

efficacy against low birthweight has been clear for many years. Although the failure of sulfadoxine-pyrimethamine to treat and prevent malaria infection during pregnancy has been documented by numerous studies,⁵ any effect of the decreased antimalarial efficacy of sulfadoxine-pyrimethamine with respect to birthweight has been difficult to detect. Given the challenges of conducting clinical trials in pregnant women⁶ and the variable attributable fraction of malaria to low birthweight,⁷ this report shows the catalytic impact that data-sharing platforms, such as those established by WWARN and the Malaria Atlas Project, can have to translate research data into evidence to inform public health.

The results of this study have important implications for the types of data that policy makers require to predict the efficacy of sulfadoxine-pyrimethamine IPTp. In low-resource settings, it might be most beneficial to limit molecular testing to *dhps* Ala581Gly in east and southern Africa and to include *dhps* Ala437Gly in west and central Africa. However, to accurately model the future risk of widespread sulfadoxine-pyrimethamine IPTp failure, we must better understand how resistance emerges and the factors that drive parasite gene flow across geographic regions. Why are quintuple-mutant sulfadoxine-pyrimethamine-resistant parasites so rare in west and central Africa? Why is the highly resistant *dhps* Ala581Gly present in only a few settings and only in the context of the quintuple mutant? What conditions favour or discourage the emergence and spread of sulfadoxine-pyrimethamine-resistant parasites? Previous experience does not provide clear answers to these questions. Although chloroquine-resistant malaria emerged a few times in distinct geographic locations, the genomic analysis of the spread of artemisinin-resistant malaria indicates

both independent emergence and also geographic spread.⁸ The combination of the types of integrated international database collaborations described by van Eijk and colleagues, along with new methods in genomics and modelling, will allow us to not only track the failure of drugs, but also to be proactive in developing interventions to limit the spread and impact of antimalarial drug resistance.

Titus H Divala, Lauren M Cohee, *Miriam K Laufer

University of Malawi College of Medicine, Blantyre, Malawi (THD); Center for Vaccine Development and Global Health, University of Maryland School of Medicine, Baltimore, MD 21201, USA (LMC, MKL)

mлаufer@som.umaryland.edu

We declare no competing interests.

Copyright © 2019 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY-NC-ND 4.0 license.

- 1 Eisele TP, Larsen DA, Anglewicz PA, et al. Malaria prevention in pregnancy, birthweight, and neonatal mortality: a meta-analysis of 32 national cross-sectional datasets in Africa. *Lancet Infect Dis* 2012; **12**: 942–49.
- 2 Frosch AEP, Laufer MK, Mathanga DP, et al. Return of widespread chloroquine-sensitive *Plasmodium falciparum* to Malawi. *J Infect Dis* 2014; **210**: 1110–14.
- 3 Artimovich E, Schneider K, Taylor TE, et al. Persistence of sulfadoxine-pyrimethamine resistance despite reduction of drug pressure in Malawi. *J Infect Dis* 2015; **212**: 694–701.
- 4 van Eijk AM, Larsen DA, Kayentao K. Effect of *Plasmodium falciparum* sulfadoxine-pyrimethamine resistance on the effectiveness of intermittent preventive therapy for malaria in pregnancy in Africa: a systematic review and meta-analysis. *Lancet Infect Dis* 2019; published online March 25. [http://dx.doi.org/10.1016/S1473-3099\(18\)30732-1](http://dx.doi.org/10.1016/S1473-3099(18)30732-1).
- 5 Desai M, Gutman J, Taylor SM, et al. Impact of sulfadoxine-pyrimethamine resistance on effectiveness of intermittent preventive therapy for malaria in pregnancy at clearing infections and preventing low birth weight. *Clin Infect Dis* 2016; **62**: 323–33.
- 6 Divala TH, Mungwira RG, Laufer MK. Moving targets: the challenges of studying infectious diseases among pregnant women in resource limited settings. *Vaccine* 2015; **33**: 6401–05.
- 7 Walker PG, ter Kuile FO, Garske T, Menendez C, Ghani AC. Estimated risk of placental infection and low birthweight attributable to *Plasmodium falciparum* malaria in Africa in 2010: a modelling study. *Lancet Glob Health* 2014; **2**: e460–67.
- 8 Takala-Harrison S, Laufer MK. Antimalarial drug resistance in Africa: key lessons for the future. *Ann NY Acad Sci* 2015; **1342**: 62–67.

A new social sciences network for infectious threats

The Ebola epidemic in the Democratic Republic of the Congo (DRC) continues to escalate, new outbreaks of Lassa fever, yellow fever, measles, and other infectious diseases erupt around the world, and antimicrobial resistance intensifies from unmanaged use of these drugs. These infectious threats are intertwined with political and economic instability, changing ecological conditions, livestock management and

food production practices, and local communities and their marginalised populations.^{1,2} The challenge in addressing these health security threats surpasses conventional response strategies. National governments and international agencies struggle to understand popular reactions to infectious disease emergence and outbreaks and to control deadly diseases.³

Given the very social, political, and economic nature of these threats, the social sciences have much to offer in terms of preparation and response. To date, however, social scientists have often been poorly integrated into public health efforts to address infectious threats, including disease outbreaks and the emergence and spread of antimicrobial resistance. Development and coordination of social science expertise is needed to maximise its public health effect.

SoNAR-Global, the new Social Sciences Network for Infectious Threats and Antimicrobial Resistance, will bolster this coordination, training, and integration of social sciences into preparedness and response. This European Commission-funded network, piloted by 11 collaborating institutions from Europe, Asia, and Africa, will organise and foster interactions among social scientists working on infectious threats and antimicrobial resistance preparedness and responses within Europe and around the world.

At the initial meeting in January 2019, SoNAR-Global members set out an ambitious agenda for the next 3 years, establishing central and regional hubs to bring together social science researchers working on infectious disease threats and antimicrobial resistance. The members of the SoNAR-Global network will (1) facilitate learning opportunities and sharing of data, tools, and knowledge through the SoNAR-Global platform; (2) promote collaborations within regions, between social scientists, and across the social, biomedical, and veterinary sciences and public health programmes; (3) adapt, test, and promote social sciences tools for assessing human vulnerability, for identifying multisectoral drivers of vulnerability,⁶ for determining appropriate resource allocations for vulnerable populations, and for strengthening local resilience networks; (4) develop and implement effective models for engaging communities and integrating the social sciences into preparedness and response strategies for infectious disease threats and antimicrobial resistance; (5) build capacity of the social sciences through curriculum development for social scientists who collaborate with diverse stakeholders during infectious outbreaks and in addressing antimicrobial resistance; (6) work closely with the Global Research Collaboration for Infectious Disease Preparedness (GloPID-R), the Joint Programme Initiative on Antimicrobial Resistance (JPIAMR), and other networks and institutions

responding to infectious threats, antimicrobial resistance, and related health emergencies.

SoNAR-Global is already acting to assist with response to the Ebola epidemic, working closely with the Global Outbreak Alert Response Network–Research Social Sciences to map social science research in the North Kivu and Ituri regions of DRC, and in Uganda, Rwanda, Burundi, and South Sudan. Our aim is to provide policy makers, responders, and funders with a comprehensive overview of where and what kinds of social science operational research is taking place. Available on the SoNAR-Global website, these maps will help responding organisations and funders to identify gaps in their response strategies.

To further aid the response, we will also adapt and pilot a vulnerability assessment tool among at-risk populations living in Uganda near the DRC border. Here, we will select a largely stable zone that could destabilise in an outbreak. This pilot project will facilitate understanding of triggers of social instability and of how local populations can prepare to respond better to infectious disease outbreaks. This SoNAR-Global pilot assessment will shed light on community resilience and vulnerability and on care pathways, contact tracing, and vaccination and vaccine hesitancy more generally.

To achieve our goal of building bridges within Europe and around the world, SoNAR-Global must forge strong relations among social scientists and across national health systems, public health experts, policy makers, ethicists, biomedical researchers, clinicians, and most of all people living on the front-lines of infectious disease outbreaks and antimicrobial outbreak emergence. All groups must work in tandem to understand what drives disease vulnerability and social resilience in outbreak and antimicrobial resistance contexts. In our view, adherence and cooperation are not fundamentally clinical conditions but are forms of social action based on trust. In the face of infectious threats and antimicrobial resistance, the SoNAR-Global network seeks to develop a social sciences network that can foster better understanding of how those vulnerabilities and trust are generated. We therefore invite all concerned parties to join us in this effort.

**Tamara Giles-Vernick, Ruth Kutalek, David Napier, David Kaawa-Mafigiri, Michel Dückers, John Paget,*

For SoNAR-Global see
www.sonar-global.eu

For GloPID-R see
www.glopid-r.org

For JPIAMR see www.jpiaamr.eu

Syed Masud Ahmed, Phaik Yeong Cheah, Alice Desclaux, Daniel De Vries, Anita Hardon, Hayley MacGregor, Christopher Pell, Sabina F Rashid, Roman Rodyna, Constance Schultsz, Khoudia Sow, Annie Wilkinson
Emerging Diseases Epidemiology Unit, Institut Pasteur, 75015 Paris, France (TG-V); Department of Social and Preventive Medicine, Center for Public Health, Medical University of Vienna, Vienna, Austria (RK); Department of Anthropology, Centre for Applied Global Citizenship, University College London, London, UK (DN); Department of Public Health, Makerere University, Kampala, Uganda (DK-M); Netherlands Institute for Health Services Research, Utrecht, Netherlands (MD, JP); James P Grant School of Public Health, BRAC University, Dhaka, Bangladesh (SMA, SFR); MORU Tropical Health Network and Department of Bioethics and Engagement, Mahidol University, Bangkok, Thailand (PYC); Centre Régional de Recherche et de Formation à la Prise en Charge Clinique du VIH et des Pathologies Infectieuses, Dakar, Senegal (AD, KS); Institut de Recherche pour le Développement, Montpellier, France (AD, CS); Amsterdam Institute for Global Health and Development,

Amsterdam, Netherlands (DDV, AH, CP); Institute of Development Studies, University of Sussex, Sussex, UK (HM, AW); and Public Health Center of the Ministry of Health of Ukraine, Kyiv, Ukraine (RR) tamara.giles-vernick@pasteur.fr

We declare no competing interests. This project has received funding from the EU Horizon 2020 Research and Innovation Programme under Grant Agreement No. 825671.

- 1 Sams K, Desclaux A, Anoko J, et al. Mobilising experience from Ebola to address plague in Madagascar and future epidemics. *Lancet* 2017; **390**: 2624–25.
- 2 Pickersgill M, Chan S, Haddow G, et al. The social sciences, humanities, and health. *Lancet* 2018; **391**: 1462–63.
- 3 Cousins S. Violence and community mistrust hamper Ebola response. *Lancet Infect Dis* 2018; **18**: 1314–15.
- 4 Echenberg MJ. Africa in the time of cholera: a history of pandemics from 1815 to the present. Cambridge: Cambridge University Press, 2011.
- 5 Cohn S, Kutalek R. Historical parallels, Ebola virus disease and cholera: understanding community distrust and social violence with epidemics. *PLoS Curr* 2016; **8**: ecurrents.outbreaks.aa1f2b60e8d43939b43fbd93e1a63a94.
- 6 Napier AD. The rapid assessment of vulnerable populations: a 'barefoot' manual. London: University College London, 2014.

2019 WHO hand hygiene campaign and global survey: clean care for all—it's in your hands

Many of us, as medical professionals, have devoted our lives to improving human health and wellbeing, but we do not always conceptualise what this looks like on a global scale. As our world becomes more globalised, interconnected, and interdependent, we need to think about health in the same context. On May 5, 2019, through the SAVE LIVES: Clean Your Hands campaign, WHO is championing universal health coverage.

Universal health coverage means that people worldwide will have access to the quality health services they need, when and where they need them, without financial hardship.¹ The achievement of health-care-related UN Sustainable Development Goals² is not possible without universal health coverage, and access to affordable quality health services is a human right regardless of gender, age, income, and location. We often think of infection prevention and control and hand hygiene as specific areas of patient safety, and they might not be the first fields that come to mind concerning the subject of equitable access to health services. Infection prevention and control and hand hygiene are cornerstones and primary indicators of quality in health care, and are thus inseparable from the larger goal of universal health coverage.

As one of the main resources to deliver universal health coverage, WHO is launching the 2019 Global Survey on Infection Prevention and Control and Hand Hygiene. The survey consists of two self-assessments for health-care facilities: the Infection Prevention and Control Assessment Framework, a new tool; and the Hand Hygiene Self-Assessment Framework, which has been widely used across countries and settings for global surveys in 2011 and 2015.^{3–5} Health-care facilities that took part in both surveys showed a statistically significant improvement in their capacity to promote hand hygiene practices, further validating the possible benefit for institutions to use such tools for self-assessment.⁶

On a facility level, these validated self-assessments give institutions a snapshot of the strengths and weaknesses of health-care facilities' infection prevention and control programmes, and provide them with concrete tools to address existing gaps and challenges. The tools associated with the Global Survey were developed for a broad range of stakeholders, including ministries of health, health facility leaders, infection prevention and control leaders, health workers, and patient advocacy groups to take action on



© WHO 2019. Some rights reserved. This work is available under the CC BY-NC-SA 3.0 IGO license.

For more on the 2019 Global Survey on Infection Prevention and Control and Hand Hygiene see <https://www.who.int/infection-prevention/campaigns/ipc-global-survey-2019/en/>