Session 2: Border Health: Concepts, Models, and Applications for the Greater Mekong Subregion

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1. Introduction

“The border can be an area of division and demarcation or alternatively of contact, exchange and integration. Borders can separate or they can connect” (Comelli et al., 2006, p. 3)

This concept paper on border health was commissioned for the Mekong Healthy Border Meeting, a three-day meeting to be held in Bangkok, Thailand on 5-7 August 2013. The general objective of the meeting is to contribute to the improvement of health of mobile and migrant populations and those people living in border areas in the Greater Mekong Subregion (GMS) through multi-sectorial collaboration. Specific objectives for the meeting include:

1) To advocate for development and implementation of “health in all policies” in the GMS

2) To secure consensus and political commitments on addressing through multisectoral action public health challenges related to borders in the GMS; ensuring universal health coverage and developing innovative approaches to strengthen access to and delivery of quality basic health services for people living in border areas, mobile and migrant populations and other vulnerable groups along and across GMS borders; ensuring access to quality-assured medicines in the GMS, including strengthened regulatory systems and enforcement actions; ensuring adequate prevention and health interventions along GMS borders to address maternal and child health, communicable diseases, nutrition, non-communicable diseases, and victims of armed conflicts; and ensuring adequate prevention and response to outbreak-prone and emerging diseases across GMS borders.

3) To secure political and multi-sectoral commitments for the Emergency Response to artemisinin resistance and for ultimately eliminating artemisinin resistance in the GMS.

In order to guide the meeting discussions, this paper seeks, in the first section, to define border health as a distinct but overlapping concept in relation to migrant health. To define border health requires at least a brief introduction to concepts and definitions of borders,

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boundaries and border regions. The second section explores a “healthy border” concept, within the frameworks of the “social determinants of health” and the “health in all policies” approach. Within each of these, we incorporate a particular focus on migrants, ethnic minorities, and other sub-populations living in border regions, as well as the particular factors and conditions that affect their health. The third section examines international models of border health as well as models and examples from GMS countries. In this section, the paper adopts the approach of the WHO’s 2010 report, *Health of Migrants–The Way Forward*, which identified priorities and actions in four thematic areas. This paper adapts the language from a focus on *migrant health* to a focus on *border health*, thus the paper suggests *monitoring border health* (instead of *monitoring migrant health*); *policy & legal frameworks; border region sensitive health systems; and partners, networks, and multi-country frameworks*. The paper concludes with some recommendations as to how discussions in the meeting might be focused in addressing key priorities and actions for border health in the Greater Mekong Subregion.

2. Health - Framing Concepts and Definitions

“In this contradictory world, borders create problems and borders are required to contain them (Anderson, 2001, p. 230).”

Like borders all over the world, borders in the Greater Mekong Subregion have been flashpoints for tension (territorial dispute, ethnic and political conflict, unregulated movement of people and products, and transmission of disease) as they have been meeting points for economic and cultural exchange, and communication of cooperative ideas and aspirations. This section introduces some key concepts and definitions of borders, boundaries and border regions and then proceeds to a definition of border health as a distinct but overlapping concept with migrant health.

2.1. Borders, Boundaries, and Border Regions

Terms for borders, boundaries, and frontiers exist in virtually all languages, though their connotations differ widely across cultures and over time (Anderson & Dowd, 1999). In a European context, Comelli, Greco, and Tocci (2006) write:

“When the border is intended as an area of demarcation, separation or division, it has commonly been referred to by political geographers as a frontier or boundary. The border marks the line separating spaces of territorially defined sovereignty; it may act as a barrier to human, economic, cultural and social exchange and movement, or in the most dramatic instances, it can mark the interface of political or military confrontation. Alternatively, the border, when translated into terms such as borderland or border-region, acquires a diametrically opposite meaning. Far from being a line of division between the ‘inside’ and the ‘outside’, between the self and the other, the border becomes an area of exchange, interaction, and integration” (p.3).

Anderson and O’Dowd (1999) note how borders and regions vary widely in terms of their history and geography though often are characterized by contradictions and ambiguity. Borders and border regions may be secure or insecure, open or closed, highly porous for certain things (such as capital flows), but relatively impervious to others (such as labor immigration or refugee movements). A proper understanding of borders and border regions, they suggest, requires concentration not only on regions and institutions within one state but in the bordering states as...
well, with four dimensions being particularly important: relative economic wealth, political power, national loyalties, and cultural identities.

“A border area’s comparative standing with regions and institutions in the neighboring state has a particularly crucial bearing on the nature and extent of its cross-border relations. They may have very similar or very different economies and levels of development. Degrees of cross-border difference, complementarity, or asymmetry—in terms of economic in/equality, political in/compatibility, and cultural and national identities—determine the potential for different types of cross-border relations that are affected, in turn, by the degree of ‘openness’ of the border concerned” (p. 597).

Zúñiga (2012) defines border health as “a broad term that is characterized by the health care markets, regulatory environments, health laws, environmental factors, and health care consumer and individual behaviors (risk and protective) that shape the health of immigrant and other populations living in the region intersected by the geopolitical boundaries of two or more nations” (p. 1). She argues against the use of a strictly geographic definition of boundaries, which determine a border region generally and border health more specifically, and for the use of a more global conceptualization of border health, which may refer to population or environmental health in border counties or municipalities, border provinces, and even border countries:

“Simple metrics of distance from the political boundary may not explain the influence on the health of populations near borders that can be exerted at state [or province], municipal, or national and international levels. The extent to which the health of border inhabitants and immigrants who cross borders is influenced by their proximity to a border region will depend on: regional, occupational, or environmental health risks or protective factors; the availability and access to desirable health resources on either side of the border; the connectivity between the nations (e.g., roads, bridges, pedestrian crossing points); the regulation of a political border; how porous the region is to unregulated crossing; the ability to cross and costs that may be associated with crossing (e.g., visas); the perceived benefit of crossing or desire to cross among border inhabitants; and the physical distance of residents from the geopolitical border that can moderate cross-border care-seeking activities (e.g., distance lived from the border may be prohibitive to crossing for routine health care)” (Zúñiga, 2012, p.1).

It is challenging to try to define a common, specific geographic unit within the Greater Mekong Subregion (GMS) in order to understand border health in this context. The U.S.-Mexico Border Health Commission (BHC, 2011) defined a border region (or border area; these terms will be used interchangeably in this paper) as 100 km north/south of the international boundary, a definition which has come to be accepted by the border health community on both sides of the boundary (Collins-Dogrul, 2013). Borrowing on Zuniga’s definition of border health, and as a first attempt to establish a common geographical unit, we define a border region for purposes of this concept paper as a first-level administrative division (generally a province) that includes a geopolitical boundary of two or more nations.

2.2 Migrant Health and Border Health

In Zuniga’s (2012) definition of border health (see above), she describes the various factors (including markets, laws and regulations, environmental factors, and individual behaviors) “that shape the health of immigrant and other populations living in the region...
“Border health,” thus can be distinguished from “migrant health” in its focus on “other populations living in the [border] region” on both sides of the boundary line(s), who are neither internal or external migrants. Border health thus encompasses migrant health but is a broader concept, including all non-migrant populations living in border regions (though generally not including migrants who move beyond these border regions).

If border health is broader than migrant health, it might also be said that an understanding of migrant health is also moving toward a broader population-based, border region orientation. As several authors have noted (Waterman et al., 2009; Gushulak & MacPherson, 2006), the discussion of health activities at borders has moved away from a focus on the traditional roles of containing and controlling communicable disease (that is, stopping disease at the borderline, or boundary) to a focus on more strategic roles that include collaborative, cross-border and regional partnerships to not only prevent the spread of infectious disease but address non-infectious disease and health disparities (promoting health in border regions). Building on this approach, Gushulak, Weekers, and MacPherson (2009) observe that “many of the important public health aspects of migration originate from or are based on the diversity and disparity of the populations themselves and extend beyond the legal and temporal processes involved in changing one’s residence. Addressing migration-associated health threats and risks will be more effectively accomplished if approached from this population-based framework, rather than from traditional disease or immigration status-based views” (p. 2).

Kamel (2009) outlined seven current and continuing concerns of health and development in border areas:

1) **The universal neglect and marginalization of border areas, border communities, and border crossers impact communities beyond the borders.** “Border communities, regardless of their size, are often regarded by policy makers as peripheral in terms of social programs but paradoxically have high priority in terms of national security, a perception that leads to the marginalization of border residents’ concerns…. It makes greater sense strategically to have sparsely-populated border regions with poor infrastructure functioning as a barrier against external threats from the states across the borders. As a result of this neglect, inequitable access to resources prevails at the borders….Worldwide, there is a deficiency of basic information and statistics about health, environmental safety, and development at border communities, and health policies and public concern are often lacking or non-existent” (Kamel, 2009, p. 327).

2) **Borders are crucial entry points for communicable diseases, which, if not properly managed, would affect the country’s population significantly.** “Communicable diseases, such as TB, AIDS, poliomyelitis, and malaria are among the most prevalent diseases at the borders. In many countries, depending on their border entrances, there are few or no restrictions upon entry in relation to health and immunizations” (Kamel, 2009, p. 327). While this seems to take more of a contain-and-control approach to infectious disease at borders, there certainly need for better surveillance of infectious disease in border regions and for promoting programs to treat and prevent infectious disease among border populations, including in the GMS.
3) **Border communities frequently suffer from lack of health care, minimal or non-existent access to preventive health services, emergency health services, and health promotion.** While much of Kamel’s (2009) analysis focuses on the U.S.-Mexico border, many of his points—about the generally poor access to health care in border regions, the need for understanding the organization of health care services, and for improving communication between the health care providers on both sides of borders, and for establishing health care protocols and suitable health care financing mechanisms in border regions—have application to the GMS.

4) **Substance abuse, preventable injury, violence and behavioural health problems are prevalent at the borders.** “Substance abuse is often higher at the borders due to lack of border control and high instances of smuggling, leading to greater availability of illicit drugs as well as discrimination and ethnic conflicts in border areas.” He emphasized “the importance of accurate tracking of data for behavioural health indicators such as alcohol and substance use/abuse as well as violence, to clarify the trends of border communities” (Kamel, 2009, p.329).

5) **An abundance of refugees and migrant workers cross borders due to political and ethnic conflicts and economic and natural disasters.** “Economic disparity and natural disasters lead to wide-scale migration. Equally, ethnic conflicts and armed fights lead to a rush of refugees to the borders and to disruption of the limited local infrastructure” (Kamel, 2009, p. 331). In the last 40 years, the GMS has seen more than its share of refugees, migrant workers, and populations displaced by natural and human-made disasters, creating not only political tensions but strains on border health infrastructure. While regional political conflicts have receded, the frequency of natural disasters in the region has increased, as has the movement of migrant workers seeking greater opportunities in asymmetric regional economies.

6) **Borders are frequently threatened by environmental problems and occupational hazards.** “High exposure to environmental hazards at the borders, including carcinogens, occurs via land through hazardous waste dumping, via water through illegal industrial wastes and inadequate sewage systems, and via air through poor regulations regarding equipment and commercial vehicles” (Kamel, 2009, p. 334-335). While environmental problems and occupational hazards in GMS border regions is not well researched, it is known that low income countries in Southeast Asia have nearly four times the number of deaths among males attributed to occupational injury risk than in middle- and high- income countries in the Americas (Findley & Gorski, 2005). It is also known that occupational injury risk generally is higher among migrant workers than among the native-born working-age population, and higher in the informal sector than the formal sector.

7) **Women, children and the elderly are more at risk, with less food security and more malnutrition at the borders.** In general, and more so in low- and middle-income countries, women, children and older adults will face greater health risks, and border areas are likely to exacerbate these, given the compounding vulnerabilities of marginalized status, low income, limited access to quality health care services, and exposure to environmental and occupational hazards. The
burden of food insecurity and malnutrition likely varies from one border region to the next, and among population sub-groups, but cannot be discounted (Kamel, 2009, p. 336-337).

In his article "Health dilemmas at the borders – A global challenge", Kamel (1997) concludes by stating that the "universal neglect of border communities and associated border-related issues and problems is reflected in the lack of basic information and statistics about populations living in borderlands...This is a world health problem, and it calls for global action starting at the national and regional levels and leading to a global initiative...for health and development at border areas" (p.15).

3. Healthy Borders” Framework: Social Determinants of Health and Health-in-All-Policies

“Territorial borders both shape and are shaped by what they contain, and what crosses or is prevented from crossing them (Anderson & O’Dowd, 1999, p. 594).”

In “Border Health”, Zúñiga (2012) also discusses how the inequalities in the distribution of historical, regional and societal factors influence the health of populations residing in border areas, especially those populations that migrate to and from the countries sharing the border. She then proposes that a socio-ecological perspective be used to develop a framework for characterizing and studying health outcomes in border regions. Such a framework would capture environmental factors (e.g., defining a border region, laws, policies, health service infrastructure), interpersonal factors (e.g., population mobility and disease exposures), and individual factors (e.g., health knowledge, perceptions, and practices) that impact the health of border residents (Zúñiga, 2012, p. 1). Without referencing the term “border health”, Zúñiga (2012) frames the concept within the “social determinants of health” (SDH) framework. Building on this work, this paper combines combines the SDH framework with the World Health Organization’s (WHO’s) “Health-in-All-Policies “ (HiAP) approach to describe the concept of “border health” and lay the foundation for the future development of a “healthy borders” framework. We propose that such a framework for understanding “border health” must address the factors that operate both inside and outside of the health system (i.e. immigration, labor, housing, social networks, etc.) that influence the physical, mental and social well-being in border regions.

3.1 Social Determinants of Health

In 2003, the WHO published a report entitled the “Social Determinants of Health: The Solid Facts”, which reviews the evidence in support of a causal links between social and environmental factors and health outcomes and the implications for policy (Wilkinson & Marmot, Eds. The report notes:

“Poor social and economic circumstances affect health throughout life. People further down the social ladder usually run at least twice the risk of serious illness and premature death as those near the top. Nor are the effects confined to the poor: the social gradient in health runs right across society, so that even among middle-class office workers, lower ranking staff suffer much more disease and earlier death than higher ranking staff. Both material and psychosocial causes contribute to these differences and their effects extend to most diseases and causes of death. Disadvantage has many forms and may
be absolute or relative. It can include having few family assets, having a poorer education during adolescence, having insecure employment, becoming stuck in a hazardous or dead-end job, living in poor housing, trying to bring up a family in difficult circumstances and living on an inadequate retirement pension. These disadvantages tend to concentrate among the same people, and their effects on health accumulate during life” (Wilkinson & Marmot (Eds.), 2003, p. 10).

Many models show how these determinants are interlinked and how many lie beyond the direct influence of health care. One of the best-known models (See Figure 1 below) is Dahlgren and Whitehead’s (1991) multi-level ‘rainbow model’ of social determinants (also known as the “Policy Rainbow” or the “Social Model of Health”) (Stahl, Wismar, Ollila, Lahtinen, & Leppo, 2006).

Figure 1: Dahlgren & Whitehead’s “Policy Rainbow” or Social Model of Health

The model highlights a relationship between individual lifestyle factors, social and community networks, and general socioeconomic, cultural and environmental factors, including agricultural and food production, education, work environment, living and working conditions, unemployment, water and sanitation, health care services, and housing. While the configuration of these different layers and factors can have both positive and protective influences on people’s lives, they can also undermine health and wellbeing, both for individuals and communities. Without mentioning border region populations per se, Dahlgren and Whitehead (1992) note that “groups at particular risk include people with low incomes or limited education, single-parent families, elderly people living alone or disabled people, the long-term unemployed, migrant workers and people in stressful or physically hazardous occupations...In some countries, black and minority ethnic groups are also at particular risk of poor living and working conditions, in addition to the racial discrimination that they face” (p.2).

As is the case for many marginalized populations, the health of migrants is to a large extent determined by factors outside the health sector, such as educational attainment, employment status, and socioeconomic status. The World Health Assembly’s (WHA’s) 2008 Resolution on the “health of migrants” (WHA, 2008) recognizes “that health outcomes can be influenced by the multiple dimensions of migration” (p.1) and the need for WHO to “consider the
health needs of migrants in the framework of the broader agenda on migration and development" (p.1). Among other things, the framework outlined in the resolution called upon United Nations (UN) Member States to:

- Promote migrant-sensitive health policies;
- Promote equitable access to health promotion and care for migrants;
- Assess and analyse trends in migrants’ health, disaggregating health information by relevant categories;
- Better identify the gaps in service delivery in order to improve the health of all populations, including migrants [emphasis added];
- Gather, document, and share information and best practices for meeting migrants’ health needs in countries of origin or return, transit, and destination;
- Raise health service providers’ and professionals’ cultural and gender sensitivity to migrants’ health issues;
- Train health professionals to deal with the health issues associated with population movements;
- Promote bilateral and multilateral cooperation on migrants’ health among countries involved; and
- Promote strengthening of health systems in developing countries (WHA, 2008).

If one were to replace the term "migrant" with the term "border region populations" in the framework elements discussed above, the outline for a “healthy border” policy framework would begin to take shape. To develop such a framework, however, other sectors need to be incorporated.

### 3.2 “Health-in-All-Policies” Approach

The term “Health-in-All-Policies” (HiAP) was first used by the WHO in the 1990s and is defined as "an approach to public policies across sectors that systematically takes into account the health implications of decisions, seeks synergies, and avoids harmful health impacts, in order to improve population health and health equity. It improves accountability of policymakers for health impacts at all levels of policy-making. It includes an emphasis on the consequence of public policies on health systems, determinants of health, and well-being" (WHO, May 2013, p. 2). This approach has been adopted early on in Finland, whose 2010 Health Act states that “the promotion of well-being and health as well as the reduction of inequality will be taken into account in all societal decision-making and incorporated into the activities of all administrative sectors and ministries” (Leppo, Ollila, Pena, Wismar & Cook, 2013, p. 37). In Thailand, the Thai Health Promotion Foundation provides a governance structure for HiAP, including promoting the right of citizens to demand a health impact assessment when they have concerns about the health impacts of a government decision (Leppo et al., 2013).

In the World Migration Report 2010, the International Organization for Migration (IOM) (IOM, 2011) identified a series of systemic gaps in fostering health provisions for migrants, including the need to mainstream migration health within governmental structures. Specific examples of capacity needs included:
Establishment of Coordinating Units on Migration Health to facilitate coordination within government and between governments.

Strengthened collaboration between the various stakeholders, including the private sector, migrant networks and NGOs.

Policies for developing effective and sustainable means of meeting the health needs of migrants involves reviewing policies related to health, immigration, security, finance and labor.

Strengthening health-care systems in border areas, which often exhibit weak health infrastructures, where counterfeit drugs are common, and a largely unregulated private sector often fills the service provision gap. Governments on both sides of borders need to work together in dealing with border area populations as a single health community. This will entail increased collaboration on surveillance of health and disease issues [Emphasis added].

As a result of the 2008 WHA Resolution on “the health of migrants”, in 2010, a Global Consultation on Migrant Health was convened by WHO and IOM, in conjunction with the Ministry of Health and Social Policy of Spain. The resulting report, “Health of migrants – The way forward” (WHO, 2010) offers an outline for an operational framework to further action on migrant health, identifying key priorities and corresponding actions in four thematic areas:

- **Monitoring migrant health:** ensure the standardization and comparability of data on migrant health; support the appropriate aggregation and assembling of migrant health information; map good practices in monitoring migrant health, policy models, health system models.

- **Policy and legal frameworks:** adopt relevant international standards on the protection of migrants and respect for rights to health in national law and practice; implement national health policies that promote equal access to health services for migrants; extend social protections in health and improve social security for all migrants.

- **Migrant sensitive health systems:** ensure that health services are delivered to migrants in a culturally and linguistically appropriate way; enhance the capacity of the health and relevant non-health workforce to address the health issues associated with migration; deliver migrant inclusive services in a comprehensive, coordinated, and financially sustainable fashion.

- **Partnerships, networks & multi country frameworks:** establish and support migration health dialogues and cooperation across sectors and among large cities and countries of origin, transit and destination; address migrant health matters in global and regional consultative migration, economic and development processes (e.g. Global Forum on Migration and Development)

Building on a 2008 report “Closing the Gap in a Generation” (WHO-CSDH, 2008), the WHO adapted Dahlgren and Whitehead’s (1991) “social model of health” (discussed above) to create a model of the social determinants of migrant health (Figure 2 below). This model further demonstrates the relevance of the HiAP approach in addressing migrant health (WHO Regional Office for Europe, 2010).
This model (which was inspired by a presentation by Dr. Nani Nair, TB Regional Advisor, at a 2005 presentation at the WHO Regional Office for Southeast Asia) makes clear that policies need to go beyond improving health services to encompass actions addressing the social exclusion of migrants. The following are among the relevant policy measures to foster social inclusion for migrants:

1) Measures to combat discrimination against migrants and ethnic minorities include education of the public and effectively enforced legislation. Institutional discrimination should be combated by imposing statutory requirements on organizations to deal with all groups equitably.

2) Educational policies can pay special attention to the needs of migrant and ethnic children by, for example, facilitating their integration into mainstream schools and ensuring that selection policies make allowances for the extra time required for acculturation and language learning. Segregation, tracking and ability grouping can have particularly negative impacts on migrant and ethnic minority children.

3) Employment policies can be directed at the removal of barriers and systematic disadvantages for migrants and ethnic minorities in the labor market.

4) Social protection policies can ensure migrants and ethnic minorities do not fall into poverty, destitution and homelessness.

5) Housing and environmental policies (such as reduction of environmental health hazards, improved transport and other amenities) designed to improve the living conditions of migrants and ethnic minorities.

6) Health policies can ensure equitable access to appropriate services (including prevention and health promotion) for all groups.

7) Policies on naturalization, political participation, family reunification, etc. can reduce the gap between the rights of aliens and those of citizens.

8) Integration programs for new migrants can offer help with language-learning, orientation to the host country and access to education, health and social care services. Particular attention should be paid to the situation of refugees, who may spend years waiting for

Figure 1: Policy Measures for Tackling SDH for Migrants and Ethnic Minorities
their asylum claim to be processed. Limitations during this period on their opportunities to work, receive education (if over 18) and make contacts in the host country can seriously hamper their integration in the case that they are granted permission to remain (WHO Regional Office for Europe, 2010, p.13).

4. Border Health Models with Applications to the Greater Mekong Subregion

“Diseases do not respect boundaries” (Kamel, 1997, p. 9)

As noted previously, in the “Health of Migrants—The Way Forward”, the WHO (2010) identified key priorities and corresponding actions in four thematic areas. Adapting the language from a focus on “migrant health” to a focus on “border health” provides an approach for identifying priorities and actions for building border health models, drawing on international models and examples from the GMS:

- **Monitoring Border Health**: ensure the standardization and comparability of data on health of populations living in border regions; support the appropriate aggregation and assembling of border health information; map good practices in monitoring border health, policy models, and health system models.
- **Policy & Legal Frameworks**: adopt relevant international standards on the protection of migrants, ethnic minorities and other vulnerable populations in border regions and respect for rights to health in national law and practice; implement national health policies that promote equal access to health services for all border region populations; extend social protections in health and improve social security for all populations in border regions.
- **Border Region Sensitive Health Systems**: ensure that health services are delivered to border region populations in a culturally and linguistically appropriate way; enhance the capacity of the health and relevant non-health workforce to address the health issues associated with living in border regions; deliver border region inclusive services in a comprehensive, coordinated, and financially sustainable fashion.
- **Partners, Networks, & Multi-Country Frameworks**: establish and support border health dialogues and cooperation across sectors and among regions and countries that include border regions; address border health matters in global and regional consultative migration, economic, and development processes (WHO, 2010, p.4).

4.1 International Border Health Models

In a publication on malaria control and prevention, Smith-Gueye, Teng, Kinyua, Wafula, Gosling, and McCoy (2012) offer several examples of multi-country initiatives aimed at prevention and controlling infectious disease, specifically across porous borders. They note that “Due to the combined effort of the Lubumbo Spatial Development Initiative (LSDI) of Mozambique, South Africa, and Swaziland, funded by the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) malaria prevalence in targeted areas has been reduced by more than 90% (Sharp, et.al, 2007; Hlongwana et. al., 2009)). The Amazonian Malaria Initiative (AMI), funded by USAID, consisting of national ministries of health and technical partners of seven countries, is similarly on the path towards successful malaria eradication (Terrell & Brenner, n.d.). In the Middle East, Saudi Arabia, Kuwait, Oman, United Arab Emirates, Bahrain, and Qatar have combined efforts to donate $17 million (USD) towards malaria
elimination interventions along the Yemen border to support regional efforts for malaria control and elimination (Smith-Gueye et al., 2012).

Despite progress, however, Smith-Gueye et al. (2012) note that a number of challenges remain, including "the relative neglect of cross-border and regional initiatives in malaria control and elimination. Border regions are often overlooked and hinder the goal of malaria elimination. Frequent human and vector border movements, a blurring of responsibility of individual countries in these regions, and relatively poorer access to health care and preventative measures, in particular for mobile populations, leave space for reservoirs of infection that can lead to continued low level transmission of malaria and vulnerability to malaria outbreaks and epidemics.... [C]ross-border population movement in the GMS of South East Asia impedes efforts to prevent the spread of drug-resistant malaria. An example of this challenge is in Yunnan Province of China, where, in 2009, 98.8% of total malaria cases and 75.0% of *P. falciparum* malaria cases were found to be imported from neighboring countries (Xu & Liu, 2011). Across the border in Myanmar there is poor access to malaria control interventions which is contributing to the continuing transmission in this area" (Smith-Gueye et al., 2012, p. 2).

Zúñiga (2012) suggests that "the future of border health includes two important elements that will favor the health of populations living in border regions: better systems for electronic transmission of health information and movement toward regional cooperative health agreements" (p. 303).

- **E-Health.** "Technological innovations and improved capacity to transmit and share health information electronically is a rapidly growing field. Although public health tends to fall behind in the adoption of new technologies, the 'e-health' movement is already being explored among border nations in the USA, Mexico, Asia, and the Pacific. Use of e-health in cross-border health care services can include referrals for care, continuing education for clinicians and other health practitioners, cross-border communication between health care providers, surveillance, medical records, and international travel for the sole purpose of seeking health care (i.e., medical tourism)" (Zúñiga, 2012, p. 303-304).

- **Regional Health Agreements.** "Cooperative cross-border or pan-border surveillance and health coordination initiatives are emerging from many regions throughout the world and will also favor the health of border-dwelling populations. The role of binational health organizations or organizations that represent public health interests from two or more countries can serve as a platform to bring together clinicians, researchers, and other public health practitioners to move border health agendas forward. Border health dialogue should include the representation of non-government agencies as well as government-sponsored agencies. Examples of cross-border coordination agencies and initiatives include the US–Mexico Border Health Commission; the US Center for Disease Control and Prevention's Early Warning Infectious Disease Surveillance Program; the Euro-Mediterranean consortium, *Impact of Migration on HIV and TB Epidemiology in the Mediterranean Area*; the 2010 border health plan implemented jointly by Bolivia, Chile and Peru; and European Commission collaboration among member nations to improve cross-border care. These activities will ultimately lead to improved regional surveillance data and to better management of infectious and chronic diseases in border regions throughout the world" (Zúñiga, 2012, p. 303-304).
In “Disease knows no borders: The emergence and institutionalization of public health transnationalism on the US-Mexico border”, Collins-Dogrul (2007) uses the US-Mexico Border Public Health Association and the Pan American Sanitary Bureau (PASB) as examples of what she calls “public health transnationalism,” that is, “transboundary epidemiological understanding combined with sustained cross-border professional and organizational ties” (p.1). The US Mexico Border Health Association she describes as a “transnational governance system” with the presidency alternating between the two countries. PASB functioned to broker “task-oriented cooperative networks” (Collins-Dogrul, 2007, p. 6), initially focusing on a cross-border venereal disease campaign but now with 28 country offices in the Western Hemisphere.

4.2 Border Health Examples in the GMS

Below are several examples of border health initiatives from the Greater Mekong Subregion that offer models and approaches for consideration:

Monitoring Border Health.

- The Mekong Basin Disease Surveillance (MBDS) network was launched in 1999 with support from the Rockefeller Foundation and WHO and was formally established in 2001 through a Memorandum of Understanding signed by six Ministers of Health in the GMS. Main areas of focus for the MBDS network are 1) to improve cross-border infectious disease outbreak investigation and response by sharing surveillance data and best practices in disease recognition and reporting, and by jointly responding to outbreaks; 2) to develop expertise in epidemiological surveillance across the countries; and 3) to enhance communication between the countries (Phommasack, Jiraphongsa, Oo, Bond, Phaholyothin, Supanchaimat, Ungchusak, & MacFarlane, 2013; Bond, Macfarlane, Burke, Ungchusak, & Wibulpolprasert, 2013). Described as a “trust-based network” (Phommasack et al., 2013, p.1), MBDS comprises senior health officials, epidemiologists, health practitioners and other professionals from the six GMS countries. Its Phase 3 (2008-2011) included seven key strategies (and the country responsible):
  1) Enhance cross-border communication and information exchange (Lao PDR)
  2) Improve the human-animal sector interface and strengthen community surveillance (Vietnam)
  3) Develop human resources and strengthen epidemiological capacity (Thailand)
  4) Strengthen capacities for information and communications technologies (Cambodia)
  5) Strengthen laboratory capacity (China)
  6) Strengthen risk communications (Myanmar)
  7) Conduct and apply policy research (collective) (Phommasack et al., 2013, p.5)

- Thailand’s Bureau of Vector-borne Diseases, has implemented an electronic Malaria Information System (eMIS) as part of a strategy to contain artemisinin-resistant malaria. The attempt corresponds to a WHO initiative, funded by the Bill & Melinda Gates Foundation, to contain anti-malarial drug resistance in Southeast Asia. The eMIS has been functioning since 2009 in seven Thailand-Cambodia border provinces. The eMIS has covered 61 malaria posts/clinics, 27 Vector-borne Disease Units covering 12,508 hamlets at risk of malaria infections. The eMIS was designed as an evidence-based and near real-time system to capture data for early case detection, intensive case...
investigation, monitoring drug compliance and on/off-site tracking of malarial patients, as well as collecting data indicating potential drug resistance among patients (Khamsiriwatchara et. al., 2012).

**Policy & Legal Frameworks**

- APSED (Asia Pacific Strategy for Emerging Diseases) was launched in 2005 as a common strategic framework for countries and areas of the region to strengthen their capacity to manage and respond to emerging diseases including epidemic-prone diseases (WHO, 2011). In June 2007, the revised International Health Regulations (2005), known as IHR (2005), entered into force and called upon countries and WHO to strengthen their capacities to detect, report and respond to acute public health events in order to build a global public health defence system. APSED serves as a road map to guide all countries in the region towards meeting the IHR (2005) core capacity requirements, thus ensuring regional and global health security. The goal of APSED is to build sustainable national and regional capacities and partnerships to ensure public health security through preparedness planning, prevention, early detection and rapid response to emerging diseases and other public health emergencies. To achieve the goal, five interrelated objectives have been identified:
  
  1) Reduce the risk of emerging diseases,
  2) Strengthen early detection of outbreaks of emerging diseases and public health emergencies,
  3) Strengthen rapid response to emerging diseases and public health emergencies,
  4) Strengthen effective preparedness for emerging diseases and public health emergencies,
  5) Build sustainable technical collaboration and partnership in the Asia Pacific region. To provide a focus for operational program work and to achieve the goal and objectives of the strategy, eight focus areas have been identified:

  1) surveillance, risk assessment and response;
  2) laboratories;
  3) zoonoses;
  4) infection prevention and control;
  5) risk communications;
  6) public health emergency preparedness;
  7) regional preparedness, alert and response; and
  8) monitoring and evaluation.

**Border Region Sensitive Health Systems**

1) Thailand’s Second Border Health Development Master Plan (BHDMP), 2012-2016, was developed by the Ministry of Public Health in collaboration with other line ministries, local administrative agencies, and international and non-governmental organizations. The objective of the plan is “to improve the health of people residing in border areas through the development of a quality health service system, improvement of access to primary care services, and encouraging the active and sustained participation of all relevant stakeholders” (Thai Ministry of Public Health, 2012, p.6). The plan covers “all sub-population groups residing in the border areas...[including] Thais, ethnic minorities, registered and non-registered migrants, [and] displaced persons living in the temporary shelters” (Thai MoH, 2012, p. 6). The 2012-2016 BHDMP consists of four core strategies:
1) Developing a quality health system
2) Promote access to primary health care services
3) Strengthen collaboration and participation from all stakeholders and sectors
4) Effective Management

**Partners, Networks, & Multi-Country Frameworks**

- The Joint United Nations Initiative on Mobility and HIV/AIDS in South-East Asia (JUNIMA) is a partnership forum that works on universal access to HIV services to migrant and mobile populations. It was initially established as the UN Regional Task Force on Mobility and HIV Vulnerability Reduction in Southeast Asia and Southern of China in 1997. This task force has since expanded to cover all the remaining Southeast Asian countries. The partnership includes governments, UN and intergovernmental organizations, and NGOs and civil society. JUNIMA identifies priorities and gaps and facilitates programmatic, policy, and advocacy actions to reduce mobility-related HIV vulnerability and address issues of care and support throughout the migration cycle (Mosca, Rijks, & Schultz, 2013).

- The U.S. Government’s President’s Malaria Initiative (PMI) Operational Plan for the GMS was developed by representatives from U.S. Agency for International Development, the U.S. Centers for Disease Control and Prevention, and the national malaria control programs of Myanmar, Thailand, and Cambodia, with the participation of other major partners working on malaria in the area. The PMI GMS program includes support for regional/cross-cutting activities, such as surveillance for antimalarial drug resistance and antimalarial drug quality monitoring, but also focuses on activities to reduce malaria transmission in geographically-focused cross-border areas with emerging artemisinin resistance, as a means of reducing the burden of malaria and eliminating the resistant parasite from these high-risk areas. These cross-border focus areas will be centered in 2013 on the Tanintharyi-Ranong border areas of Myanmar and Thailand and the Trat-Pailin border areas of Thailand and Cambodia (USAID, 2013).

**5. Conclusions and Recommendations**

“The challenges of promoting coordinated border health are many, and …political and social will to address these issues is critical” (Zúñiga, 2012, p. 4).

Collins-Dogrul (2007) offered the examples of the US-Mexico Border Public Health Association and the Pan American Sanitary Bureau as, respectively, a “transnational governance system” and a “task-oriented cooperative network.” The Greater Mekong Subregion comprises six countries, not two, and is a more complex and diverse environment—politically, economically, and socially—than the US-Mexico border. That said, it still may be worthwhile considering how a transnational governance system and task-oriented networks might be brokered in the GMS in support of border health across the region.
As has been noted in another background paper for the meeting (HEALTHY BORDERS: Improving coordination mechanisms for better collaboration across sectors and borders), the GMS region offers an array of coordination entities, though none with a health-specific mandate. The Association of Southeast Asian Nations (ASEAN) does have the ASEAN Highly Pathogenic Avian Influenza Task Force and participates in the Regional Forum on Environment and Health in Southeast and East Asian Countries. Within the context of this Regional Forum, ASEAN committed in April 2009—as part of the Chiang Mai Declaration on Health Impact Assessment for the Development of Healthy Societies in the Asia Pacific Region—to set up a working group on health impact assessment (HIA) with three main objectives: to establish a body of knowledge with ASEAN guidelines on mechanisms for HIA in the region; to share studies and technical documents on HIA; and to support capacity development on HIA.

There is a recent and successful model of regional and bilateral cooperation to draw upon, namely the ASEAN response to Cyclone Nargis. On 2 May 2008, Cyclone Nargis made landfall in the Ayeyarwady Delta region of Myanmar; in the devastation that followed, an estimated 140,000 people died and 2.4 million people were severely affected (Belanger & Horsey, 2008). On 5 May, ASEAN Secretary-General Surin Pitsuwan called on all member states to offer immediate relief assistance through the framework of the ASEAN Agreement on Disaster Management and Emergency Response (AADMER). Following acceptance of this ASEAN-coordinated aid approach, the ASEAN Secretariat established a two-tiered structure: a diplomatic body, the ASEAN Humanitarian Task Force (AHTF), and a Yangon-based Tripartite Core Group (TCG), comprising ASEAN, the Myanmar government, and the United Nations. Following a visit to cyclone-affected areas, UN Emergency Relief Coordinator John Holmes offered that “Nargis showed us a new model of humanitarian partnership, adding the special position and capabilities of [ASEAN] to those of the United Nations in working effectively with the government.” He added that ASEAN leadership was “vital in building trust with the government and saving lives” (Creac'h & Fan, 2008:7; see also ASEAN, 2010).

In terms of “task-oriented networks,” the Mekong Basin Disease Surveillance (MBDS) network offers a good example of not only a task-oriented but “trust-based network” (Phommasack et al., 2013, p.1) working to improve cross-border infectious disease outbreak investigation and response, to develop expertise in epidemiological surveillance across the countries, and to enhance communication among countries in the network.

More broadly, a WHO model (presented above in Figure 2) on Policy Measures for Tackling Social Determinants of Health for Migrants and Ethnic Minorities makes clear that policies need to go beyond improving health services to encompass actions addressing the social exclusion of migrants. Their recommendations included:

1) Measures to combat discrimination against migrants and ethnic minorities including education of the public and effectively enforced legislation.
2) Educational policies that pay special attention to the needs of migrant and ethnic children by facilitating their integration into mainstream schools.
3) Employment policies directed at the removal of barriers and systematic disadvantages for migrants and ethnic minorities in the labor market.
4) Social protection policies that ensure migrants and ethnic minorities do not fall into poverty, destitution and homelessness.
5) Housing and environmental policies (such as reduction of environmental health hazards, improved transport and other amenities) that are designed to improve the living conditions of migrants and ethnic minorities.

6) Health policies that ensure equitable access to appropriate services (including prevention and health promotion) for all groups.

7) Policies on naturalization, political participation, family reunification, etc. that reduce the gap between the rights of aliens and those of citizens.

8) Integration programs for new migrants (and refugees) that offer help with language-learning, orientation to the host country and access to education, health and social care services.

More broadly still, we suggest that a “healthy borders” framework should incorporate the full dimensions of a “social determinants of health” model. One such model that may be appropriate for the GMS, with modifications, is adapted from a “place-based” organizing framework developed by Healthy People 2020 (HHS, 2013), reflecting five key areas of SDH: (1) economic stability, (2) education, (3) social and community context, (4) health and health care, and (5) neighbourhood and built environment. To be more relevant to a “social determinants of border health” model, we have added Policy and Legal Frameworks on labor migration, refugees, and displacement as an additional “ring”; and have also added SDH specific to border regions within the five existing domains. The suggested additions to HHS’ place-based framework are in italics in Figure 3 below:

1) Economic Stability
   - Poverty
   - Employment status
   - Access to employment
   - Cross-border trade and development
   - Working conditions/workplace safety
   - Housing stability

2) Education
   - Access to education for migrants, refugees, displaced and/or stateless persons
   - School policies that support health promotion
   - School environments that are safe and conducive to learning
   - High school graduation rates
   - Enrolment in higher education

3) Social and Community Context
   - Family structure
   - Social cohesion
   - Perceptions of discrimination and equity
   - Civic participation

4) Health and Health Care
   - Access to health services, including clinical and preventive care
   - Access to primary care, including community-based health promotion and wellness programs
   - Appropriateness of health services for migrants, refugees, and displaced and/or stateless persons
Availability of health information systems to assess and analyse trends in border health (including cross-border health)

5) Neighbourhood and Built Environment
- Quality of housing
- Crime and violence
- Environmental conditions
- Access to healthy foods/food security
- Border security

6) Policy and Legal Frameworks
- Pre-arrival screening, border screening, and communicable disease control policies
- Immigration (including labor migration) and refugee laws and policies
- Nationality laws and regulations, including vital registration systems
- Border control, detention, and deportation laws and policies
- Bilateral and multilateral cooperation mechanisms

As noted at the outset, like borders all over the world, borders in the Greater Mekong Subregion have been flashpoints for tension (territorial dispute, ethnic and political conflict, unregulated movement of people and products, and transmission of disease) as they have been meeting points for economic and cultural exchange, and communication of cooperative ideas and aspirations. Border regions can be areas “of division and demarcation or alternatively of contact, exchange and integration” (Comelli et al., 2006, p. 3). Ultimately, whether borders
separate or connect has much to do with how border regions are governed and whether the
affected states and populations perceive healthy borders as being of mutual interest for security,
prosperity and public health.
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