Session 5: Health Situation and Health Systems Analysis: Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam

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Introduction to five country studies

The 2010 Global Consultation on Migrant Health, building on the 2008 World Health Assembly's resolution on the Health of Migrants, proposed a framework of action points to promote migrant health and provide migrant sensitive policies and practices. The four components of this framework are:

- **Monitoring migrant health** (for example, ensure the standardization and comparability of data on migrant health);
- **Policy and legal frameworks** (for example, implement national health policies that promote equal access to health services for migrants);
- **Migrant sensitive health systems** (for example, enhance the capacity of the health and relevant non-health workforce to address the health issues associated with migration);
- **Partnerships, networks and multi country frameworks** (for example, address migrant health matters in global and regional consultative migration, economic and development processes).

This framework emphasizes the need to simultaneously focus on the health of migrants (for example, extend social protections in health and improve social security for all migrants as a part of actions on policy and legal frameworks), as well as a focus on health systems that respond to and address migrant and border health issues (for example, ensure continuity and quality of care for migrants in all settings). The Concept Paper alongside these five country studies, *Border Health: Concepts, Models, and Applications for the Greater Mekong Subregion*, goes into these themes and areas in further depth.

Some notes on the scope and structure of these papers are warranted. Firstly, the five papers are country papers for Cambodia, Thailand, Lao PDR, Myanmar and Vietnam. While Yunnan Province and Gungxi Zhuang Autonomous Region in China are considered part of the Greater Mekong Subregion, these areas are not addressed in these papers. Secondly, while there is considerable internal migration within countries in the region, primarily from rural areas to the large urban centers, the focus of this analysis is on influences on border health in each country, and cross-border migration. Thirdly, the health of migrants in receiving countries is primarily addressed in the country report on the receiving country – for example, the health of migrants from Vietnam living in Thailand is addressed in the paper on Thailand, rather than the paper on Vietnam.

Each of the five country studies includes the following sections:

- Demographic, economic and social background;
- Health status – a broad overview of health status from a national perspective;

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• Health systems – using the WHO’s six building blocks of health systems, providing an overview of health service delivery, health workforce, health information systems, access to essential medicines, financing, and leadership/governance;

• Migration and border specific health issues;

• Migration and border specific health systems issues;

• Policies, legal frameworks and institutions; and

• Data gaps and challenges.

In an effort to provide comprehensive information to address these areas, these papers are based on a wide range of data sources, which include international organizations, national health systems and institutions, published academic literature, and grey literature from non-governmental organizations and research institutions.

Following the five country studies, recommendations and conclusions are provided that tie together common themes found in each of the individual studies.

Cambodia country study

I. Background:

Cambodia has a population of 14.31 million, and shares a 541 km border with Lao PDR, a 803 km border with Thailand, and a 1,228 km border with Vietnam. The Mekong Border Disease Surveillance initiative collects cross-border information on the following provinces that border Vietnam, Thailand or Lao PDR: Stung Treng (bordering Lao PDR, population of 111,734), Banteay Meanchey (bordering Thailand, population of 678,000), Takaeo (bordering Vietnam, population 843,931), Kampot (bordering Vietnam, population 627,884), Battambang province (bordering Thailand, population 1,036,523), Svay Rieng (bordering Vietnam, population 482,785), Kampong Cham (bordering Vietnam, population 1.68 million), and Koh Kong.

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3 Ibid.

4 Ibid.

5 Ibid.

6 Ibid.

7 Ibid.
Koh Kong has been identified as both a destination and transit point, where internal migrants within Cambodia come to work and then move on to Thailand. Other border provinces include Mondolkiri province, bordering Vietnam (population 60,811) and Kratie (bordering Vietnam, population 318,523). Life expectancy in 2012 was 63.6 and 35% of the population is under the age of 15. Cambodia ranks 138th in the UNDP Human Development Index, and according to the most recent UNDP data, 22.8% of the population of Cambodia live on under $1.25 PPP per day, and 30.1% of the population live below the national poverty line.

Cambodia’s primary exports are petroleum products, cigarettes, gold, construction materials and machinery, and 24.6% of its exports go to Thailand, while 20.6% go to Vietnam. There is already considerable cross-border movement and trade, particularly from Cambodia to Thailand, and current and future plans for increased economic integration may impact border health issues. For example, there are a number of activities underway to boost trade between Thailand and Cambodia, with a new Joint Commission on Border Area Development and Connectivity planning two special economic zones, between Sa Kaeo province in Thailand and Banteay Meanchey province in Cambodia, and Trat province in Thailand and Koh Kong province in Cambodia. Cambodia has also recently set up a Joint Trade Commission with Lao PDR in an effort to increase cross-border trade. Economic analysis indicates that while there has been considerable economic growth over the past decade, this has not benefitted the poorest segments of the population, and has not contributed sufficiently to increased employment.

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8 Ibid.
9 Ibid.
14 http://www.bangkokpost.com/breakingnews/354563/more-checkpoints-to-be-launched-on-thai-cambodian-border
15 http://www.phnompenhpost.com/business/cambodia-eyes-laos-trade
17 Kingdom of Cambodia, Policy on Labour Migration for Cambodia, 2010.
Widening disparities within rural areas may continue to contribute to internal migration and cross-border migration as a livelihood strategy.18

II. Health status – national level

Health status in Cambodia, across a number of indicators, is amongst the lowest in the Western Pacific region, with indicators of neo-natal mortality, maternal mortality and rates of infectious diseases generally higher than neighboring countries and other countries in the region.

The 2010 Global Burden of Disease Study found that the highest-ranking causes of years of lost life [YLLs] in Cambodia were lower respiratory infections, ischemic heart disease, cerebrovascular disease and pre-term birth complications.19 Diarrheal diseases, as a cause of disease burden, showed the largest decrease in contribution to disease burden from 1990 to 2010. In terms of morbidity, the top fives causes of years lived with disability are iron-deficiency anemia, major depressive disorder, low back pain, chronic obstructive pulmonary disease, and tuberculosis. Leading causes of DALYs in 2010 that were not leading causes in 1990 were ischemic health disease, cerebrovascular disease, road injury, and major depressive disorder. Differences in leading cause of DALYs between 1990 and 2010 show that, overall, the disease burden of non-communicable diseases and injuries is increasing, while communicable, maternal, neonatal and nutritional causes are decreasing. However, compared to the regional average, Cambodia has higher years of life lost due to communicable diseases and lower due to non-communicable diseases.20 The top three risk factors accounting for disease burden overall in Cambodia are dietary risks, household air pollution from solid fuels and tobacco smoking, while for children under 5 it is childhood underweight.

Prevalence of tuberculosis per 100,000 population is 817, compared to a regional average of 138; prevalence of HIV per 100,000 population is 447 compared to a regional average of 72, and prevalence of malaria per 100,000 population is 1353 compared to a regional average of 104. High levels of multi-drug resistant malaria have been found in some areas.21 The burden of TB in Cambodia is high, with prevalence of 817 per 100,000 population.22

18 World Bank, op. cit.
22 http://hiip.wpro.who.int/hiip/
UNICEF data indicates that across a number of indicators, reproductive health is a significant challenge in Cambodia. However, a number of indicators have improved significantly, as shown in the recent Cambodia Demographic and Health Survey. For example, in 2005, 44% of births were attended by a skilled health provider, whereas in 2010, this figure was 71%. The maternal mortality ratio – 250 per 100,000 births – is high for the region, which has an average of 49 [seeTextbox 1, below].

Services and treatment for key child health challenges are also limited, with only 50% of children under 5 with diarrhea receiving oral rehydration therapy or increased fluids, with continuous feeding. Under-5 mortality dropped from 83 per 1,000 live births in 2005 to 54 per 1,000 live births in 2010. The percentage of children with suspected pneumonia taken to a health provider has risen from 37% in 2000 to 48% in 2005, and the percentage of infants who are exclusively breastfed under 6 months rose from 12% to 60% from 2000 to 2005.

In 2010, 28% of children under 5 years of age were underweight, and 8.2% of newborns were considered low birth-weight.

Mental disorders are a significant concern in Cambodia. A study of post-conflict mental health in four countries found a prevalence of 28.4% Post Traumatic Stress Disorder, with the following risk factors: conflict-related trauma after 12 years, psychiatric history and current illness, death or separation in the family and alcohol abuse in parents. Additional data on the prevalence of common mental disorders is limited, however, prevalence of depression and anxiety is suspected to be high. In order to respond to these challenges, a number of programs and activities have been developed, including efforts to train more psychiatrists and implementation of community-based mental health activities in rural areas.

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23 Cambodia Demographic and Health Survey 2010 Factsheet.
26 Ibid.
27 http://hiip.wpro.who.int/hiip/
Textbox 1: Improving maternal health

While the 2010 DHS indicators significant improvements in maternal and child health indicators in Cambodia, Cambodia still lags significantly behind its neighbors and remain significant public health problems throughout the country. To address these issues, the Government of Cambodia initiated the 2010-2015 Fast Track Initiative Road Map for Reducing Maternal and Newborn Mortality. The WHO states that with the initiative, “the Ministry of Health signals its intention to allocate national resources [to this issue], and its desire for development partners to similarly support with funds and technical assistance.” The strategy has identified a number of priority areas and interventions – including emergency obstetric and newborn care, skilled birth attendance, safe abortion and removing financial barriers to access to services – and has put in place activities to reach these objectives, as well as mobilizing donor support around these objectives.

A case study has also identified improvements in the deployment and retention of midwives in rural areas as part of the strategy, as well as other activities to improve human resources for health, as a factor behind the reduction in maternal mortality in Cambodia. Activities included providing incentives to midwives for each delivery they perform at a health facility. However, gaps remain in provision of skilled midwives in health facilities, and the Initiative contains a number of activities to address this issue.

One study has indicated that unsafe abortion is an issue that significantly affects unmarried migrant Cambodian women along the Thai-Cambodia border, and efforts to increase and improve access to reproductive health services may need to specifically account for the experiences of women who migrate temporarily to Thailand for work, which include risky sexual experiences, including multiple unsafe abortions.

31 http://www.who.int/countryfocus/cooperation_strategy/ccsbrief_khm_09_en.pdf
III. Health systems – national level

i. **Health service delivery:** Cambodia’s health system is delivered through health centers and health posts. 1,049 of these facilities cover between 10,000 and 20,000 people each. In 2010, only 43% of health centers offered the full minimum package of services.\(^{35}\) There are .84 inpatient beds per 1,000 population.\(^{36}\) There is a total density of .43 per 100,000 population of district or rural hospitals, 7.02 per 100,000 population of health centers, .12 per 100,000 of provincial hospitals and .06 per 100,000 of specialized hospitals.\(^{37}\) There are national, district and referral hospitals that offer various levels of services – for example, in 2011 there were 33 CPA-1 hospitals, which provide basic obstetric care but no large-scale surgery, 31 CPA-2 hospitals, which additionally have emergency care services, ICU and large-scale surgery, and 26 CPA-3 hospitals, which also offer additional specialized services. Limited data on number of inpatient beds available for the population exists. One study showed that there are 14 in-patient psychiatric beds in the country, the lowest ratio of psychiatric beds per person in Southeast Asia.\(^{38}\) Aside from availability of services, some reports indicate concerns about quality of services at all levels.\(^{39}\) Data on the number and distribution of inpatient beds per 10,000 population, and specific services and general services readiness scores for health facilities could not be obtained. Low quality and lack of access to public health facilities has meant that a large proportion of the population utilizes private health facilities, which are often unregulated and have high user fees.\(^{40}\)

ii. **Health workforce:** There are 2.3 doctors per 10,000, compared to a regional average of 15.2, and 7.9 nurses and midwives per 10,000, compared to a regional average of 19.5.\(^{41}\) Human resources for mental health are also limited, with the WHO mental health atlas in 2005 finding that there are .16 psychiatrists for 100,000 population, .45 psychologists per 100,000 population and .05 social workers per 100,000 population.

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\(^{35}\) WHO and Ministry of Health, Cambodia, Health service delivery profile Cambodia, 2012.

\(^{36}\) WHO and Ministry of Health, Cambodia, Health service delivery profile Cambodia, 2012.

\(^{37}\) http://hiip.wpro.who.int/hiip/

\(^{38}\) Leitner Center for International Law and Justice, Mental Health and Human Rights in Cambodia, Fordham University, 2012.


\(^{40}\) Cambodia Department of Planning and Information, Strategic Framework for Health Financing.

The WHO recommendation is 2.5 skilled birth attendants per 1,000 population, however, Cambodia only has .77 per 1,000 population (10,333 nationally), including secondary nurses, secondary midwives, and medical assistants.

iii. **Health information:** The Health Information System in Cambodia has been implemented nationwide since 1995. A 2007 assessment of the HIS found that there are inadequate resources and policies to guide the HIS, limited use of HIS data in planning and monitoring health service delivery, and inadequate dissemination of data, while the strengths include that it has integrated nearly 20 reporting and monitoring systems into one system in order to reduce duplication and that definitions and reporting forms are standardized. The 2008-2015 Health Information System Strategic Plan seeks to address a number of these challenges and improve the system overall.

iv. **Essential medicines:** Data on median consumer price ratio of 14 essential medicines and average availability of the medicines is not available. Some data show that there are significant differences between brand and generic medicines, and that these price differences are higher in private facilities. Availability of medicines is a problem; NGO facilities were only able to dispense 50% of prescribed medicines, private facilities 59% and public facilities, 80%.

v. **Health financing:** Total expenditure on health as a percentage of GDP was 5.8% in 2010, and general government expenditure on health as a proportion of general government expenditure was 10.5%. Per capita expenditure on health, at purchasing power parity, was $17. Out of pocket payments as a percentage of health expenditure is 64.3%, which is one of the highest in the Western Pacific region. Data from the recent DHS shows that these payments often come from savings, sale
of assets and borrowing with high interest rates, and literature has shown that out of pocket payments cause delays in seeking treatment and can have long-term impacts on household health and well-being. A number of forms of health insurance and health financing exist, including health equity funds, community-based health insurance and the SKY health insurance plan [see Textbox 2, below].

vi. Leadership and governance: The Health Strategic Plan (2008-2015) forms the basis of the Ministry of Health’s plan for improvement of health systems in Cambodia. The plan focuses on cross-cutting issues in order to identify and improve system-wide services and programs: health service delivery, health care financing, human resources for health, health information systems, and health system governance, with a mission statement to “provide stewardship for the entire health system and ensure a supportive environment for increased demand and equitable access to quality health services.” A number of other relevant policies and strategies exist, including the Framework for Health Financing (2008-2015), the Health Workforce Development Plan (2006-2015), and the Fast Track Initiative on Maternal and Child Health, which signals the Ministry of Health’s intention to allocate specific resources towards improving key maternal and child health indicators. Despite this, there are problems with fragmentation due to multiple donors and implementing partners.

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50 WHO Thailand, Health Systems in the ASEAN Region: Migrant Health Systems and Country Profiles, 2012

51 Ministry of Health, Cambodia Health Strategic Plan.

Textbox 2: Building Block 5 – Health financing in Cambodia

Out of pocket spending on health in Cambodia is amongst the highest in the world. User fees are charged in all health facilities in Cambodia, and expenditures on health care costs are a major cause of debt amongst poor Cambodians. Households use a combination of savings, selling assets and borrowing money to finance health care expenditure, which can be considerable; in the case of one study of health care costs for dengue fever, out of pocket costs totaled up to half a year's salary, and debt incurred resulted in households having to sell land. The current health system in Cambodia severely limits access and equity; the WHO ranked Cambodia 183rd out of 191 countries in terms of fairness of financial contribution to health systems, where fairness means that “the risks each household faces due to the costs of the health system are distributed according to ability to pay rather than to the risk of illness.”

A number of approaches have been used to address this issue. Health equity funds (HEFs) provide for waiving of user fees, alongside other benefits, including payment for costs of transport and food costs at the hospital, depending on eligibility, for poor patients. The design of the HEF rests on the principles that the specific fund is established in order to compensate the health facility for providing services for patients who receive waived fees, and that the management of the fund is independent of the health facility, i.e. that the HEF itself determines targeting. Voucher programs have also been used – for example, in one case in Kampong Cham, eligible pregnant women were given vouchers that entitled her to free antenatal services and transportation costs. HEFs operate in 49 of 77 operational districts across Cambodia. Methods of targeting and composition of benefits packages vary.

Some of these approaches to addressing health financing in Cambodia have showed

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54 Economic Institute of Cambodia, Health Care in Cambodia, 2004


58 Ir. P. et al., Using targeted vouchers and health equity funds to improve access to skilled birth attendants for poor women: a case study in three rural health districts in Cambodia, BMC Pregnancy and Childbirth, 10(1), 2010.

59 Cambodia – user fees
significant results. For example, a combination HEF and voucher scheme in Kampong Cham led to an increased in deliveries at facilities, while failing to address some barriers, such as cost of transportation to health facilities, and supply side barriers, such as availability of skilled human resources for deliveries in health facilities.\textsuperscript{60} HEFs have resulted in increased utilization of health services by poor people. HEFs are perceived to be more effective than full waiver systems, as they allow health facilities to retain income, and in some cases, increase income due to an increase of new patients who access services due to the HEF.\textsuperscript{61}

However, assessment of eligibility for user fees is often done after the patient arrives that the facility, meaning that the patient may still delay seeking care as they do not know in advance of their entitlements. Impacts have been most substantial in cases where performance of health facilities was improved through investments in staff motivation and higher quality of care.\textsuperscript{62} Hardeman et al found that only 12\% of beneficiaries of a HEF in Takeo province were aware of the HEF before seeking care.\textsuperscript{63} It is probable that large numbers of poor people are still delaying or avoiding treatment due to concerns and uncertainties about financial contributions to health services. In terms of addressing the key constraints to accessing health services, HEFs and voucher systems can be effective. However, addressing the core challenge of health system financing in Cambodia will also require increased government expenditure on health.

\textbf{IV. Migration and border specific health issues}

Numerous sources identify the importance of cross-border migration as a livelihood strategy in Cambodia. Issues of land confiscation, debt and poor conditions for agricultural production have contributed to migration to Thailand being a key livelihood strategy in Cambodia, primarily amongst poor rural Cambodians. Border areas are affected by these migration patterns in a number of ways. Migration patterns differ. Some migrants cross the border with Thailand for short-range migration close to the border, while others travel further into Thailand for longer periods, to access other industries such as fishing and construction. Cambodia’s framework for

\begin{itemize}
\item \textsuperscript{60} Ir. P. et al., op. cit.
\item \textsuperscript{61} Noirhomme, M., op. cit.
\item \textsuperscript{62} Meesen, B et al., Poverty and user fees for public health care in low-income countries: lessons from Uganda and Cambodia, \textit{Lancet}, Vol. 368, 2006.
\end{itemize}
labor migration does include provisions for pre-departure health services and information, and the Cambodian Ministry of Labor and Vocational Training requested that the IOM produce manuals for pre-departure information, including on health needs, for migrant workers. However, this is aimed towards documented migrants who move to Thailand, Malaysia, Korea and Singapore using recruitment agencies, and while statistics are unclear, it appears that a substantial amount of cross-border migration from Cambodia is irregular. Following a regularization program introduced by the Thai Government in 2004, 110,025 Cambodians working in Thailand obtained work permits, however, in subsequent years official deployment of migrant workers from Cambodia to Thailand, through channels established in a Memorandum of Understanding, has declined. A small study of four villages in a commune in Battambang identified the high prevalence of forms of labor migration within these villages, and anecdotal evidence suggests that migration is often of short duration, entailing trips to Thailand to work during non-harvest season or when livelihoods difficulties emerge.

Recent data from the 2010 Demographic and Health Survey indicates disparities in health status between provinces. For example, the infant mortality rate in Phnom Penh is 13 per 1,000 live births, 50 in Siem Reap province, and 57 in Kampong Thom, compared to rates in border provinces that include 82 per 1,000 live births in Mondolkiri, 95 per 1,000 live births in Preah Vihear/ Stung Treng and 76 per 1,000 live births in Kratie. The national average is 45 per 1,000 live births. However, it is also the case that these provinces are all in the Northeast of the country, which is more remote and has less access to services in general, with much lower rates of skilled attendant at birth and birth in a health facility in Mondolkiri and Preah Vihear/ Stung Treng. Banteay Meanchey province, which sees considerable cross-border movement to Thailand, has above average infant mortality rate of 61 per 1,000 live births, but this does not differ from a number of non-border provinces, indicating that patterns in health status between border and non-border areas need to be further disaggregated and examined in order to establish the role of border health issues in influencing health status disparities, whereas other

64 USAID and the Asia Foundation, Cambodia’s Labor Migration: Analysis of the Legal Framework, 2011.
66 Kingdom of Cambodia, Policy on Labour Migration for Cambodia, 2010.
67 Ibid.
68 Cooperation Committee for Cambodia, Labor Migration to Thailand and the Thai-Cambodian border – recent trends in four villages in Battambang Province, 2003.
69 Cambodia Demographic and Health Survey 2010, Key Findings.
70 Cambodia Demographic and Health Survey 2010.
patterns of disparities – for example, the association of infant mortality to rural residence and lower mother’s education, are clearer.\textsuperscript{71} The pattern of child immunization nationally (the % of children between 12 and 23 months who have received all basic vaccinations) also shows patterns whereby provinces in the Northeast have much lower rates of vaccination, but Northwestern border provinces and non-border provinces show less variation. In 2003, Battambang contributed 14% of malaria cases and had highest number of malaria cases\textsuperscript{72} and UNAIDS data shows that border provinces bordering Thailand have higher prevalence compared to other provinces.\textsuperscript{73}

Some specific programs and activities have identified border areas in Cambodia as at risk for specific health challenges. For example, an IOM program focused on pandemic preparedness focused on the Cambodia/Vietnam border area generally and Svay Rieng province specifically, recognizing the potential vulnerability to specific groups such as cross-border labor migrants and returnees in rural and cross-border communities who have limited access to health services.\textsuperscript{74} Health systems preparedness for surveillance of and response to pandemics, such as influenza or avian flu, is considered limited.\textsuperscript{75}

Other activities, including the Community Action for Preventing HIV/AIDS project, have been implemented in border areas (Battambang, Koh Kong, Prey Veng and Svay Rieng), recognizing that the prevalence of highly mobile populations in these areas put individuals and communities at risk for higher rates of HIV transmission.\textsuperscript{76} Activities implemented as part of this project included increased voluntary testing and counseling, provision of STI services, promotion of 100% condom use and behavior change communication activities. The programs described here – pandemic preparedness and HIV/AIDS prevention – are focused on border areas based on the understanding that these areas are more vulnerable to these risks.

There are limited data that provide clear evidence as to the argument that Cambodian border provinces experience significantly higher health challenges. Evidence of vulnerability of border areas used to support specific programs for these areas is often tied to general

\textsuperscript{71} Cambodia Demographic and Health Survey 2010, Key Findings.

\textsuperscript{72} WHO, Roll Back Malaria Monitoring and Evaluation Profile, 2005.

\textsuperscript{73} WHO and UNAIDS, Epidemiological Country Profile on HIV and AIDS.


\textsuperscript{76} Sopheab, H. et al., Community action for preventing HIV in Cambodia: evaluation of a 3-year project, \textit{Health Planning and Policy}, Vol. 23, 2008.
arguments around vulnerability and risk behaviors of mobile populations, and links to various forms of adverse health outcomes due to these behaviors and risks. Some data supports the argument that border areas are particularly susceptible to challenges in health status and health systems. A small study of Cambodian female returned migrants in a commune close to the border with Thailand illustrates some of the sexual risks experienced by female irregular migrants, including rape and unsafe abortion. Programmatic research has also identified challenges in ARV adherence amongst mobile populations crossing through and returning to Koh Kong province. Evidence of high levels of abuse and violence experienced by Cambodian migrants who returned from Thailand indicate that returned migrants are likely to have specific physical and mental health needs that are often left unaddressed, with only 23% of respondents in a survey of returned migrants in Banteay Meanchey province reporting having had a health check in the past two years. Drug-resistant malaria has emerged in Thailand-Cambodia border regions, and is thought to be associated with migratory patterns, given that in Thailand, a significant percentage of malaria cases are found amongst short-term labor migrants. One study of migratory patterns amongst Cambodian migrant workers on the Thailand border found that workers were often short-term migrants (had been in Thailand for less than six months), and had plans to return to Cambodia, indicating migratory patterns that constitute risks for spread of drug-resistant malaria. Data collected by an electronic malaria information system in districts in Thailand, along the border with Cambodia, identified higher malaria prevalence amongst migrant workers who had been in Thailand for less than 6-months and/ or crossed the border regularly for work, compared to local Thai populations [seeTextbox 3 for more on approaches to malaria treatment].

V. Migration and border specific health systems issues

77 Hegde, S et al., op. cit.
78 Raks Thai Foundation, op. cit.
80 Containment of artemisinin resistance and moving towards the elimination of Plasmodium falciparum in Thailand. 2010, CCM-Thailand Round 10 malaria proposal to the GFATM.
82 Ibid.
Ratios of indicators for child and maternal health services between rural and urban areas indicate some patterns of disparities of access to maternal and child health services between rural and urban areas.\(^{83}\) Given border areas are primarily rural, this may broadly indicate challenges to health service utilization in border areas. However, more specifically, data showing utilization of services for reproductive health by province indicates that the border provinces of Battambang, Banteay Meanchey, Koh Kong and Kampot have higher rates of utilization of reproductive health services compared to other provinces, although it is unclear what factors contribute to this.\(^{84}\) It is unclear the extent to which services in Cambodia are “migrant-sensitive,” though notably, the key health strategies and discussion of health services and health systems do not contain reference to migrant populations or migration dynamics from Cambodia. IOM has migrant health programs with a specific focus on border regions, including programs to strengthen migrant health structures, services and systems in selected border provinces, and cross-border pandemic preparedness activities, focusing on capacity building for migrants, host communities and border agencies.\(^{85}\)

**Textbox 3: Access to artemisinin combination therapy [ACT] for malaria in remote areas**

Cambodia is the first country to change its national malaria treatment policy to ACT as first-line treatment for \(P. \text{falciparum}\) malaria, in 2000.\(^{86}\) Use of artemisinin as a monotherapy response to malaria in the area is not recommended, given concerns about the rise of resistance to artemisinins.\(^{87}\) Strategies to address implementation of this policy have included Malaria Outreach Teams, established and funded by Medicins Sans Frontieres, who go from health facilities in teams to diagnose and treat malaria cases, and Village Malaria Workers, who are based in villages and supervised by the National Malaria Control Programme, and perform rapid diagnostic tests on villagers suspected of having malaria. Since 2001, the Village Malaria Workers program has been scaled up to 1528 villages in 17 provinces.\(^{88}\) A study conducted in four provinces (Battambang, Siem Reap,

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\(^{84}\) Ibid.

\(^{85}\) http://www.iom.int/cms/en/sites/iom/home/where-we-work/asia-and-the-pacific/cambodia.html#mh

\(^{86}\) Yueng, S. Cost of increasing access to artemisinin combination therapy: the Cambodian experience, *Malaria Journal*, 7(84), 2008.


Odar Meanchey and Koh Kong) sought to compare malaria diagnosis and treatment in three different types of areas: with Mobile Outreach Teams, with Village Malaria Workers, and with no intervention, finding low utilization of ACTs overall, given the majority of patients seek care in the private sector, which is largely unregulated and primarily provides artemisinin monotherapy for malaria treatment. The presence of Village Malaria Workers, in particular, significant increased the likelihood of receiving an accurate diagnosis and appropriate treatment.\(^{89}\) Various other studies have emphasized the role of Village Malaria Workers in providing information about malaria transmission and services for diagnosis and treatment comparable to that of health centers (although Village Malaria Workers were found to be less effective than health centers in informing villagers about malaria symptoms).\(^{90}\) One study found that the low level of knowledge of malaria transmission routes amongst Village Malaria Workers, while still finding that they effectively conduct diagnosis with rapid diagnostic tests and provide appropriate treatment.\(^{91}\) Another study examined Village Malaria Workers' knowledge and quality of service provision for malaria after scale-up of services to expand their scope to include treatment of fever, diarrhea and acute respiratory infection in children under 5, finding that service quality was retained.\(^{92}\) Village Malaria Workers have also been found to be a strong source of surveillance, as well as providing high quality diagnosis and treatment.\(^{93}\)

Approaches to address barriers in implementation of this strategy, including rapid diagnostic tests and interventions to improve identification and treatment of malaria, are relevant for border health, in that drug-resistant malaria has been identified as a significant concern in areas along the Thailand-Cambodia border, and malaria is thought to specifically affect mobile communities and vulnerable populations living in remote areas. Therefore, while these strategies are not specifically framed as border or migrant health strategies, they can be viewed as approaches to border health given they focus on these specific areas (in the case of the study discussed above, five of the six study sites were in border provinces) and on issues that affect mobile populations and border communities.

\(^{89}\) Malaria access study

\(^{90}\) Lim, S. et al, op. cit.


VI. Policies, legal frameworks and institutions

Cambodia’s 2010 Policy on Labor Migration for Cambodia recognizes challenges to migrants’ health in Thailand, including lack of access to health services, lack of insurance coverage, and exposure to risks in workplaces that can have long-term health consequences. The policy recommendations related to migration governance primarily refer to migration facilitated through formal channels, and include efforts to disseminate information pre-migration about the risks and benefits of migration, extending protection to migrant workers by posting a labor attaché in receiving countries, and establishing a social welfare or health insurance fund to help migrant workers cope with risks and contingencies while outside of Cambodia. The main legal framework for cross-border migration is the 2003 Memorandum of Understanding between the Governments of Cambodia and Thailand, which seeks to establish legal and organized deployment of migrant workers from Cambodia to Thailand and includes guidelines for safe and legal migration. In 2004, the Government of Cambodia signed the MoU for Joint Action to Reduce HIV Vulnerability Related to Population Movement, and also signed the ASEAN Declaration on the Protection and Promotion of the Rights of Migrant Workers. Cambodia has signed, but not ratified, the Convention on the Protection of the Rights of All Migrant Workers.

Textbox 4: Migration management policies and practices in Cambodia

Various laws and sub-decrees in Cambodia provide for the conditions for potential migrants in Cambodia to register with the Ministry of Labor and Vocational Training and be placed, through a recruitment agency, in a job overseas. These decrees include a number of provisions for pre-departure training, while there has been criticism of regulation of recruitment agencies and oversight of working conditions of Cambodian migrant workers in other countries.

The primary migration management framework for Cambodians in Thailand is the Memorandum of Understanding between Cambodia and Thailand on Bilateral Cooperation in the Employment of Workers, 2003, and recruitment under the MoU started in 2006. The aim and scope of the MoU is contained in Article 1 and is:

1) Proper procedures for employment of workers;
2) Effective repatriation of workers, who have completed terms and conditions of employment or are deported by relevant authorities of the other Party, before completion of terms and conditions of employment to their permanent addresses;
3) Due protection of workers to ensure that there is no loss of the rights and protection of workers and that they receive the rights they are entitled to;
4) Prevention of, and effective action against, illegal border crossings, trafficking of

The ILO noted that between 2006 and June 2007, 3,628 Cambodians had been recruited and sent to Thailand to work under the MoU, and the ILO reports that many Cambodians perceive the formal recruitment process as slow and expensive. The MoU is a limited tool to manage cross-border migration of Cambodians to Thailand. The MoU only covers formal, registered migration processes, and irregular migrants – who may already be more vulnerable to exploitation and exposure to health risks – are not provided with regular or specified services under this agreement. However, there are also indications that migrants recruited under the MoU also fail to receive protections, and are vulnerable to high recruitment fees, deduction of salaries and restrictive contracts. NGOs in Cambodia have noted that the registration process for Cambodian migrant workers in Thailand has at times been complicated and difficult, and an unknown number of Cambodian migrant workers in Thailand remain unregistered.

The lack of capacity of the MoU, registration processes in Thailand, and current migration management policies and practices in Cambodia, to adequately provide for health and social services of migrants, prior to migration, during work in Thailand, and after returning to Cambodia, is thought to have a significant impact on migrants, their families and communities, and as such, on border health overall.

### VII. Data gaps and challenges

While the recent 2010 DHS provides some province-level data, there is a lack of sub-national data available on many indicators, as noted in a study of the availability of sub-national data for the purpose of monitoring the Millennium Development Goals. An analysis of the Cambodian Health Information System in 2007 identified significant gaps in data collection at a number of levels, including in population-based household surveys and health service records. Data sources identified in the course of this review indicate that data that focuses specifically on migrants or monitoring the impacts of migratory patterns and migration on migrants themselves,

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96 Ibid.

97 National Institute of Statistics Cambodia, MDG Data at Sub-national Level: the experiences of Cambodia, MDG Monitoring Workshop, 2009.

their households, and communities, are primarily ad hoc surveys and programmatic reports of varying quality.

**Lao People’s Democratic Republic country study**

**I. Background:**

Lao People’s Democratic Republic (Lao PDR) has a total national population of over 6.2 million, and borders five countries: Myanmar, Thailand, Vietnam, Cambodia, and China. The borders shared between Lao PDR and these countries is a combined length of more than 4,000km with that total broken down to a border of 2,130km with Vietnam, 1,754km with Thailand, 541km with Cambodia, and 235km with Myanmar. Lao PDR has several official border crossings with Thailand, Vietnam, and Cambodia; however, there are no official border crossings with Myanmar. Lao PDR is landlocked and primarily covered with mountainous and thickly forested areas, making access to some areas difficult as illustrated by the fact that up to 21% of the population live in areas without roads. In 2010, an estimated 66.8% of the population was living in rural areas.

The Mekong Basin Disease Surveillance (MBDS) initiative collects cross-border information on 10 provinces in Lao PDR that border Thailand, Vietnam, Cambodia, and/or China: Savannakhet province (Mukdaharn, Thailand; Quang Tri, Vietnam), Champasak province (Stung Treng, Cambodia; Ubon Ratchathani, Thailand), Luang Namtha province (Mengla, China), Bo Kaeo province (Chiang Rai, Thailand), Borikhamxay province (Ha Tinh, Vietnam), Vientiane province (Nongkhai, Thailand), Khammouane (Nakorn Phanom, Thailand; Quang Binh, Vietnam). Within this initiative, Lao PDR is tasked with taking the lead on the strategy to “enhance cross border communication and information exchange” with the goal of setting up cross-border sites for disease control cooperation and disease surveillance information exchange.

Current demographic estimates report that 37.9% of the population is under the age of 15 years and 3.7% over the age of 65 years. The median age as of 2012 was estimated to be

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100 CIA world fact book

101 Lao PDR health service delivery profile 2012

102 *Emerg Health Threats J* 2013, 6: 19944 – [http://dx.doi.org/10.3402/ehtj.v6i0.19944](http://dx.doi.org/10.3402/ehtj.v6i0.19944)

103 2013 estimate CIA World Fact Book
21.02 years. Although the nation is rural, there are signs of a rural-to-urban shift, which is illustrated by a decrease in the estimated percentage of the population living in rural areas from 72.9% to 66.8% between 2005 and 2010.

Lao PDR ranked 122th in UNDP’s Human Development Index in 2010. Based on international purchasing power parity (PPP) standards, 33.9% of the population was living on less than US $1.25 in 2008. Although the poverty rate has fallen in recent years, it is higher in remote and highland areas. Furthermore, increased poverty correlates with a decreased amount of road or river access. Despite national-level increases in literacy (73% in the population above 15 years of age in 2005) and increases in school attendance, disparities in literacy and school attendance between men/boys and women/girls still exist.

Following decades of war and political instability, Lao PDR has experienced GDP growth of 8% in the last ten years and is now classified as a low-middle income country. With a GDP of $8.2 billion, Lao PDR’s primary exports are wood products, coffee, electricity, tin, copper, gold, and cassava. Major imports include machinery and equipment, vehicles, fuel, and consumer goods. Trade and economic development plans between countries are currently being implemented or planned. These include improved infrastructure to boost bilateral trade between Lao PDR and Thailand to over $8 billion by 2015 through closer cooperation within the ASEAN Economic Community. For example, Lao PDR and Thailand have agreed to build another Mekong Bridge, linking the Lao province of Borikhamxay with Bung Khan province in Thailand. The two countries have already opened three bridges linking central Lao PDR with Thailand.

In addition, Lao and Cambodian officials recently agreed to start a Joint Trade Commission in order to promote expansion of trade and eliminate trade impediments between the two countries, with a particular focus on border trade. A main focus of this is aimed particularly at farm productions along the border, along with the establishment of border markets.
in order to push development of border trade.\textsuperscript{112} Developments such as these mean that increased interactions across border may have implications for health as well and a cross-border approach is warranted to increase cooperation in tackling health concerns. An example of Lao PDR cooperation with neighboring countries to address health concerns comes from a joint survey and programmatic review carried out in Savannakhet, Lao PDR and Quang Tri, Vietnam in 2010 to improve malaria control methods through better cooperation between the two countries.\textsuperscript{113} The study carried out data collection in randomly selected villages within 5km of the border. It found that malaria prevalence was significantly higher in Lao PDR (5.2\%) compared to Vietnam (1.8\%). In addition, variations in prevention measures and health seeking behaviors were found. Together, the two countries assessed differences in access to public health facilities and government-led initiatives to control malaria. The need for cooperation was highlighted by the fact that inhabitants of this area, from the same ethnic group, are allowed to freely cross the border by both governments. The result of this study was an improved cross-border collaborative effort between both countries and an agreement to have regular exchanges of malaria surveillance data as well as to jointly carry out standardized malaria control efforts such as indoor residual spraying.

**II. Health status – national level**

Since the introduction of market-based economic reforms in 1986, Lao PDR has been undergoing social and economic transformations, which have significantly improved health status and development. However, while Lao PDR has made significant progress in socioeconomic development, the health status remains one of the lowest in the WHO Western Pacific Region due to poor health infrastructure, poverty and inaccessible terrain in the poorest parts of the country. Lao PDR is landlocked between China, Thailand, Vietnam, Cambodia and Myanmar and cross-border disease transmission remains a big issue.

There are many health challenges in the country. The 2010 Global Burden of Disease Study found that the highest-ranking causes of years of lost life [YLLs] in Lao PDR were due to premature death, lower respiratory infections, ischemic heart disease, and diarrheal diseases.\textsuperscript{114} In the same study, it was found that the leading causes of disability-adjusted life years lost [DALYs] were lower respiratory infections, ischemic heart disease, and diarrheal diseases. In addition, among the 10 leading causes of DALYs in 2010 and not 1990 were cerebrovascular disease, major depressive disorder, road injury, and neonatal encephalopathy. Overall, the three risk factors that account for the most disease burden in Lao PDR are household air pollution from solid fuels, tobacco smoking, and dietary risks. The leading risk factors for

\begin{flushleft}
\textsuperscript{112} Lao PDR Trade Portal website
\textsuperscript{113} Pongvongs – in DB
\textsuperscript{114} Global Burden of Disease Country Profile
\end{flushleft}
children under 5 and adults aged 15-49 years were childhood underweight and alcohol use, respectively. A limitation of this national-level data is that these estimates do not break down into subcategories by province and, thus, it is difficult to know the specifics of burden of disease, mortality, and morbidity for the border areas.

This illustrates the increasing burden from non-communicable diseases along with continuing concerns over infectious diseases. It is likely that there is an increased burden of many of these health problems in the border areas, which are less likely to have health facilities and infrastructure for increasing access.

Despite current low-level prevalence of HIV/AIDS (0.2% among adults) there is cause for concern due to increases in prevalence among female sex workers. In addition, increases in free trade zones, the opening of more casinos throughout the country, and the easing of migration formalities may result in increasing challenges in the control of HIV/AIDS, along with other communicable diseases.

Malaria has been successfully controlled in most areas but at-risk areas still include remote, forested areas. Although recent efforts conducted with Global Fund support have seen positive impacts with falling numbers in confirmed malaria cases, malaria is still a major contributor to morbidity and mortality and 70% of the population still live in areas that put them at risk for contracting malaria. From the Western Pacific Region Health Databank, 2011 Revision statistics, malaria is reported to be the leading cause of morbidity and mortality (4083.17 and 40.09 per 100,000, respectively).

Maternal and child health is still a pressing issue. There is a high maternal mortality rate and relatively high infant and child mortality rates, despite decreases in recent years. The maternal mortality ratio (MMR) dropped from 656 to 405 deaths per 100,000 live births between 1995 and 2005, infant mortality rate (IMR) from 104 to 70 deaths per 1000 live births, and the under-five mortality rate (U5MR) from 170 to 98 deaths per 1000 live births. Further progress has been shown for both IMR and U5MR with a reduction from 20005 estimates to 61 per 1000 live births and 74 per 1000 live births, respectively, in 2010. However, these rates still remain of concern in comparison to other countries in the region and globally. In addition, these estimates may be underestimates of the actual situation with high variation between provinces.

115 Country Health Information Profiles - WHO
116 Country Health Information Profiles - WHO
117 Country Health Information Profiles – WHO. Statistical Annex
118 Country Health Information Profiles - WHO
119 WHO Country Cooperation Strategy at a glance
Of concern for border health, for example, 2005 IMR estimates showed Vientiane Capital with the lowest rate (18) compared with the highest in Sekong province (122), indicating a need to look at variation between border and non-border areas.

A 2007 Lao Reproductive Health Survey\textsuperscript{120} reported that antenatal care and skilled birth attendance had not experienced significant progress in the general population, but did show some improvements among younger women. For the general population, 28.5% of women were seeking antenatal care and only 18.5% of deliveries were taking place with a trained birth attendant present. In addition, a high percentage of women were still delivering at home (84.8\%) despite some decrease from the year 2000 (89\%). More recent 2009/2010 estimates report that 71\% of women receive at least 1 antenatal care visit, 37\% delivered with a skilled health worker.\textsuperscript{121}

Progress was shown with regard to use of modern contraceptive methods with an increase from 28.9\% to 36.6\% between 2000 and 2005 among married women and a decline in the total fertility rate (4.07 between 2002 and 2005 and 3.90 in a 2009 estimate).\textsuperscript{122}

In 2011, there were only two psychiatrists for six million people in Lao PDR and still no plan for a mental health implementation strategy, despite the government having a mental health policy in place. According to the WHO, mental health issues are still “completely new.” Although mental health services are scarce, Valium is allegedly over-prescribed in rural areas. Drug abuse is also a growing concern, although currently poorly reported. Since 2009 there has been an expanded focus on mental health in the Ministry of Health drug treatment program, but no dedicated mental health division. There is limited access to appropriate medication, particularly in rural areas.\textsuperscript{123} Currently, the majority of provincial hospitals have set up mental health teams comprising of a doctor and two nurses who received a four-day mental health training. Other mental health and neurological diseases issues include management of seizure disorders and psychosis.

Food security and malnutrition continues to be a significant problem in Lao PDR with 41\% of children under five years old stunted\textsuperscript{124} and 7.3\% underweight.\textsuperscript{125} While 87\% of

\begin{itemize}
  \item \textsuperscript{120}Country Health Information Profiles - WHO
  \item \textsuperscript{121}WHO Country Cooperation Strategy at a glance
  \item \textsuperscript{122}Country Health Information Profiles - Annex
  \item \textsuperscript{123}http://www.irinnews.org/report/92362/laos-mental-health-still-neglected-underfunded
  \item \textsuperscript{124}Country Health Information Profile - WHO
  \item \textsuperscript{125}http://www.who.int/countries/lao/en/
\end{itemize}
households nationally are reported to be food secure, this is true for only one in three households in rural areas, and the situation is worse in the more vulnerable populations living in remote areas.\textsuperscript{126}

**Textbox 1: Joint outbreak investigation of human H5N1 influenza, 2007\textsuperscript{127}**

Following an announcement of an avian influenza H5N1 outbreak among poultry in Nong Khai province, Thailand, which borders Lao PDR, a similar outbreak was confirmed in Vientiane, Lao PDR. The Lao PDR Rapid Response Team (RRT) found three suspected human cases. Following this, Lao RRT and Thai Surveillance and Rapid Response Team (SRRT) worked together alongside the respective Ministries of Health to establish confirmation of the first human avian influenza case in Lao PDR. This person was first admitted to a hospital in Lao PDR and two days later was transferred to Nong Khai with notification from the Lao RRT to the Nong Khai Provincial Health Office following shortly thereafter. Together, a joint Lao-Thai investigation began by collecting specimens for testing and was able to illustrate collaboration that strengthened the surveillance system, cooperation between health workforces, and border responses and practices on both sides of the border.

### III. Health systems

Health systems can be assessed according to six building blocks, using standardized indicators proposed by the WHO.\textsuperscript{128} Available data at the national level, according to each building block, is presented here.

1. **Health service delivery:** There are four levels of administration in the health system: central, provincial, district, and village. The public sector is the primary provider of health services in the country through government owned and operated health centres and district, provincial and central hospitals. Furthermore, the health system is divided into three branches: health care; prevention, promotion and disease control; and health management and administration.\textsuperscript{129} Although emerging, the

\begin{footnotesize}
\textsuperscript{126} Country Health Information Profile - WHO

\textsuperscript{127} Emerg Health Threats J 2013, 6: 19944 – http://dx.doi.org/10.3402/ehtj.v6i0.19944

\textsuperscript{128} WHO building blocks paper

\textsuperscript{129} Asante and Roberts, 2011
\end{footnotesize}
private sector still remains relatively small with the majority of private sector health service access points being pharmacies. In the public sector, as of 2010, there were 20 general hospitals (4426 beds total, giving a ratio of 0.7 beds per 1000 population), 3 specialized hospitals, 16 provincial hospitals, 130 district-level referral hospitals (separated into Category A with surgical capacity and Category B without surgical capacity), and 862 primary health care centers.\textsuperscript{130,131} This is in comparison to the 222 private outpatient clinics.\textsuperscript{132} Combining public and private facilities, 2010 World Bank data show 0.7 inpatient beds per 10,000 population countrywide.\textsuperscript{133} Due to the fact that the state system is underutilized, particularly in rural areas, efforts have been made to increase access through village volunteers and village revolving drug funds. Through this effort, 5226 villages have been reached.\textsuperscript{134} Outpatient department visits per 10,000 population, data on the distribution of health facilities per 1000 population, and service readiness scores for health facilities are not available.

\begin{enumerate}
\item \textit{Health workforce:} Lao PDR faces challenges regarding human resources for health such as underfunding of salaries and wages, poor distribution of qualified staff, and limited numbers of qualified health workers. The country is estimated to have 1283 physicians (0.23 per 1000 population) and 5291 nurses (0.93 per 1000 population).\textsuperscript{135} The total health workforce in 2005 numbered 18017 (3.21 per 1000 population), with approximately 70\% of all health workers employed by the Ministry of Health.\textsuperscript{136} Furthermore, high- and mid-level medical staff (physicians, nurses and midwives with two or more years of formal training) make up only 23\% of the staff under the Ministry of Health (0.74 per 1000 population). A 2012 Health Service Delivery Profile from the Lao PDR Ministry of Health reported 14189 public sector health workers (2.17 per 1000 population), reflecting a critical shortage of staff.\textsuperscript{137}

\end{enumerate}

\begin{flushleft}
\textsuperscript{130} Country Health Information Profile - Annex
\textsuperscript{131} Country Health Information Profile - WHO
\textsuperscript{132} Country Health Information Profile - Annex
\textsuperscript{133} http://data.worldbank.org/indicator/SH.MED.BEDS.ZS
\textsuperscript{134} Country Health Information Profile - WHO
\textsuperscript{135} Country Health Information Profile - Annex
\textsuperscript{136} Country Health Information Profile - WHO
\textsuperscript{137} Health Service Delivery Profile, 2012
\end{flushleft}
The majority of staff working at the district level are mid- and low-level health workers (88%), and physicians represent only 6% of district-level staff. Health centers are primarily staffed by low-level (81%) and mid-level (18%) staff. A pressing problem for the country is the misdistribution of staff. Distribution is poor with regard to geography and facility level with only 2992 regular high- and mid-level medical staff at the health-facility level. This ratio of 0.53 per 1000 population is well below the 2.5 WHO recommendation.\textsuperscript{138} Rural areas have fewer health staff and recruitment of staff for these areas is often difficult given the remote locations and difficult living conditions.\textsuperscript{139}

Annual number of graduates of health professions by level and field of education is only available for the Pharmacists and Nurses with 53 and 30, respectively, reported in 2005.\textsuperscript{140}

Distribution of Ministry of Health staff by health system level reported in 2005 and 2008 indicate that the majority of workers are at the district level, followed closely by numbers reported for the provincial level (above 4,000 and 3500, respectively for both years). Staff at the central level was 2000 in 2005 and approximately 2400 workers in 2008. The lowest number of Ministry staff are working in health centers (just over 1000 in 2005), but there was an increase in the number of workers at this level by 2008 (over 1500).\textsuperscript{141}

In 2009, 58% of health workers employed by the Ministry of Health were female and 16% were from ethnic minority backgrounds.\textsuperscript{142}

\textit{iii. Health information:} The Lao PDR Government collaborates with international organizations to focus on improving health information systems (HIS). According to a 2006 Lao Health Information System Review and Assessment report, health information is still lacking in terms of completeness, timeliness and reliability due mostly to different and uncoordinated data collection methods, often due to donor-

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\textsuperscript{138} Country Health Information Profile - WHO \\
\textsuperscript{139} Health Service Delivery Profile, 2012 \\
\textsuperscript{140} Country Health Information Profile - Annex \\
\textsuperscript{141} Asante, Hall and Roberts, 2011 \\
\textsuperscript{142} Asante, Hall and Roberts, 2011
\end{flushleft}
driven reporting. In addition, the Statistic Division in the Ministry of Health has very limited capacity because they lack supportive legislation, regulation, policies and detailed strategic plans. Furthermore, there is a lack of necessary human resources, financial support and infrastructure that are necessary for developing the health information system into a stronger system. According to this same report, three main sections of HIS resources were present, but not adequate: policy and planning, HIS institutions, human resources and financing, and HIS infrastructure. A 2009 National Health Information System Strategic Plan (2009-2015) indicated five areas they aim to improve in order to strengthen HIS in the country: policy and resources; indicators and information products; data management; data sources; and data dissemination and use. However, the report also points out that successful implementation depends on support from the central government (policies, mandates, legislation), adequate funding, proper and increased coordination, improved communication between stakeholders, and continued monitoring of progress. A health information systems performance index score is not available.

iv. **Essential medicines:** Data on the availability of 14 essential medicines in public and private health facilities and the median consumer price ratio of the 14 essential medicines are unavailable. A study published in 2008 used a cross-sectional design to assess availability of essential drugs in remote areas in two provinces (Khammouane and Champasak). The study found that average availability of 10 selected essential drugs through the village revolving drug fund (a primary mode of health services in remote areas) was 37%. In some villages, availability was higher due to the presence of a private pharmacy, compared to other villages where only a revolving drug fund program was present. The report further indicates that low availability of high quality essential drugs in the village revolving drug fund appears to be due to poor management, which includes: lack of guidelines and equipment for village health volunteers, no reporting and feedback systems, and no regular monitoring or supervision.

v. **Health financing:** The health system relies heavily on donor funding, with external sources accounting for approximately 52% of public health expenditures in 2006. Total health expenditures in 2009 were US $226.75 million and total expenditures on

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143 Health Metrics Network

144 HMN_Lao_StrPlan_Final_2009_03_en.pdf in DB

145 Asante, Hall and Roberts, 2011
health as a percentage of GDP in the same year was 4.10%. In comparison, private expenditures on health make up 80.9% of total expenditures on health with out-of-pocket expenditures accounting for 61.7% of total expenditures in 2010. Total government expenditures on health were US $43.38 million with expenditures on health accounting for 3.8% of total general government expenditures, much of this going to staff salaries.

vi. Leadership and governance: The Ministry of Health’s VIIth Five-Year Health Sector Development Plan (2011-2015) provides the framework for specific directions of the health system. Key components of this framework include strengthening the health system, improving organization, improving quality and reach of health services, and developing a sustainable health financing package. While financial investments outlined in this report show good support for reducing child mortality, combating HIV, and fighting malaria, other areas such as efforts to eradicate poverty and hunger, improve maternal health, and ensure environmental sustainability show, at the time of report publishing, low levels of financial investment.

The National Growth and Poverty Eradication Strategy (NGPES) focuses on poverty and the poorest districts for an initial 10 initiatives. Principle health priorities within the NGPES include: information for health, expansion of services to rural areas, improved capacity of health workers, promotion of maternal and child health, immunizations, water supply and environmental health, communicable disease control, control of sexually transmitted infections, development of revolving drug funds for villages, food and drug safety, promotion of traditional medicine, and strengthening sustainability.

The Government has pledged to increase health spending through support of policy dialogues with key institutions such as the World Bank and International Monetary Fund.

146 Country Health Information Profile - Annex
147 http://www.who.int/countries/lao/en/
148 Country Health Information Profile - Annex
149 VIIth Five-Year Health Sector Development Plan - MOH
150 Country Health Information Profile - WHO
151 Country Health Information Profile - WHO

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Specific articles in the constitution obligate the Government to provide particular health services. For example, a new constitutional article enacted in 2004 obligated the Government to improve and extend the health network, disease prevention, and work to create conditions for mothers, children, and the poor – as well as other citizens – can access health care, and legalized private investment in health services.\textsuperscript{152}

\begin{table}[h]
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\textbf{Textbox 2: Human resources for health in Lao PDR} \\
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Lao PDR is facing a severe shortage of health staff and the country is included on the list of crisis countries in terms of health workforce. A key factor contributing to this problem is the low number of recent graduates from universities and occupational training schools. The Ministry of Health has made it a top priority to strengthen this area of the health system. Approaching the problem through the Ministry will be quite useful given that about 70\% of the health workforce is working for the Ministry, 63\% working at health facilities. A key area to focus on will be attempting to increase coverage of programs in rural areas by finding ways to increase the number of health staff in these areas.\textsuperscript{153}

In recognition of the problems facing the system with regard to the health workforce, the first National Health Personnel Development Strategy 2009-2020, endorsed in late 2010, addresses key issues and includes needs-based human resource planning, recruitment and retention using new mechanisms of incentivizing. In addition, the strategy calls for review and development of curricula for training health personnel. With regard to the incentives, the strategy will allow the Ministry of Health to adapt incentives schemes according to the needs in each region and by specific category of health personnel. It is hoped that the specialization of incentives will improve recruitment and retention of health staff, particularly in remote and rural areas.

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\textbf{IV. Migration and border specific health issues}

All provinces in Lao PDR have at least one international border, and as such, when examining border health issues, it is important to look at other factors as well, such as the fact that only 32\% of the population live in urban areas with the rest residing in mountainous, hard-to-reach parts of the country.\textsuperscript{154} In some cases, specific health issues are of concern for

\textsuperscript{152} \textit{Country Health Information Profile - WHO}

\textsuperscript{153} \textit{Country Cooperative Strategy}

\textsuperscript{154} \textit{Country Cooperative Strategy}
particular international borders. For example, more people are found to inject drugs in the provinces bordering China, Myanmar and Vietnam than in provinces bordering other countries.  

Regarding migration flows, the International Office of Migration (IOM) states that limited opportunities for cross-border migration through regular channels creates an environment in which irregular migration is common. In turn, this can also lead to increases in smuggling and trafficking in persons – both of which can be risk factors for poor health outcomes and increased vulnerability to communicable diseases. Due to limited job opportunities, it has been reported that annually approximately 60,000 individuals who enter the labour market in Lao PDR are unsuccessful in finding work in the country and, thus, choose to migrate to neighbouring countries in search of economic opportunities. In addition, a 2006 study found that 7% of the population migrated for employment.

Although out migration is considerable, there are also an estimated 200,000 migrant workers officially in Lao PDR from neighboring countries such as Vietnam, China, Thailand, and Myanmar.

In 2005 it was found that over half of the officially registered Lao migrant workers in Thailand were women. While data does not exist on undocumented migrants, it can be assumed that actual numbers of women migrants is higher. This has implications for health such as the need for health programs that provide continuum of care for women with regard to sexual and reproductive health, in addition to programs aimed at communicable diseases. In addition to women needing specific services, high rates of child migration should also be considered when looking at border-specific health issues. It is estimated that 21.4% of the total population migrating abroad are children under the age of 18 years.

155 Country Cooperative Strategy
158 http://www.migration-unifem-apas.org/laos/
160 http://www.migration-unifem-apas.org/laos/
Textbox 3: Coordinated response to HIV in border areas

Through grants provided by the Asian Development Bank (ADB) since 2012 and Government funding, Lao PDR and Vietnam are currently working to prevent the spread of HIV infections in 23 border provinces. These provinces are locations where risks are growing due to increased population movement and commercial activities along specific economic corridors. Aims of this initiative are to strengthen the HIV response systems of both countries to protect vulnerable populations with information, skills, supplies and access to quality healthcare services. Due to the fact that border regions have some of the poorest and most isolated populations, initiatives such as this are necessary to increase access to health services in these areas, particularly given that these border region areas are also the location of new construction developments such as roads, hotels, casinos, and other businesses.

Many efforts to combat the spread of HIV specifically focus on key populations at higher risk in major urban areas, but resources are typically scarce for interventions in more isolated areas. This ADB-funded initiative is a unique step toward increased cooperation and standardization for programs specifically for people living in and moving through the border areas. Of particular interest are the joint pilot activities for HIV services in border areas, involving various state agencies, private sector stakeholders, and nongovernmental organizations. Lao PDR is contributing more than $0.5 million to the overall project (estimated to costs $21.9 million for the overall initiative), which is a promising step toward increased investment from the Government for health initiatives. However, one of the challenges noted for Lao PDR is the level of international aid currently relied upon for programs.

V. Migration and border specific health systems issues

Given the high mobility of population in and out of Lao PDR, the Government has made efforts to partner with various organizations to strengthen the health system – specifically looking to provide culturally and linguistically appropriate health information for migrants. One example of this partnership is the Migration Health project implemented in partnership between IOM and local government institutions. Migration Health program aims to strengthen the capacity of the Lao Ministry of Public Works and Transportation to locally adapt and test health information materials suitable for HIV prevention work in its different sectors. The majority of this work has focused on creating HIV prevention materials along with information on safe migration. A unique approach of this program has been to create health education materials suitable for outreach activities with construction workers, managers, supervisors, truck drivers,


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sex workers, and other mobile populations – particularly those in communities along road project sites.

The health of migrants returning to Lao PDR is of concern as well. A study found that prevalence of HIV among migrants returning to Lao PDR was 0.98%, far greater than the national prevalence.\textsuperscript{163}

Because Lao PDR borders a variety of countries, the country is very important for cross-border issues such as the control of infectious diseases, food and drug safety, and environmental health.\textsuperscript{164}

\textbf{VI. Policies, legal frameworks and institutions}

Lao PDR has been a member of the International Labour Organization (ILO) since 1964 and has ratified eight ILO Conventions, including core Conventions covering forced labour, equal rights, discrimination, and child labour.\textsuperscript{165} The National Economic and Social Development Plan includes specific language around increasing safe labour migration.\textsuperscript{166}

Lao PDR (and neighboring Thailand) regulations do not acknowledge and protect the rights of domestic workers. The Memorandum of understanding on Labour Cooperation signed by both countries does not acknowledge the domestic sector. Since a vast majority of the out-migrating population are women, specifically going to Thailand for domestic work, this gap can contribute towards irregular migration and can increase irregular female migrants’ risk of being exploited or trafficked into Thailand. Of note, however, is that, as of 2004, the Thai Government started registering Lao domestic workers already in Thailand.

The Government has institutionalized policies related to agriculture and resettlement to either keep people in place or to resettle them to particular places. The policy restricting land use for shifting agriculture caused an increase in outmigration because of food insecurity, thus impacting overall migration as well as international migration.\textsuperscript{167} In addition, economic development led the Government to promote resettlement schemes within rural areas as a way to address inequalities, which led to increases in migration along border areas as well. Both of these movements are typically managed by village authorities, unlike cross-border migration,

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\textsuperscript{163} http://www.gfmer.ch/Activites_internationales_Fr/Laos/PDF-Course-2011/Migrant-labor-context-Lao-PDR-Chanthavysouk-2011.pdf
\textsuperscript{164} Country Cooperative Strategy
\textsuperscript{165} http://www.ilo.org/asia/countries/lao-peoples-democratic-republic/lang--en/index.htm
\textsuperscript{166} http://www.ilo.org/asia/countries/lao-peoples-democratic-republic/lang--en/index.htm
\textsuperscript{167} UNFPA report on Regional Migration
\end{flushleft}
which is government controlled.\textsuperscript{168} For example, Lao PDR and Thailand developed a bilateral agreement to regulate labour migration to Thailand in 2002.\textsuperscript{169} This bilateral agreement, however, focuses more on documentation of labour migrants and does not specify information about access to health care other than to mention the need for establishing health insurance mechanisms.\textsuperscript{170} More recent economic development has seen the establishment of economic corridors through the construction of roads linking Lao PDR with neighboring countries, large scale mining and dam construction projects, as well as growth of light industry, all of which have increased migration for economic opportunities.

Lao PDR signed the ASEAN Declaration on the Protection and Promotion of the Rights of Migrant Workers in 2007.\textsuperscript{171} This declaration recognizes the contributions of migrant workers to society and economic development of both receiving and sending states, while also calling for improved coordination between sending and receiving states to increase data-sharing on matters related to migrant workers. Of note, however, is that health and access to health care are not specifically mentioned in this declaration.

Some specific health-related policies are in place. For example, the MOU for Joint Action to Reduce HIV Vulnerability Related to Population Movement, signed in 2001, calls for increased collaboration to strengthen policies and systems aimed at reducing HIV/AIDS vulnerabilities.\textsuperscript{172} It also calls for cross-sector collaboration that involves Ministries of agriculture, construction, finance, health, home affairs, labour, public works, public security, and transport sectors to reduce HIV/AIDS vulnerabilities caused by migration and mobility.

\textbf{VII. Data gaps and challenges}

Although province-level data is available from most surveys conducted in the country, such as the Lao Social Indicator Survey conducted in 2011-2012,\textsuperscript{173} it is difficult to use this information when looking specifically at border health due to the fact that all provinces in Lao PDR have at least some portion that is an international border. Research on specifically done in

\begin{itemize}
  \item \textsuperscript{170} Thai-Lao MOU_October 18, 2002
  \item \textsuperscript{171} ASEAN Declaration_January 2007
  \item \textsuperscript{172} MOU HIV_September 5, 2001
  \item \textsuperscript{173} Lao Social Indicator Survey (LSIS)
\end{itemize}
border areas tends to be topic-specific (i.e. malaria, HIV/AIDS, reproductive health) whereas national statistics such as those collected to monitor progress toward the Millenium Development Goals\textsuperscript{174} do not allow for analysis of border areas within the provinces.

The Union of Myanmar country study

I. Background:

The Union of Myanmar (Myanmar) is estimated to have a total national population of over 48.3 million as of 2011\textsuperscript{175}, and borders five countries: Bangladesh, Thailand, Lao PDR, China, and India. The borders shared between Myanmar and these countries is a combined length of more than 5,876km. For this review, the borders with Thailand and Lao PDR will be considered. Myanmar’s border with Thailand and Lao PDR are 1800km and 235km, respectively.\textsuperscript{176} The country is diverse in ethnicity and language with over 135 different ethnic groups.\textsuperscript{177} Eight main ethnic groups are recognized and the country is divided into seven states and seven divisions.\textsuperscript{178} Within these 14 states and divisions there are 69 districts, 330 townships, 82 sub townships, 396 towns, 3045 wards, 13,276 village tracts, and 67,285 villages.\textsuperscript{179} In recent years, the country’s political environment has been marked by the transition from military rule to a civilian Government in 2011. The country is reported to have 808,075 stateless and 430,400 internally displaced persons.\textsuperscript{180}

The Mekong Basin Disease Surveillance (MBDS) initiative collects cross-border information on three provinces in Myanmar: Tachilek (Chiang Rai, Thailand); Myawaddy (Mae Sot, Thailand); and Kawthaung (Ranong, Thailand). Within this surveillance system, Myanmar takes responsibility for strengthening risk communications. In this capacity, Myanmar takes the lead on documenting experiences of national-level disaster management collaboration within ASEAN and UNICEF.\textsuperscript{181}

\begin{itemize}
\item \textsuperscript{174} http://mdgs.un.org/unsd/mdg/Data.aspx
\item \textsuperscript{175} WHO health profile
\item \textsuperscript{176} CIA world fact book
\item \textsuperscript{177} http://www.oxfordburmaalliance.org/ethnic-groups.html
\item \textsuperscript{178} http://www.unesco.org/education/uie/pdf/country/Myanmar.pdf
\item \textsuperscript{179} Country Cooperative Strategy
\item \textsuperscript{180} UNHCR country report
\item \textsuperscript{181} Emerg Health Threats J 2013, 6: 19944 – http://dx.doi.org/10.3402/ehtj.v6i0.19944
\end{itemize}
Current demographic estimates report that 26.7% of the population is under the age of 15 years and 5.2% over the age of 65 years.\(^{182}\) The median age as of 2012 was estimated to be 28.62 years.\(^{183}\) The population reported to live in urban areas as of 2011 was 33%, which means a significant proportion of the population live in rural and potentially hard to reach areas throughout the country.\(^{184}\)

Myanmar ranked 149\(^{th}\) in UNDP’s Human Development Index in 2010.\(^{185}\) Based on international purchasing power parity (PPP) standards, 31.9% of the population was living on less than US $1.25 in 2009 and 91.3% on less than US $2.50.\(^{186}\) Differences can be found between poverty levels in rural and urban areas, and the national poverty level, with 20.4% of the urban population living on less than US $1.25 a day and 79.8% on less than US $2.50 per day, compared to 35.9% and 95.3% for rural areas, respectively. In addition, differences can be found between the national-level statistics and individual states and are geographically linked.\(^{187}\) For example, on the measure of less than US $2.50 per day, 92.9% of the population in Kayin State and 91.6% of the population in Shan State live on less than US $2.50 per day, which, when compared to the national-level statistics, may indicate that poverty is more widespread in particular border provinces. The latest Integrated Household Living Conditions Assessment survey indicates that one in every four Myanmar citizens is considered poor.\(^{188}\)

According to a World Bank report published in 2010, 92.03% of the adult population (ages 15 and above) is literate.\(^{189}\) However, it is likely that variation between states within the country is considerable.

Myanmar is a developing country with a significant annual economic growth rate of 12% of GDP in 2002-2003, however, variation exists given that some areas of the country benefit less

\(^{182}\) 2013 estimate CIA World Fact Book
\(^{183}\) WHO http://apps.who.int/gho/data/view.country.14300
\(^{184}\) 2013 estimate CIA World Fact Book
\(^{186}\) Scoring Poverty_Myanmar
\(^{187}\) Country Cooperative Strategy
\(^{188}\) Country Cooperative Strategy
from the economic advances (particularly rural areas as compared to urban areas). The GDP in 2011 was US $51.44 billion. Primary exports from the country are oil, natural gas, wood products, rice, and mined minerals. Trade partners in 2011 were reported as Thailand (36.7%), China (18.8%), India (14.1%), and Japan (6.6%) with more recent developments in bilateral trade agreements with countries such as the United States.

Within the region, Myanmar has an agreement with Thailand for construction of a large port and industrial estate in Dawei, estimated to be a 10-year project worth an estimated US $58 billion. As has been seen in other settings where development projects take place, this may increase cross-border migration, impact internal migration, and is highly likely to have effects on health status of persons living in the area.

II. \textit{Health status – national level}

Throughout the country there is wide variation in access to basic services, such as housing, water and sanitation. From 2005-2010, overall access to safe drinking water increased from 75 to 83%, however, while 81% of the urban population had access to safe drinking water in 2010 only 65% of the rural population had similar access.

Myanmar has identified protein energy malnutrition and micronutrient deficiencies as the principle nutritional problems in the country. The country is potentially on track to reduce the prevalence of underweight children under age five years, but further intensive interventions are required.

According to government statistics, the Infant Mortality Rate (IMR), Under Five Mortality Rate (U5MR), and Maternal Mortality Ratio (MMR) have declined between 1988 and 2007. In 2010, the IMR was reported to be 50 deaths per 1000 live births and U5MR 66 deaths per 1000 live births. In the same year, MMR was 200 deaths per 100,000 live births. However, a

\begin{itemize}
  \item[^{190}] Country Cooperative Strategy Myanmar
  \item[^{191}] http://www.tradingeconomics.com/myanmar/gdp
  \item[^{192}] World Fact Book CIA
  \item[^{193}] World Fact Book CIA
  \item[^{194}] http://elevenmyanmar.com/business/2619-u-s-and-myanmar-reach-bilateral-trade-agreement
  \item[^{195}] http://www.eastasiaforum.org/2012/02/24/thailand-set-to-profit-from-burma-s-new-dawei-port-project/
  \item[^{196}] Country Cooperative Strategy
  \item[^{197}] Country Cooperative Strategy
  \item[^{198}] Countdown to 2015 report 2012
\end{itemize}
joint survey conducted by the Government and United Nations Agencies indicated significant differences between urban and rural areas among regions of the country, with rural U5MR (72.5 per 1000 live births in 2003) almost twice that of urban rates (37.3). In addition, UN estimates of MMR report 240 deaths per 100,000 live births in 2008.

The leading causes of death and illness are tuberculosis, malaria and HIV/AIDS. The TB prevalence rate confirmed by the 2009-2010 nationwide TB surveillance survey is three times higher than the global average and one of the highest in Asia. The WHO estimated that there were 506 prevalent and 381 incident TB cases per 100,000 population, respectively, in 2011. Multidrug-resistant TB was found to be 4.2% of new cases and 10% of previously treated patients and only 7% of MDR-TB cases among notified pulmonary TB cases in 2011 received adequate diagnosis, treatment and care. Extensively drug resistant TB has been detected since 2007. Approximately 10% of TB cases are co-infected with HIV/AIDS.

Over three quarters of the population (76%) live in malaria endemic areas. Morbidity trends of 1988-2011 show the number of malaria cases ranging from 4.2 to 8.6 million per year.

The HIV/AIDS epidemic is considered to have stabilized nationally since 2000, with higher rates of transmission in particular areas. The prevalence among the general population is 0.61%. The proportion of people aged 15-24 with correct knowledge of HIV has increased from 21% in 2003 to 75.2% in 2007. A major challenge is to scale up HIV treatment, which now covers only 1 in 3 of those in need.

The country is facing a double burden of diseases – communicable diseases and non-communicable diseases. Chronic non-communicable diseases with shared modifiable risk factors – tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol includes: cardio-vascular disease, diabetes mellitus, cancer and chronic respiratory disorders. The

199 Countdown to 2015 report 2012
200 Country Cooperative Strategy
201 Country Cooperative Strategy
202 Country Cooperative Strategy
203 Country Cooperative Strategy
204 Country Cooperative Strategy
205 Country Cooperative Strategy
206 Country Cooperative Strategy

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national STEPS survey, conducted in 2009, reported that the prevalence of hypertension, for example, was 30.99% in males and 29.34% in females among the sample population.\textsuperscript{207}

The WHO and Ministry of Health joint WHO-AIMS report on the mental health system in Myanmar, published in 2006, reported 25 outpatient mental health facilities, 2 day treatment facilities, 17 community-based psychiatric inpatient units and 2 mental hospitals.\textsuperscript{208} The total number of human resources working in mental health facilities or private practice reported from the same survey found 0.477 per 100000 population. The report does point out, however, that data from remote areas was difficult to collect due to poor transportation and communication.

Mental illness is one of the major emerging health problems. Several community surveys conducted between 1976 and 2004 in urban and suburban areas found that mental disorders ranged from 56 to 86 per 1000 population; psychosis ranged from five to six per 1000 population; mental retardation from one to four per 1000 population; and epilepsy from two to four per 1000 population. Mental health care has shifted from hospital care to community care. However, community-based mental health programmes are implemented in selected townships only.\textsuperscript{209}

\textbf{III. Health systems}

Health systems can be assessed according to six building blocks, using standardized indicators proposed by the WHO.\textsuperscript{210} Available data at the national level, according to each building block, is presented here.

\textit{i. Health service delivery:} The Ministry of Health (MOH) is responsible for raising the health status of the people through provision of comprehensive health services through seven departments for health, planning, and medical sciences.\textsuperscript{211} The largest is the department of health, which employs 93% of over 58,000 personnel employed and accounts for approximately 75% of the ministry's expenditure. Other Ministries also run health care facilities (Defense, Railways, Mines, Industry, Energy, Home and Transport). Most private sector services provide ambulatory care, but in-patient private facilities are developing in major urban centres. Community and faith based organizations are also providing ambulatory care and some institutional care and social protection.
In 2011-2012 there were 987 public sector hospitals with a total number of 54,503 beds – an nearly two-fold increase from 25309 in 1988.\textsuperscript{212,213} There are also 1565 rural health centers. However, rural health centers have not increased as hospital beds have, meaning that from 1988 to 2012, the increase in rural health centers was only 17\%. The 2012 World Health Survey reports inpatient hospital beds as 6 per 10,000 population, but information is not available on distribution.\textsuperscript{214}

ii. **Health workforce:** Health staff in Myanmar are comprised of the following general classifications: doctors, dental surgeons, nurses, dental nurses, health assistants, Lady Health Visitors, Midwives, Health Supervisors (1) and (2) and traditional medicine practitioners.\textsuperscript{215} Human resources for health are of concern. It is estimated that there are 23,709 physicians (4.6 per 10000 population), 41424 nursing and midwifery workers (8.0 per 10000 population), and 3247 community health workers (0.6 per 10000 population).\textsuperscript{216} However, it is likely that density of these workers varies greatly by geography. This includes 26,435 medical practitioners, 25,544 nurses and 19,556 midwives. 75\% of health workers are women.\textsuperscript{217} In 2010, there were 2,108 new medical graduates.\textsuperscript{218} Distribution of the health workforce is shown to be in favor of urban areas with the ratio of doctors per 1000 population in urban and rural areas 0.83 and 0.24, respectively. The same is true for nursing staff with 0.82 and 0.23 per 1000 population for the ratio of nurses in urban and rural areas, respectively.\textsuperscript{219} Under-staffing in rural areas was confirmed by the Health Systems Survey assessment in 20 Townships, which confirmed that in 50\% of locations, 1 staff was covering from between 4000 and 10000 population and every rural health center in the sample had unfilled

\begin{itemize}
  \item \textsuperscript{212} Health System Assessment in Myanmar
  \item \textsuperscript{213} Country Cooperative Strategy
  \item \textsuperscript{214} WHS 2012
  \item \textsuperscript{215} Health System Assessment in Myanmar
  \item \textsuperscript{216} WHS 2012
  \item \textsuperscript{217} Health System Assessment in Myanmar
  \item \textsuperscript{218} Health System Assessment in Myanmar
  \item \textsuperscript{219} Health System Assessment in Myanmar
\end{itemize}
Furthermore, the ratio of midwives to public health supervisors was found to be 11:1 in 2011-2012, far from the idea ratio of 1:1. Having more midwives than public health staff means that midwives are taking on more communicable disease control activities, including immunizations, and may be creating a burden of workload for midwives or putting them in the position of dealing with health issues for which they do not yet have proper training and supervision. Community health workers (a broad term for a variety of workers including auxiliary midwives, maternal and child health promoters, malaria volunteers, general community health workers, etc) play an essential role in helping with data collection, facilitating access to treatment, providing surveillance of disease control programs, and conducting health promotion activities. They are seen as key change agents in community health development and work together with other local leaders and local administrative authorities.

iii. Health information: An analysis of the six areas of health information systems (HIS) was conducted in 2010 and results found that vital statistics and population surveys were adequate, but census functions were considered to be inadequate. Health and disease and health service record were present, but were not considered to be adequate. Data management (data collection methods, estimation methods, etc) was considered to be present but not adequate. In addition, disaggregation and completeness of data was reported to be present but not adequate. While a nationwide GIS mapping of health infrastructure is underway, the system is constrained by lack of village tract-level population data. Finally, there are gaps in the HIS infrastructure regarding data on availability of services, accessibility of services, and acceptability of services.

iv. Essential medicines: Information on the median availability of selected generic medicines, median consumer price ratio of selected generic medicines, and complete report of access to essential medicines is not available in the 2012 World Health Statistics report. It is believed, however, that 80% of essential medicines are produced through domestic sources, however, changes in the

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220 Health System Assessment in Myanmar
221 Health System Assessment in Myanmar
222 Health System Assessment in Myanmar
223 Health System Assessment in Myanmar
224 WHS 2012
essential medicines policy may require more to be sourced externally. Stock outs of essential medicines are widely reported and out-of-pocket payment for essential medicines by the population is common.

v. **Health financing:** Total expenditure on health as a percentage of GDP in 2009 was 2.1%. General government expenditure on health as a percentage of total expenditure on health in the same year was 11.3%. Information on the ratio of household out-of-pocket payments for health to total expenditure on health shows 87% in 2011 and out-of-pocket expenditure as a percentage of private expenditure on health in 2009 was 92.4%. Current resource allocations are made for salaries and infrastructure and there is yet to be a nationwide model for allocation of operational funds to support a comprehensive needs-based plan for States/Regions or Townships.

vi. **Leadership and governance:** The country is networked by a system of health committees from National to Township level. The National Health Committee was founded in 1989. At the national level there is a country coordination mechanism for management and oversight of key diseases and health program interventions. The new constitution of 2008 states that “every citizen shall, in accord with the health policy laid down by the Union, have the right to health care.” The National Health Committee and the Township Health Committees across the country are the main drivers for inter-sectoral action on health, along with a system of School Health Committees. Current community participation mechanisms include community-based health workforce, community-based organizations and local NGOs, health committees, INGOs, private sector, and the community. Specifically related to governance of the health workforce, the national health workforce strategic plan sets forth four pillars of the policy which include: strengthening leadership and management, improving availability of human resources for health, improving quality of human resources for health, and

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225 Health System Assessment in Myanmar
226 Health System Assessment in Myanmar
227 http://apps.who.int/gho/data/view.country.14300
228 WHS 2012
229 Health System Assessment in Myanmar
230 Health System Assessment in Myanmar
ensuring equity in human resources for health – with planned actions ranging from immediate to short-term, and long-term.\textsuperscript{231}

\section*{IV. Migration and border specific health issues}

According to 2009 estimates, up to 10\% of Myanmar’s population lives overseas, a population that includes migrant workers, asylum seekers, refugees and other temporary or long-term residents living outside of the country.\textsuperscript{232} The main international migration flows from Myanmar are to other countries in the region, including Thailand, Malaysia, Singapore, Bangladesh, Korea and Japan. Migration from Myanmar to countries in the Greater Mekong Subregion (GMS) accounts for the largest migration flows within the GMS. The number of migrant workers from Myanmar in Thailand is estimated to be between 2-4 million with approximately 1.45 million officially registered as of March 2012, making Thailand the receiving country of the most international migrants from Myanmar out of all receiving countries.\textsuperscript{233} The official estimates may be lower than actual numbers, however, given that most people from Myanmar have migrated irregularly (i.e. without documentation) and also given the issue of children and dependents of migrant workers for whom there are no reliable estimates.

Internal migration and movement of persons is also of issue in Myanmar with estimates between 446000 and 451000 individuals displaced within the country, particularly to and within states bordering Thailand.\textsuperscript{234} Both international and internal migration has implications for health along the border areas since these areas have often fall outside the reach of Government-led health initiatives. While organizations do exist who provide health services in these areas, there has tended to be a lack of coordination between the Government and these groups.\textsuperscript{235,236}

Disparities in health exist between central Myanmar and more peripheral areas, typically along such areas such as the border with Thailand. For example, a study published in 2006 found that IMR and U5MR were higher among populations living in eastern Burma compared to estimates at the national level.\textsuperscript{237} This study found IMR to range between 122-135 deaths per

\begin{thebibliography}{9}
\bibitem{231} Myanmar\_Health Work Force Strategic Plan\_15Feb2013
\bibitem{232} Hall, A. 2012
\bibitem{233} Hall, A. 2012
\bibitem{234} IDMC 2011
\bibitem{235} Trop Med 2006
\bibitem{236} Trop Med 2007
\bibitem{237} Trop Med 2006
\end{thebibliography}
1000 live births between 2002-2003 and U5MR during the same time period to be between 276-291 deaths per 1000 live births. Furthermore, these estimates show higher rates when compared to national-level estimates for rural areas, as stated earlier in this report. However, townships in Kayin State have reported IMR and U5MR lower than national estimates, which indicates the need for village tract-level standardized data collection in order to identify key areas in need of specific health services.

Regarding malaria, malaria has been reported to be of more concern in the border areas of Myanmar – with case levels higher than both Myanmar national estimates and the prevalence of malaria in neighboring Thailand. A study published in 2007 explains this difference by comparing cases reported in 2003 in Kayin State, bordering Thailand. The study reports that during the year of 2003, the WHO reported 2016 cases in the entire state when two local health organizations reported treating 27000 cases. The implications of malaria along the border are also apparent when looking at the number of malaria cases confirmed and treated in a clinic on the Thailand-side of the border just across from Kayin State, which reported more than 5000 cases in that year. Furthermore, Tak province in Thailand, which borders Kayin State had the highest number of malaria cases that year with migrants from Burma estimated to have 4.4% prevalence of malaria, compared to only 0.2% prevalence among Thai citizens in the province.

V. Migration and border specific health systems issues

Considering the number of international migrants from Myanmar to Thailand, it is important to look at ways in which the health systems in both countries can develop to expand coverage of essential services to be inclusive of this mobile population. Village Health Volunteers and Community Health Workers have been utilized by both the Myanmar government and community-based organizations working in the country – and to some extent in Thailand providing services to migrants from Myanmar. For example, the Country Cooperative Strategy for Myanmar points out the role of Village Health Volunteers within State/Division health departments and community-based organizations also utilize similar community-level workers to expand coverage of programs. As noted by the WHO in 2006, Myanmar faces a critical health workforce shortage and suggested that “simplification and delegation” of health tasks could facilitate improved access to care. Community-based organizations in eastern Burma have been able to document expanded coverage for malaria control program efforts (from 3000 population to 8000 population coverage between 2003 and 2008) with outcomes of reducing morbidity and mortality from malaria through these efforts.

238 Township Health Profiles – sent by Brent

239 Trop Med 2007

Due to the fact that international migrants from Myanmar account for the largest flow in the GMS, it is important to address the issue of health system service provision within the country and also collaboration between the Government and neighboring countries for coordination.

Considering diversity of language in Myanmar and among migrants – with estimates stating that approximately 30% of migrant workers in Thailand from Myanmar are Tavoy ethnic persons, 25% Karen, 25% Mon, 15% Shan, and 5% Burma (although, reliable statistics are not available and these numbers are only based on estimates) – it is also important to note that this has implications for the health system and its response in terms of how such a diverse group of individuals can access health services and health information during migration and return.  

VI. Policies, legal frameworks and institutions

Myanmar is currently without a comprehensive and holistic migration policy or an effective migration management body within the Government. The Overseas Employment Service facilitated regular deployment of Myanmar migrants overseas in the past, but this was limited to higher skilled workers to specific locations such as Korea, Malaysia and Singapore. Furthermore, the country has no clear policy to ensure that migration of its workers overseas contributes to the development of the economy in Myanmar and social development in the future. Progress has been shown, however, as evidenced by the shift of responsibility for migration policy development from the Ministry of Foreign Affairs to the Ministry of Labour in 2010 and the first legal process of migration for manual or domestic workers from Myanmar to Thailand by the end of 2011. Although these efforts to facilitate formal migration from Myanmar to Thailand did produce a record number of 2 million documented migrants from Myanmar living in Thailand during the last round of registration in 2011, limitations to the process are reported. For example, lack of understanding of the official process, language barriers, and concern about personal safety in registering are reported to contribute to a continuation of informal migration patterns – which can lead to increased vulnerability, including vulnerabilities for poor health outcomes. Despite the formal channels for migration, lack of awareness about the policy and high broker fees continued to lead to informal migration.
The Governments of Myanmar and Thailand are seeking to create a process by which formal migration patterns can be further strengthened, however, the Myanmar government’s 11th National Economic and Social Development Plan 2012-2016 does not explicitly address long-term migration policies to cope with ongoing labour demands in Thailand.  

** VII. Data gaps and challenges**

The WHO Country Cooperation Strategy points out that various sources within and outside the Ministry of Health are involved in data generation, which makes comparison difficult due to the fact that data are collected in different ways. Furthermore, some areas are not easily accessible and cross-border and internal migration creates challenges for a comprehensive health information system. Both scope and quality of data are issues related to health information in Myanmar. As outlined in the National Health Plan 2011-2016, development of a stronger health information system is a priority of the Government. In addition, government health officials have themselves pointed out gaps in the health information system with regard to the following areas: data quality (not highly valid), data flow (still a manual process), and timeliness of data (affecting completeness of data).

**Thailand country study**

**I. Background:**

- **Geography**

The Kingdom of Thailand has a long border with four neighboring countries totally around 5,820 kilometers long as shown in Figure 1.

To the north, Thailand is bordered by the Republic of the Union of Myanmar and the Lao People’s Democratic Republic.

To the south, Thailand is bordered by the Federation of Malaysia.

To the east, Thailand is bordered by the Lao People’s Democratic Republic and the Kingdom of Cambodia.

To the west, Thailand is bordered by the Republic of the Union of Myanmar.

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247 Hall 2012

248 Country Cooperation Strategy

249 National Health Plan 2011-2016

250 MoH_presentation_HSS_First_Myanmar_Dev_Coop_Forum_Jan_2013
There are 31 provinces lie along the border categorized as follows:

**Thai-Myanmar border** (10 provinces):
1) Chiang Rai  
2) Chiang Mai  
3) Mae Hong Son  
4) Tak  
5) Kanchanaburi  
6) Ratchaburi  
7) Phetchaburi  
8) Prachuap Khiri Khan  
9) Chumporn and  
10) Ranong

**Thai-Laos border** (12 provinces):
1) Chiang Rai  
2) Phayao  
3) Nan  
4) Uttaradit  
5) Phitsanulok  
6) Nong Khai  
7) Bueng Kan  
8) Loei  
9) Nakhon Phanom  
10) Mukdahan  
11) Amnat Charoen and  
12) Ubon Rachathani

**Thai-Cambodia border** (7 provinces):
1) Si Sa Ket  
2) Ubon Rachathani  
3) Surin  
4) Buri Ram  
5) Sa Kaeo  
6) Chanthaburi and  
7) Trat

**Thai-Malaysia border** (4 provinces):
1) Songkha  
2) Narathiwat  
3) Yala and  
4) Satun

**Figure 1** Map of Thailand
**Population**

Number of population in Thailand in 2010 including Thais and Non-Thais are 65.9 million (Table 1). These figures are based on The 2010 Population and Housing census (1 September 2010) and corrected those using methods in demography. Details for correcting those numbers are in elsewhere (Institute for Population and Social Research, 2013).

The number for non-Thai population whose names are not in household registration from the 2010 census is 2.1 million (Table 1). However, based on the data from The Bureau of Registration Administration, Department of Provincial Administration, Ministry of Interior, the updated figure is approximately 4.3 million in 2013 (Table 2), Those non-Thais are categorized into 1) migrant workers and dependants, 2) ethnic minorities, 3) stateless persons, and 4) displaced persons.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Number of population in Thailand (1 July 2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>Male</td>
</tr>
<tr>
<td>Thais, and non-Thais*</td>
<td>31,084,000</td>
</tr>
</tbody>
</table>
Biregional Meeting on Healthy Borders in the Greater Mekong Subregion

<table>
<thead>
<tr>
<th>Non-Thais**</th>
<th>1,221,000</th>
<th>911,000</th>
<th>2,131,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>32,305,000</td>
<td>33,616,000</td>
<td>65,921,000</td>
</tr>
</tbody>
</table>

* Thais, and non-Thais whose names are in household registration.

** Non-Thais whose names are not in household registration at the same number as enumerated in 2010.


**Table 2** Number of non-Thai population

<table>
<thead>
<tr>
<th>Non-Thais</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Migrant workers and dependants</td>
<td>2,007,707</td>
<td>1,559,976</td>
<td>3,567,683</td>
</tr>
<tr>
<td>Ethnic minorities</td>
<td>175,181</td>
<td>157,241</td>
<td>332,422</td>
</tr>
<tr>
<td>Stateless persons</td>
<td>139,086</td>
<td>142,852</td>
<td>281,938</td>
</tr>
<tr>
<td>Displaced persons</td>
<td>51,584</td>
<td>51,080</td>
<td>102,664</td>
</tr>
<tr>
<td>Total</td>
<td>2,373,558</td>
<td>1,911,149</td>
<td>4,284,707</td>
</tr>
</tbody>
</table>

Source: ข้อเท็จจริงและตัวเลขเกี่ยวกับแรงงานข้ามชาติและผู้มีปัญหาสถานะบุคคล (Achavanitkul, In Press)

• **Economy**

Border trade volume is as high as 899,783 million Baht in 2011 (of which 62 percent with Malaysia, 18 percent with Myanmar, 12 percent with Laos and 8 percent with Cambodia), increased at 13 percent annually in the past 5 years and is targeted to rise up to 15 percent in the next 5 years by the 11th National Economic and Social Development Plan 2012-2016 (ธานินทร์ ผะแอม, 2012).

• **Thailand-Myanmar**
  - Three major check points with custom houses: Sanklaburi, Mae Sot, and RaNong
  - During 2001-2011, border trade volume grew at 16.3 percent annum

• **Thailand-Laos**
  - Two major check points with custom houses: Nongkhai and Mukdaharn
  - During 2001-2011, border trade volume grew at 18.87 percent annum

• **Thailand-Cambodia**
  - Two major check points with custom houses: Alanyapadesh Klongyai
  - During 2001-2011, border trade volume grew at 17.10 percent annum
As for the ASEAN cooperation and attempt towards a regional single market, the National Economic and Social Development Board (NESDB) has recognized a more significant role of border cities in the national development as international checkpoints boosting trade and tourism ("Spotlight on provinces: Study shows corruption derails development," 2013).

The 11th National Economic and Social Development Plan emphasizes the importance of border area development under the 3 principles including to be gateways of regional economic and business activities, to facilitate the connectivity of production and supply chain with neighboring countries, and to create mutual benefit and trust with neighboring countries (ธานินทร์ผะเอม, 2012).

With supports from the current government, border areas being assessed for the potential to be developed as a special economic zone (Ministry of Public Health, 2013e) include:

- With Myanmar: Mae Sai and Chiang Saen districts in Chiang Rai, Mae Sot district in Tak, Kanchanaburi
- With Laos: Mukdaharn, Nakhonpranom and Nongkhai
- With Cambodia: Srakaew

- **Relevant human development indicators**
  - **Human Achievement Index (HAI) 2009**

  The 2009 HAI (United Nations Development Programme, 2010) indicated lower levels of human achievement in most of major border provinces as compared to the national average. Mae Hong Sorn, Sra Kaeo, Tak, Sri Saket, Burirum, and Nakhonpranom are listed as the bottom 10 provinces with the least HAI out of the 76 provinces. Other border provinces i.e. Nongkhai, Chiangrai, and Kanchanaburi are not much different, in the rank 61, 59, 55 and 52 respectively of the 76 provinces.

  - **Education and household income (2007)**

    Population in major border provinces obtained less education than the national average indicated by average years of schooling. Percentage of uneducated population is generally larger, especially among those located along the Thai-Myanmar border, i.e. Kanchanaburi, Chiangrai, and Tak and Ranong (Table 3).

    Household income is also generally lower (Table 3), though the poverty incidence is clearly much higher than the county average figure. This is especially for Tak, Chiangrai (border...
provinces with Myanmar), (i.e.), Srakeao, Ubon rajathani (with Cambodia) and Nakhornpranom and Mukdaharn (with Laos).

**Table 3** Average schooling year and household income by major border provinces

<table>
<thead>
<tr>
<th>Province</th>
<th>Average schooling year (2007)</th>
<th>% of uneducated population</th>
<th>Household Income</th>
<th>Poverty rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>7.68</td>
<td>4.9</td>
<td>14778</td>
<td>8.48</td>
</tr>
<tr>
<td>Bangkok</td>
<td>10.11</td>
<td>3.2</td>
<td>29696</td>
<td>1.14</td>
</tr>
<tr>
<td>Sa Kaeo</td>
<td>6.77</td>
<td>7.1</td>
<td>10753</td>
<td>19.85</td>
</tr>
<tr>
<td>Kanchanaburi</td>
<td>6.5</td>
<td>12.4</td>
<td>11944</td>
<td>10.71</td>
</tr>
<tr>
<td>Trat</td>
<td>6.87</td>
<td>8.9</td>
<td>13961</td>
<td>6.16</td>
</tr>
<tr>
<td>Nong Khai</td>
<td>6.91</td>
<td>2.7</td>
<td>11218</td>
<td>3.37</td>
</tr>
<tr>
<td>Nokhon Phanom</td>
<td>6.77</td>
<td>2.7</td>
<td>8080</td>
<td>17.87</td>
</tr>
<tr>
<td>Mukdahan</td>
<td>7.34</td>
<td>3.4</td>
<td>9176</td>
<td>14.32</td>
</tr>
<tr>
<td>Ubon Ratchathni</td>
<td>6.97</td>
<td>1.7</td>
<td>11333</td>
<td>13.69</td>
</tr>
<tr>
<td>Chiang Rai</td>
<td>6.23</td>
<td>13.9</td>
<td>8870</td>
<td>14.43</td>
</tr>
<tr>
<td>Tak</td>
<td>6.45</td>
<td>14.7</td>
<td>9431</td>
<td>17.86</td>
</tr>
<tr>
<td>Ranong</td>
<td>7.14</td>
<td>8.7</td>
<td>14229</td>
<td>1.96</td>
</tr>
</tbody>
</table>


The results from the tuberculosis knowledge, attitude, and practice (TB KAP) survey (Boonchalaksi, Chamchan, Holumyong, Apipornchaisakul, & Muensakda, 2012) in selected border provinces;

**Chiang Rai:** There are significant socio-economic disparities between Thai and non-Thai populations, i.e. in terms of income and education. Household monthly income of the non-Thai is lower at about two-third of that of the Thai household; about 10,000 Baht and 15,000 Baht, respectively. Nearly all Thai population were educated with about 8.2 years of schooling in average, while three-fourth of the non-Thai was reported received no education and mean of schooling years was at only less than 2 years.
Ubon Rachathani: Similarly to situation in Chiang Rai, socio-economic disparities between Thai and non-Thai populations are also obvious – household income of the non-Thai is significantly lower while the percentage of the uneducated is higher (though not as much as found in Chiang Rai) with lightly lower mean of schooling years as compared to those of the Thai.

II. Health status

- Mortality

The death rates per 100,000 population by leading causes of death in major border provinces in 2010 are summarized in Table 4. The data is from the National Statistical Office (Statistical Forecasting Bureau). The first leading cause of death was malignant neoplasm which is about 91 per 100,000 population from the whole country. The death rate from suicide, homicide and other injury in Chiang Rai (19/100,000) was almost twice as high as the national level (11/100,000). The death rate from HIV in Ranong (13/100,000) was more than 2 times as high as the national average (6/100,000).

- Morbidity

The rates of In-patients per 100,000 population for non-communicable diseases and infectious diseases in major border provinces in 2011 are depicted in Figure 2 and Figure 3, respectively. For non-communicable diseases (Figure 2), looking at the whole country, diabetes mellitus was the main cause of morbidity, the in-patients rate was 730/100,000. The two highest in-patients rates from diabetes were from Kanchanauburi (1,150/100,000) and Trat (1,070/100,000) respectively.

Figure 2 Rates of In-patients for non-communicable diseases by major border provinces, 2011
DM = Diabetes mellitus; HT = Hypertensive diseases; IHD = Ischaemic heart diseases; Stroke

Source: Bureau of Non-Communicable Disease (Ministry of Public Health, 2013)
**Table 4** Death rates per 100,000 population by leading cause of death, and major border provinces 2010

<table>
<thead>
<tr>
<th>Cause of death</th>
<th>Whole Country</th>
<th>Thai-Myanmar border</th>
<th>Thai-Laos border</th>
<th>Thai-Cambodia border</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Chiang Rai</td>
<td>Tak</td>
<td>Kanchanaburi</td>
</tr>
<tr>
<td>(1)</td>
<td>91.17</td>
<td>97.19</td>
<td>65.43</td>
<td>63.11</td>
</tr>
<tr>
<td>(2)</td>
<td>51.59</td>
<td>61.26</td>
<td>35.59</td>
<td>59.77</td>
</tr>
<tr>
<td>(3)</td>
<td>31.42</td>
<td>28.92</td>
<td>22.00</td>
<td>25.34</td>
</tr>
<tr>
<td>(4)</td>
<td>28.88</td>
<td>24.49</td>
<td>27.74</td>
<td>24.50</td>
</tr>
<tr>
<td>(5)</td>
<td>25.70</td>
<td>28.75</td>
<td>20.47</td>
<td>27.73</td>
</tr>
<tr>
<td>(6)</td>
<td>21.61</td>
<td>28.08</td>
<td>10.33</td>
<td>14.46</td>
</tr>
<tr>
<td>(7)</td>
<td>13.80</td>
<td>15.29</td>
<td>11.29</td>
<td>14.82</td>
</tr>
<tr>
<td>(8)</td>
<td>11.09</td>
<td>19.14</td>
<td>11.67</td>
<td>11.36</td>
</tr>
<tr>
<td>(9)</td>
<td>7.01</td>
<td>6.27</td>
<td>3.83</td>
<td>9.92</td>
</tr>
<tr>
<td>(10)</td>
<td>5.71</td>
<td>8.52</td>
<td>4.78</td>
<td>4.66</td>
</tr>
</tbody>
</table>

Cause of death: (1) Malignant neoplasm, all forms; (2) Accidents and poisonings; (3) Hypertension and cerebrovascular diseases; (4) Diseases of heart; (5) Pneumonia and other diseases of lung; (6) Nephritis, nephritic syndrome and nephrosis; (7) Diseases of liver and pancreas; (8) Suicide, homicide and other injury; (9) Tuberculosis, all forms; (10) Human immunodeficiency virus (HIV) disease.

Source: National Statistical Office (Statistical Forecasting Bureau)
On the other hand, for the infectious diseases (Figure 3), tuberculosis was the highest leading cause of in-patient morbidity at the rate of 135/100,000 on the national average. At the province level, the in-patient morbidity rate from malaria was highest in Sa Kaeo (460/100,000) while the national level was 29/100,000.

**Figure 3** Rates of In-patients for infectious diseases by major border provinces, 2011

Source: Bureau of Policy and Strategy, Office of the Permanent Secretary (Ministry of Public Health, 2013b)

The results from TB KAP survey (Boonchalaksi, et al., 2012) in selected border provinces;

*Chiang Rai:* It is indicated by incidence of minor illness in the past month, inpatient illness and home-care illness in the past 12 months – illness rate reported by the non-Thai were lower than that of the Thai in all categories. The implications might be that the non-Thai are generally healthier than the Thai or, on the other hand, that they might be not healthier but less accessible to health care and services which resulted in the lower reported rate of illness. This is especially for in-patients illness which was obvious that none of the non-Thai reported ever got sick that needed to be admitted for inpatient care in a hospital.
In terms of health care seeking behavior, Thai population appeared to have more choices of method or place that they would seek for care than the non-Thai did. For example, in case of minor illness, the majority of the Thai reported to seek for care at a public health unit and public hospital and some would go to private clinic or do self-medication. On the other hand, all of the non-Thai reported to seek for care only at a public hospital. Less choices of treatment method, to some extent, implies less accessibility to care which support our hypothesis about the reason explaining the lower rates of illness of the non-Thai as compared to the Thai.

**Ubon Rachathani:** The incidence of minor illness in the past month of the non-Thai was quite indifferent from that of the Thai. Interestingly, though inpatient illness reported by the non-Thai was much lower than the number reported by the Thai (4.8% and 12.6%, respectively), home care illness was reported significantly higher (27.7% and 5.9%, respectively. This evidence, to some extents, reflects limited accessibility to inpatient care of the non-Thai in Ubon Rachathani. Incidence of sickness that results in inability to work or to perform daily activities was found higher among the non-Thai when compared to the Thai (by the definition used in the survey, it is referred to sickness that needs inpatient care or care at home), but most were treated at home rather than to be admitted for inpatient care at a health facility. This is opposite to the Thai’s that most were admitted to a hospital and only some were treated at home.

In terms of health care seeking behavior, similar to situation in Chiang Rai, the survey result in Ubon Rachathani also indicated more choices of treatment method of the Thai than those of the non-Thai. For example, when having minor illness, three-fourth of the non-Thai did self-medication and rest went for care as a public health facility. For the Thai, only one-fifth was reported to do self-medication, more than 60 percent went for care at a public facility and the rest around 17 percent went for care at a private facility.

- **Reproductive health**

The maternal health service in Thailand has improved significantly. Figure 4 shows that maternal mortality ratio (MMR), infant mortality rate (IMR), as well as child mortality rate (CMR) have declined steadily. For example, the MMR has decreased from 0.122/1,000 live births in 2007 to 0.089/1,000 live births in 2011.

Similarly for crude birth rate (CBR), it has declined from 12.7/1,000 population in 2007 to 12.4/1,000 population in 2011 as shown in Figure 4. When comparing CBR of the major border provinces to the whole country, in 2009, it revealed that CBR in Tak (16.4/1,000) was the highest while the national average is 12.1/1,000 (Table 5).

Table 6 summarizes the IMR and MMR in 2011 at the national level and by major border provinces. The MMR in Sa Kaeo (16.2/100,000 live births) was almost twice as high as that of the national level (8.9/100,000 live births). The IMR in Ubon Rachathani
was 9.3/1,000 live births which was highest while the national average is at 6.6/1,000 live births.

**Figure 4** Crude birth rate, Infant mortality rate, Child mortality rate, and Maternal mortality ratio, 2007-2011

Source: Public Health Statistics 2011 (Ministry of Public Health, 2013c) and Statistical Thailand 2011 (Ministry of Public Health, 2013a)
Table 5 Crude birth rate by major border provinces, 2009

<table>
<thead>
<tr>
<th>Province/Border Area</th>
<th>CBR (per 1,000 population)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Whole Country</strong></td>
<td>12.1</td>
</tr>
<tr>
<td>Thai-Myanmar border</td>
<td></td>
</tr>
<tr>
<td>Chiang Rai</td>
<td>9.2</td>
</tr>
<tr>
<td>Tak</td>
<td>16.4</td>
</tr>
<tr>
<td>Kanchanaburi</td>
<td>11.6</td>
</tr>
<tr>
<td>Ranong</td>
<td>11.8</td>
</tr>
<tr>
<td>Thai-Laos border</td>
<td></td>
</tr>
<tr>
<td>Nong Khai</td>
<td>10.3</td>
</tr>
<tr>
<td>Nakhon Phanom</td>
<td>9.9</td>
</tr>
<tr>
<td>Mukdahan</td>
<td>10.8</td>
</tr>
<tr>
<td>Ubon Rachathani</td>
<td>11.5</td>
</tr>
<tr>
<td>Thai-Cambodia border</td>
<td></td>
</tr>
<tr>
<td>Sa Kaeo</td>
<td>11.0</td>
</tr>
<tr>
<td>Trat</td>
<td>11.2</td>
</tr>
</tbody>
</table>

CBR = Crude birth rate (per 1,000 population)

Table 6 Infant mortality rate and maternal mortality ratio by major border provinces, 2011

<table>
<thead>
<tr>
<th>Province/Border</th>
<th>IMR</th>
<th>MMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Country</td>
<td>6.6</td>
<td>8.9</td>
</tr>
</tbody>
</table>

**Thai-Myanmar border**

<table>
<thead>
<tr>
<th>Province</th>
<th>IMR</th>
<th>MMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chiang Rai</td>
<td>4.7</td>
<td>0.0</td>
</tr>
<tr>
<td>Tak</td>
<td>1.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Kanchanaburi</td>
<td>5.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Ranong</td>
<td>6.8</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**Thai-Laos border**

<table>
<thead>
<tr>
<th>Province</th>
<th>IMR</th>
<th>MMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nong Khai</td>
<td>5.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Nakhon Phanom</td>
<td>7.3</td>
<td>14.4</td>
</tr>
<tr>
<td>Mukdahan</td>
<td>7.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Ubon Rachathani</td>
<td>9.3</td>
<td>9.2</td>
</tr>
</tbody>
</table>

**Thai-Cambodia border**

<table>
<thead>
<tr>
<th>Province</th>
<th>IMR</th>
<th>MMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sa Kaeo</td>
<td>6.0</td>
<td>16.2</td>
</tr>
<tr>
<td>Trat</td>
<td>2.7</td>
<td>0.0</td>
</tr>
</tbody>
</table>

IMR = Infant mortality rate (per 1,000 live births); MMR = Maternal mortality ratio (per 100,000 live births).

Source: Public Health Statistics 2011 (Ministry of Public Health, 2013d)

**III. Health systems**

There are several major health insurance schemes for health security for all Thai namely 1) Universal coverage health care 2) Medical welfare for the poor 3) Medical benefits for civil servants and state enterprise employees 4) Social Security and workers’ compensation fund 5) Voluntary health insurance and 6) Others. In 2001, all the schemes covered 71.0% of the population. After the launching of the universal health-care policy in 2002, the coverage of health security increased to 97.4% in 2009, meaning only 2.6% is without any health insurance (“Thailand Health Profile 2008-2010,” 2011).
The health systems in Thailand according to the WHO’s Health System Building Blocks are summarized as follows:

1) **Service delivery**

Universal Coverage Scheme (UCS) service delivery network consists of both public and private health facilities. Public health facilities are automatically registered in the delivery network while private health facilities are investigated prior to signing contracts with the UCS. In theory, people are free to choose any facility as their primary care units (PCU). However, in practice, the choices are restricted by small number of facilities that are close to their homes or workplaces. This is particularly true in the rural areas where the people are mainly assigned to public facilities that are close to them (Joint Learning Network, 2013).

UCS provides beneficiaries with comprehensive care which focused on health promotion and disease prevention. The coverage includes immunizations, annual physical checkups, premarital counseling, antenatal care and family planning service etc. ARV treatment for HIV/AIDS and renal replacement therapy have also been added into the coverage recently (Joint Learning Network, 2013).

2) **Human resources for health**

Allocation of human resources for health (i.e. doctor, dentists, nurses) as well as facilities (i.e. number of hospital and beds) to major border provinces are found underprivileged (when comparing the provincial figures to the national average) (Table 7). Ratios of population per one doctor, for example, in Sa Keao, Tak, and Nongkhai are as high as 5077, 4467 and 6692 respectively, while the national average is 2893.
Table 7 Ratios of population per health-care provider and population per bed

<table>
<thead>
<tr>
<th></th>
<th>Population</th>
<th>Ratio of Population per health-care provider</th>
<th>Health facility</th>
<th>Population per bed ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Doctor</td>
<td>Dentist</td>
<td>Professional Nurse</td>
</tr>
<tr>
<td>Whole Country</td>
<td>63,701,703</td>
<td>2,893</td>
<td>13,252</td>
<td>531</td>
</tr>
<tr>
<td>Bangkok</td>
<td>5,701,995</td>
<td>1,052</td>
<td>7,865</td>
<td>282</td>
</tr>
<tr>
<td>Sa Kaeo</td>
<td>543,276</td>
<td>5,077</td>
<td>23,621</td>
<td>864</td>
</tr>
<tr>
<td>Kanchanaburi</td>
<td>836,600</td>
<td>5,295</td>
<td>16,404</td>
<td>668</td>
</tr>
<tr>
<td>Trat</td>
<td>220,465</td>
<td>2,826</td>
<td>16,959</td>
<td>338</td>
</tr>
<tr>
<td>Nong Khai</td>
<td>910,094</td>
<td>6,692</td>
<td>21,165</td>
<td>840</td>
</tr>
<tr>
<td>Nakhon Phanom</td>
<td>702,041</td>
<td>8,069</td>
<td>26,002</td>
<td>745</td>
</tr>
<tr>
<td>Mukdahan</td>
<td>338,812</td>
<td>6,050</td>
<td>16,134</td>
<td>648</td>
</tr>
<tr>
<td>Ubon Rachathani</td>
<td>1,808,422</td>
<td>5,037</td>
<td>19,239</td>
<td>717</td>
</tr>
<tr>
<td>Chiang Rai</td>
<td>1,196,576</td>
<td>3,751</td>
<td>14,773</td>
<td>595</td>
</tr>
<tr>
<td>Tak</td>
<td>522,673</td>
<td>4,467</td>
<td>15,373</td>
<td>543</td>
</tr>
<tr>
<td>Ranong</td>
<td>182,417</td>
<td>5,365</td>
<td>15,201</td>
<td>407</td>
</tr>
</tbody>
</table>

Source: Public Health Statistic 2010 (Ministry of Public Health, 2010)
3) **Health information**

Health information system in Thailand has improved continuously. During the 9th and 10th National Development Plan period (2002-2011), the modern management information system based on the electronic individual cards has been introduced. The new system can link all concerned agencies together and in the future, the smart card will be used to add more functionality to the system. In addition, the National Health Information System Development Program has officially been endorsed by the National Health Commission in 2010 ("Thailand Health Profile 2008-2010," 2011).

4) **Medical procurement**

There is an inequality distribution in high-technology medical devices such as CT scanners, magnetic resonance imaging devices (MRI), extracorporeal shortwave lithotripters (ESWL), and mammography devices. For example, mammography devices are used in large cities, such as Bangkok, about 54.4% (Table 8). High-tech medical devices, for instance, CT scanners, MRI, and mammography devices are in the private sector more than in the public sector (Table 8).

**Table 8** Number and percent of medical devices

<table>
<thead>
<tr>
<th>Devices</th>
<th>Number of devices</th>
<th>Number by sector</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>In Bangkok:</td>
<td>In provinces:</td>
</tr>
<tr>
<td></td>
<td>No. (%)</td>
<td>No. (%)</td>
<td>(%)</td>
</tr>
<tr>
<td>1. CT scanners</td>
<td>399</td>
<td>128 (32.1)</td>
<td>271 (67.9)</td>
</tr>
<tr>
<td>2. Magnetic resonance imaging devices (MRI)</td>
<td>51</td>
<td>34 (66.7)</td>
<td>34 (66.7)</td>
</tr>
<tr>
<td>3. Lithotripters</td>
<td>74</td>
<td>9 (12.2)</td>
<td>65 (87.8)</td>
</tr>
<tr>
<td>4. Mammography devices</td>
<td>215</td>
<td>117 (54.4)</td>
<td>98 (45.6)</td>
</tr>
<tr>
<td>5. Ultrasound devices</td>
<td>2158</td>
<td>323 (15.0)</td>
<td>1835 (75.3)</td>
</tr>
</tbody>
</table>

5) Health financing

There are three sources of health expenditure ("Thailand Health Profile 2008-2010," 2011) which are public sector (42.23%), private sector (57.60%), and international financial aid (0.17%).

In 2008, the major source of public sector is government budget, especially through Ministry of Public Health which contributes 24.34%. The largest source of funds of private sector is households which contributes 55.31% in 2008. It slightly dropped from 62.58% in 2002 due to the launch of the universal health-care policy which decreased family burden expenditure. Nevertheless, the large portion of expenditure from households still shows that people pay high cost for services that are not covered by universal health-care scheme, for instance, drug cost for self-care, or visiting a private clinic.

6) Leadership and governance

According to United Nations Economic and Social Commission for Asia and the Public (UNESCAP), the eight attribute for the good governance are accountability, participation, transparency, responsiveness, consensus orientation, following the rule of law, effectiveness and efficiency, and equity and inclusiveness. Overall assessment of UCS was concluded as “good enough”. The results of National Health Security Board (NHSB) survey is shown below.

Source: Thailand's Universal Coverage Scheme: Achievements and Challenges (Health Insurance System Research Office, 2012)
IV. Migration and border specific health issues

Specific border health issues (in concerns) and challenges are summarized from the Border Health Development Master Plan (Bureau of Policy and Strategy, 2011) and a situation analysis on Health System Strengthening for Migrants in Thailand (Chamchan & Apipornchaisakul, 2012) include the following:

- **Communicable diseases**: Emergence and also re-emergence of major diseases in border areas – i.e. Malaria, TB, STI including HIV and AIDS. Tak, Mae Hong Sorn, and Ranong reported the first three provinces with the highest Malaria incidence in Thailand in 2009.

- **Reproductive health and maternal and child health** (especially among the non-Thai populations):
  - Significantly higher rates of maternal mortality rate (MMR), infant mortality rate (IMR) and crude birth rate (CBR) than the national target.
  - Improper practice of family planning method among the non-Thai population (including migrant workers, ethnic minorities), which result in high fertility rate and number of children born to these groups of population. Health problems of the newborn from infectious diseases and the quality of child-raising are consequent concerns.
  - Risky sexual behaviors and other behaviors due to lack of health literacy and proper attitudes (i.e. condom use, drug use, tobacco and alcohol use)

- **Negative impacts** of border situations and its contexts on the performances of local health system i.e. from unrest situations, natural disasters (both natural and man-made ones), irregular migration along the border, large number of vulnerable population, challenges in addressing health needs, as well as in collecting surveillance data, due to political, language and cultural barriers, high mobility of the border population from cross-border movement and relocation.

- Limitations of referral system from and to the source countries especially for those patients with major infectious diseases

- Harms from Illegal health products

- Lacks of sufficient collaboration on border health works among relevant organizations in all sectors (i.e. public and private sectors) and levels (i.e. the central and the local levels)

V. Migration and border specific health systems issues

Border specific health system issues (in concerns) are summarized from a situation analysis on Health System Strengthening for Migrants in Thailand (Chamchan & Apipornchaisakul, 2012) include the following;
Biregional Meeting on Healthy Borders in the Greater Mekong Subregion

- **Availability** and responsiveness of health facilities (and equipments), and human resources especially health personnel in the border areas
- **Quality** of health services provided by available facilities and personnel
- **Coverage** of health insurance or protection to each population group in border areas – i.e. the coverage of the Universal Coverage (UC) and Social Security Scheme (SSS) for the Thai, Compulsory Migrant health Insurance (CMHI) and the SSS for migrant workers, NGOs-run health programs for displaced persons in temporary shelters, and available health schemes for ethnic minorities.
- **Accessibility** to health services of the border population, both the Thai and the non-Thai. This issue also relates to the previous issue on coverage of health protection, geographical barriers in the border areas, and migrant insensitive or unfriendly health services which mainly results from language and cultural differences between the health personnel and the non-Thai population.

Barriers and challenges to be addressed in achieving border sensitive health system (with a focus on the non-Thai populations) are as follows

**On service delivery → accessibility and quality**

- Inefficient, unsafe and unqualified service delivery due to adverse attitudes of service providers, communication barriers, limited capacity of available facilities, limitation of referral system, discontinuity of service provision and treatment
- Non-financial barriers of access to health care and services of border population. These are for example, long distance and lacks of public transportation, insufficient outreach activities to the remote population especially for health promotion and infectious disease prevention
- Financial barriers of care accessibility to some population groups due to incomplete/limited health protection coverage in border areas (i.e. legal and illegal migrant workers and dependants, ethnic minorities, stateless person, and displaced persons)

**On human resource → Availability (and responsiveness)**

- Inadequacy of health personnel, professionals, and other human resources for health
- Unresponsiveness of existing care providers (in servicing care for the non-Thai groups) due to negative attitudes, lacks of proper awareness and understandings about “health rights” of the non-Thai, and also communication barriers
- Lacks of supporting health workforce for interpretation, outreach activities on health promotion and disease prevention for border population in remote areas
**On health financing → Coverage**

- Limited and fluctuating coverage of health insurance among the non-Thai, resulting in limited financing resources and risk pooling of the existing health financing schemes (especially the CMHI)
- Uneven health benefit coverage provided under existing health insurance schemes for the border population (the UC the SSS and CSMBS for the Thai; and the CMHI, SSS and others for the non-Thai)
- High reliance on the out of pocket payments and hospital exemptions (especially for the non-Thai patients) which result in financial risks to the patient and financial burdens to health facilities in the border areas

**VI. Policies, legal frameworks and institutions**

Targeted on the 31 border provinces of the country, the Ministry of Public Health (MOPH) by Bureau of Policy and Strategy of the Permanent Secretary Office has developed and officially launched the first Border Health Development Master Plan 2007-2011 in 2007 (Bureau of Policy and Strategy, 2007), followed by the second plan 2012-2016 in 2012 (Bureau of Policy and Strategy, 2011). The plans were drafted and implemented with aims to improve the quality of life and health of border populations, including both the Thai and the non-Thai.

In order to monitor the implementation according to the master plan, 4 border health indicators (Bureau of Policy and Strategy, 2011) have been adopted by the MOPH encouraging partners in the 31 border provinces to apply. These indicators include, (1) percentage of hospitals in border areas that provide migrant-friendly health services, (2) percentage of migrant populations with health insurance, (3) percentage of health products in border areas that pass the standard criteria of inspection and (4) percentage of health facilities in border areas that has complied with the standard migrant health information system.

**VII. Data gaps and challenges**

Gaps and challenges to be addressed on “monitoring border health” are mainly about weakness in the border health information system (Chamchan & Apipornchaisakul, 2012) which might be summarized as follows.

- Lacks of sufficient information of non-Thai population in border areas, especially irregular migrant workers and dependants (demographic and health profiles; i.e. health status and determinants, morbidity, care seeking behaviors)
- Fragmented, inaccurate, doubtful in term of reliability of the existing data about the non-Thai population from routine health information system
- Existing data (especially about the non-Thai) is incomparable from different sources
• Though the border health indicators have been adopted by the MOPH, monitoring and evaluation mechanism on the performance of border health work and border sensitive health system are still in concern
• insufficient IT and technical supports at the local operating level in border provinces
References


I. Background:

Vietnam has a total national population of 87.84 million, and shares extensive borders with China, Lao PDR and Cambodia. As such, using the definition of “border provinces” in Vietnam as a province that borders another country is a limited approach. As highlighted in the accompanying concept paper, “a strictly geographic definition of the boundaries that determine a border region generally, and border health more specifically, is elusive. 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, municipal, or national and international levels.”

Vietnam shares a 2,130km border with Lao PDR and a 1,128km border with Cambodia, and a large number of official border crossing points exist in each border. The Mekong Basin Disease Surveillance initiative collects cross-border information on the following areas that border Lao PDR or Cambodia: Quang Tri province (population of 600,500, bordering Savannakhet, Lao PDR), An Giang province (population 2.15 million, bordering Takaes, Cambodia), Kieng Giang province (population 1.704 million, bordering Kampot, Cambodia), Ha Tinh (population 1.228, bordering Borikhamxay, Lao PDR), Tay Ninh (population 1.075 million, bordering Svay Rieng and Kampong Cham, Cambodia), and Quang Binh (population 849,300, bordering Khammouane, Cambodia). The median age of the population in 2010 was 28, and 24% of the population was under the age of 15. Vietnam ranks 127th in UNDP’s Human Development Index. According to the most recent UNDP Human Development Report, 40.1% of the

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253 Vietnam General Statistics Office, 2010

254 http://apps.who.int/gho/data/view.country.21300

population of Vietnam live on under $1.25 PPP per day, and 28.9% of the population live below the national poverty line.

With a GDP of $123.6 billion, Vietnam’s primary exports are clothes, shoes, electronics, seafood, oil, rice and coffee, with major imports including machinery and equipment, steel products, electronics and plastics.\(^{256}\) Internal economic reforms have been significant, and have impacted health systems, health service delivery and health financing.\(^{257}\) A number of issues relating to trade and economic development may currently and in the future impact border health. There are ongoing efforts to increase economic ties between Vietnam and Lao PDR,\(^{258}\) with some border provinces also conducting talks to improve economic investment and trade between Vietnam and Lao PDR.\(^{259}\) Vietnam established a special economic zone in Lao PDR in 2011.\(^{260}\) Vietnam has established a number of bilateral economic and trade relationships with Cambodia, including over 60 legal documents for bilateral economic cooperation. In January 2013, the construction of a pilot Vietnam-Cambodia border market began along the border between Tay Ninh province of Vietnam and Kampong Cham province in Cambodia.\(^{261}\) These activities may lead to increased cross-border movement and mobility. Some policies and programs are responding to these challenges – for example, in 2012, the Asian Development Bank announced $20 million in grants and loans to address HIV infection risks in 23 border provinces in Lao PDR and Vietnam, given “risks are growing due to increased population movement and commercial activities along economic corridors.”\(^{262}\)

II. **Health status – national level**

The 2010 Global Burden of Disease Study found that the highest-ranking causes of years of lost life [YLLs] in Vietnam were cerebrovascular disease, road injury, HIV/AIDS, liver cancer and lower respiratory infections. A 2008 burden of disease study

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found that amongst men, alcohol use disorders, depression, and road traffic accidents were the three leading causes for disability burden in men, while amongst women the three leading causes were depression, vision loss and osteoarthritis.\textsuperscript{263} The leading causes of disability-adjusted life years lost [DALYs] are stroke, road injury, low back pain, major depressive disorder and chronic obstructive pulmonary disease.\textsuperscript{264} In 2008, the top five causes of burden of disease measured in DALYs for males were: stroke, road traffic accidents, alcohol use disorders, liver cancer and HIV/AIDS. For females: depression, stroke, vision loss, diabetes and road traffic accidents. For children under age 15, the top 5 causes of burden of disease were: pneumonia, drowning, falls, road traffic accidents and epilepsy. The main causes of death are increasingly related to non-communicable disease and injuries. Low back pain, major depressive disorder, HIV/AIDS, liver cancer and ischemic heart disease are all in the ten leading causes of DALYs in 2010 and new leading causes since 1990. The Global Burden of Disease study also found that the three risk factors that contribute to the most disease burden in Vietnam are dietary risks, tobacco smoking and high blood pressure, while for children the leading risk factor was childhood underweight. This data is limited to nation-wide estimates, and therefore the implications for border health of the global burden of disease and leading causes of mortality and morbidity in Vietnam is unclear. However, these estimates indicate that i) non-communicable and chronic diseases are increasing in importance, and it is likely that migrants from Vietnam to neighboring countries are impacted by these risk factors and health conditions, and ii) border provides are likely to have less access to treatments for chronic diseases, and iii) while non-communicable and chronic diseases are increasing, communicable diseases are still a significant challenge in Vietnam, with 29% of years of life lost due to communicable diseases compared to 19% on average in the region, with implications for border health due to permeability of borders to communicable diseases.\textsuperscript{265}

Prevalence of HIV per 100,000 people is 283, compared to the regional average of 72.\textsuperscript{266} However, important differences in prevalence of HIV in vulnerable and at-risk populations compared to the national average exist – for example, prevalence of 32% amongst injecting drug users in 2002 and of 6.6% in female sex workers.\textsuperscript{267} Incidence of

\textsuperscript{263} VINE Project, Vietnam Burden of Disease and Injury Study, 2008


\textsuperscript{265} World Health Organization, Vietnam: Health Profile, 2010.

\textsuperscript{266} Ibid.

malaria (29 per 100,000 population) is significantly lower than the regional average (104 per 100,000 population).\textsuperscript{268} Prevalence of TB is 323 per 100,000 (compared to 138 per 100,000 average in the region).\textsuperscript{269}

A number of risk factors for chronic and non-communicable diseases have high prevalence in Vietnam – in 2008, 29.1\% of males and 23.3\% of females had high blood pressure, while 48\% of men aged 15 and above smoke (compared to only 2\% of women).\textsuperscript{270} There are 339 deaths per 1,000 people due to cardiovascular and diabetes.\textsuperscript{271}

Mental health disorders are prevalent, with a nationally representative epidemiological study showing that the ten most common mental disorders have a combined prevalence of 14.9\%, representing around 12 million people in need of mental health services.\textsuperscript{272} A range of studies emphasize the prevalence and impact of depression; data shows that 33\% of women who attend general health clinics in Ho Chi Minh City are depressed, and that depressive symptoms impact daily functioning and suicidal ideation.\textsuperscript{273} Data on alcohol abuse is limited; one study showed that 66.7\% of men between the age of 25 and 44 years consumed more than 3 standard drinks per day in the previous month.\textsuperscript{274} Services for mental health services are lacking, with 6.08 beds per 100,000 population for mental health patients, compared to 151.3 per 100,000 for general hospital beds. While community-based mental health programs cover 67\% of the population, these activities are limited to epilepsy and schizophrenia.\textsuperscript{275}

In 2010, 79.2\% of women received at least four visits of antenatal care, and skilled health personnel attended 97\% of births.\textsuperscript{276} The maternal mortality rate is 59 per

\textsuperscript{268} World Health Organization, Vietnam: Health Profile, 2010.

\textsuperscript{269} Ibid.

\textsuperscript{270} Ibid.


\textsuperscript{273} Cited in Ibid.

\textsuperscript{274} Ibid.


\textsuperscript{276} http://hiip.wpro.who.int/hiip/
100,000 live births.\textsuperscript{277} The infant mortality rate in 2010 was 19 per 1,000 live births, and under five mortality rate 23 per 1,000 live births.\textsuperscript{278} Food security and malnutrition continues to be a significant problem in Vietnam; in 2010, 29.3\% of children aged under 5 were stunted and 17.5\% were underweight.

Many of the challenges identified by the WHO in 2003, in its 2003-2006 Country Strategy for Vietnam, remain, including i) high prevalence of chronic malnutrition amongst under 5s and low birth-weight, ii) continued high burden of infectious, communicable and vector-borne diseases, iii) increase in non-communicable and chronic diseases, including cardiovascular diseases and cancers, and iv) increasing importance of lifestyle in influencing risk factors, including tobacco, alcohol and drug use, injuries and mental health.

\textbf{Textbox 1: Hypertension management in Vietnam}

Hypertension is a significant problem in Vietnam, with a national survey finding overall prevalence of 25.1\% - 28.3\% in men and 23.1\% in women.\textsuperscript{279} As noted above, high blood pressure is one of the three leading risk factors leading to burden of disease in Vietnam. In another study in Thai Nguyen province, amongst those with hypertension, only 34\% knew they had hypertension, and of those, 43\% received treatment.\textsuperscript{280} Non-communicable diseases are increasingly a significant component of hospital admissions, increasing from 39\% of patients in 1986 to 50\% in 1996 and 66.3\% of all hospital admissions in 2009.\textsuperscript{281} A pilot community-based hypertension management program was found to be successful in reducing blood pressure and CVD 10 year risk, and increase the proportion of hypertensives who were treated and controlled,\textsuperscript{282} showing the feasibility, acceptability and applicability of such an approach in Vietnam.

In 2008, the Vietnam National Health Institute developed a national program to target

\begin{itemize}
\item \textsuperscript{277} \url{http://hiip.wpro.who.int/hiip/}
\item \textsuperscript{278} \url{http://hiip.wpro.who.int/hiip/}
\item \textsuperscript{279} Son, P.T. Hypertension in Vietnam: From community-based studies to a national targeted program, Umea University, Sweden, 2012.
\item \textsuperscript{281} Ministry of Health of Vietnam: Vietnam health statistics yearbook 2009.
\item \textsuperscript{282} Son, op. cit.
\end{itemize}
hypertension, which was approved by the Vietnamese Prime Minister and incorporated into the 2002-2010 Program of Prevention and Control of Non-Communicable Diseases.\textsuperscript{285} The program was modeled on the pilot program, including both hypertension management approaches, which included incorporating screening activities into current health programs, building human resource capacity and equipping healthcare staff with guidelines and essential drugs, as well as utilizing information, education and communication activities to improve local awareness, and encourage lifestyle and behavior change. A review of implementation of the overall 2002-2010 Non-communicable Disease Prevention and Control Program identified limitations in coverage of hypertension programs, but successful implementation of the program for the populations it reached, and the achievement of national guidelines on diagnosis and treatment of hypertension.\textsuperscript{284}

Health service provision in border areas for hypertension would need to include approaches to improve adherence to pharmacological treatment, address lifestyle-related risk factors and improve awareness of hypertension, while simultaneously collecting specific data to illustrate if rates of hypertension in border areas in Vietnam, and amongst mobile populations, are similar or different to the results of national surveys.

### III. Health systems

Health systems can be assessed according to six building blocks, using standardized indicators proposed by the WHO.\textsuperscript{285} Available data at the national level, according to each building block, is presented here.

1. **Health service delivery**: Health services in Vietnam are organized and delivered at a number of levels. The Ministry of Health represents the central level, providing legislative and policy framework for health services; at the provincial level and district levels, there are technical agencies that assist in health care, including preventative medicine, consultation and treatment and health facilities; at the commune level, which is the primary care units accessible to people and provide primary health care services, early detection of epidemic outbreaks, and

\textsuperscript{283} Ibid.


treatment of common diseases. There are 10,926 commune health stations and high national coverage – 99% of communes have a health station, while 70% have a doctor and 79% have active village health workers. 2010 World Bank data shows that there are 2.17 inpatient beds per 10,000 population and 3.2 outpatient department visits per 10,000 population. There are 20 central hospitals, 63 provincial health offices, 197 provincial hospitals, 63 provincial preventive health centers, 697 district health center offices, 1507 district hospitals/ policlinics, and 3014 district preventive health teams. Other data on the proportion of health facilities offering specific services, services readiness scores for health facilities and distribution of health facilities per 10,000 population are not available.

**ii. Health workforce:** There are 12.2 physicians per 100,000 in Vietnam (compared to a regional average of 15.2). Further details on health workforce capacity for mental health care is available in the 2006 WHO-AIMS assessment of Vietnam’s mental health system, which found that based on 2004 data, there are 286 psychiatrists in the country (.35 per 100,000), who all work in mental hospitals. According to the same study, there were 2.1 per 100,000 nurses working in the mental health field, compared to 81.9 per 100,000 nurses in all fields. In 2009, there were 1644 midwifery graduates, contributing to a midwifery workforce of over 35,000, as well as over 100,000 community health workers with some midwifery training, leading UNFPA to characterize Vietnam’s midwifery workforce as strong. Ministry of Health Statistics indicate that Vietnam’s supply of doctors compares favorably with neighboring countries, while it has less nurses than the regional average. Further in-depth data on the occupation and specialization of the health workforce, region and place of work is unavailable; however, the Ministry of Health’s

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287 Ibid.

288 Son, op. cit.

289 WHO Vietnam Country Profile


5 year strategy acknowledges that there is an imbalance in the structure and distribution of the health workforce, especially in rural areas. For further explanation of health workforce issues, see Textbox 2, below.

iii. Health information: A 2006 review of Vietnam’s health information system found that systems for collection of health indicators exist at central, provincial and district levels, however, standard indicators such as infant mortality and cause of death is often not collected regularly. More recently, the Ministry of Health stated that health information systems in Vietnam have limited data on causes of death, risk factors non-communicable diseases and health workforce, amongst other areas, and that collaboration between sectors on collection, dissemination and utilization of health information is weak.

iv. Essential medicines: Data on the availability of 14 essential medicines in public and private health facilities and the median consumer price ratio of the 14 essential medicines is unavailable. However, it is evident that availability of essential medicines is a public health concern as prices are high – lowest priced generics are 1.09 to 3.4 times the International Reference Price in the public sector and 1.7 to 5.14 times in the private sector. Medicines are highly overpriced compared to average wages – a one-month supply of medicine to treat a peptic ulcer would cost 27 days of average wages.

However, a 2009 review noted improvements in domestic supply and production of essential medicines, and improvements in drug distribution, storage and supply.

v. Health financing: In 2010, general government expenditure as a percentage of total expenditure on health was 37.8%, while general government expenditure on health as a percentage of total government expenditure was 7.8%. Total per capita expenditure on health (PPP) was $31. Out of pocket expenditure as a percentage of private

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297 http://hiip.wpro.who.int/hiip/
expenditure on health was 92.7%, and a 2011 WHO review of health financing in Vietnam identified serious issues in health financing that create significant hardship for the poorest, despite social health insurance schemes.298

vi. **Leadership and governance:** The Ministry of Health provides leadership in the area of planning and strategy for health. The Ministry of Health’s 5 year health sector plan emphasizes the following areas: preventative medicine, communicable disease prevention, health education and school health, maternal and child health, and HIV/AIDS control amongst other areas. Other key policies, including the Socio-economic Development Strategy (2011-2020) frames overall development policies in Vietnam, and therefore influences the design, financing and delivery of health services, especially for the most vulnerable groups. There are also thirteen national health target programs for prevention and control of specific diseases, including malaria, TB, HIV/AIDS, child malnutrition, diabetes, dengue fever and hypertension.299

**Textbox 2: Human resources for health in Vietnam**

Vietnam faces a severe shortage of human resources for health, specifically in distribution of health workers across the country. The Ministry of Health 5 year health sector plan states, “[m]igration of health workforce from lower to higher level, rural to urban and from public to private sector and high level facilities has reached an alarming rate, which affects secure availability of health workers in rural, mountainous and the grassroots level.”300 The 2009 Joint Annual Health Review also identified distribution of human resources for health across the country as a central problem in health workforce issues.301 Ministry of Health statistics from 2003 show that in some regions, only 22.6% of commune health centers had doctors, compared to 82.6% in more urban areas. Other data shows that while 84% of the health workforce is in rural areas, there are often open posts at the commune level, and some staff who are employed have inadequate skills for their expected role and tasks.302

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298 WHO, Health Financing Review of Vietnam, with a focus on Social Health Insurance, 2011.

299 Ministry of Health Vietnam and Health Partnership Group, op. cit.


301 Ministry of Health Vietnam and Health Partnership Group, op. cit.

The Government has implemented policies to address the lack of health workforce in rural and remote areas, including financial incentives designed to attract and retain the health workforce in these areas, of up to 70% additional salary for attraction to ‘hardship areas,’ and 70% extra salary for retention. Moreover, a study has shown that non-financial incentives for health worker quality improvement in rural areas is important, including appreciation, support and feedback from managers, which was found to often not be forthcoming, or limited, for example, using appraisal sessions for administrative purposes, rather than to adequately provide feedback.

Policy analysis has concluded that efforts to attract and retain health workers to rural and remote areas have thus far been inadequate, for example, that the policy is “lacking in terms of concrete guidance and mechanisms for monitoring policy implementation, conditions such as budget resources, [and] accountability and responsibility to implement policies.” Recommendations include to improve non-financial incentives, increase performance management incentives to improve quality.

IV. Migration and border specific health issues

The comparative study of migration from Lao PDR, Myanmar, Cambodia and Vietnam discussed in the introduction to these five country papers found that in the case of Vietnam, as distinct from other countries, migrants primarily travelled with relatives and friends to Thailand to work. However, similar to migration experiences from other countries, once in Thailand, they often experienced difficult and harsh working conditions.

Data on health issues in border regions and specific to migrants to neighboring countries is sparse. One project – Community Action for Preventing HIV/AIDS, funded by the Japanese Fund for Poverty Reduction – focused on border provinces in Vietnam, Cambodia and Lao PDR, through an intervention that included HIV prevention activities, such as communication, condom promotion and improved STI control. Findings from a


304 Dieleman, et al. op. cit.

305 Tuan, K.A., op. cit.

306 SERC, A Comparative Picture of Migration in Laos, Myanmar, Cambodia, Vietnam and Thailand.
survey of female sex workers conducted as part of the project in five border provinces in Vietnam - Lai Chau, Quang Tri, An Giang, Dong Thap, and Kien Giang – showed variation of HIV prevalence across the provinces, ranging from 1% in Quang Tri to 7% in An Giang, with factors including age of first sex being under 15, low income and having more than 9 clients per month associated with higher HIV prevalence.  

These provinces were selected for intervention and research given specific risks and vulnerable groups present in the provinces, including, for example, that HIV infection is high amongst commercial sex workers in An Giang and Kien Giang, which may be associated with mobility of women, fishermen and border traders in these provinces, which border Cambodia.

UNAIDS data provides further insight into distinctions between HIV prevalence in border and non-border areas in Vietnam. For example, there is data on prevalence amongst injection drug users and female sex workers from 2005 that provides some insight into differences between provinces, as well as statistics on cumulative number of people living with HIV, cumulative AIDS deaths and report new HIV cases by province. However, given many of the non-border provinces are also impacted by significant internal migration, it is difficult to disentangle patterns or causes behind disparities between provinces, and how these disparities might relate to border health issues.

Research has also been used to improve understanding of border health issues and promote more effective co-ordination and co-operation. For example, a study of malaria in Savannakhet province of Lao PDR and Quang Tri province of Vietnam demonstrated different prevention, treatment and management approaches between the two bordering provinces. Findings from the survey showed that malaria prevalence was significantly higher in Lao PDR (5.2%) than in Vietnam (1.8%), and that while bed net coverage was high in both provinces overall, in Lao PDR, more than 60% of the nets were long-lasting insecticide treated, while Vietnam used indoor residual spraying.

This study showed significant differences in socio-economic status, health-seeking behaviors, and access to health services in districts that share a border, leading to collaboration on revised policy measures to address specific issues relevant to each province, and the border area overall.


309 Pongvongsa, T. et al., Joint malaria surveys lead towards improved cross-border cooperation between Savannakhet province, Laos and Quang Tri province, Vietnam, Malaria Journal, 2012.
V. Migration and border specific health systems issues

A health systems analysis of six provinces in Vietnam included analysis of two relevant border provinces – Nghe An, bordering Lao PDR, and An Giang, bordering Cambodia.\(^{310}\) Across a number of indicators of governance, service delivery and human resources, the border provinces did not differ in health systems performance compared to non-border provinces, while in terms of total health spending per capita, the border provinces had lower health spending than the other provinces examined, and lower human resources supply.\(^{311}\) It is unclear from this analysis and other available policy and program documents and data whether border areas in Vietnam experience significant or specific burdens on the health system, and if so, what these issues are.

One of the pillars of the Operational Framework for Migrant Health is that migrant-sensitive health systems should exist, including capacity of the health workforce to address migrant health issues. Given the extent of internal migration within Vietnam, the existing data and literature on this theme primarily focuses on access to health services for internal migrants.\(^{312}\) However, health systems issues, including possible health financing issues in border provinces, or health insurances issues specific to cross-border migrants, are underexplored in the literature.

VI. Policies, legal frameworks and institutions

One of the pillars of the Operational Framework for Migrant Health is policies and legal frameworks affecting migrant health, and more broadly, border health. This includes the status of key international conventions and protocols in Vietnam. In terms of engagement with migrant health, and border health more broadly, while there are some activities and initiatives that have been described above, the key health strategy does not include specific mention of border health or migrant health issues or challenges, nor specific policy, programmatic or legislative approaches to address these challenges. In the health strategy, rural-urban migration is recognized as a specific risk factor and internal migrants are identified as a potentially underserved and vulnerable group, however, beyond this, migration from Vietnam to neighboring GMS countries is not recognized or addressed. The Government of Vietnam has not signed or ratified the


\(^{311}\) Ibid.

Convention on the Protection of the Rights of All Migrant Workers. However, in 2004, along with the other countries in ASEAN, it signed the MoU for Joint Action to Reduce HIV Vulnerability Related to Population Movement, and also signed the ASEAN Declaration on the Protection and Promotion of the Rights of Migrant Workers.

The Government of Vietnam, with the support of the International Organization for Migration, established a Migrant Resource Center in Hanoi, and conducts outreach activities at the provincial level with the Vietnamese Women’s Union. Another example of these activities is the ILO’s TRIANGLE project [Tripartite Action to Protect Migrants within the Greater Mekong Subregion from Labour Exploitation]. Beyond specific health strategies, it is evident that the policies and legislation of a range of sectors can significantly impact border health, including migration, trade and labor policies. It is unclear the extent to which policies in these areas recognize or contribute towards addressing border health issues in Vietnam.

VII. Data gaps and challenges

Another pillar of the Operational Framework for Migrant Health is that there should be specific monitoring of migrant health. From a border health perspective, this monitoring can be used to inform cross-border policies and programs. However, beyond regular data collection conducted as part Demographic and Health Surveys and population-based surveys, and some ad hoc studies discussed in this paper, there is a lack of specific monitoring of migrant health, and relevant border health data is lacking.

Policy recommendations

- Governments and key stakeholders should establish and support cross-sector (labour, migration, and health) programs that support a continuum-of-care model for individuals throughout the migration process.
  - Expand the scope from the health sector alone to include other sectors such as social service organizations to increase reach into communities for health programs
- Continue and expand coordination between countries in the region to promote health, disease prevention, care and treatment along border areas.
  - Multi-country partnerships to make new and existing services more sensitive to the diversity of individuals seeking to access these services (e.g. culturally appropriate, translation to various languages, removal of barriers within the system when possible)

313 http://www.iom.int.vn/joomla/index.php?option=com_content&task=view&id=309&Itemid=294
Identify and implement feasible, accessible and appropriate health services for irregular migrants to access upon return, as well as approaches to providing a continuum of care of health services during migration processes

- **Develop systematic data collection mechanism at a country-level and, when possible, coordinated efforts specifically along border areas.**
  - Include township, district, and village tract information
  - Expand monitoring beyond disease outcomes by also focusing on health behavior, utilization of and access to services, barriers to access, occupational safety, housing, and sanitation throughout the migration process
  - Further refine ‘border health’ to refer to specific districts or provinces in each country, based on more disaggregated data and health needs of specific populations

- **Include community-based organizations specifically working along border areas in program development and data collection.**
  - Compare data collection processes and health programs to create a standardized system
  - Increase collaboration at the community-level for development of appropriate and effective programs

- **Adapt approaches to increase human resources for health.**
  - Investigate the role of community members, particularly in rural and hard-to-reach border areas, in data collection and service provision for health programs
  - Utilize existing programs – for example, Village Malaria Workers program in Cambodia – to improve access to health services in border areas
  - Expand focus of capacity building and health service expansion in border areas to beyond infectious diseases (malaria, pandemic flu)

- **Improve understanding of the impact of expanded economic ties and trade on border health.**
  - Conduct collaborative scoping studies, with economic and financial actors, to determine the impact of planned economic co-operation and expansion of trade on border health and migration dynamics
  - Establish communication and co-operation mechanisms to identify and address possible negative impacts

- **Improve understanding of how trends in national health status impact border health.**
  - Collate and analyze province and district-specific data, from Health Information System and Demographic and Health Surveys
  - Establish procedures to adequately monitor and collect data specifically on migrant health

- **Build on existing border health programs and expand beyond infectious disease focus to address social determinants of health.**
Biregional Meeting on Healthy Borders in the Greater Mekong Subregion

- Expand focus of capacity building and health service expansion in border areas to beyond infectious diseases

**Summary and Conclusions**

These five country reviews illustrate that border health is closely linked with socio-economic determinants, such as development, individual income, nutrition, and employment, along with factors including geographic distribution of populations, risk areas for communicable diseases, and location and density of health services. As a result, action steps and policies should be conducted in a multi-disciplinary way in order to account for the various sectors that have a role in influencing border health.

Current data are difficult to disaggregate along border areas in many cases and, thus, a standardized and systematic system for collecting, analyzing and sharing information would aid the process of determining potential strategies for developing healthy borders.

In the region, several examples of cross-sector coordination and collaboration between countries can be found. These examples should be used to create more platforms from which coordinated efforts to improve health status along border areas can be implemented. In addition, there are several initiatives from these countries that show the benefits of involving community members in programs in order to increase access to, acceptability of, and effectiveness of services. For example, involving community health workers in malaria control efforts and involving various sectors, not only health-specific stakeholders, in efforts to combat the spread of HIV. Particularly for border areas, including a diverse group of stakeholders can increase the likelihood that programs are holistic and take in to account the variety of factors influencing health status along border areas.

While countries reported on in this study face challenges in attaining healthy borders, coordinated efforts between countries have shown to be effective in moving toward this goal and, thus, expansion of these types of programs and an increase in standardized and regular information sharing are recommended.

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