thanh Hoa Le is a Principal Research Fellow at the Institute of Biotechnology (IBT) of the Vietnam Academy of Science and Technology (VAST) in Hanoi, Vietnam. He obtained the veterinary doctor degree (DVM) in Microbiology and Infectious Diseases at the University of Veterinary Sciences in Budapest (Hungary) in 1977 and the PhD degree in Tropical Health (Molecular Parasitology) at the University of Queensland and Queensland Institute of Medical Research (Australia) in 2001. He published over 70 international SCI/SCIE peer-reviewed papers; over 200 national papers, and 14 scientific and text books. He is the Deputy-in Chief of Journal of Biotechnology (Vietnam) and a member of the International Editorial Board for Clinical and Experimental Vaccine Research Journal (South Korea). His major research are: zoonotic relationships of the common parasitic infections, bacterial and viral emerging pathogens; veterinary diseases commonly affected upon the livestocks; molecular mitochondrial genomics and proteomics of parasitic helminths; interactive enhancing factors for immune response; vaccine technology and new generation vaccines, including DNA, vectoral and reverse genetics based-vaccines.

[P#21] Quality of mortality data recorded in the routine health management information system in Vietnam: Implication for system strengthening.

Tran Thi Hong[1], Nguyen Phuong Hoa[2], and Chalapati Rao[3]

[1]*Hanoi University of Public Health, Vietnam; School of Public Health, University of Queensland, Australia*

[2]*Hanoi Medical University, Vietnam*

[3]*Australian National University, Australia.*

Abstract

Causes of death (COD) statistics are essential components of national health information, however high quality data are not available for Vietnam. At national level, there are two main systems for collection and compilation primary mortality data. The first is operated by the Ministry of Justice (MOJ) through the national civil registration and vital statistics (CRVS) system across the country. In each commune, the office of the justice clerk maintains a civil and vital event register to record births, deaths, and marriages in the resident population and reported to district and higher levels. However, the completeness of deaths recorded in this system is low and the information on the COD is unavailable or poorly recorded. The second system is operated by the Ministry of Health (MOH) through the health management information system (HMIS), which maintains a routine primary death recording at commune health stations (CHS). Accordingly, CHS staffs identify deaths in the community, and record basic demographic data and information on the COD for each death into an official MOH log-book named the "A6 register". Data from which can be served as potential national mortality data source for policy formulation, since it could capture all deaths in the community, along with the COD. However, the quality of A6 registers has not been comprehensively assessed so far. This study aims to assess the completeness of deaths recorded and the reliability of recorded COD in the A6 registers.

The study results imply the urgent need to enhance reliability of COD recorded in A6 registers at CHSs, for which VA methods could be effective. Further actions should be done to identify the suitable mechanism and process for applying VA methods in the national routine HMIS in Vietnam.

Keywords: mortality data, reliability, completeness, causes of death, Vietnam

Short bio

Hong has been a lecturer at Hanoi University of Public Health for 15 years, teaching courses on health information systems, and participating in research mainly on quality of health data, and injury prevention and control. She obtained a Masters degree on Public Health from Queensland University of Technology in 2006. Her ongoing PhD thesis is about improving the quality of mortality data in the national routine Health Management Information system in Vietnam.

Hong is interested in working with Australian researchers who specialise in designing implementation research programs to strengthen death registration and COD reporting systems. Such research programs are critically necessary to build the Vietnamese mortality statistics system over the next 5-10 years. Collaborative research will develop a routine mortality statistics system that provides reliable data on all CODs which could be used to inform health programs on maternal and child health, infectious diseases (e.g. TB, dengue fever), non-communicable diseases (cardiovascular disease, cancers etc) and injuries.

[P#22] Emergence of New Delhi Metallo-beta-lactamase 1 and other carbapenemase-producing *Acinetobacter calcoaceticus-baumannii* complex among patients in hospitals in Ha Noi, Viet Nam.

Duong Nhu Tran[1], Hoang Huy Tran[1], Mari Matsui[2], Masato Suzuki[2], Satowa Suzuki[2], Keigo Shibayama[2], Thai Duy Pham[1], Tran Thi Van Phuong[1] Duc Anh Dang[1], Hong Son Trinh[3], Chu Thi Loan[4], Luu Thi Vu Nga[5], H. Rogier van Doorn[6] and Heiman F. L. Wertheim[6,7]

[1] *National Institute of Hygiene and Epidemiology, Yersin 1, Hanoi, Vietnam*
[2] *Department of Bacteriology II, National Institute of Infectious Diseases, Tokyo, Japan*
[3] *Viet-Duc Hospital, Hanoi, Vietnam*
[4] *Saint Paul Hospital, Hanoi, Vietnam*
[5] *Thanh Nhan Hospital, Hanoi, Vietnam*
[6] *Oxford University Clinical Research Unit, Hanoi, Vietnam; Nuffield Department of Clinical Medicine, Centre for Tropical Medicine, University of Oxford, Oxford, UK.*
[7] *Department of Clinical Microbiology, Radboud UMC, Nijmegen, Netherlands*

Abstract:

Acinetobacter baumannii is an important cause of multidrug-resistant hospital acquired infections in the world. Here, we investigate the presence of NDM-1 and other carbapenemases among carbapenem-resistant *A. baumannii* isolated between August 2010 and December 2014 from three large hospitals in Hanoi, Vietnam. We identified 23/582 (4%) isolates (11 from hospital A, 5 from hospital B, and 7 from hospital C) that were NDM-1 positive and among them 18 carried additional carbapenemase genes, including 7 isolates carrying NDM-1, IMP-1 and OXA-58 with high MICs for carbapenems. Genotyping indicated that NDM-1 carrying *A. baumannii* have expanded clonally in these hospitals. Five new STs (ST1135, ST1136, ST1137, ST1138 and ST1139) were identified. One isolate carried NDM-1 on a plasmid belonging to the N-repA replicon type, no NDM-1 positive plasmids were identified in the other isolates. We have shown the extent of the carbapenem resistance and the local clonal spread of *A. baumannii* carrying NDM-1 in these hospitals, coexistence of NDM-1 and IMP-1 is reported for the first time from Vietnam here and this will further seriously limit future therapeutic options.

Key words: Carbapenem; resistance; NDM-1; IMP-1; OXA-58; Acinetobacter baumannii; Clonal spread; Vietnam

Short bio

Dr. Tran Huy Hoang is a clinical microbiologist and the head of the antimicrobial laboratory at the National Institute of Hygiene and Epidemiology in Hanoi, Vietnam. He obtained his PhD from National Institute of Hygiene and Epidemiology in Hanoi, Vietnam in 2104, spent 7 years (from 2001-2008) in UK, Norway, France and Japan as research assistance on molecular epidemiology of AMR and enteric infections. He has published 16 international and more than 40 local scientific papers. He has received numerous research grants: from national-grant, Japan, Welcome Trust and MRC-UK to support his work on ARM. His research area focuses on the burden antimicrobial resistance bacteria isolates from clinical, community, environment, animal..

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GENERAL ATTENDEES

List of Australian attendees

Dr. Tony Willis
National Health and Medical Research Council
Email: pdr@nhmrc.gov.au

Ms. Linda Chen
National Health and Medical Research Council
Email: pdr@nhmrc.gov.au

Dr. Jacqui Webster
[KEYNOTE]
The George Institute for Global Health
Email: jwebster@georgeinstitute.org.au

Prof. Jonathan Morris
[KEYNOTE]
The Kolling Institute of Medical Research
Email: jonathan.morris@sydney.edu.au

Dr. Annette Fox (Marsh)
[KEYNOTE]
The University of Melbourne
Email: annette.fox@unimelb.edu.au

Prof. Fiona Russell
[OP#8]
The University of Melbourne
Email: fmruss@unmelb.edu.au

Dr. Lien Anh Ha Do
[OP#4]
Murdoch Children's Research Institute
Email: lienanhha.do@mcri.edu.au

Prof. Warwick Britton
[OP#15]
Centenary Institute
Email: warwick.britton@sydney.edu.au

Dr. Ha Nguyen
[P#6]
University of South Australia
Email: ha.nguyen2@unisa.edu.au

Dr. George Lenon
Royal Melbourne Institute of Technology University
Email: george.lenon@rmit.edu.au

Dr. Reema Harrison
[OP#2]
University of New South Wales
Email: reema.harrison@unsw.edu.au

Dr. Dung Phung
Centre for Environment and Population Health, Queensland
Email: d.phung@griffith.edu.au

Dr. Greg Fox
[OP#13]
University of Sydney
Email: greg.fox@sydney.edu.au

Dr. Tuan Anh Nguyen
University of South Australia
Email: tuan.nguyen@unisa.edu.au

Dr. Rodney Lea
Institute of Health and Biomedical Innovation
Email: rodney.a.lea@gmail.com

Prof. Kirsty Foster
University of Sydney
Email: kirsty.foster@sydney.edu.au

Prof. Naresh Verma
Australian National University
Email: naresh.verma@anu.edu.au

Dr. Lauren Carrington
The University of Melbourne
Email: lcarrington@oucru.org

List of Vietnamese attendees

Prof. Nguyen Tran Hien

National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: ngtrhien@yahoo.com

Prof. Dang Duc Anh

National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: dangducanh.nihe@gmail.com

Prof. Nguyen Van Kinh

National Hospital of Tropical Diseases, Hanoi, Vietnam
Email: kinhnv@nhtd.vn

A/Prof. Nguyen Linh Toan

Vietnam Military Medical University, Hanoi, Vietnam
Email: toannl@vmmu.edu.vn

A/Prof. Dinh Thi Phuong Hoa

Research Institute for Child Health, National Children's Hospital
Email: phuonghoa55@yahoo.com

A/Prof. Nguyen Thi Van Anh

Key Laboratory of Enzyme and Protein Technology - University of Science, Vietnam National University, Hanoi, Vietnam
Email: vananhbiolab@gmail.com

A/Prof. Nguyen Vu Trung

National Hospital for Tropical Diseases, Hanoi, Vietnam
Email: nguyen.vu.trung@gmail.com

A/Prof. Le Huu Song

108 Military Central Hospital, Hanoi, Vietnam
Email: songlh@benhvien108.vn

A/Prof. Le Thi Minh Huong

National Children's Hospital, Hanoi, Vietnam
Email: lehuong@mail.ru

A/Prof. Le Thi Huong

The Institute for Preventive Medicine and Public Health, Hanoi Medical University, Hanoi, Vietnam
Email: lethihuong@hmu.edu.vn

Dr. Le Thi Hoi
[OP#19]

National Hospital for Tropical Diseases, Hanoi, Vietnam
Email: lehoi2003@gmail.com

Dr. Dang Vu Phuong Linh
[OP#14]

Hanoi School of Public Health, Hanoi, Vietnam
Email: dvpl@hsph.edu.vn

Dr. Ngo Tat Trung
[OP#17]

108 Military Central Hospital, Hanoi, Vietnam
Email: tatrungngo@gmail.com

Dr. Ho Huu Tho
[OP#18]

Vietnam Military Medical University, Hanoi, Vietnam
Email: huuthottncydqs@yahoo.com

Dr. Ngo Thi Hoa
[OP#12]

Oxford University Clinical Research Unit, HCMC, Hanoi, Vietnam
Email: hoant@oucru.org

Dr. Pham Viet Hung
[OP#9]

National Children's Hospital, Hanoi, Vietnam
Email: vhnhi44@gmail.com

Dr. Bui Chi Bao
[OP#10]

University of Medicine and Pharmacy at HCM City, Ho Chi Minh city, Vietnam
Email: bcbao@ump.edu.vn

A/Prof. Hoang Thi Lam
[OP#11]

Hanoi Medical University, Hanoi, Vietnam
Email: drhoangthilam@yahoo.com

Dr. Vu Duy Kien
[OP#3]

Hanoi School of Public Health, Hanoi, Vietnam
Email: vuduykien@gmail.com

A/Prof. Le Tran Ngoan
[OP#7]

Hanoi Medical University, Hanoi, Vietnam
Email: Letngoan@hmu.edu.vn

Dr. Le Minh Giang
[OP#6]

Hanoi Medical University, Hanoi, Vietnam
Email: leminhgiang@hmu.edu.vn

Dr. Do Nam Khanh
[P#14]

Institute for Preventive Medicine and Public Health, Hanoi Medical University, Hanoi, Vietnam
Email: donamkhanh@hmu.edu.vn

Dr. Do Phuong Loan
[OP#16]

National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: dpl@nihe.org.vn

Dr. Nguyen Thu Trang
[P#7]

Research and Training Centre for Community Development (RTCCD), Hanoi, Vietnam
Email: thutrangrtccd@gmail.com

Dr. Tran Thi Ly
[OP#8]

National Children's Hospital, Hanoi, Vietnam
Email: ly83_yhn@yahoo.com

Dr. Do Van Dung
[OP#1]

University of Medicine and Pharmacy at Ho Chi Minh City, Ho Chi Minh City, Vietnam
Email: dvdung@ump.edu.vn

MSc. Tran Thi Mai Hung
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: ttmh@nihe.org.vn

Dr. Trinh Thanh Trung
[P#15]

Vietnam National University, Hanoi, Vietnam
Email: trinhtrung80@yahoo.com

Ms. Tran Thi Thanh Thoa
Duy Tan University, Da Nang, Vietnam
Email: thanhthoa.qbinh@gmail.com

Ms.Thai Thi Cam Chi
University of Queensland in Vietnam
Email: c.thaicam@uq.edu.au

Dr. Tran Dai Lam
[P#17]

Hanoi University of Science and Technology, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Email: trandailam@gmail.com

A/Prof. Le Duc Hau
[P#18]

Thuyloi University, Hanoi, Vietnam
Email: duchaule@wru.vn

Dr. Tran Thi Nguyen Hoa
[P#19]

National Institue of Hygiene and Epidemiology, Hanoi, Vietnam
Email: trnghoasuk@gmail.com

Prof. Le Thanh Hoa
[P#20]

Institute of Biotechnology, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Email: imibtvn@gmail.com

Dr. Tran Thi Hong
[P#21]

Hanoi School of Pubic Health, Hanoi, Vietnam
Email: honghsph@gmail.com

Dr. Tran Huy Hoang
[P#22]

National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: thh@nihe.org.vn

Dr. Chu Duc Hoang
National Technology Innovation Fund, Hanoi, Vietnam
Email: hoangcd@zinmed.com

Dr. Ho Lam Hong
[P#8]

Center for research and action of comprehensive health (RACH), Hanoi, Vietnam
Email: center.rach@gmail.com

A/Prof. Nguyen Huy Hoang
[P#9]

Institute of Genome Research, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Email: nhhoang@igr.ac.vn

Dr. Tran Cam Tu
[P#10]

Institute of Tropical Biology –Vietnam Academy of Science and Technology, HCM city, Vietnam
Email: camtu79@gmail.com

MD. Luu Phuong Dung
[P#11]

National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: lpd@nihe.org.vn

Prof. Dr. Nguyen Khac Hai
[P#12]

National Institute of Occupational and Environmental Health, Hanoi, Vietnam
Email: haink@nioeh.org.vn

Prof. Michael Dunne
[P#1]

School of Public Health and Social Work, Queensland University of Technology, Queensland, Australia
Email: m.dunne@qut.edu.au

A/Prof. Vo Van Thang
[P#1]

Hue University of Medicine and Pharmacy, Hue, Vietnam
Email: vovanthang147@gmail.com

MD. Nguyen Thanh Chung
[P#4]

National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: bsnguyenthanhchung@gmail.com

Dr. Do Chi Hung
[P#5]

Hanoi School of Public Health, Hanoi, Vietnam
Email: dochihung1962@yahoo.com.vn

Dr. Ta Thi Binh
[P#12]

National Institute of Occupational and Environmental Health, Hanoi, Vietnam
Email: tabinh133@gmail.com

Dr. Pham Thi Lan Lien
[P#13]

National Children's Hospital, Hanoi, Vietnam
Email: phamlanlien@gmail.com

Dr. Nguyen Thi Mai Hien
[P#2]

The Vietnam Office of the International Center, an USA based NGO., Hanoi, Vietnam
Email: maihiennguyen2010@gmail.com

Dr. Hoang Van Dong
[P#3]

National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: hdongyk97@gmail.com

Ms. Nguyen Thuy Linh
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: ntl@nihe.org.vn

Dr. Ritsuko Kakuma
Melbourne School of Population & Global Health, University of Melbourne, Melbourne, Australia
Email: rkakuma@unimelb.edu.au

Dr. Nguyen Thi Lan Anh
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: ntla@nihe.org.vn

Mr. Vu Manh Hung
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: hung.k52a@gmail.com

Dr. Pham Hung Vuong
Hanoi University of Science and Technology (HUST), Hanoi, Vietnam
Email: vuong.phamhung@hust.edu.vn

Dr. Duong Cong Thanh
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: congthanhnihe@yahoo.com

MSc. Nguyen Thi Huyen Trang
Hanoi Medical University, Hanoi, Vietnam
Email: tranghealthpublic@gmail.com

Dr. Dang Thi Thanh Son
National Institute of Veterinary Research (NIVR), Hanoi, Vietnam
Email: thanhson_chien@yahoo.com

MSc. Ngo Thi Ty Na
Nong Lam University in Ho Chi Minh City, Ho Chi Minh city, Vietnam
Email: tyna.ngothi@gmail.com

MSc. Nguyen Thi Thu Cuc
Hanoi University of Pharmacy, Hanoi, Vietnam
Email: cucnguyen.pharm@gmail.com

MD. Nguyen Ngoc Tam
National Geriatric Hospital, Hanoi, Vietnam
Email: ngoctamyhn@gmail.com

Dr. Vu Thi Thanh Huyen
Hanoi Medical University, Hanoi, Vietnam
Email: vuthanhhuyen11@yahoo.com

Mr. Nguyen Xuan Thanh
National Geriatric Hospital, Hanoi, Vietnam
Email: xuanthanhvlk1901@gmail.com

MD. Ho Anh Son
Vietnam Military Medical University, Hanoi, Vietnam
Email: hoanhsonhp@gmail.com

Dr. Phan Thi Nga
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: pnga_arboviruses@yahoo.com

Dr. Nguyen Dong Tu
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: ndt@nihe.org.vn

MSc. Trieu Thi Thanh Van
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: tttv@nihe.org.vn

Mr. Nguyen Ngoc Luong
Hue University, College of Sciences, Hue, Vietnam
Email: luongnguyen@jbnu.ac.kr

MD. Nguyen Le Khanh Hang
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: nlkh@nihe.org.vn

Dr. Nguyen Thi Dieu Thuy
Vietnam Academy of Science and Technology, Hanoi, Vietnam
Email: ntdthuy@ibt.ac.vn

Dr. Hoang Vu Mai Phuong
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: hvmp@nihe.org.vn

Ms. Dao Thi Hai Anh
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: daohaianh2002@yahoo.com

Ms. Ung Thi Hong Trang
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: ungtrang195@gmail.com

Mr. Nguyen The Anh
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: nguyentheanh25689@gmail.com

Dr. Do Duc Minh
University of Medicine and Pharmacy at HCMC, Ho Chi Minh city, Vietnam
Email: mdt14284@yahoo.com

A/Prof. Dr. Nguyen Van Trang
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: nvt@nihe.org.vn

Ms. Nguyen Thi Mai Duyen
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: maiduyen.hp@gmail.com

Dr. Mai Thi Ngoc Lan Thanh
Thu Dau Mot University, Binh Duong, Vietnam
Email: thanhmtnl@tdmu.edu.vn

A/Prof. Nguyen Huy Nga
National Institute of Occupational and Environmental Health, Hanoi, Vietnam
Email: huynga2000@gmail.com

Dr. Nguyen Viet Dung
Hanoi University of Science and Technology, Hanoi, Vietnam
Email: dung.nguyenviet1@hust.edu,vn

MD. Le Thi Phuong Mai
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: lepmai@yahoo.com

Dr. Dang Thi Thanh Huyen
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: epi.huyen1@gmail.com

A/Prof. Dang Thi Ngoc Dung
Hanoi Medical University, Hanoi, Vietnam
Email: dzunghmu@gmail.com

MSc. Nguyen Thi Ngoc Lan
Hanoi Medical University, Hanoi, Vietnam
Email: hslan2011@gmail.com

Dr. Dinh Truong Son
Vietnam National University of Agriculture, Hanoi, Vietnam
Email: dinhtruongson77@gmail.com

MD. Hoang Thi Thu Ha
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: htth@nihe.org.vn

Dr. Nguyen Van Hanh
Institute of Biotechnology, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Email: nvhanh@ibt.ac.vn

MSc. Nguyen Thi Thu Hoa
Hanoi Metropolitan University, Hanoi, Vietnam
Email: ngthithu3hoa@gmail.com

Dr. Nguyen Thi Minh Huyen
Institute of Biotechnology, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Email: ntminhhuyen@ibt.ac.vn

Dr. Hoang Thi Khuyen
Institute of Materials Science, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Email: khuyenhtims@gmail.com

MD. Pham Duy Quang
The Pasteur Institute, Ho Chi Minh City, Ho Chi Minh city, Vietnam
Email: duyquang.pham@gmail.com

Dr. Nguyen Thanh Binh
National Children's Hospital, Hanoi, Vietnam
Email: nguyentb2002@gmail.com

Mr. Luyen Quoc Hai
BIONET Vietnam Biotechnology JSC, Hanoi, Vietnam
Email: director.bionet@gmail.com

Dr. Tran Thu Huong
Institute of Materials Science, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Email: tthuongims@gmail.com

Dr. Duong Van Dat
United Nations Population Fund in Vietnam, Hanoi, Vietnam
Email: dat@unfpa.org

Dr. Do Trung Kien
Institute of Biotechnology, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Email: dotrungkienbio@gmail.com

MD. Nguyen Van Huy
Hanoi Medical University, Hanoi, Vietnam
Email: nguyenvanhuy@hmu.edu.vn

Dr. Tran Quang Binh
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: binhnihe@yahoo.com

Dr. Pham Ngoc Minh
Thai Nguyen University of Medicine and Pharmacy, Thai Nguyen, Vietnam
Email: minh.pn@tnu.edu.vn

Ms. Nguyen Bich Ngoc
National Geriatric Hospital of Vietnam, Hue, Vietnam
Email: ngocbn1@gmail.com

A/Prof. Dr. Harry Minas
Melbourne School of Population and Global Health, The University of Melbourne, Melbourne, Australia
Email: h.minas@unimelb.edu.au

Dr. Nguyen Thi Tuyet Nhung
Institute of Biotechnology, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Email: nttnhung@ibt.ac.vn

MD. Dao Thi Minh An
Hanoi Medical University, Hanoi, Vietnam
Email: daothiminhan@yahoo.com

Ms. Nguyen Thi Thu Phuong
Hanoi University of Pharmacy, Hanoi, Vietnam
Email: nhungnguyen.hup@gmail.com

Dr. Mai Van Cuong
Bach Mai Hospital, Hanoi, Vietnam
Email: maicuongicu@gmail.com

MD. Tran Thi Thanh Hoa
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: hoasinh41@gmail.com

Dr. Nguyen Thuy Duong
Institute of Genome Research, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Email: tdnguyen@igr.ac.vn

Dr. Nguyen Thi Xuan
Institute of Genome Research, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Email: xuannt@igr.ac.vn

Prof. Vu Sinh Nam
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: vusinhnam@gmail.com

Dr. Nguyen Le Thanh An
International University – Vietnam National University HCMC, Ho Chi Minh city, Vietnam
Email: nltan@hcmiu.edu.vn

Dr. Pham Thi Kim Lien
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: lilienpham@yahoo.com

MSc. Nguyen Thi Thu Trang
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: antoinettenguyen81@gmail.com

Dr. Le Nguyen Thanh
Institute of Marine Biochemistry, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Email: lethanh6476@yahoo.com

Ms. Bui Thi Thien Thanh
Biotechnology Center of Ho Chi Minh City, Ho Chi Minh city, Vietnam
Email: btthienthanh@gmail.com

Mrs. Dao Thi Vi Hoa
Vaccine of Dalat Pasteur Limited Company, Da Lat, Vietnam
Email: dtvihoa@gmail.com

Dr. Nguyen Cong Khanh
National Institute of Hygiene and Epidemiology, Hanoi, Vietnam
Email: nck@nihe.org.vn

Dr. Duong Hong Quan
Duy Tan University, Da Nang, Vietnam
Email: quanvspt@gmail.com

Ms. Anna Bergström
Uppsala University
Email: anna.bergstrom@kbh.uu.se