出國報告（出國類別：研究）

赴泰國曼谷參加2017年防疫一體國際研討會(One Health International Conference)進行禽流感相關研究

服務機關：衛生福利部疾病管制署
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摘要

本次出國係為出席泰國醫學會與泰國法政大學醫學院假曼谷舉辦之 2017 年第 2 屆防疫一體國際研討會(One Health International Conference)，與來自亞太國家醫學、獸醫學、公共衛生、農業及環境相關領域之專家學者約計 300 人，針對禽流感、MERS 等新興傳染病及抗生素抗藥性等研究新知與防治政策進行研討與交流，並瞭解泰國政府及學術機構推動防疫一體(One Health)之政策與計畫，以研討跨部門合作防治禽流感及其他新興傳染病疫情之策略或機制，同時蒐集各國執行「全球衛生安全綱領(Global Health Security Agenda – GHSA)」之情形。另代表本署發表一篇論文海報「Response to H5N6 avian influenza outbreaks in Taiwan, 2017」，分享我國 2017 年因應 H5N6 禽流感疫情之跨部門合作情形。

目錄

壹、目的

本次出國目的係藉由參加 2017 年第 2 屆防疫一體國際研討會(One Health International Conference)，探討各國跨部門合作防治禽流感及其他新興傳染病疫情之機制，並分享我國 2017 年因應 H5N6 禽流感疫情之跨部門合作情形，俾與各國專家學者進行交流，拓展我國傳染病防治之國際合作關係及作為我國擬定公共衛生緊急事件整備與因應計畫之參考。

貳、過程

一、行程表

日期	地　　點	行　程　內　容
106/12/13	台北→曼谷	啟程及抵達
106/12/14	曼谷	參加 2017 年防疫一體國際研討會進行禽流感相關研究
106/12/15	曼谷	參加 2017 年防疫一體國際研討會進行禽流感相關研究
106/12/16	曼谷→台北	返程及抵達

二、會議內容

本研討會時間自 106 年 12 月 14 日至 12 月 15 日，共計 2 天，議程分為開幕演講、專題演講(One Health 的合作及在衛生/動物/農業/漁業/環境等領域之應用)、技術場次(經驗分享及論文發表)、綜合討論。茲挑選幾項主題，重點摘錄如下:

(一) 開幕演講(Inaugural session):One Health approach: Influenza and MERS」

來自香港大學的 Malik Peiris 教授說明，One Health 看似一個新的名詞，但這個概念其實早在 19 世紀已獲得認可。以歷史觀點來看，巴斯德(Louis Pasteur)原是位化學家，否定「自然發生說」、找到預防葡萄酒變酸和導致蠶生病的原因、提出預防接種措施並研製出狂犬病疫苗，對全球衛生有莫大的影響；William Osler 是位醫師，同時在醫學院和獸醫學院執教，並進行豬/狗/牛等動物的疾病研究；Rudolf

Virchow 病理學家，強調「動物和人類醫學之間不存在分界線，也不應該有分界線」。近年來，透過重點人物和重大事件的支持，One Health 理念在公共衛生界和動物健康界愈來愈獲得認同。2004 年國際野生生物保護學會(Wildlife Conservation Society)辦理一場以「在全球化的世界中建立通往健康的跨學科橋樑」為主題的研討會，訂定了 12 項優先事項，亦即 The Manhattan Principles，伊波拉病毒、禽流感等都是該研討會的討論主題。2007 年，在印度新德里舉行的國際禽流感和流感大流行部長級會議，鼓勵各國政府進一步發展 One Health 概念，建立人與動物衛生系統之間的聯繫，以因應流感大流行。2008 年，聯合國農糧組織(FAO)、世界動物衛生組織(OIE)和世界衛生組織(WHO)與聯合國兒童基金會(UNICEF)、聯合國系統科學組織(UNSIC)和世界銀行(World Bank)共同訂定因應新興傳染病風險的聯合戰略框架，正式提出整合人類－動物－生態環境介面之 One Health 概念。

新興的病毒性傳染病持續對全球公共衛生產生巨大的威脅，20 世紀以來發生的重大傳染病疫情，有許多是人畜共通傳染病，且大部分是 RNA 病毒所引起的。但新興傳染病疫情帶來的不僅是健康威脅，還有巨額的經濟損失，根據世界銀行 2012 年統計 1986 年到 2006 年期間人畜共通傳染病疫情對經濟損失的影響，從立百病毒腦炎、西尼羅熱、鼠疫的 5-10 億美元，到超過 100 億美元的 BSE、SARS、禽流感。

雖然最近幾年發生的伊波拉病毒感染和茲卡病毒感染疫情影響頗大，但對全球公共衛生安全威脅最大的還是新興呼吸道病毒，因為能夠快速地在國際間傳播，SARS 和 2009 年的 H1N1 流感大流行即為最佳例證，更需要運用 One Health 的方法，整合人類及動物健康、環境科學、行為科學等領域的專家共同合作。目前流感病毒和 MERS 冠狀病毒被認為是最具全球大流行潛力的呼吸道病毒。

人類 H7N9 流感病例持續出現，亞洲、歐洲、北美洲和非洲也不斷有禽鳥的高病原性 H5N1、H5N6、H5N8(H5Nx)疫情，並有零星人類感染 H5Nx 病例，活禽市場是禽流感病毒在禽類之間複製、持續存在及傳播，以及傳染給人類的來源，香港實施活禽市場休息清潔日和活禽不在市場過夜的政策，經實際採檢結果證實，可以降低新型病毒出現、在禽類間傳播及禽傳人的風險。此外，中國豬隻的流感病毒帶有 2009 年 H1N1 大流行病毒的基因片段，也可能透過基因重組出現大流行病毒。美國 CDC 和 WHO 分別發展出流感風險評估工具(IRAT 和 TIPRA)，用於評估目前在動物中流行但不在人類中流行的 A 型流感病毒構成大流行的風險，這也可以做為流感大流行發生前疫苗選株的基礎，目前具流行潛力且影響較大的有 H7N9、H5N6、H9N2。

阿拉伯半島仍然持續有 MERS 病例發生，大多與接觸駱駝有關，有時會在醫院發生群聚感染事件，但執行良好的院內感染管制措施已能有效阻斷其傳播。但我們不能假設 MERS-CoV 不會像 SARS-CoV 可以有效地人傳人，對於 MERS-CoV 的傳染機轉仍需要投入更多的調查。

(二) 專題演講(Key Note Speech)及技術場次(Technical sessions):

1. One Health 概念旨在透過跨部門及跨領域的相互合作，促進全球人類健康福祉，因此鼓勵衛生、動物、農漁業、環境及生態等不同領域的專家學者投入研究，找出威脅人類與動物健康及環境恢復力的解決方法，以達到聯合國在 2016 年通過的永續發展目標(Sustainable Development Goals - SDGs)。美國 Davis 加州大學及斯里蘭卡 Peradeniya 大學爰於 2014 年假斯里蘭卡合作舉辦第 1 屆 One Health 國際研討會，並於 2015 年辦理 One Health Intensive Course 及一系列 One Health Teaching Scholar program，期透過各領域專家學者的交流互動及學校教育的推展，建構跨學科合作的 One Health 夥伴關係群。
2. 美國在 2014 年聯合 WHO、OIE、FAO、歐盟及 29 個國家，發起「全球衛生安全綱領(Global Health Security Agenda – GHSA)」倡議，期藉由跨部門合作、強化衛生體系及凸顯國際組織角色與防疫一體的新概念，在既有全球衛生安全基礎架構上，透過 11 項行動方案之執行，加強國際合作，建構全球衛生人力量能，以防範傳染病造成的全球衛生威脅，促進全球衛生安全。而為達到 GHSA 建構全球衛生人力量能的目標，美國國際開發總署(USAID)即在同(2014)年發起一項 One Health Workforce(OHW)計畫，提供經費給大學網絡聯盟包括 One Health University Networks、One Health Central and Eastern Africa(OHCEA)、Southeast Asia One Health University Network (SEAOHUN)及以國家為主的大學聯盟包括越南(VOHUN)、泰國(THOHUN)、印尼(INDOHUN)及馬來西亞(MYOHUN)辦理 One Health 跨學科訓練課程，協助傳染病爆發流行高風險區域如中非、東非及東南亞國家提升偵測、預防及應變之人力量能，使其達到 WHO IHR、OIE PVS 或 JEE 所要求的標準，目前共有 74 所大學加入此計畫。
3. 英國愛丁堡大學獸醫學院與盧安達大學合作，經由 OHCEA 取得 USAID 經費補助，在盧安達辦理狂犬病防治人力訓練計畫，藉由大學跨領域師生合作，深入社區鄉鎮教導民眾防治人類及動物狂犬病；此外，英國愛丁堡大學獸醫學院亦在盧安達大學開

設 One Health 暑期課程，教導非洲國家學生如何防治人畜共通傳染病，以提升非洲國家因應新興傳染病及人畜共通疾病的應變量能。

4. 泰國政府有感於 2003 年 SARS、2004 年 H5N1、2009 年 H1N1 以至於 2014 年伊波拉及 2015 年茲卡疫情之肆虐，積極推動 One Health 合作計畫並訂定國家型 One Health 政策及策略計畫，包括在 One Health 概念下設立疾病監測/預防/治療/防治體系、透過管理系統強化畜養動物及野生動物免於疾病危害、建構知識管理系統及促進研究發展、整合緊急事件因應與整備管理系統、新興傳染病之風險溝通等 5 大策略。泰國政府為確實執行國家型 One Health 政策，由農業部、天然資源及環境部、內政部、社會發展及人類安全部、勞動部、教育部、公共衛生部及紅十字會共同簽署 Memorandum of Understanding on Implementation of One Health Initiative for National Health Security，內容包括新興傳染病及人畜共通疾病或任何可能造成健康危害訊息之分享交流、各層級工作之整合、促進年輕世代認同 One Health 概念、將 One Health 概念推廣到地方層級。

5. 為強化監測因應量能，泰國政府在全國(鄉鎮、地區、省、區域、中央)共設立 1,030 個跨部會的監測與緊急應變小組(SRRT)，以即時監測及因應各種可能造成健康危害之事件；另自 2012 年起，由政府部門、學術機構及國際組織合作推動 One Health 計畫，針對 One Health Provincial Epidemiology team members 加強流病訓練，並在 19 個省分開設跨部會流病訓練班(multi-sectoral training in applied epidemiology and field investigation)，強化防疫人力量能。此外，更在 2014 年召開 Thailand National Health Assembly 會議，與會人員包括衛生部/農業部/教育部官員、學術機構專家學者及地方行政單位人員，共同提升監測及因應健康危害之量能，且將 One Health 推廣到學術機構及設立 One Health 協調辦公室；會後亦在此架構之跨部會合作下，於 2016 年完成 JEE 評核及報告。

6. 狂犬病是非洲及東南亞國家最常見的人畜共通疾病，亟需跨學科及跨部會合作推動家犬貓及流浪犬貓之疫苗接種計畫。美國加州大學與華盛頓州立大學在肯亞進行一項模擬試驗，倘全國犬隻的疫苗接種涵蓋率達 70%，可在 3 年消除狂犬病；倘涵蓋率達 25%，則需 5 年方能消除狂犬病。菲律賓、印尼及泰國與會者表示，推動犬貓施打狂犬病疫苗政策需要跨部門之協調與合作，包括深入社區家戶教育民眾攜帶犬貓施打疫苗、防範流浪犬貓等。此外，野生動物之狂犬病監測工作亦有助於防範狂犬病毒之散播。

7. 抗生素抗藥性(AMR)對全球公共衛生構成日益嚴重的威脅，需要政府部門和社會立即採取行動。據估計，到 2050 年，每年因抗藥性細菌感染所引起的死亡人數將高達 1,000 萬人(其中亞洲和非洲分別有 400 餘萬人)，其造成的經濟損失將使全球 GDP 下降 3%，WHO 於 2015 年公布對抗 AMR 全球行動計畫，强调需要有效的 One Health 思維。泰國在 2011 年訂定對抗抗生素抗藥性計畫(Antimicrobial Resistance Containment and Prevention Program, AMRCP)，涵蓋人類、動物、植物、環境等範圍，納入人類醫學(臨床及基礎醫學)、獸醫學、農業、環境、社會科學與經濟等部門，依照 WHO 訂定的 5 項策略目標，制定出 10 個主要工作項目，包括 AMR 疾病負擔推估、確定 AMR 食物鏈及 AMR 盛行率、辦理 AMR 管制及預防之大型宣導活動、製作 AMR 管制及預防之教育練及宣導素材等。此計畫共分為 3 期，除泰國衛生、農業等政府部門之編列相關預算外，還有來自加拿大、美國、WHO 提供之經費。透過執行此計畫，發現泰國每年約有 10 萬人感染 AMR、延長住院天數 300 萬天、約有 3 萬人死於 AMR 感染，每年治療 AMR 感染的抗生素費用約 2 億美元，每年造成的經濟損失約 130 億美元(約 0.6%GDP)。而在瞭解 AMR 如何在社區傳播方面(AMR chain)，AMR 主要來自人類和食用動物使用抗生素，泰國人民獲得抗生素的來源多元，包括零售店、藥房、診所和醫院，且經常沒有適當使用抗生素，ESBL 腸道菌在無症狀人之盛行率為 29%-93%之間，在無症狀的豬隻和雞則分別為 76.7%和 40%，因此 AMR 可以傳到食物、環境和其他人。醫院的 AMR 則通常與不當使用抗生素、無效的感染管制措施有關。醫院內不當使用抗素的比例約為 25%-92%之間，也經常造成院內感染。依照 AMR chain 設計大型宣導活動，並以 STOP AMR: Everybody’s business 為活動主軸，此外，選定部分社區將所有利害關係人納入一起推動對抗 AMR 行動，做為推廣到其他社區的示範點。

8. 強生公司(J＆J)是全球最大的醫療保健公司，公司的宗旨是融合心靈，科學和智慧，改變人類健康的軌跡。該公司於 2013 年成立全球公共衛生（Global Public Health, GPH）部門，主要針對 4 個重點領域：HIV，結核病，心理健康和土壤傳播的寄生蟲。結核病被選為重點領域，因為它仍然是全球頭號傳染病殺手，全球每年估計有 170 萬人死於 TB，每年約有 1,000 萬個新病例，其中 49 萬人是多重抗藥性結核(MDR-TB)。MDR-TB 使已經負擔過重的衛生系統面臨沉重的壓力。MDR-TB 也佔所有抗藥性細菌的三分之一以上。亞太地區 TB 和 MDR-TB 的疾病負擔特別高。WHO 終結 TB 的策略目標是，到 2035 年與 TB 相關的死亡減少 95%。強生公司(J＆J)研發的 bedaquiline，於

2012 年獲美國 FDA 核准上市，是 40 多年來的第一個新型結核病藥物，目前也已在多個國家上市，印度政府於 2016 年開始在 6 家醫院提供 600 名 MDR-TB 病人使用，2017 年 3 月擴大到 156 個 TB 中心，預計提供 10,000 名病人使用。2016 年 11 月 bedaquiline 在中國上市，該公司也與國際組織合作，即將開始在部分醫院提供 MDR-TB 病人使用。

(三) 綜合討論(Panel discussion):One Health, How can we collaborate?

1. 與會專家一致認為，推動 One Health 概念應該與教育體系結合，例如醫學系和獸醫系的學生可以一起受訓，未來可以再加入社會科學領域的學生。此外，One Health 概念需要向下紮根，最好從中學就可以納入。
2. 推動 One Health 的困境之一，就是政府部門的經費是各自編列，各自為政。因此與會專家認為，只有透過對話找到部門與部門間的關聯，才能共同合作。換言之，欲落實 One Health 概念最基本也是最重要的方法，就是跨出去和別的部門開始對話。
3. 第 3 屆 One Health 國際研討會主題訂為 One Science One Health，預訂於 2019 年 1 月 9-11 日假菲律賓馬尼拉舉行。

叁、心得及建議

一、本研討會之講者及與會人員以大學獸醫或生態領域之專家學者或研究人員為多，且長期投注在 One Health 相關研究議題，舉凡 One Health 與泰國草藥之推展、透過行為改變減少抗藥性機率與 One Health 的關係、二氧化碳對 One Health 的影響、One Health 對食品安全的重要性等等，皆為本屆會議重要之研討議題。爾後倘有類此會議資訊，建議亦可轉知農委會、環保署或衛福部中醫藥司及食藥署等單位參考。

二、美國國際開發總署(USAID)為響應 GHSA 而在 2014 年發起的 One Health Workforce(OHW)計畫，結合 One Health University Networks、One Health Central and Eastern Africa(OHCEA)、Southeast Asia One Health University Network(SEAOHUN)及越南(VOHUN)、泰國(THOHUN)、印尼(INDOHUN)及馬來西亞(MYOHUN)等大學聯盟，合作辦理 One Health 跨學科訓練課程，協助中非、東非及東南亞國家提升傳染病偵測、預防及應變之人力量能。此計畫策略，係由學校教育推廣，向下扎根，逐步落實 One Health 概念，值得我國學習。

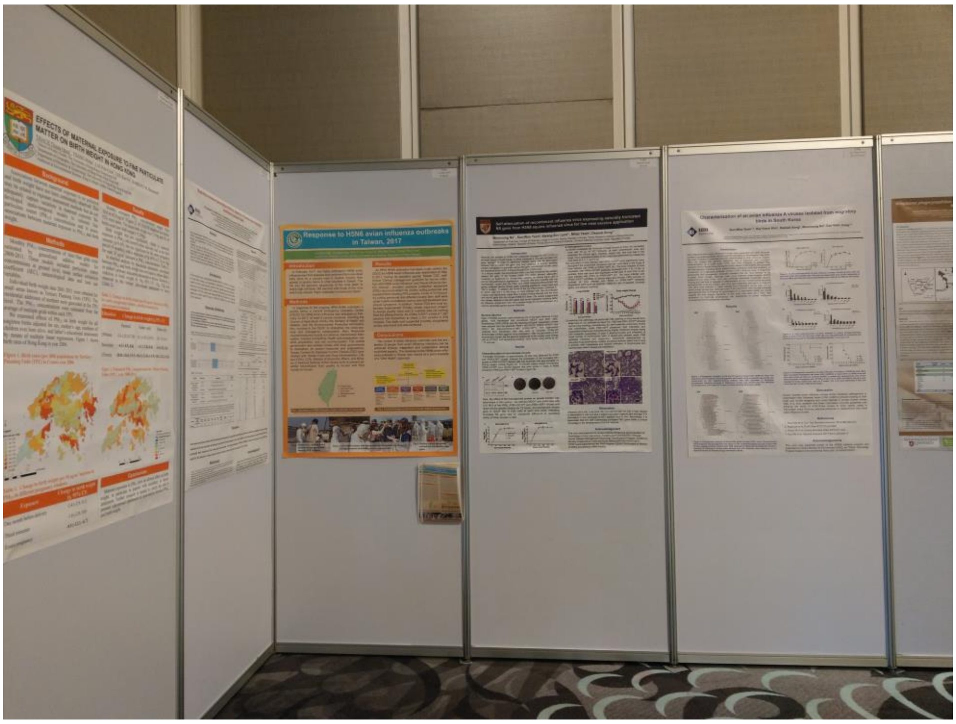
三、泰國政府為推動 One Health 概念，聯合 8 個部層級組織簽署合作備忘錄並制定國家型 One Health 政策，合作推動 One Health 計畫，值得我國參考。本署在 2016 年進行之 JEE 評核計畫及農委會防檢局在 2018 年即將進行之 OIE PVS 評核計畫，已建立跨部會合作機制，未來應更強化此一合作機制，落實 One Health 概念。

肆、附錄

一、會場照片

報到區

開幕演講


Response to H5N6 avian influenza outbreaks in Taiwan, 2017


from Zanthoxylum rhetsa Fruits
against Streptococcus mutans
Introduction
Methods
Results and Conclusion

海報展示區

二、研討會議程

OHIC 2017 Scientific Program
December 14, 2017

Time	Vibhavadee Ballroom B	Vibhavadee Ballroom C	Rangsit 1
07.30-08.15	**Registration**		
08.15-08.45	**Opening Ceremony**		
08.45-09.45	**Inaugural session** "One Health approach: Influenza and MERS" Prof. Malik Peiris, *University of Hong Kong*		
09.45-10.00	**Coffee break**		
10.00-11.30	**Technical sessions: Siriraj Hospital Experience** **"How geriatric clinic can align the health need for older people"** Moderator: Prof. Dr. Prasert Assantachai Why Thailand desperately needs geriatric clinic now? Prof. Dr. Prasert Assantachai, *Department of Preventive and Social Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University* How to achieve the desirable characteristics of geriatric clinic? Assoc. Prof. Dr. Weerasak Muangpaisan, *Department of Preventive and Social Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University* Contribution of multidisciplinary team in geriatric clinic: rehabilitation model Assoc. Prof. Dr. Piyapat Dajpratum, *Department of Rehabiliation, Faculty of Medicine Siriraj Hospital, Mahidol University* Contribution of multidisciplinary team in geriatric clinic: nursing care model Mrs. Dujpratana Pisalsalakij, *Department of Preventive and Social Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University*	**Technical sessions: Thammasat Experience** (Thai Traditional Medicine) **"Thai Herb and One Health"** Moderator: Assoc. Prof. Dr. Arunporn Itharat Thai traditional medicine as anti-microbial agent Dr. Sumalee Panthong, *Department of Applied Thai traditional medicine, Faculty of Medicine, Thammasat University* Thai traditional medicine for NCD Assoc. Prof. Dr. Arunporn Itharat, *Department of Applied Thai traditional medicine, Faculty of Medicine, Thammasat University* Thai traditional medicine for cancer Dr. Srisopa Ruangnoo, *Department of Applied Thai traditional medicine, Faculty of Medicine, Thammasat University* Palliative Care in Thai traditional medicine and complementary medicine for terminal cancer patients Phra Paponpatchara Pibanpaknitee, *Kampramong Temple*	**Technical sessions:** **Oral presentation** (Rabies/Infection) Moderator: Prof. Patricia Conrad / Prof. Michael Wilkes Modelling mass dog vaccination strategies to eliminate human rabies in Kenya Thumbi Mwangi *(U.S.A.)* Comparison of identical data of animal bite case reports to veterinary and public and public health centres in Bener Meriah district of Aceh Province, Indonesia Teuku Reza Ferasyi *(Indonesia)* Communication, Information, and education (CIE) program for Rabies in Bener Meriah Recency of Aceh, Indonesia Al Azhar *(Indonesia)* Influenza viruses and dogs: One-health perspectives Woonsung Na *(Republic of Korea)* Diversity of bat astroviruses in Lao PDR and Cambodia Veasna Duong *(Cambodia)* Genetic diversity of coronaviruses in bats in Lao PDR and Cambodia Vibol Hula *(Cambodia)* Factors affecting adherence to antiretroviral therapy Nanda Safira *(Indonesia)*
11.30-11.50	**Key Note Speech 1** UC Davis One Health and Planetary Health programs: Collaboration is critical Prof. Patricia Conrad, *University of California, Davis*		
11.50-12.10	**Key Note Speech 2** A successful One Health Collaboration Assoc. Prof. Saumya Wickramasinghe, *University of Peradeniya, Sri Lanka*		
12.10-12.30	**Key Note Speech 3** Advancing the global One Health Concept through Collaborations that Connect, Create and Educate Dr. Cheryl Stroud, *Executive Director, One Health Commission*		
12.30-12.45	**Discussion**		
12.45-13.30	**Lunch & Poster session:** **"Infection"** Moderator: Prof. Patricia Conrad / Dr. Saumya Wickramasinghe **"Public Health / Herbal Medicine"** Moderator: Prof. Michael Wilkes / Assoc. Prof. Arunporn Itharat		
13.30-15.00	**Technical sessions: NIDA Experience** Moderator: Dr.Pananda Chansukree Potential exposure of small children to urban dust particles in Thailand Assist. Prof. Dr. Pakpong Pochanart, *Graduate School of Environmental Development Administration* Environmental management for elderly in rural areas Assoc. Prof. Dr. Wisakha Phoochinda, *Graduate School of Environmental Development Administration & Research Center* Drought adaptation at community level in Thailand Dr. Karika Kunta, *Graduate School of Environmental Development Administration* Social cognitive determinants of healthy eating behaviors in late adolescents: A gender perspective Dr. Pananda Chansukree, *Research Center*	**Technical sessions:** **Oral presentation** (Herbal Medicine special multidisciplinary session) Moderator: Assoc. Prof. Dr. Arunporn Itharat Antibacterial Activity of Unanni Herbal drugs against *Salmonella typhi* and *paratyphi* isolated from various food samples collected at Peshawar KPK Muhammad Iqbal Khan Rahman *(Pakistan)* In *vitro* antifungal and anti-inflammatory activities of *Areca catechu L.* Seed Extracts Kriyapa Lairungruang *(Thailand)* Biological activity of selected wild plants from Jordan Wesam Al Khateeb *(Jordan)* Extra virgin olive oil decreases the uremic pruritus in hemodialysis patients Laily Hidayati *(Indonesia)* Anti-Allergic Activity of *Kaempferia galanga* Rhisome Extracts and Its Isolated Compounds Nichamon Mukkasombut *(Thailand)* Preformulation and accelerated stability study of a liver cancer remedy from Khampramong Temple called "Saban" Weerachai Pipatrattanaseree *(Thailand)* Inhibitory effect of chemical constituents from Benjakul Ethanolic extract on β-hexosaminidase release in RBL-2H3 cells and nitric oxide production in RAW 264.7 cells Sunita Makchuchit *(Thailand)*	**Technical sessions:** **Oral presentation** (Environment/community/public health/animal health-non infection) Moderator: Prof. Michael Wilkes PENAKIB - A comprehensive approach to maternal and infant mortality Tiyas Kusumaningrum *(Indonesia)* Awareness of adolescents to prevent symptom of vaginal discharge based on the theory of planned behavior Ni Ketut Alit Armini *(Indonesia)* Correlation of social media use with sleep quality, emotion stability and social anxiety for adolescent I senior high school 20 Surabaya Tintin Sukartini *(Indonesia)* Advance care planning- An educational intervention for elderly in Indonesia: A pilot randomized controlled trial Rista Fauziningtyas *(Indonesia)* Stigmata by relationship (family stigmata) in mental illness: A quantitative study Rr Dian Tristiana *(Indonesia)* Heath promotion on good hygiene practices when dealing with bush meat among the Orang Asli in Belum forest, Malaysia Siti Fatimah KM *(Malaysia)* Effect of foot chain restrains on stereotyping in captive Asian elephants Eranda Rajapaksha *(Sri Lanka)*
15.00-15.15	**Coffee break**		
15.15-15.40	**Keynote Speech 4** Antimicrobial Resistance (AMR): One Health Perspectives in Thailand Prof. Visanu Thamlikitkul, *Siriraj Hospital, Mahidol University, Thailand*		
15.40-17.15	**Symposium "How to Combat Antimicrobial Resistance (AMR) Using One Health Approach"** Human Healthcare Professionals		

	Dr. Kumthorn Malatham, *Ramathibodi Hospital, Mahidol University, Bangkok, Thailand* Veterinary Practices Dr. Sasi Charoenpoj, *Department of Livestock Development, Ministry of Agriculture, Thailand* Food Safety Dr. Wantanee Kulpravich, *FAO Office, Thailand*	
18.00-22.00	**Banquet and Cultural show**	

December 15, 2017

Time	Vibhavadee Ballroom B	Vibhavadee Ballroom C	Rangsit 1
08.00-09.30	**Symposium on AMR: Veterinary Medical Perspective** AB used and AMR in animals: international experience Dr. Shabbir Simjee, *Microbiology & Antimicrobials, ELANCO, England* AMR in animals in Thailand: believe it or not? Assoc. Prof. Dr. Nuvee Prapasarakul, *Chulalongkorn University, Thailand*		
09.30-09.45	**Coffee break**		
09.45-11.30	**Technical sessions:** **"Success Stories of Thailand One Health Projects"** Moderator: Assoc. Prof. Waraphon Primprapai One Health platforms and policy in Thailand Dr. Soawapak Hinjoy, *DVM, PhD, Bureau of Epidemiology, Department of Disease Control, Ministry of Public Health* Lawa Model: Integration of human-animal-environment for the control of Opisthorchiasis Asst. Prof. Sirikachorn Tangkawattana *DVM., PhD, Department of Veterinary Pathobiology, Faculty of Veterinary Medicine, Khon Kaen University* Cross-sectorial collaboration in Health Risk management in SEA, a collaborative approach for Research and Capacity Building Dr. Flavie Goutard, *ComAcross project (Thai and French Team), GREASE research network* One Health core competency for multidiscipline students Assoc. Prof. Patamabhorn Amavisit, *Multidisciplinary teaching in Kasetsart University*	**Technical sessions: Thammasat Experience** (Social Science/ Public Health) **"Expanding Frontiers in Research on Health and Well-being: Toward a Transdisciplinary Approach to One Health"** Moderator: Assoc. Prof. Decha Sungkawan One Health and Social Sciences Assoc. Prof. Decha Sungkawan, *Ph.D, Dean, College of Interdisciplinary Studies* Social Capital and Age-friendly Community Development in Thailand Asst. Prof. Rungnapa Thepparp, *College of Interdisciplinary Studies* Organic Revitalization of Rural Thai Community Assoc. Prof. Saifon Su-indramedhi, *College of Interdisciplinary Studies* Women's experiences towards their wombs and hysterectomy Asst. Prof. Pornthip Netiparatanakul, *Faculty of Sociology and Anthropology* Social and Geographical Determinants of Rabies Infection in Thailand Asst. Prof. Tatchalerm Sudhipongpracha, *Faculty of Public Health*	**Technical sessions:** **Oral presentation** (One Health training/Community/Infectious diseases) Moderator: Prof. Michael Wilkes Technology to support the One Health Initiative: Survey and state of the art Marj Darrel Calabia *(The Philippines)* A collaborative training program for animal health researchers/ professionals dealing with health challenges at people, animal and ecosystem interfaces Mieke Stevens *(Belgium)* Legal and regulatory framework in deploying OneHealth workers at the community level: challenges and solutions Michael Tee *(The Philippines)* Communication for better connection: approaches to promote One Health in the community Estadola Rizza *(The Philippines)* A community engagement as a comprehensive learning approach Kusumaratna RK *(Indonesia)* Community based emerging and re-emerging diseases surveillance in temporary displacement sites at the urban-wildlife interface in Kathmandu, Nepal Dibesh Karmacharya *(Nepal)* One Health study of Japanese encephalitis virus vectors' preference in Cambodia Kshitiz Shrestha *(Thailand)* Relationship of community behavior in mosquito nest control with the existence of larva *Aedes aegypti* in Dwikora district, Medan Helvetia Yenni Gustiani Tarigan *(Indonesia)*
11.30-11.50	**Key Note Speech 5** Ending TB in the Asia-Pacific Region: An Unprecedented Public Health Opportunity Dr. Robert Newman, *Vice President, Global Head, TB, Jonhson & Johnson, Singapore*		
11.50-12.10	**Key Note Speech 6** One Health practice in Africa Dr. Elizabeth Grant, *Director of the Global Health Academy and Assistant Principal for Global Health, University of Edinburgh*		
12.10-12.30	**Key Note Speech 7** One Health in Ministry of Health in Africa Prof. Philip Cotton, *Vice Chancellor of the University of Rwanda*		
12.30-12.45	**Discussion**		
12.45-13.30	**Lunch Symposium on Food Security for Thailand: Current and Future** Providing Together Food Security To The World *Alexis Kiers, Elanco Thailand*		
13.30-13.50	**Keynote Speech 8** Health and Production Standard of Aquaculture Dr. Somkiat Kanchanakhan, *Department of Fisheries, Thailand*		
13.50-14.10	**Key Note Speech 9** Application of Herbal Medicine in One Health Prof. R P V J Rajapakse, *University of Peradeniya, Sri Lanka*		
14.10-14.30	**Key Note Speech 10** Carbon Footprint and One Health Prof. Surasak Buranatriwet, *Thammasat University, Thailand*		
14.30-14.50	**Keynote Speech 11** THOHUN activity Dr. Saengduen Moonsom, *Ph.D., Coordinator, THOHUN and THOHUN National Coordinating Office, Faculty of Tropical Medicine, Mahidol University*		
14.50-14.05	**Discussion**		

15.05-15.50	**Panel discussion: "One Health; How can we collaborate?"** Moderator: Prof. Michael Wilkes Prof. Patricia Conrad, Prof. Malik Peiris, Assoc.Prof. Saumya Wickramasinghe, Prof. Philip Cotton, Dr. Elizabeth Grant, Dr. Cheryl Stroud, Dr. Robert Newman, Prof. R P V J Rajapakse, Assoc. Prof. Parntep Ratanakorn (THOHUN), Dr.Vipat Kuruchittham (SEAOHUN) and Representative of MAT, TVMA, MOPH **Bangkok Declaration on One Health 2017**
15.50-16.15	**Closing remarks** One Health Perspective, Present and Future Prof. Yoshitake Yokokura, *President of WMA, Japan*
16.15-17.00	**Hi-Tea**

三、海報展示「**Response to H5N6 avian influenza outbreaks in Taiwan, 2017**」

Response to H5N6 avian influenza outbreaks in Taiwan, 2017

Yi-Chien Chih, Yu-Chen Hsu, Shin-Yi Lin, Yu-Ju Lin, Shu-Mei Chou, Chang-Hsun Chen
Centers for Disease Control, Ministry of Health and Welfare, Republic of China (Taiwan)

Introduction

In February 2017, the highly pathogenic H5N6 avian influenza was first detected and confirmed from one dead baby duck on a country road in Hualien County, then spread to poultry farms in other counties in Taiwan. The HA and NA genomic sequences of the virus seem to share high similarity (99 percent) with those of the virus which has caused major outbreaks in Korea and Japan.

Methods

In response to the ongoing HPAI H5N6 outbreaks in poultry farms, a Central Emergency Operation Center (CEOC) for H5N6 Avian Influenza was activated on February 12 2017. At least 8 central ministries, including the Council of Agriculture (COA), the Ministry of Health and Welfare, and the Environmental Protection Administration, involved in the CEOC to strengthen the cross-sectoral and interagency collaboration. Main Response countermeasures include surveillance, transmission interruption, industry counselling, health care preparation, material preparation, and risk communication. The central government also worked closely with local governments to strengthen all control measures and preparations. Taiwan Centers for Diseases Control (Taiwan CDC) coordinated with Taiwan Food and Drug Administration (Taiwan FDA), COA, Ministry of Economic Affairs, and Ministry of National Defense at the central level to prevent potential transmission from poultry to human and from human to human.

Fig 1. Distribution of H5N6 domestic poultry outbreaks in Taiwan,2017

Results

As HPAI H5N6 outbreaks had been under control, the CEOC for H5N6 Avian Influenza was deactivated on May 5 2017. During its operation period, Taiwan CDC reaffirmed "Clinical management guideline for human infection with H5N6 avian influenza" and "Novel influenza control manual", provided personal protective equipment (PPE) recommendation for poultry culling personnel and assisted them wearing PPE properly. A total of 3,010 poultry culling personnel and affected poultry farm staff were under health surveillance, but no one had developed suspicious symptoms. In addition, Taiwan FDA and local authorities implemented "Poultry vendor inspection project" to ensure poultry meat sold in markets was not coming from the affected farms. As of May 5 2017, a total of 1,307 persons had dispatched to check 2,453 vendors in 876 markets. Two stalls sold suspected privately slaughtered poultry was found and was corrected.

Conclusions

The control of avian influenza outbreaks and the protection of people from avian influenza infections can be achieved through integration and cooperation among multi-field experts. The response to the H5N6 avian influenza outbreak in Taiwan was viewed as a good example of a "One Health" approach.

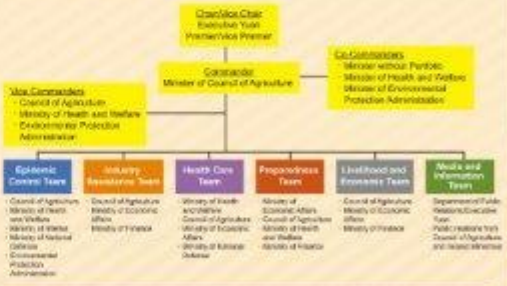


Fig 2. Central Emergency Operations Center (CEOC) Architecture

Fig 3. Taiwan CDC staff assisted poultry culling personnel wearing PPE properly

Fig 4. Local health bureau staff measured body temperatures of poultry culling personnel and military support personnel

Fig 5. Poultry culling personnel carried out disinfection after work