

Combating antimicrobial resistance: quality standards for prescribing for respiratory infections in Vietnam

Antimicrobial resistance is recognised as a serious global health threat requiring global action. However, much work remains to translate global strategies to combat antimicrobial resistance into national policy and action. In low-income and middle-income countries where vulnerable health-care systems require investment within constrained budgets, antimicrobial resistance strategies might not be prioritised, and indeed equitable versus restricted access to antibiotics present a conflicting challenge.¹

Engaging the right stakeholders nationally and contextualising scientific evidence to address concrete policy issues moves antimicrobial stewardship strategies into action.² High-burden diseases present an important starting point. In Vietnam, severe acute respiratory tract infections and chronic obstructive pulmonary disease (COPD) together account for 8% of mortality.³ However, antibiotic prescribing is often inappropriate in preclinical and clinical disease stages, and is commonly done against local and international evidence-based guidelines.^{4,5}

The Ministry of Health (MOH), Vietnam, issued a national action plan on antimicrobial resistance in June, 2013, supported by WHO.⁶ Building on their situation analysis of antimicrobial resistance and surveillance,⁷ and previous MOH success to establish national quality standards for acute stroke,⁸ Oxford University Clinical Research Unit and the Vietnam MOH convened a working group to develop evidence-informed quality standards for appropriate inpatient antibiotic prescribing for community-acquired pneumonia and acute exacerbation of COPD. Quality standards translate best practice recommendations

from international guidelines into high-priority, implementable, and measurable clinical activities relevant for the local context, through local stakeholder collaboration.

In June, 2016, we presented the draft of the quality standards for community-acquired pneumonia and acute exacerbation of COPD to a national committee convened by MOH, comprising MOH officials, and over 40 managers, physicians, pharmacists, and microbiologists from central and provincial hospitals across Vietnam. Although there was rapid consensus to adopt international principles of matching route of administration to duration of administration, matching breadth of spectrum to disease severity, and justifying any deviation, there was equal recognition that international standards need local adaptation. Thus, the committee agreed on the need for thorough clinical diagnostic assessment, including medical and antibiotic histories, using locally available microbiological tests to inform antibiotic prescription. However, in an environment with high prevalence of antimicrobial resistance, patients self-medicating with over-the-counter antibiotics before presenting to hospital, and absence of national surveillance, determining appropriate first-line therapy was more challenging than establishing the standards for thorough clinical diagnostic assessment.^{5,7} Further collection and analysis of susceptibility data from the Vietnam resistance network of 16 hospitals² will allow formal standards to be recommended.

Establishing national quality standards coproduced with local clinicians is a massive step towards combating antimicrobial resistance in Vietnam. Additionally, local evidence, engagement, and contextualisation are critical for transforming global discourse into global action on antimicrobial resistance. Implementation will be challenging, but with national opinion leaders championing the cause, we have great optimism for success.

We declare no competing interests.

Copyright © The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY license.



*Ryan Li, H Rogier van Doorn, Heiman F L Wertheim, Luong N Khue, Ngo T B Ha, Vu Q Dat, Chu T Hanh, Do T T Nga, Nghiem N M Trang, Behzad Nadjm, Françoise Cluzeau, Nguyen V Kinh, Nguyen V Trung, Nguyen T L Huong, Ngo Q Chau, La Q Huong, Le T Thao, Le T A Hong, Tran T M Oanh, Jasmin Islam, C Michael Roberts, Kalipso Chalkidou
ryan.li@imperial.ac.uk

Global Health and Development Group, Institute of Global Health Innovation, Imperial College London, London W2 1NY, UK (RL, FC, KC); Oxford University Clinical Research Unit, Hanoi, Vietnam (HRvD, HFLW, DTTN, NNMT, BN); Radboud UMC, Nijmegen, Netherlands (HFLW); Medical Services Administration, Ministry of Health, Hanoi, Vietnam (LNK, NTB, LTT, LTAH); Hanoi Medical University, Hanoi, Vietnam (VQD); National Hospital of Tropical Diseases, Hanoi, Vietnam (VQD, NVK, NVT); Bach Mai Hospital, Hanoi, Vietnam (CTH, NQC, LQH); Hanoi University of Pharmacy, Hanoi, Vietnam (NTLH); Health Strategy and Policy Institute, Hanoi, Vietnam (TTMO); Brighton and Sussex University Hospital Trust, Brighton, UK (JI); Barts Health NHS Trust, London, UK (CMR); UCL Partners, London, UK (CMR); and Royal College of Physicians, London, UK (CMR)

- 1 Abdula N, Macharia J, Motosoledi A, Swaminathan S, VijayRaghavan K. National action for global gains in antimicrobial resistance. *Lancet* 2016; **387**: e3–e5.
- 2 Wertheim HF, Chandna A, Vu PD, et al. Providing impetus, tools, and guidance to strengthen national capacity for antimicrobial stewardship in Viet Nam. *PLoS Med* 2013; **10**: e1001429.
- 3 GBD profile: Vietnam. Seattle, WA: Institute for Health Metrics and Evaluation, 2010. http://www.healthdata.org/sites/default/files/files/country_profiles/GBD/ihme_gbd_country_report_vietnam.pdf (accessed Sept 26, 2016).
- 4 Hoa NQ, Larson M, Kim Chuc NT, Eriksson B, Trung NV, Stålsby CL. Antibiotics and paediatric acute respiratory infections in rural Vietnam: health-care providers' knowledge, practical competence and reported practice. *Trop Med Int Health* 2009; **14**: 546–55.
- 5 Nga do TT, Chuc NT, Hoa NP, et al. Antibiotic sales in rural and urban pharmacies in northern Vietnam: an observational study. *BMC Pharmacol Toxicol* 2014; **15**: 6.
- 6 WHO. Viet Nam signs aide-memoire to combat antimicrobial resistance. Geneva: World Health Organization, 2015. <http://www.wpro.who.int/mediacentre/releases/2015/20150722/en/> (accessed Sept 26, 2016).
- 7 Global Antibiotic Resistance Partnership–Vietnam National Working Group. Situation analysis. Antibiotic use and resistance in Vietnam. Washington DC: CDDEP, October, 2010. http://www.cddep.org/sites/default/files/vn_report_web_1_8.pdf (accessed Aug 5, 2016).
- 8 Hinh LD. Quality standards for management of stroke in Vietnam. *Viet J Neurol* 2014; **9**: 7–11 (in Vietnamese).