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TEN YEARS REPORT 1998-2009

LIFE, LIBERTY AND THE PURSUIT OF HEALTH

A DECADE OF PROVIDING PRIMARY HEALTH CARE IN BURMA'S DISPLACED AND VULNERABLE COMMUNITIES

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MISSION STATEMENT

The Back Pack Health Worker Team (BPHWT) is an independent, nonprofit, multi-ethnic organization dedicated to providing primary health care to ethnic groups and vulnerable populations in armed conflict and rural areas of Burma, where access to healthcare is otherwise unavailable. Furthermore, by equipping communities with the skills and knowledge necessary to manage their own health issues, the Back Pack Health Worker Team is dedicated to the long-term, sustainable development of a healthy society in Burma.

To accomplish its mission, BPHWT utilizes mobile health teams to provide a range of primary medical care, maternal and child health services, and community health education and prevention programs to internally displaced and vulnerable populations in Burma.

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Foreword by

Dr. Cynthia Maung,

Founder, Mae Tao Clinic and Chairperson, Back Pack Health Worker Team

When I was studying medicine at university in Burma, I undertook two clinical internships during 1980 – 1985, one at Mingaladone Military Hospital and the other at North Okkalar Civil Hospital. It was then that the problem for access to health care in Burma and in particular for the poor and rural populations first became apparent to me. At North Okkalar most of the patients came from the outskirts of the city and were poor; the hospital facilities were terribly inadequate and the staff overworked. There the staff struggled against many challenges, lack of medicine, lack of staff and also struggling to make ends meet for their own families. There were no preventive services and many patients arrived seriously ill. The differences between Okkalar and Mingaladone were striking in terms of the resources and who could access the services.

After I finished study, I was an intern at Moulmein Hospital, where the situation was very similar to North Okkalar, but so many of the patients had to travel 3 – 5 hours by bullock cart or boat to reach the facility. It became clear to me that for rural populations, preventive care was non existent and emergency services were not accessible. Government services were simply not accessible to all.

After I graduated, I went to work in the village of Eain Du in Karen State and there I realized the role of poor social and economic development on health as well as the affects of militarization. Young boys, called up for their "volunteer" work, to serve the army in building military camps or in carrying military supplies, returned to the village malnourished, injured and with untreated malaria. The fear of the military was pervasive, and villagers' ability to work to raise enough for their own food and livelihood was severely impaired. The effect of militarization on the villagers was very clear.

The village was only 15 km from the State Hospital, but there was only public transport 2 times a day at night, or for emergencies, referral was really difficult. The hospital in Eain Du village had a 12 bed facility for a 20,000 – 25,000 population. During the 11 months that I stayed in Eain Du, a doctor was only available for 3 months. There was no medicine available. Nurses and midwives operated out of their houses, providing private medical services. Public services were barely provided. I soon knew that the Burmese health system had in fact collapsed.

When I fled to the border, we passed through the jungle, walking for 7 days. At that time I met with many villagers and internally displaced people who had never been able to access any government health care systems.

Since 1988, the health workers coming to the border have always been quick to identify and respond to the needs of the local villagers and internally displaced populations living along the border. Gradually mobile medical teams emerged and where possible, community health clinics were established. Most health work on the border started with medical services, but gradually expanded to public health, maternal and child services, school health programmes and basic trauma care. Through maternal and child health programmes and school health programmes, the community understanding of health issues and how to participate in their own health provision increased.

Each organization on the border was operating their own mobile medical teams, traveling for 3 – 6 months at a time. During 1996 and 1998, many ethnic areas fell under the control of the military regime; some clinics had to close down and the challenges in providing health care increased. In 1998, a series of meetings were held among different ethnic organizations and through these, the Back Pack Team model was developed. Through this effort, it was possible for standardization of service delivery and a great collaboration was initiated. Everyone involved was very proud of its establishment and it was so impressive that we were able to begin immediately with 38 teams in 1998.

Since the Back Pack Health Worker Team started 10 years ago, awareness of the health and human rights situation facing internally displaced people from Burma has increased and continues to grow.

In the last 10 years, militarization and the destruction of community infrastructure has escalated. Against extremely harsh conditions, through extreme bravery and immense effort by members of the Back Pack Health Workers Team as well as other community-based women's and youth organizations, opportunities have opened for improving access to health and education for these vulnerable populations. These openings have brought more support, both financial and technical, to health and education services as well as community development. The international partners work in true partnership with the local community organizations, relying on the local expertise of the community workers, and enhancing this with technical input and funding. This partnership provides the means for maintaining community infrastructure and sustaining local community initiatives.

With very limited financial resources and considerable logistical barriers, the Back Pack Team is now able to access a target population of 190,000 population in both and Eastern and Western Burma, working together with eight major ethnic groups. Through the provision of desperately needed health services and the fostering of preventive health strategies, the Back Pack Team not only saves lives, but also motivates young men and women to take active roles in community work. The sense of ownership, fostered by the community working together to provide health services, results in sustainable programming. The Back Pack Health Worker Team model, for meeting the needs of the rural poor, is an excellent one and essential in health service provision to displaced peoples.

Foreword by

Luke C. Mullany, PhD, MHS

Center for Public Health and Human Rights, Johns Hopkins University

Ten years ago, I walked across the border of Thailand and Burma into eastern Karen State with a group of medics from the Back Pack Health Worker Team. They were pilot testing a new survey instrument; their plan was to describe knowledge and practices surrounding infant feeding and to assess nutritional status of children among internally displaced communities. I was there to watch, to listen, to learn … and to be inspired. The health workers chatted about their commitment to improving the health of their people, of the challenges and dangers facing them during their day-to-day work, of their families at home, their longing for peace, democracy, rights, and dignity for all people of Burma. They spoke lightly, their youthful smiles and brave outlook belying the heavy burden they carried. Not only a physical burden — days of trekking through difficult terrain carrying heavy packs of supplies and medicines to people in need – but the greater burden (and pride) of knowing that they alone provided health services to their community, that their people depended on them for help, looked to them for leadership, waited for them with hope.

I was inspired then, and remain even more so today, a feeling shared with many of those who have been fortunate enough to spend time with these health workers and to learn what the Back Pack Health Worker Team is able to achieve under extraordinarily difficult circumstances. The pages of this Ten Years Report illustrate an innovative approach to community-based public health programming in conflict-affected settings, an approach which serves as model for others around the world to emulate. At least four major points are clear to any attentive observer. First, the Back Pack Health Worker Team has grown tremendously over its first ten years, all the while developing an appropriate, integrated, and comprehensive health care program, including both preventative and curative components and encompassing maternal, neonatal, and child health, improved referral systems, trauma management, infectious disease outbreak response, behavioral change communications, water and sanitation, and community empowerment. Second, from its inception, the Back Pack Health Worker Team has been characterized by multi-ethnic collaboration and a shared vision for the future, providing a valuable example for all elements of Burma's civil society.

Third, the Back Pack Health Worker Team emphasizes monitoring and evaluation within all its activities — the pages within this report are bursting with enough numbers, proportions, rates, and yes, even denominators, to make any epidemiologist smile. Standardized data collection has enabled program leaders to evaluate coverage and impact, to examine trends over time, to set benchmarks, and to quantify progress toward these milestones. Despite substantial challenges, information gathered through the course of the Back Pack Health Worker Team's work has been highlighted by program leaders in regional and international conferences, scientific publications, and numerous reports. Fourth, the Back Pack Health Worker Team is providing global leadership in advancing recognition of the intersection between human rights and health. Its founding vision — to equip internally displaced persons with enough knowledge and skills that they are able to address the health problems of their own communities — and individual components of the program such as providing birth certificates for all babies born in the target areas, can be described as rights-based approaches. Furthermore, their 2006 report Chronic Emergency was one of the first to quantify the impact of violations of human rights on population health.

In January 2010, experts writing in the international journal *The Lancet* issued an urgent call for new models of health care delivery in conflict settings.[1] The authors noted a particular need for "new strategies … to deliver health services to dispersed, intermittently accessible populations in low-income settings with a continuing high burden of infectious disease" and that a "main challenge for internally displaced populations is to expand the range of interventions including use of temporary mobile services." Clearly, the Back Pack Health Worker Team is demonstrating how community-based organizations can lead the way. With a steadfast commitment to comprehensive health care, multi-ethnic collaboration, high quality monitoring and evaluation, and a focus on community empowerment and human rights, the Back Pack Health Worker Team is rising to meet the immediate needs of today, while laying the foundation for a better tomorrow for all of Burma's people.

Preface

Ten years ago, health workers from the Mon, Karen, and Karenni States in Burma came together as the Back Pack Health Worker Team (BPHWT) in partnership with the Mae Tao Clinic in Mae Sot, Thailand. The need for mobile healthcare services grew out of increasing military attacks against civilians in eastern Burma in the late 1990s, coupled with a lack of local, official healthcare. These circumstances prevented a large proportion of the population from receiving basic primary and preventative healthcare services. Since 1998, BPHWT has stayed true to its founding mission: to equip internally displaced persons with enough knowledge and skills that they are able to address the health problems of their own communities and work towards the development of a sustainable health infrastructure.

The Back Pack Health Worker Team established key principles that have guided our work since the inception of the organization: to provide healthcare services to all, regardless of ethnic group, age, gender, religion, or political affiliation; to focus on communities where access to primary and preventive healthcare services is severely limited; to collaborate with local organizations and communities; to improve health through a multi-sectorial development and integration approach; and, to foster inter-ethnic unity and trust, thereby promoting democracy in Burma. Over the past ten years, BPHWT has expanded from 32 teams serving 64,000 people in the eastern border region of Burma to 80 teams serving over 187,000 people in eastern and western Burma.

Over time, the scope of BPHWT's services and programs has expanded as well. BPHWT has trained more than 1,300 multi-ethnic health workers who are currently living and working in their communities in Burma, providing primary and preventive healthcare services and enabling communities to address and prevent health problems. As BPHWT has grown, so has our reputation, and we have gained support and assistance from an expanding base of local and international health and education professionals and donors.

As BPHWT looks towards the next ten years, we will continue to focus on strengthening and expanding our community-based primary healthcare system in Burma. Whether the future brings continued conflict or peace and democracy. BPHWT remains committed to our community-based approach, aimed at empowering local populations and bringing ethnic groups together in the name of improving health for all.

Sincerely,

Mahn Mahn
Secretary
Leading Committee
Back Pack Health Worker Team

Acknowledgements

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Map of Burma and Surrounding Countries

INTRODUCTION

Background

Burma, or Myanmar as it is called by the military government, is one of the most ethnically diverse countries in the world, with more than 100 different languages and dialects spoken. Ethnic minority groups occupy approximately half of the land area of the country, particularly in the mountains and border areas.

Burma has been ruled almost continuously by a succession of military dictators since General Ne Win toppled a popularly elected government in 1962. The constitution was suspended and many ethnic minority leaders were imprisoned, with several dying or disappearing while in custody.

The current military regime, calling itself the State Peace and Development Council (SPDC), has consistently been ranked as one of the world's worst dictatorships and most corrupt governments in the world.[2,3]

The government commits widespread, documented human rights abuses against civilians, particularly against ethnic minorities and political dissidents. Today, the junta holds over 2,100 political prisoners,[4] including Aung San Suu Kyi, leader of the National League for Democracy (NLD) and winner of the 1991 Nobel Peace Prize - the only Nobel Peace Laureate still in detention. Hundreds of others, including religious leaders, ethnic leaders, community aid workers, and journalists languish in prisons scattered throughout the country.

Meanwhile, decades of military mismanagement, continuing under the SPDC, has led a country rich in natural resources into becoming a United Nations Least Developed Nation and one of the poorest in the world.[5] In sharp contrast, despite being at similar stages of development at Burma's independence in 1948, Thailand pursued democratic and market reforms, and today has become a regional hub of trade and tourism, with a GDP 12 times that of its impoverished neighbor.[6]

Burma's Displaced Populations

Since the SPDC took control of Burma, governmental mismanagement, economic collapse, civil conflict in the border regions of the country, and widespread human rights abuses against civilians have all contributed to large-scale displacement. Millions of Burmese have either fled into neighboring countries as refugees or migrants, or remained in Burma as Internally Displaced Persons (IDPs). Nine official refugee camps in Thailand along the Burmese border host approximately 112,000 registered and an additional 50,000 unregistered Burmese refugees, some of whom have been living there for over 20 years.[7] Many others are not recognized as refugees. Burma's neighboring countries also currently host millions of displaced Burmese. The vast majority lack documentation and are considered illegal migrants. In Thailand alone, the Migrant Assistance Program, a Thai NGO, estimates that there are one and a half to two million legal or illegal Burmese migrants, and this is li kely an underestimate.[8] Although neighboring countries host large numbers of displaced persons from Burma, at least 470,000 are estimated to live as IDPs in eastern Bur-

ma alone, forced to flee and hide within the borders of their own country.[9] Throughout the entire country, there are an estimated one to four million IDPs, a figure difficult to ascertain due to restrictions on information and the political sensitivities of the government regarding displaced populations.[10]

Amongst the displaced populations from Burma, those living along the country's borders are the most vulnerable. In many of these areas, ethnic minority groups have been struggling for autonomy against the Burmese government for decades in some of the longest continuous civil conflicts worldwide. In 1974, the Burmese government began to employ a counterinsurgency strategy along the eastern border known as the Four Cuts Policy, aimed at cutting the four crucial links between opposition groups and local villages (food, funds, recruits, and information), while increasing Burmese army control over the local population.[11] Central to this policy is the forced relocation of civilians from contested areas to "relocation centers," and the destruction of rice fields and food storage.[12,13,14] The Burmese army, or Tatmadaw, confiscates food and valuables, often burns villages and agricultural fields, and lays landmines to ensure that villagers don't return.[15,16] In addition, forced relocation is often accompanied by other abuses, including extrajudicial executions, forced labor, rape, torture, attacks against health clinics and medical personnel, and compulsory contributions to the Burma Army (including arbitrary taxes).[17,18,19,20] The Tatmadaw has also forced villagers to work as human landmine sweepers, walking ahead of military personnel in landmine-risk areas in a practice known as "atrocity de-mining."[21]

The Four Cuts Policy was even more brutally and systematically applied in eastern Burma after 1996. As a result, it was estimated that by 2009 more than 3,500 villages had been destroyed, abandoned, or forcibly relocated, forcing at least 470,000 people to live as IDPs in eastern Burma.[22] This scale of forced displacement is comparable to the situation in Sudan's Darfur.[23] While a significant proportion of IDPs have been coerced into government-controlled "relocation centers," the rest are hiding in the jungles or in temporary settlements. These villagers face harsh living conditions, where access to basic housing, food, water, and healthcare services is limited and unreliable. Returning to their home villages, where they will face continued landmine threats, forced labor, extortion, and other human rights abuses, is not a viable option.

General Health Situation in Burma

Public health is another casualty of decades of military rule and chronic disinvestment in basic, essential social services. Burma's current rulers have not deviated from the negligent socio-economic policies of the past. Despite an estimated $3.5 billion (31 December 2009 estimate) in foreign exchange earnings, predominantly from the sale of natural gas to Thailand, the regime spends around $1 per capita per annum on health, amongst the lowest in the world according to the United Nations Development Program's development index.[24] Furthermore, recent estimates suggest that Burma only spends 1% of GDP on health and education, leaving Burma in 138th position in the United Nation's Development Program's Human Development Report for 2009.[25] This leaves Burma lagging far behind the UN's Millennium Development Goals (MDGs).

Basic public health measures such as infant, child, and maternal mortality rates are amongst the highest in Asia, second only to Afghanistan.[26] Most deaths are preventable, caused by diseases such as malaria, diarrhea and other childhood illnesses, malnutrition, HIV/AIDS, and tuberculosis. In recognition of these realities, the World Health Organization ranked Burma's healthcare system below all but one of its member states in 2000, outperforming only Sierra Leone. Meanwhile, as a consequence of disinvestment, censorship, and persecution, many of Burma's most skilled educators have fled the country, and most of the nation's educational facilities, particularly for more technical fields such as medicine, have become woefully inadequate. In 2006, the WHO World Health Report noted a critical health worker shortage in Burma, with extremely low densities of physicians, nurses, midwives, dentists, and pharmacists throughout the country.[27,28]

The situation is even more dire in the armed conflict and rural areas of Burma, where basic health and other social services are more scarce, poverty more pronounced, and abuses against civilians rife.

This lack of access to basic health services has also increased the threat of multi-drug resistant diseases, such as tuberculosis and plasmodium falciparum malaria. People who lack access to adequate health care are frequently forced to self-medicate, receiving inappropriate treatment regimens or treatments taken for insufficient durations. In addition, given Burma's substantial black market economy and extensive official corruption, many people unknowingly purchase fake or adulterated medications from vendors or other local sources. These drugs pose a threat to treatment effectiveness and future treatment options in the region, especially for malaria.[29, 30, 31]

Despite the burden of preventable disease, particularly in communities living in the "black zones" of eastern Burma affected by the Four Cuts Policy, the SPDC has largely blocked local and international humanitarian organizations from providing much-needed aid.[32] In late 2005, the Global Fund terminated a $98 million countrywide contract and Medecins Sans Frontieres (France) was forced to close its malaria programs in eastern Burma as a result of increasing governmental restrictions on access to areas in which they worked, measures that violated prior agreements made by the military regime. In 2007, the International Committee for the Red Cross (ICRC) reduced its operations in Burma by 90% and closed all five of its offices in eastern Burma as a result of similar restrictions.[33]

No international non-governmental health programs have been based in these zones since, and consequently, the information on the health status of these populations has been severely limited.[34] While there are approximately 30 government-sponsored hospitals and 17 clinics in Karen State, they are not accessible to most conflict-affected populations. Furthermore, hospitals in Burma are typically perennially understaffed, and the country as a whole lacks skilled medical professionals.[35,36]

Health of Internally Displaced Persons (IDPs) in Burma

While the health of the general population of Burma is poor, the health of hundreds of thousands of IDPs in Burma may be far worse. As a result of official neglect, much of rural Burma lacks a functioning health infrastructure. In addition, the SPDC and its allies have perpetrated widespread human rights abuses against civilians, forcing many IDPs to hide in the jungle, usually in small, fragmented communities lacking basic services such as medical and educational facilities.[37,38] These populations struggle to survive and feed themselves, rendering official healthcare services unaffordable luxuries. For the few able to afford it, the journey to an official township center clinic or hospital can be long and dangerous, with risks of encountering Burma Army soldiers, landmines, bandits, and disease, including malaria.[39] These obstacles dissuade many IDPs from obtaining vital treatment from SPDC-run medical facilities.

Furthermore, most IDPs in eastern Burma die from preventable illnesses and conditions. Infectious diseases — mostly treatable — are overwhelmingly the main cause of death for children and adults, with malaria accounting for almost half of deaths, followed by diarrhea and acute respiratory infections. Moderate to severe malnutrition is also prevalent. An estimated one in twelve IDP women will eventually lose her life due to pregnancy-related causes, far higher than Burma's official figure of one in seventy-five, already amongst the highest in the region.[40] The maternal mortality ratio for IDP women in Burma is more akin to ratios found in other areas of the world facing humanitarian disasters, such as Somalia, Democratic Republic of the Congo, and Rwanda.[41]

In September 2006, Back Pack Health Worker Team published *Chronic Emergency*, a report detailing these abysmal statistics, based on a population-based survey of more than 1,800 IDP households conducted in 2004. The report was the first to summarize and quantify the association between health status and human rights violations within the IDP populations in eastern Burma. Survey results indicated that human rights abuses in eastern Burma are extremely common: 33% of households experienced forced labor, 26% had their food stolen or destroyed, and 9% were forcibly displaced in the year prior to the survey. Furthermore, BPHWT found that villagers forcibly relocated by the SPDC were five times more likely to step on a landmine, while children from families that had suffered forced relocation had double the risk of dying and triple the chance of becoming malnourished compared to their counterparts who had been free of this abuse. Similarly, villagers facing food insecurity as a result of SPDC confiscation or destruction of food supplies were five times more likely to suffer a landmine injury, two times more likely to be infected with malaria, and two times more likely to die.[42,43]

Chronic Emergency confirmed that the Burmese government's long-term disinvestment in health, combined with civil conflict and widespread human rights violations, have severely impacted the health of the citizens of Burma, particularly communities in conflict zones — areas barred from official international humanitarian assistance.

Formation of the Back Pack Health Worker Team

The Back Pack Health Worker Team was founded to empower local communities to provide primary healthcare services to underserved populations in conflict-affected areas of Burma, particularly in areas that international humanitarian organizations cannot reach. The formation of the BPHWT was led by Dr. Cynthia Maung, who has served as chairperson since its inception. Dr. Cynthia, a Karen physician who fled Burma as a result of her involvement with pro-democracy activities, initially established the Mae Tao Clinic (MTC) in 1989 in Mae Sot, Thailand, for the thousands of students also forced to escape Burma at that time. In a dilapidated building on the outskirts of Mae Sot, despite few supplies and little money, Dr. Cynthia and her colleagues treated an ever-increasing number of patients with malaria, respiratory disease and diarrhea, as well as gunshot wounds and landmine injuries.

Over the years, the clinic has developed into a comprehensive healthcare facility offering a wide variety of services, as well as medical and public health education, training hundreds of healthcare workers. For her work, Dr. Cynthia has received numerous honors, including a nomination for the Nobel Peace Prize in 2005, as well as 12 other international awards and honorable mentions for Mae Tao Clinic's humanitarian work.[44]

In 1996, in response to increasing SPDC attacks in eastern Burma and a worsening humanitarian crisis, Dr. Cynthia began sending mobile medical teams to provide primary healthcare in Karen, Karenni, and Mon States in eastern Burma. These teams were separately organized by the Mae Tao Clinic, ethnic health organizations, and individuals, and they worked independently. In 1998, Dr. Cynthia and the Burma Relief Centre (BRC) began to organize meetings of Mon, Karen, and Karenni health workers who desired to become more united and organized in providing care in their home communities just across the border. Recognizing the benefits of

collaborating to standardize healthcare services throughout eastern Burma, they agreed to work together to provide health services to vulnerable populations in conflict-affected areas, while still providing care through clinics already established by their respective health departments across the border. A year later, this group of health workers formed the core of the Back Pack Health Worker Team (BPHWT).

Initially made up of 32 teams and 120 health workers, BPHWT has since expanded to include 80 teams of three to five health workers each, or a total of 289 workers. The health workers, all members of the communities in which they serve, now offer basic health services to over 187,000 IDPs and war-affected residents living in Karen, Karenni, Mon, Kayan, Shan, Pa'O, and Lahu ethnic areas in eastern Burma. In addition, BPHWT has expanded operations to the western part of the country, serving displaced Arakan and Chin communities. Every team travels primarily on foot to each of the villages in their designated target area, carrying medical and health education supplies as well as data collection materials. Working in cooperation with community leaders, the health workers provide curative and preventative health services as well as community education on a variety of public health topics. In addition, BPHWT quickly recognized the significant obstacles posed by the lack of reliable health information in the areas in which they work. Consequently, BPHWT health workers regularly collect health data essential for health programming in areas inaccessible to international relief organizations. In this manner, BPHWT occupies a unique position, circumventing the SPDC's many restrictions to monitor and report on the health status of these vulnerable populations, as well as to deliver vital health-related services.

Vision, Mission and Goal

Vision: The vision of the Back Pack Health Worker Team is that of a healthy society in Burma through a primary health care approach, targeting the various ethnic nationalities and communities in the border areas and remote interior regions of Burma.

Mission: The Back Pack Health Worker Team is organized to equip people with the skills and abilities necessary to manage and address their own health care problems, while working toward the long-term sustainable development of a primary health care infrastructure in Burma.

Goal: The goal of the BPHWT is to reduce morbidity and mortality, and minimize disability by enabling and empowering the community through primary health care.

Guiding Principles of BPHWT

The Back Pack Health Worker Team integrates the following principles into its programs in order to ensure adherence to the vision and mission of working towards and sustaining a healthy society in Burma.

Protecting and promoting the human right to health

The Back Pack Health Worker Team is committed to protecting and promoting the human right to health for all individuals in all communities of Burma, regardless of ethnicity, race, gender, religion, culture, political affiliation, or age.

Providing healthcare where access is unavailable

BPHWT provides services in areas of challenging physical terrain, made more challenging by barriers imposed by the Burmese military regime. Despite these circumstances, BPHWT's mobile design, flexibility, and cohesion with the local villages enables teams to provide consistent, high-quality healthcare to communities outside of Burma's central healthcare system and to communities in active conflict areas. The mobile nature of BPHWT's teams allows them to reach the least stable areas in greatest need. When teams of health workers are not present in a given village, Traditional Birth Attendants (TBAs) and Village Health Volunteers (VHVs) from each community, trained by BPHWT, are present and continue to provide basic care and referrals. Their presence in communities at all times ensures constant access to basic services in between visits from BPHWT's more advanced teams, helping to provide service continuity even in the event of a sudden change such as displacement.

Collaboration with local communities and organizations in Burma

BPHWT strives to provide assistance based on community needs. Providing assistance in this manner requires respecting the traditions and culture of each community, utilizing local resources, collecting data in order to assess the unique needs of each community, seeking community feedback, and partnering with other local organizations that provide health-related services in Burma. Health workers, TBAs, and VHVs work in their home communities, and therefore speak the local language and are familiar with the health issues and risk factors particular to their area.

To strengthen the quality of its work, BPHWT incorporates external support and collaboration as well, including technical support on health information systems, epidemiology, monitoring and evaluation, financial management, and survey design from local and international institutions.

Empowerment of Burma's displaced and vulnerable populations

Almost all of BPHWT's staff, health workers, and other personnel are recruited from communities in or near BPHWT's target population.The training and skills these staff and health workers develop by working with BPHWT empower them to improve the health of their own communities as well as other communities in Burma. For instance, training skills are taught at almost every level so that staff train health workers, who in turn train TBAs and VHVs.

BPHWT continually provides training, supplies, and support, but it is the local populations who become more empowered and take charge of providing healthcare for their own communities.

Sustainable development of a primary health care infrastructure, fostering greater inter-ethnic partnership

BPHWT promotes a system that relies on community-based human resources. As community members continue to increase their health knowledge and capabilities, they are more able to serve as health resources for their communities, thereby reducing reliance on clinic-based and BPHWT services over time, and ensuring communities' ability to protect public health at a grassroots level.

Moreover, collaboration between health providers from different ethnic groups and different regions of Burma, all working towards the same goal of building a healthy society in Burma, fosters the promotion of broader health policy and the development of an equitable health system, as well as greater inter-ethnic unity and trust. BPHWT hopes that such collaborative work helps to lay the foundations of a peaceful, democratic Burma, one in which such health providers will continue to play a key role.

BPHWT Organizational Structure and Governance

BPHWT governs and administers its programs from Thailand, but implements all program activities inside Burma, working directly with local organizations based within the country. The Leading Group governs BPHWT and is elected by BPHWT staff every three years. The Leading Group appoints the members of the Executive Board, which meets monthly to make operational decisions about the implementation and coordination of BPHWT's programs. Field-in-Charges are responsible for organizing field meetings and workshops, distributing supplies, collecting and reporting data, and organizing security and transportation for all health workers.

Because of their close proximity to the communities in which BPHWT works, VHVs and TBAs are the initial contacts for villagers regarding basic reproductive health and community education, with a referral system to BPHWT health workers for patients who need higher-level care. Using this locally-based system, communities are building a health system that is less dependent on external sources of health care, such as clinics that are difficult to reach from remote villages.

Relationships between each of BPHWT's components and their geographic locations.

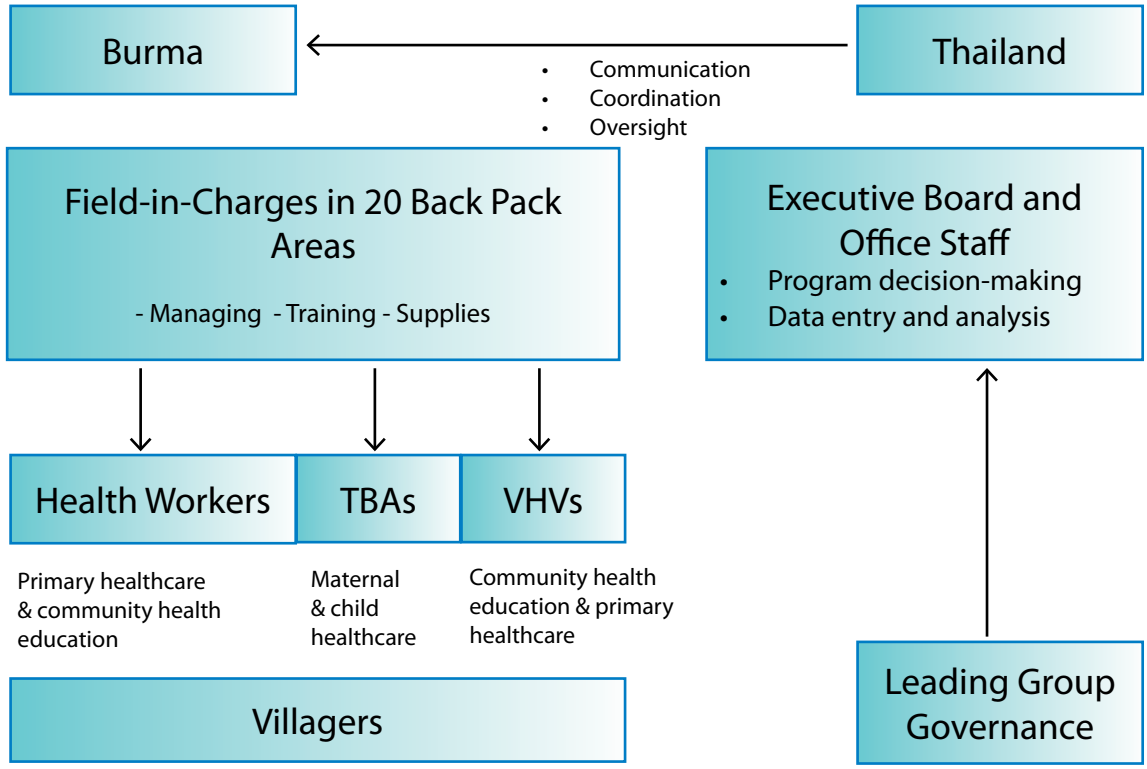


Figure 1. BPHWT Organizational Structure

II. BPHWT PROGRAMS

General Programs Structure

BPHWT runs three main programs: the Medical Care Program (MCP), the Maternal and Child Healthcare Program (MCHP), and the Community Health Education and Prevention Program (CHEPP). The programs are highly integrated, allowing BPHWT's target population to benefit from comprehensive primary and preventive healthcare services.

Back Pack teams of three to five mobile, trained health workers provide necessary care and treatment to BPHWT's target population. The members of each team work together to provide all program services, with at least one health worker occupying a leadership role for MCP, one for CHEPP, and one for MCHP. However, all team members share responsibilities as well as communicate with each other about their programs, helping to identify and meet community needs. Health workers carry data forms and essential medicines in their backpacks, and some teams carry more specialized equipment such as surgical tools for trauma patients.

BPHWT's target population is dispersed throughout 43 townships and more than 320 villages with a median size of 275 people. Every township is divided into village tracts, each of which is supervised by a field-in-charge, second-in-charge, CHEPP-in-charge, and MCHP-in-charge. This team of senior health workers is responsible for managing, overseeing, and coordinating the three to seven Back Pack teams in each tract. Each team targets 2,000 people, traveling between the villages in their tract to carry out their duties. Teams also travel to and serve numerous small, temporary IDP communities in hiding from the SPDC.

The teams typically carry enough supplies to treat 2,000 people in a six-month period, but occasionally they encounter larger populations needing services due to the unpredictable security situation in many of the areas in which BPHWT works. Back Pack teams spend a minimum of three days in a village, but different lengths of time are spent with each community depending on the movement of communities and the need to avoid SPDC forces, with some communities becoming inaccessible if the route becomes too dangerous. However, as members of the communities they serve, local BPHWT staff are familiar with the local terrain and security situation, and are usually able to overcome these barriers to provide healthcare services to otherwise unreachable populations.

BPHWT health workers provide care according to regional and international standards and protocols as outlined in the Burma Border Guidelines (BBG), a set of standard clinical guidelines specifically designed to assist health workers practicing along the Thailand/Burma border. The BBG are adapted from international treatment guidelines and medical literature of the World Health Organization, and recommendations from non-governmental organizations that focus on common diseases present on the Thailand/Burma border.[45] These guidelines are updated every two to three years and are consistently used by local organizations working along the border, helping to standardize diagnosis, care, and treatment in a constantly changing environment. BPHWT also regularly meets with other organizations providing health care in their target areas to coordinate and standardize diagnosis and treatment protocols. To ensure that health workers' knowledge and practices are up to date, they meet every six months for field workshops, where they learn about updates to protocols and review common procedures and practices.

The health workers in each team share their responsibilities and work closely together throughout the target area. The activities of each program are not separate; rather, all of Back Pack's activities are highly integrated and streamlined, from supply delivery and distribution to health care delivery and community education.

A Day in the Life of a Back Pack Health Worker

There is no typical day in the life of a Back Pack health worker. For even a single team, the security and transportation situation can change quite rapidly, which can alter a team's plan and ability to visit particular villages within their tract on certain dates. The following example is just one illustration of a day of work for a Back Pack health worker.

Hser Mu Na Htoo had just traveled ten hours with her Back Pack team. The team of five health workers trekked on small paths over strenuous terrain, climbing mountains and descending valleys. It was rainy season when the rivers flood which forced the team to wait many hours before they could cross a large river and continue towards the village. Near the end of their journey, the team kept in close contact with the village leader, using their walkie-talkie to make sure the SPDC had not occupied the village since their last visit. With a confirmation that the village was safe, the team walked into the village at sunset, warmly welcomed by members of their own community. The health workers slept in the homes of their aunts and uncles, friends and cousins.

Health workers ford a river to bring medical supplies and services to the next village

The team awakened early to begin their duties. It was a busy day — the health workers treated 26 patients for a variety of conditions, including diarrhea, malaria, and acute respiratory infection. The health workers also provided patients with health education and counseling to ensure that they understood their condition and treatment. In the afternoon, the team visited the local school for a health education session with the help of a Village Health Volunteer. The health workers and VHV taught the students about nutrition and personal hygiene practices, and distributed Vitamin A and de-worming medication. In the evening, the local TBAs and VHVs compiled their data, detailing village health activities performed since the Back Pack team last visited. The health workers then spent another night in the village, ready to wake at sunrise to provide another day of treatment, care, and community health education.[46]

BPHWT Health Access Targets[a]

BPHWT aims to provide one team of three to five health workers for every 2,000 people in the target population (one health worker for every 400-670 people), one Village Health Volunteer for every 200 people, and one Traditional Birth Attendant for every 200 people. Currently, the Back Pack health worker-to-population ratio is one health worker to about 650 people, which is measured as only 60% progress in Figure 2. However, this number does not necessarily indicate lack of access. While a team of five health workers working in an area of 2,000 people achieves the BPHWT official target ratio of one health worker for 400 people, by which this graph was calculated, a team of three health workers still provides the necessary supplies and services to a population of 2,000 despite a lower health worker-to-population ratio (approximately 1:670). The health worker-to-population ratio has remained stable over time because as BPHWT has recruited more health workers, the target population has continued to increase.

The TBA-to-population ratio has improved over time toward the target of one TBA to 200 people. Up until 2010, BPHWT only trained TBAs that had prior experience. As a result, after several years, there were few experienced TBAs left to train. Starting in 2010, BPHWT will also recruit women to become TBAs for the first time and will give them complete training. This will allow them to increase the ratio of TBAs to the population.

The VHV-to-population ratio remains around 1:500, still well below the target of one VHV per 200 people. BPHWT will need to recruit and train more VHVs, as only two rounds of VHV training have been held since 2004. However, because VHVs are unpaid volunteers, the number of VHVs is expected to fluctuate more often than the number of health workers or TBAs.

a The MCHP and VHV programs were not implemented in all areas as of 2009. However, BPHWT to population ratios are calculated using the entire BPHWT target population, because BPHWT aims to provide adequate services to all target areas and measure progress made toward this goal.

Medical Care Program (MCP)

As BPHWT's first, overarching program, the Medical Care Program's original goal embodied BPHWT's overall mission: to provide primary healthcare services to conflict-affected populations in eastern Burma where access to healthcare is otherwise unavailable. Infectious disease is overwhelmingly the main cause of death of internally displaced children and adults in eastern Burma, particularly malaria. Surveys performed in such populations by BPHWT and the Karen Department of Health and Welfare have found that malaria alone accounts for almost half of all deaths in these populations. The Medical Care Program aims to reduce mortality and morbidity rates in eastern Burma by diagnosing and treating common illnesses in BPHWT target areas.

Table 1. Number of health workers, TBAs, VHVs and target population by year

Year	# of HWs	# of TBAs	# of VHVs	Target Population
1998	120	0	0	64000
1999	150	0	0	64000
2000	200	0	0	121692
2001	208	0	0	121896
2002	224	0	0	156986
2003	238	0	0	147537
2004	232	202	332	176200
2005	287	260	625	162060
2005	284	507	700	185176
2007	288	591	341	160063
2008	291	525	413	176214
2009	289	630	388	187274

Figure 2. TBA, VHV, and health worker-to-population ratios as a percent of target ratios over time[b,c]

When MCP health workers travel to their target areas, they visit the homes of sick villagers, diagnose them, and provide them with treatments from their backpacks. The most common illnesses the health workers see are malaria, diarrhea/dysentery, acute respiratory infections, anemia, and worm infestation. However, the health workers also treat war injuries and a host of other conditions. Increasingly, health workers encounter infectious diseases that they are not equipped to treat, such as suspected tuberculosis or HIV/AIDS. Health workers cannot care for these patients because of the extensive care and treatment such patients require, but health workers are able to provide these indi-

b While BPHWT began training TBAs in 2000, the MCHP only began systematically training TBAs in BPHWT target areas in 2004. Therefore, only 2004-2009 TBA/population ratios are included. BPHWT also began training VHVs in 2004.

c Targets are as follows: 1 BPHWT health worker : 400 people; 1 TBA : 200 people; 1 VHV: 200 people.

viduals with health education and referral information. Patients suffering from more severe illnesses, such as cerebral malaria, are referred to the nearest clinic or hospital, and health workers will often help to facilitate this transfer and make sure that the patient arrives safely. BPHWT aims to increase the population receiving MCP services each year to ensure that populations in need receive basic medical care. In addition, this mobile system of healthcare delivery also allows BPHWT to monitor and adeptly respond to outbreaks of infectious disease of international concern, including diarrhea, measles, and influenza-like illnesses. Such responses are key in areas that are barred to international humanitarian organizations by the SPDC (see box below).

Outbreak! BPHWT responds to an emergency in the field

In September 2009, more than 500 people were infected with an influenza-like illness in Papun District in Karen State, eastern Burma. In the eight original villages affected, a total of 2,000 patients presented the sudden onset of flu-like symptoms, such as fever, headache, cough, and diarrhea. Concurrently, the world was struggling with a new H1N1 (swine flu) influenza epidemic. By October, the Karen outbreak had spread to another three villages ten miles away, affecting an additional 150 people.

A BPHWT health worker examines a patient with influenza symptoms

BPHWT, together with Papun District Karen Department of Health and Welfare Mobile Health Clinics and Pha Hite Clinic, organized a task force to respond immediately to the outbreak. The team conducted a workshop for health workers in the field on how influenza is transmitted, how to prevent transmission, and how health workers can protect themselves when working with affected populations. Concerned that this epidemic could be an outbreak of the novel, pandemic H1N1 influenza, which had been reported in urban Burma, BPHWT collaborated with a local Thai hospital to send influenza test kits to the affected area. Local health workers collected respiratory samples in the field and stored them in vials. Using a battery-powered refrigerator, health workers carried these samples on foot and by boat for 12 hours back to the Thai border. Test results from a Thai hospital indicated that all cases were seasonal human influenza virus.[47]

Throughout the outbreak, BPHWT and its partners provided medical services, health education, case investigation, and disease surveillance in the affected areas. By November, the epidemic had subsided. This comprehensive response illustrates BPHWT's capacity to utilize all available resources and respond effectively and quickly to infectious disease outbreaks in the field, where the affected communities have no access to government healthcare facilities or international aid.

Objectives of MCP

- To provide essential drugs for common diseases in the target areas
- To strengthen patient referral systems
- To respond to disease outbreaks and emergency situations
- To improve health workers' skills and knowledge

Impact

As BPHWT's capacity to provide basic medical care has grown and the need for medical care in eastern Burma has remained high, BPHWT has expanded coverage of the MCP program over the past ten years. In 1998, there were 32 Back Pack teams composed of 120 health workers working in eastern Burma. At that time, Back Pack teams served nine ethnic target areas and 64,000 people. By 2010, BPHWT has expanded to the north and west; today there are 289 health workers and 80 Back Pack teams serving 20 target areas and more than 187,000 people, indicating a ratio of one Back Pack health worker for every 650 people. In 2009, Back Pack teams treated a total of 88,786 patients.

In the following pages are a series of tables and graphs with caseloads and disease rates for the diseases most commonly affecting the BPHWT target population. It is very difficult to attribute trends in disease rates to a particular factor or to use them to gauge BPHWT's effectiveness because so many factors affect disease risk, and many factors are immeasurable. These factors include military violence, human rights violations, environmental factors, and population displacement, as well as disease prevention behaviors and effectiveness of BPHWT services. It is also important to keep in mind that the disease rates presented in the following pages are estimated, and thus involve a certain level of uncertainty; a series of disease rates over a number of years may suggest a trend, but when taking the uncertainty of the estimates into account, it is possible that such a trend does not exist. Despite this, it is helpful for BPHWT to track caseloads and estimate disease as they monitor the health situation in their areas and plan for future services.[d]

d While BPHWT has provided necessary care and treatment in its target areas since 1998, standard data collection procedures were not implemented until 2003. For this reason, only 2003-2009 data is included in this report. For more information on standardization of data collection, see "Monitoring and Evaluation: Caveats and Solutions" in the Obstacles in Program Implementation section.

Story from the field:

Skilled BPHWT health workers provide essential care in remote areas of eastern Burma

"Once, I was in the field when a patient with a severe abdominal injury was brought to me from a nearby village. A buffalo had gored the patient, forcing a horn straight into his abdomen, causing the intestine to come out of his body. I had never seen this kind of injury before, but I knew I had to help in some way. I asked permission from the patient's parents to try and heal the patient, because I wasn't sure whether I could help or not. They said it was OK. So I got a surgical knife, cut a small hole in the stomach, put the intestines back into the stomach, and sutured the wound closed. I divided the BPHWT health workers into groups so that the patient could receive continuous care, around the clock. After two weeks, this patient recovered and he is still alive today. I was very happy to have saved his life."

Hser Mu Nar Htoo, Field-in-Charge and MCP health worker, Kler Lwee Htoo area

Malaria

Plasmodium falciparum (Pf) malaria is the most deadly form of malaria parasite. In Burma during 2008, it was responsible for about 75% of malaria cases, and it affects at least 6.3%-12.5% of IDPs in the conflict areas of eastern Burma.[48,49] Other strains of malaria, such as plasmodium vivax (Pv), are also prevalent in eastern Burma. Prior to 2005, Back Pack health workers utilized clinical diagnosis and presumptive treatment for malaria patients according to the Burma Border Guidelines (BBG). Clinical diagnosis and presumptive treatment involves assessing a patient for malaria signs and symptoms without laboratory or rapid testing and treating according to clinical guidelines.

In 2005, due to increasing access to resources, BPHWT began confirming diagnosis of Pf using small, easy-to-use, portable kits known as Rapid Diagnostic Test (RDTs). Initially, health workers only used RDTs if they were unsure of a clinical malaria diagnosis, so only a limited number of RDTs were distributed to each team. However, in July 2007, BPHWT gained the appropriate resources to adhere to a consistent confirmed diagnosis protocol as recommended by the BBG. Since 2007, health workers have used RDTs for everyone presenting a fever, resulting in increased accurate diagnosis for

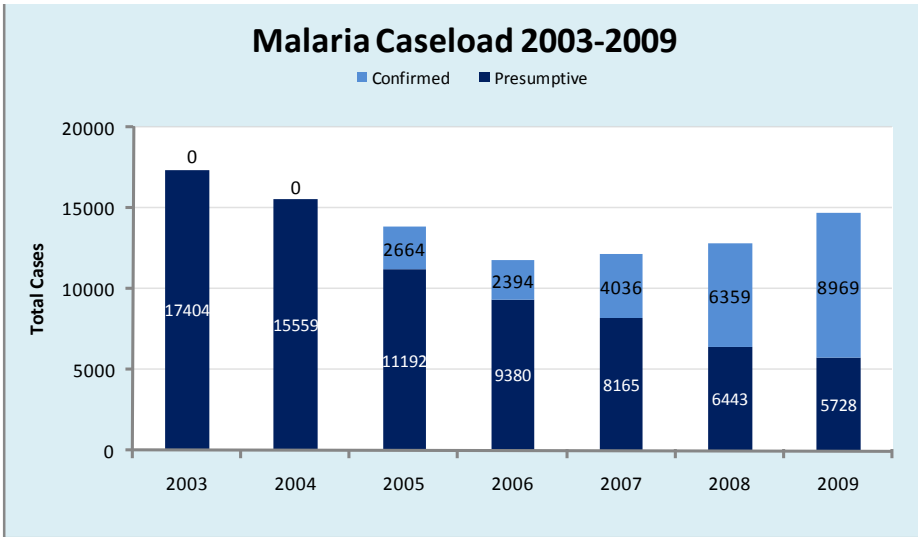


Figure 3. Presumptive and confirmed malaria caseload over time

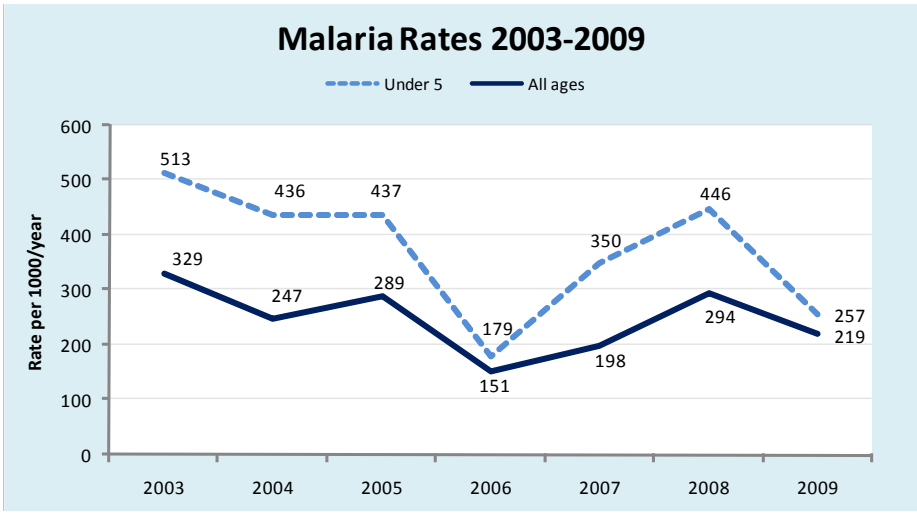


Figure 4. Malaria rates over time (per 1000 people per year)[e]

e In 2009, BPHWT measured a *Pf*-specific malaria infection rate of 135 per 1000 people.

patients with Pf malaria. As a result the proportion of confirmed cases increased in 2008 and 2009.

Similarly, BPHWT currently provides first-line malaria treatment to patients in the field in accordance with the BBG and practices of local health organizations. By ensuring that diagnostic and treatment protocols adhere to the current BBG, BPHWT health workers save patient lives, reduce the spread of the Pf parasite in IDP communities, and help prevent the development and spread of drug resistant forms of the disease.

According to a 2009 internal clinical logbook review, 94% of BPHWT Pf patients were treated correctly according to clinical symptoms and treatment guidelines as outlined in the BBG.

Figure 4 depicts malaria morbidity rates over time. The rates are mostly consistent except for those in 2006 and 2007, when they were lower. At that time in some BPHWT areas, health workers stayed longer in their village tracts and provided more ongoing services. As a result, the amount of access time increased for those years, which decreased the overall rate. Starting in 2008, they changed the way they counted access time in order to make the rates more consistent across areas, so the rates went back up.

Diarrhea and Dysentery

Diarrhea is a catchphrase for a variety of medical conditions caused by bacteria, viruses, and parasites. Regardless of the pathogen causing diarrhea, when left untreated, it can quickly cause dehydration, especially among children, and result in severe illness or death. Dysentery is characterized by blood in the stool, high fever, and abdominal pain, and is caused by particular types of bacteria or parasites. [50]

Diarrhea is largely preventable when populations can access a clean water source and a proper water and sanitation system, and good nutrition promotes a strong immune system that can fend off diarrheal disease. Drinking oral rehydration solution (ORS) is the most effective way to speed recovery from diarrhea and to prevent mortality, particularly among children. However, IDPs in Burma often lack knowledge on the best ways to prevent and respond to diarrhea, and due to frequent displacement and limited resources, it is difficult for them to develop safe water and sanitation systems.

In a BPHWT baseline health assessment survey conducted in 2001, 40% of children under age five had diarrhea in the two weeks prior to the survey. Only 8% of mothers gave ORS to their child with diarrhea, and an additional 6% gave "more fluids" than normal. Only 21% of adults and 14% of children regularly used a latrine. In a survey BPHWT conducted in IDP communities in three states in eastern Burma in 2002-3, diarrhea accounted for 24% of deaths of children under age 5 and 11% of adult deaths.[51] In the more recent survey conducted in 2008 in a wider range of areas in eastern Burma including BPHWT areas, diarrhea accounted for 9% of deaths in children under age five, and 13% of overall deaths. Diarrhea prevalence in BPHWT areas among children under five years old in the two weeks prior to the survey was 7%, and among children

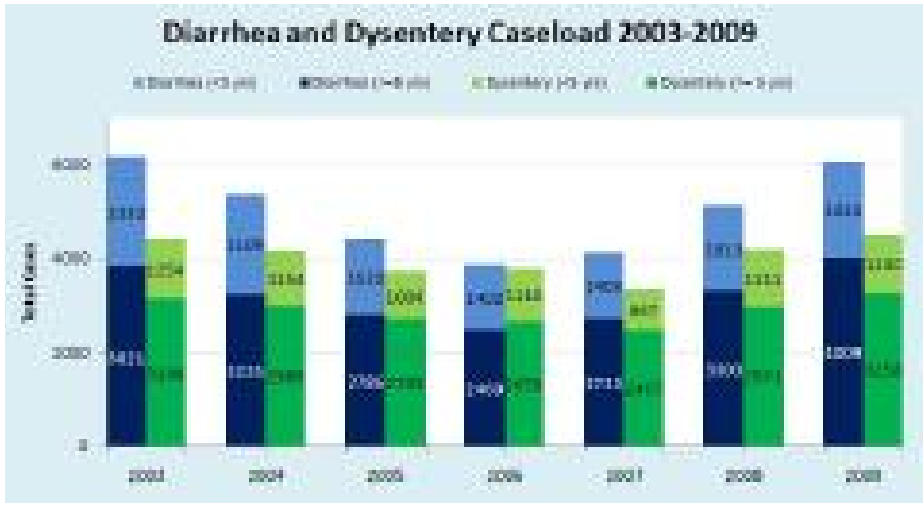


Figure 5. Diarrhea and dysentery caseload over time

who had diarrhea, 17% of them had taken ORS for treatment. In addition, more than 75% of households in BPHWT areas did not regularly have access to a latrine or other toilet facility.

The MCP program works to prevent deaths due to diarrhea and dysentery by encouraging the use of ORS and providing additional treatment for severe cases. Other BPHWT programs, discussed later, help to prevent diarrheal disease by providing education and improving water and sanitation systems.

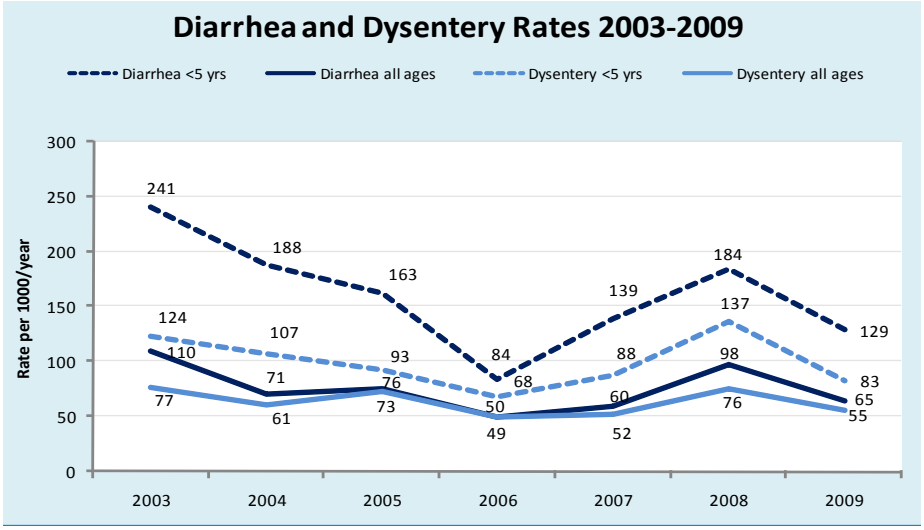


Figure 6. Diarrhea and dysentery rates over time (per 1000 people per year)

Acute Respiratory Infection (ARI)

Acute respiratory infections (ARIs) are infections of both the upper and lower respiratory tract. Upper respiratory tract infections affect the ear, nose, throat, and airway; these infections are known as "colds" and usually resolve on their own without treatment. Lower respiratory tract infections (pneumonia) affect the lungs and smaller airways. Lower respiratory infections are much more serious and without proper treatment can be fatal, particularly in infants, children, and the elderly.

ARIs account for a large proportion of morbidity and mortality in the IDP communities of Burma. In the 2004 BPHWT survey (reported in *Chronic Emergency* in 2006), ARIs accounted for 11% of deaths of children under age five and 12% of total deaths.[52] Similarly, the Eastern Burma Retrospective Mortality Survey (2008) reported that ARIs accounted for 21% of all deaths and 26% of deaths in children under the age of five in BPHWT areas. Proper care and treatment for ARI patients in Burma is necessary in order to prevent antibiotic resistance and mortality.

By assessing cases early to determine if they are serious cases that require treatment, BPHWT helps to prevent mortality due to ARI. It is particularly important for young children to receive treatment for lower ARI.

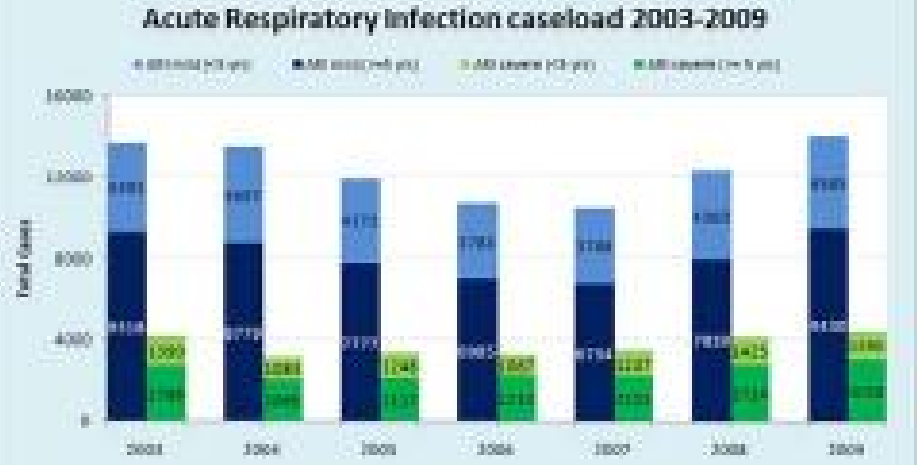


Figure 7. Acute Respiratory Infection caseload over time
(Data includes both upper(mild) and lower (severe) respiratory infections)

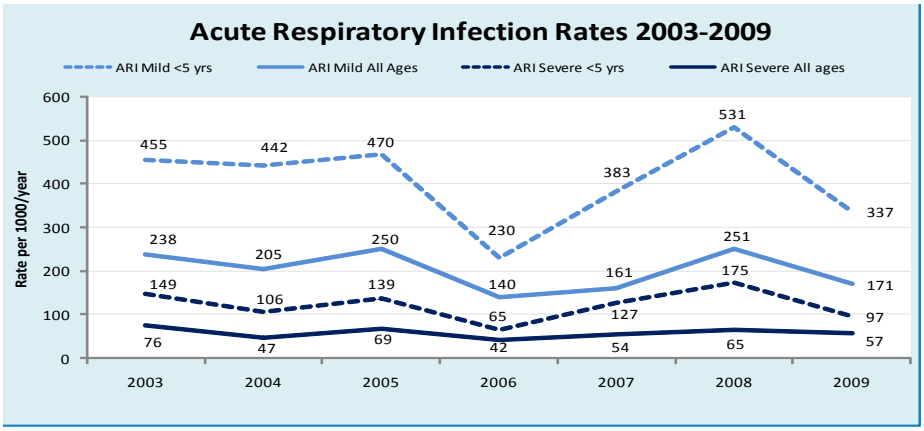


Figure 8. Acute Respiratory Infection rates over time (per 1000 people per year)

War Injuries

In the conflict zones of eastern Burma, war injuries, particularly gunshot and landmine casualties, are common. In a 2003 mortality survey, landmines and other violent causes accounted for 4% and 6% of total deaths, respectively, and eastern Burma remains one of the most heavily mined areas in the world.[53]

In 2008, the *Landmine Monitor* reported a total of 721 landmine casualties in Burma, increased from 438 in 2007 and 243 in 2006.[54] Other sources have estimated that approximately 1,500 landmine casualties occur annually in eastern Burma alone, accounting for 5% of deaths.[55] However, these estimates likely reflect severe underreporting, as most injuries occur in areas where data are not routinely collected.[56] BPHWT is one of the few organizations making an effort to systematically collect information that can be used to estimate landmine and gunshot wound casualty rates in Burma.

The Burmese government has remained outside international efforts to ban landmines, which are used by both government forces and armed ethnic groups.[57] Despite their intended use for combat, landmines have been shown to have a disproportionate effect on civilian populations.[58] Yet for landmine victims in conflict areas in eastern Burma, there is little or no access to care. The lack of care in these areas means long delays before reaching treatment, which are often fatal. For the survivors who are already living in poverty, being crippled by an amputated limb can worsen poverty, as the survivor is likely unable to help forage for food or supplies or help earn a living for his or her family. Additionally, the fear of landmines also limits villagers' ability to forage or travel, with significant impact on economic security and access to healthcare services.[59]

Table 2. Acute gunshot and landmine injuries over time

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Gunshot injuries	127	201	145	155	86	122	151	127	39	55
Landmine injuries	297	83	68	40	18	28	28	49	22	17

While the landmine casualty rates estimated from BPHWT case data are high, Back Pack health workers only visit a given village for a handful of days out of the year, and record data only for the landmine casualties that were treated during this window of time. Therefore, the landmine injuries occurring during the rest of the year are probably not counted, and the case data likely underestimates the true landmine casualty rate. This notion is supported by the consistently higher figures from BPHWT population-based surveys: 13.4 casualties per 10,000 in 2003, and 21.9 in 2005. The population-based surveys sampled a large population over a set period of time, and therefore provide a more ac-

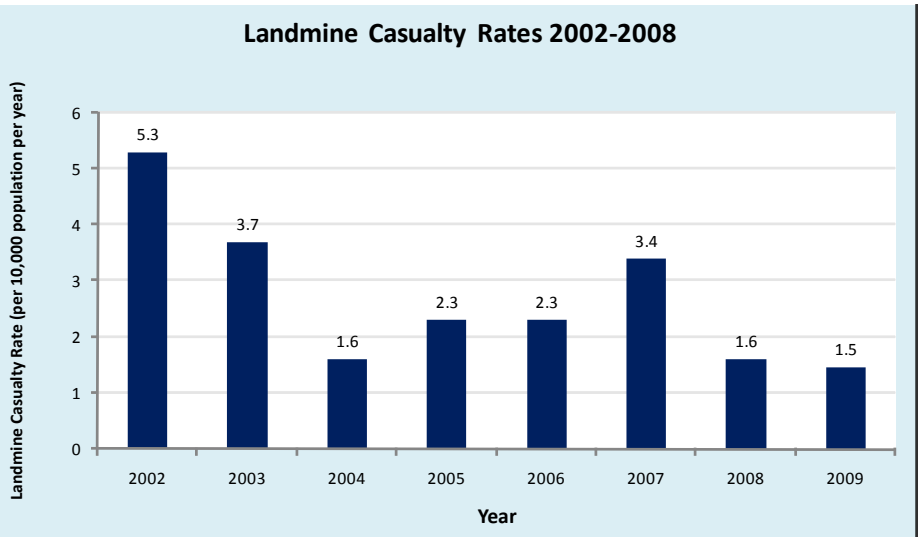


Figure 9. Landmine casualty rates per 10,000 people (estimated from case records).

curate estimate of true landmine casualty rates in eastern Burma.

Rates estimated using BPHWT's population - based surveys from eastern Burma are on par with some of the most heavily mined conflict settings in the world, including Kosovo in 1999 (12.0 casualties per 10,000 population), Mozambique in 1994 (12.8) and Cambodia during active conflict in the 1990s (16.3).[60,61,62] BPHWT landmine data provides a window into the severity of the situation in eastern Burma, and rationale for critically needed increased international advocacy. Moreover, the data indicates a large number of trauma patients that need care. BPHWT aims to increase coverage and services in the coming years in order to care for a greater proportion of these patients.

Conclusion

BPHWT's target population has increased significantly since 1998, from nearly 64,000 people to more than 187,000 in 2009. As the target population grows, BPHWT aims to continue to provide health care to a growing population of hard-to-reach people in need. Moreover, BPHWT provides care according to regional and international standards and protocols for disease treatment, including using RDTs and combination therapy for malaria diagnosis and treatment. BPHWT has and will continue to not only keep abreast of best health practices, but also work with other organizations to expand health care services and better standardize care and promote health system development throughout Burma. Such practices not only benefit internally displaced populations at the individual and community levels, but also benefit neighboring countries by preventing the spread of communicable and drug-resistant diseases across the border.

It is noteworthy that the major causes of morbidity and mortality in BPHWT target areas (malaria, diarrhea/dysentery, ARI) are largely preventable. BPHWT has recognized the need for both prevention and treatment of these diseases and has achieved measurable progress through implementation of the Community Health Education and Prevention Program (CHEPP). The Medical Care Program will seek to expand its services in the coming years in close conjunction with prevention services and health education, and with an emphasis on collecting high quality data that can be used to monitor and evaluate their programs.

Story from the field:

BPHWT empowers local communities with critical health knowledge

"Since I started working for BPHWT as an MCP health worker, I have noticed many changes in the communities in which we work. Earlier, when villagers got malaria, they waited to go to a health worker until it was severe. Now, villagers have learned more about malaria and other diseases and the importance of early diagnosis and treatment. They contact Back Pack health workers before their illness becomes severe. They increasingly ask BPHWT for assistance, instead of buying medicine of questionable quality from pharmacies. As a result, there are fewer disease outbreaks such as diarrhea. Moreover, Back Pack health workers are diagnosing disease better, and expanding and treating according to the needs of the communities."

Win Kyaw, MCP coordinator & MCP health worker since 1999

Community Health Education and Prevention Program (CHEPP)

The major causes of morbidity and mortality in BPHWT's areas, such as diarrhea, malaria, and malnutrition, are mostly preventable. As a complement to the Medical Care Program, which primarily treats illnesses and injuries, BPHWT designed the Community Health Education and Prevention Program to promote measures to prevent diseases in their target areas. The main focus of disease prevention activities are malnutrition, and water and sanitation.

Malnutrition is highly prevalent among internally displaced populations in Burma. The Eastern Burma Retrospective Mortality Survey (2008), which included BPHWT areas as well as other areas in eastern Burma, found that 37% of children ages three months to five years were malnourished, and 4% were severely malnourished. Additionally, only 19% of children under age 12 had received Vitamin A supplementation in the six months prior to the survey. Vitamin A is essential for the functioning of the immune system and the growth of children, and Vitamin A supplementation has been shown to prevent illness and death in low birth-weight or preterm infants. The WHO recommends provision of Vitamin A supplements every four to six months for young children in order to prevent deficiency, which can cause blindness, exacerbated illness from measles or diarrhea, and an increased risk of death.[63,64] In short, supplementation with Vitamin A is among the most affordable, easy to deliver, and effective health interventions for young children.

Prevention is also extremely effective through improved water and sanitation systems, which prevent the spread of gastrointestinal illness. A water and sanitation survey conducted by BPHWT in 2001 indicated that more than 30% of IDPs rarely or never boil their water, and that access to and use of latrines is low. Installation of latrines and improved, safe water systems reduce contamination of drinking water, and in turn reduce the incidence of water-borne diseases.

Since the program began in 1999, the Community Health Education and Prevention Program has aimed to enable and empower internally displaced and vulnerable populations in Burma with basic skills, knowledge, and supplies related to primary health care and prevention. The four sub-programs of CHEPP provide complementary services that together provide each community with the knowledge and ability to independently prevent disease and improve the public health of their villages.

CHEPP Sub-Programs Objectives and Impact

The **School Health and Nutritional Program** teaches primary school students about nutrition and water and sanitation, including personal hygiene practices. The program aims:

- To improve networking among community health organizations
- To educate students and the community about health
- To improve water and sanitation systems in the community to reduce water-borne diseases
- To reduce the incidence of malnutrition and worm infestation.

Impact

Since 2001, the School Health and Nutritional Program has expanded from educating 500 students annually to 8,578 students in 2009. In 2004, BPHWT began distributing Vitamin A and de-worming medication every six months to children under age 12 both inside and outside of schools. In 2009, BPHWT distributed Vitamin A 88,250 times to children under age 12, which represents 59% progress towards the target of providing Vitamin A twice per year to every child under age 12 in BPHWT's target population. Back Pack teams also distributed de-worming medication 63,536 times to children under age 12, representing 42% progress.[f]

The data illustrate that BPHWT is making significant progress in distributing Vitamin A and de-worming medication to the goal of reaching 90% of the child population.

Vitamin A and De-worming Coverage for Children in BPHWT Target Areas

Year	Pregnant Women Target Population	Total # Times Children Receiving Deworming Medicine	% Coverage Deworming Medicine	#Times Children Receiving Vitamin A	% Coverage of Vitamin A
2004	7453	29725	21%	38250	27%
2005	6855	40095	31%	41628	32%
2006	7832	24373	16%	23774	16%
2007	6770	31484	25%	39784	31%
2008	7453	46308	33%	78024	55%
2009	7921	63536	42%	88250	59%

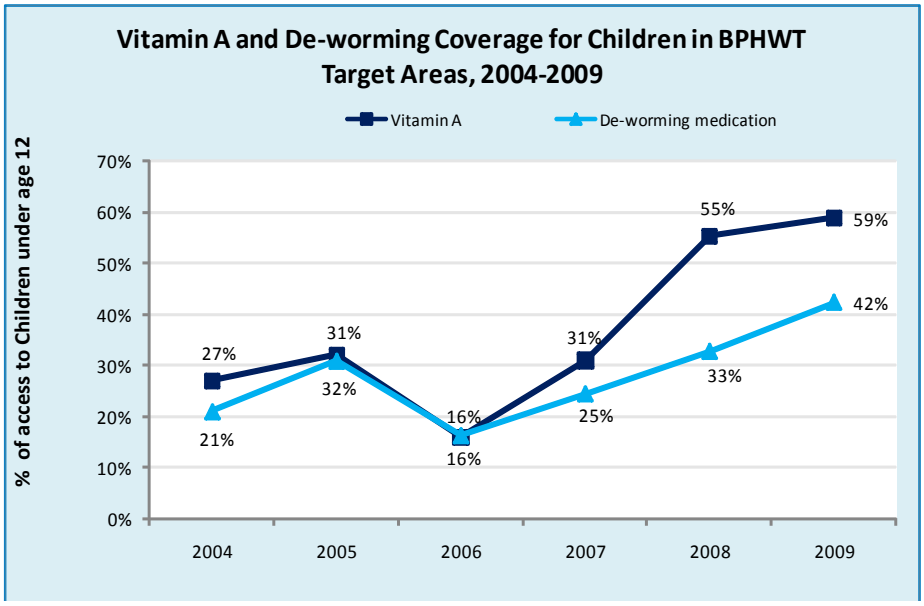


Figure 10. Vitamin A and de-worming supplementation coverage represented as a percent of the total number of times children under age 12 should receive each medication each year

f It is difficult to accurately estimate the total number of children under age 12 who receive Vitamin A supplements and de-worming medication every six months as recommended by the WHO. Security circumstances in the field prevent BPHWT from being able to assign children an identification number, therefore making it nearly impossible to record follow-up doses and overlap between six-month terms.

The **Water and Sanitation Program** installs latrines and water systems in villages and trains field workers to perform the installations. The program aims to:

- Improve water and sanitation systems in communities in order to reduce the prevalence of water-borne diseases
- Install one latrine for every five villagers in BPHWT target areas

Impact

Since 2005, BPHWT has installed 64 gravity flow water systems, 63 shallow wells, and at least 8,080 latrines in villages and near schools throughout BPHWT's target areas. Currently, about 12,000 people have access to gravity flow systems, 3,500 people to shallow wells, and at least 29,600 people to latrines built by BPHWT.[g] The percent of target population with access to improved water and sanitation systems will be estimated during BPHWT's 2010 Impact Assessment Survey, as water systems and latrines built by BPHWT represent only a portion of those available to the target population.

The **Village Health Volunteer (VHV) Program** trains VHVs in water and sanitation and disease prevention, among other relevant health topics. VHVs provide much-needed assistance to Back Pack health workers during their stay in the villages, helping with Vitamin A distribution, follow-up malaria treatment, compiling lists of schools and numbers of students, recording village populations, conducting home health education, and monitoring BPHWT-built water systems. Additionally, villagers attend village health workshops led by Back Pack health workers and VHVs. Villagers then bring the health knowledge that they learned back to their communities. These sessions not only help community members learn about health, but also help them identify and express the health priorities of their communities, allowing BPHWT to better address these needs and improve their programs. In 2009, 13,588 community members attended village health workshops.

The program seeks to:

- Recruit Village Health Volunteers from target communities to assist Back Pack health workers and organize community health education sessions (one VHV for every 200 people)
- Organize VHV trainings and workshops and community health campaigns
- Improve community participation in health programs

Impact

BPHWT has trained more than 700 VHVs, 388 of which were working in the field in 2009. This data indicates a current ratio of one VHV to 480 target population. BPHWT has only conducted two rounds of VHV field trainings in the past ten years (2004 and 2005), and plans to hold additional trainings, with a focus on retention to achieve the goal of one VHV per 200 target population.

g Populations who have access to latrines built at schools for the School Health and Nutrition Program have not been included.

The **Lymphatic Filariasis (LF) Control Program** seeks to prevent and control LF transmission and infection through community education and by treating those currently infected with the disease.

Because not all people infected with LF show symptoms, it is necessary to conduct Mass Drug Administration (MDA) to a specific target population in order to eliminate the disease. MDA is a standard international practice that has been successful in other countries such as neighboring Thailand.[65] For displaced populations in eastern Burma, government LF surveillance and reporting are inadequate and unreliable, rendering LF control nearly impossible, and threatening LF control efforts in neighboring countries. Because of these issues, BPHWT endeavored to measure LF prevalence in three areas of eastern Burma that reported high incidence of LF symptoms such as hydrocele (fluid accumulation in a body cavity, particularly the scrotum) and lymphadema (tissue swelling in the legs). BPHWT conducted screening using rapid diagnostic equipment, and screening results provided baseline data for the initiation of an LF treatment program.From January to July 2008, BPHWT screened 297 people in Kler Lwee Htoo, Papun, and Thaton areas of Karen State. 128 of 297 people (43%) tested positive for LF antigenemia, indicating a high rate of LF infection. Accordingly, BPHWT conducted MDA training and subsequently implemented MDA in Papun area in 2008. In 2009, BPHWT implemented MDA in all three areas. The LF program still remains in its pilot phase.

Impact

MDA coverage reached 70% of the eligible LF target population in 2008, and 71% of the total eligible LF target population in 2009. BPHWT continues to talk with villagers about their concerns with MDA, and will focus on raising community awareness of the risks of LF, how it is transmitted, and the importance of participating in MDA to prevent transmission. In early 2011, BPHWT will conduct a second round of screening to estimate LF prevalence and program impact after two and a half years of MDA cover age.

Table 3. Lymphatic filariasis MDA coverage for selected BPHWT areas

Year	Area	Total eligible population[h]	Population ingesting medicine	Percent MDA coverage
2008	Papun	4648	3239	70%
2009	Papun	5204	3051	59%
2009	Kler Lwee Htoo	3408	3148	92%[i]
2009	Thaton	1124	679	60%

Conclusion

As CHEPP continues to expand its services, an increasing number of villagers will become knowledgeable about basic primary health concepts, and will be well-equipped to prevent and treat common health problems. CHEPP will continue to emphasize community involvement and ownership, and encourage long-term, sustainable, high-quality health care in internally displaced communities.

h Excludes population ineligible for MDA ingestion: pregnant women, lactating women, and children under two years of age.

i BPHWT distributed MDA in Kler Lwee Htoo in both terms in 2009, and overlap was not recorded. This percentage is possibly a slight overestimate due to double counting, but because coverage was very low in the first term, it is unlikely that overlap was significant.

Maternal and Child Healthcare Program (MCHP)

As most causes of maternal death are preventable in a functioning health system, the Maternal Mortality Ratio (MMR) is often used as an indicator of the availability of reproductive health-related care and services.[66] The estimated Maternal Mortality Ratio within the internally displaced populations in eastern Burma ranks amongst the highest in the world: 1 in 12 women die in pregnancy or childbirth (1,000-1,200 women per 100,000 live births)[j]. Such a high MMR indicates a consistent high risk of death when compared to developed countries (an average of 9 deaths per 100,000 live births), or even the national Myanmar figure reported to the UN. [67,68] The latest survey (for 2003-2008) by UNICEF and the Myanmar Department of Health indicated that the MMR in Myanmar was 320 per 100,000 live births.[69] This figure severely underestimates the MMR in remote IDP populations in Burma as estimated by BPHWT.

According to a BPHWT survey (2002), the majority of deliveries in eastern Burma occur at home, usually with only the assistance of an unskilled birth attendant. Furthermore, internally displaced women had very low levels of knowledge about the risks associated with pregnancy, and only 4% of these women had access to emergency obstetric care. Approximately 80% of respondents had never used contraceptives, indicating lack of knowledge about and access to family planning resources. Women require high iron intake during pregnancy, but only 40% of respondents received any iron supplements during their previous pregnancy.

Responding to these demonstrated needs, BPHWT founded the Maternal and Child Health care Program in 2000. The program aims to improve maternal and child health by training and utilizing an extensive network of community-selected Traditional Birth Attendants (TBAs). BPHWT trains TBAs in antenatal and postnatal care, normal delivery, and recognition of danger signs during pregnancy and childbirth. TBAs refer patients to clinics for emergency obstetrical care. This network ensures that maternal healthcare is readily available to even remote populations.

The program also distributes de-worming medication, folic acid, and iron supplements to women during pregnancy, and Vitamin A to pre- and postpartum women. Maternal Vitamin A deficiency has been shown to not only cause maternal night blindness, but also has been associated with an increased risk of low birth weight for the infant, higher incidence of common childhood morbidities, and increased risk of mortality in the infant's first six months.[70,71] Folic acid and iron supplements have been shown to reduce birth defects and prevent maternal iron deficiency, respectively.

j Based on BPHWT Traditional Birth Attendant data, and reported in *Chronic Emergency.*

Program Objectives

- To increase maternal and child health care
- To improve knowledge and skills of TBAs and MCHP Supervisors
- To encourage positive community attitudes towards and utilization of family planning
- To provide delivery records

The MCHP has a unique strategy for selecting and training program staff in order to increase the number of highly trained Traditional Birth Attendants in the field. BPHWT selects Back Pack health workers to be MCHP Supervisors, and then trains them in Thailand every six months in safe birthing practices and teaching methods and skills so they can return to the field as trainers (this strategy is known as Training of Trainers). MCHP Supervisors return to the field, where they recruit and train TBAs. TBAs are selected only if they have previous experience with childbirth in their communities, and are recommended by their community for the position. The MCHP program's Training of Trainers strategy ensures that many TBAs can be effectively and safely trained in the field without the security risk and resources associated with long-distance travel to and from trainings in Thailand. TBAs also attend follow-up workshops in the field every six months in order to improve their knowledge and skills, share their experiences, and discuss issues faced in the field with other health workers.

Impact

The MCHP currently accesses approximately 35,000 women of reproductive age in eastern Burma, out of approximately 44,000 total women of reproductive age in BPHWT target areas. Since 2000, Traditional Birth Attendants trained by BPHWT have assisted with a total 20,906 deliveries, of which 20,136 (96.3%) resulted in a live birth. BPHWT has held yearly trainings in BPHWT target areas for new TBAs every year since 2004, training a total of 948 TBAs, 630 of which are currently working in the field. This indicates a ratio of one TBA for every 70 women of reproductive age in all BPHWT target areas. While this ratio has decreased by over 100% since 2002, indicating significant progress towards the target, BPHWT still aims for a ratio of one TBA for every 200 people in their target population.

Table 4. Summary of MCHP deliveries from 2000-2009

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Total deliveries	115	324	2201	1517	1432	2297	2693	3463	3156	3708
Live births	101	296	2066	1457	1347	2222	2594	3337	3095	3621
Still births / Abortions	14	28	135	60	84	81	103	134	63	90
Neonatal deaths	N/A	N/A	52	32	47	73	94	117	69	96
Pregnancy - related deaths	N/A	N/A	21	12	8	15	15	27	13	16

Progress towards TBA to pregnent women target 2004-2009

Year	TBA	Pregnant	TBA/ Pregnant Ratio	Target TBA /Pregnant Ratio	% Progress to TBA/ Pregnant Target
2004	202	4753	37	8	22%
2005	260	6855	26	8	30%
2006	507	7833	15	8	52%
2007	591	6771	11	8	70%
2008	525	7454	14	8	58%
2009	630	7922	13	8	64%

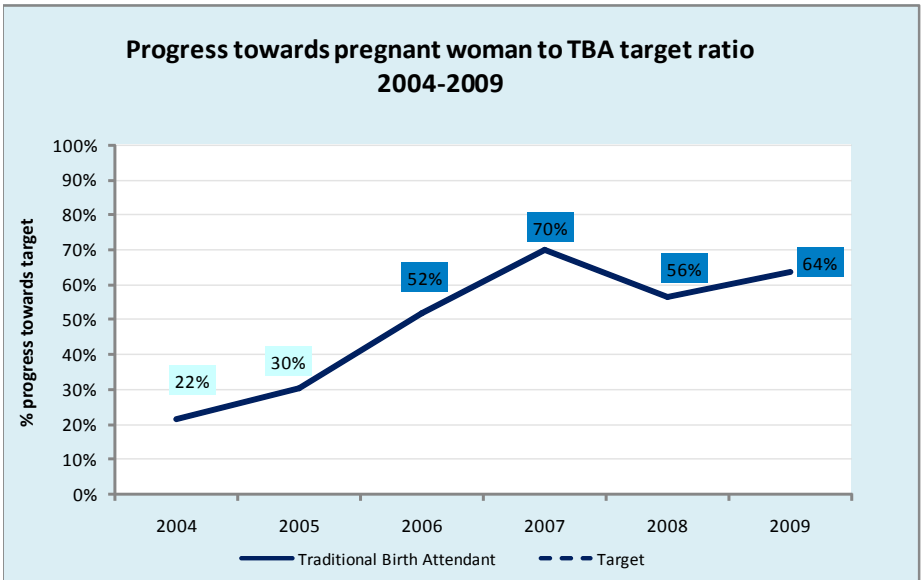


Figure 11. Traditional Birth Attendant-to-pregnant ratio as a percent of the target ratio in BPHWT target areas over time.[k]

The MCHP began distributing Vitamin A and de-worming medication to women in 2004, and iron and folic acid in 2007. In 2004, 1,001 pre- and postpartum women received Vitamin A, and 863 pregnant women received de-worming medication, indicating approximately 52% and 45% coverage of pregnant women in the MCHP's access population, respectively. In 2009, 3,348 pre- and postpartum women received Vitamin A and 3,281 pregnant women received de-worming medication. Out of the total eligible population, approximately 53% of pregnant women received Vitamin A and 52% received de-worming medication. From 2007-2009, BPHWT has given iron and folic acid to approximately 3,000-3,500 pregnant women each year, indicating roughly 55% coverage of eligible pregnant women.

Beginning in 2004, BPHWT began educating men and women in their target areas about family planning and distributing birth control. In 2004, BPHWT distributed family planning medicine and supplies to 1,262 people in their target population; in 2009, 2,771 people received services, including 289 men. BPHWT aims to encourage greater male participation in the future because male contraceptive methods are simple and involve fewer complications. Because of the cultural issues surrounding family planning, BPHWT distributes supplies to only those who request access to these services.

k Although BPHWT began training TBAs in 2000, the MCHP only began systematically training TBAs in BPHWT target areas in 2004. Therefore, only 2004-2009 data is included.

Conclusion

Over the years, the MCHP has continued to train new TBAs and re-train existing TBAs, supplying more knowledge to the TBAs working in the program. As time has passed, TBAs have increasingly communicated and coordinated with each other in workshops and in their communities, lending strength to the effectiveness of the program. However, many TBAs are aging, and BPHWT's requirement that each newly-trained TBA have previous experience is limiting the pool of recruitment. To solve these problems in the next several years, new birth attendants will work with existing TBAs to learn initial skills. They will then be eligible to participate in BPHWT TBA training. Additionally, TBAs will be offered the opportunity to attend special TBA training to learn skills in emergency obstetrical care.

As BPHWT expands, the MCHP will seek to hold more TBA trainings in Back Pack target areas, thereby increasing coverage for all women in need. The Maternal and Child Healthcare Program has recently expanded into Chin State in western Burma. In the more distant future, the MCHP aims to increase standards and train TBAs as midwives, with more knowledge and skills in preventing and treating maternal health issues. BPHWT aims to train at least one midwife for every village in their target population, serving as a much-needed resource for the women in each community.

Story from the field:

BPHWT encourages local communities to learn about and discuss health issues

David Yeh, MCP health worker, Taungoo area

"Before we gave health education, villagers were very shy to talk about family planning and women's reproductive health. With health education, villagers now understand family planning methods and how family planning impacts themselves and the community. They understand how it is useful for them, and they are willing to share ideas with each other and talk openly about family planning and women's health amongst each other."

III. MONITORING AND EVALUATION

BPHWT consistently collects high-quality data from eastern Burma's "black zones", reporting on the health status of vulnerable and internally displaced populations in these areas. To ensure maximum program effectiveness, BPHWT routinely monitors the management and impact of its programs using several methods.

PROGRAM MONITORING AND EVALUATION

Logical Framework

The foundation of BPHWT's monitoring and evaluation efforts is their logical framework. At the beginning of each year, BPHWT revisits the logical framework of its programs and for the organization as a whole. To formulate this framework, BPHWT carefully developed overall goals for each program, specific objectives for each program goal, and precise qualitative and quantitative indicators to measure the achievement of these objectives. At the beginning of each year, BPHWT predicts program activities and results for the year based on target populations and previous data. At the end of each year, the BPHWT Leading Group, Executive Board, and Field-in-Charges compare the planned and actual activities of each program, which is reported in the annual report. This review allows BPHWT to identify strengths and weaknesses and make appropriate changes in program implementation.

Data Collection and Biannual Meetings

Each Back Pack health worker completes a set of standard forms during a six-month period. Collected data includes programmatic and population data, a record of how long the team spent in each village, information on patient referrals, as well as medicine and supply inventories, descriptions of security and program challenges in the area (including documented human rights violations perpetrated by the SPDC and its allies), and summaries of workshops, decisions, and changes made in the field.

Data from each Back Pack team is reviewed and compiled at biannual field workshops in each area inside Burma. At these workshops, Field-in-Charges lead refresher and specialized programmatic training and review issues and challenges in their area with health workers. Health workers are evaluated using pre-training and post-training exams. Field-in-Charges also hold biannual meetings with local community leaders to discuss the current health situation and any healthcare concerns or needs the communities may have, and plan how BPHWT will help meet these needs.

In this setting, BPHWT is able to obtain support and approval from community leaders and strengthen communication and feedback systems.

Field-in-Charges also attend meetings at the BPHWT office in Mae Sot every six months, where they report on their areas, discuss relevant problems or issues with each other, and brainstorm solutions. At this time, Field-in-Charges receive upgrade and refresher training and make key programmatic decisions as a group. They also return data from their area, which is analyzed during the meeting so that participants can discuss the indicators for each program.

Additionally, program coordinators and members of the Leading Group and Executive Board from Mae Sot visit the field sites in Burma twice a year to attend field meetings and workshops and to meet with the local communities to gauge BPHWT reception and effectiveness.

Internal Program Monitoring and Development

Internal Program Improvement Project

In 2007, BPHWT wanted to ensure that current systems and structures were keeping pace with the growth of the organization. With help from the Burma Relief Centre (BRC) and an external consultant facilitator, BPHWT created an Internal Program Improvement Project (IPIP) committee to address three areas where improvements could be made:

1. Communications - BPHWT implemented more communications protocols, encouraged feedback in communications loops, and bought more radios and satellite phones for remote areas.
2. Drug Management - Prior to the IPIP, BPHWT documented regular shortages in drug supply and problems with faulty orders and late deliveries. Increased communication between the drug company, the Mae Sot office, and the field resulted in fewer problems with drug orders, but additional problems with budget and supply estimates continue to be addressed.
3. Clinical Log Book Review - A review of clinical log books showed health worker adherence to diagnostic and treatment guidelines, but also reflected that Back Pack workers could improve compliance with treatment protocols. As a result, more health workers obtained copies of the current, standard clinical guidelines and passed a field course on their use. Adherence to protocols has since improved significantly.

Internal Performance Monitoring Team

At the conclusion of the Internal Program Improvement Project, BPHWT decided to continue internal program improvement through the formation of an Internal Performance Monitoring Team (IPMT). The IPMT meets biannually and is responsible for the improvement of the general and operational management capacity of BPHWT. The IPMT focuses on three main areas:

1. Quality Control - BPHWT conducts regular clinical logbook reviews to assess compliance with malaria, diarrhea, and ARI diagnostic and treatment protocols, holds field workshops to review and upgrade health worker knowledge, conducts assessments of health workers and Field-in-Charges, and ensures government certification of drug quality.
2. Administration - BPHWT holds regular board and staff meetings, ensuring consistent internal communication and coordination. Additionally, office staff receive specialized training according to their position.
3. Logistics Management - BPHWT has implemented a step-by-step procedure for medical supply chain management between suppliers, the central BPHWT office, and field operations. Additionally, field staff receive further workshops regarding supply management and distribution.

The IPMT has also initiated an examination of BPHWT's drug management system through consultation with local partners and outside experts. Back Pack teams have begun to record precise medicine distribution and inventories as part of this project.

Finally, the IPMT aims to strengthen community participation in the design and implementation of BPHWT programs. To begin this process, several trainings in Participatory Learning and Action concepts have been held in 2010 for Field-in-Charges and Village Health Volunteers in collaboration with the Burma Relief Centre.

Health Worker Assessment

At each VHV, TBA, or Back Pack health worker training, the trainees complete pre- and post-tests to assess what they learned during training as well as the effectiveness of the training curriculum. Additionally, in 2010, BPHWT began conducting annual assessments of Field-in-Charges and Back Pack health workers at each biannual meeting in Thailand in order to evaluate their medical knowledge and management capacity. These assessments ask workers about supervisory activities, adherence to treatment protocols, effectiveness of trainings attended, and any problems or issues that the health worker feels needs to be addressed. The medical assessment is based on diagnosis and treatment protocols as written in the Burma Border Guidelines. The results of these assessments allow BPHWT to continually assess the knowledge, skills, and needs of Back Pack health workers and Field-in-Charges, and plan appropriate upgrade trainings and program interventions.

IMPACT ASSESSMENT

Surveys

Baseline Health Assessment Surveys

In 2001, BPHWT conducted health needs assessment surveys to determine appropriate programmatic guidelines and protocols. In a *nutritional survey,* BPHWT found that 14% of children were malnourished and 82% of children had inadequate Vitamin A intake. In a *water and sanitation survey*, 40% of mothers reported that their youngest child under age five had diarrhea during the past two weeks. Sixty-eight percent rarely boiled their drinking water, and 90% rarely washed their hands with soap before handling food. Few adults (21%) and children (14%) commonly used a latrine. In a baseline *malaria survey*, 58% of respondents and 62% of children under age five had malaria in the last year. Thirty-six percent of women had malaria during their last pregnancy. Only 48% of respondents owned a mosquito net, and only two-thirds of those who owned one used it. The majority of respondents said that they could rarely access a health worker when they needed one for malaria testing or treatment.

Chronic Emergency: Linking Human Rights Violations and Health Indicators

In 2004, BPHWT conducted a population-based survey to estimate key health indicators, assess the prevalence of human rights violations, and document the impact of human rights violations on health status at a population level. The results of this survey were published as *Chronic Emergency* in 2006, the first definitive report that quantified the association between human rights violations and adverse health outcomes in eastern Burma.

Chronic Emergency reported that children of families forcibly displaced within the year preceding the survey were two times more likely to die than those who had not been forcibly displaced. Similarly, displaced households were also three times as likely to have malnourished children as those in more stable situations. In the year after forced relocation, BPHWT found a five-fold increase in the risk of landmine injury. Similarly, destruction of food supplies and crops not only increases the risk of malnutrition and death, but also increases the chance of landmine injury and malaria infection, as people are forced to forage in the jungle and sleep in beds lacking mosquito nets.

Although BPHWT's original mission was focused on health care, BPHWT realized prior to and during this survey that the most important determinants of health in eastern Burma were continuing civil conflict and human rights abuses perpetrated by the Burmese army. Without collecting information about human rights violations, BPHWT would not be able to fully document and understand the health status of their target population. BPHWT leaders came to realize that advocacy offers one of the most effective means to address human rights violations and the health of BPHWT's target communities. As a result, BPHWT continues to collect data on human rights violations through regular programmatic data and in population-based surveys.

Eastern Burma Retrospective Mortality Survey (EBRMS)

In 2008, BPHWT and ten other community-based organizations conducted the Eastern Burma Retrospective Mortality Survey (EBRMS) in order to estimate mortality rates, assess health status and access to health services, and to document human rights violations. EBRMS results indicated that the health and human rights of IDP populations are still in dire need of improvement. The most common causes of death are preventable: malaria (24%), acute respiratory infections (ARI) (19%), and diarrhea (15%). Malnourishment was common in children (37%). Sixty-two percent of households did not use sanitary latrines, and only 27% of households had at least one insecticide treated net (ITN) to prevent malaria. Moreover, 30% of households reported at least one human rights violation in the previous year. The survey found several associations between various human rights violations and adverse health outcomes. The results of this survey have helped BPHWT assess the impact of its programs in the field and formulate appropriate alterations in program implementation, as well as advocate for IDP populations in Burma.

Impact Assessment Survey

BPHWT, with technical support from Johns Hopkins University and the Global Health Access Program (GHAP), is currently conducting an Impact Assessment Survey to assess the effectiveness of its programs in the field. Results will be reported in the next BPHWT annual report.

External Monitoring and Evaluation

In 2008, Danish Church Aid (DCA) conducted an external evaluation of BPHWT to assess whether BPHWT was reaching its stated objectives, the relevance, effectiveness, and efficiency of BPHWT's main program components, and if resources were appropriately reaching the target population. DCA collected qualitative data from BPHWT field staff, the Executive Board, and the Leading Group, and also reviewed quantitative data from BPHWT reports and surveys.

DCA found that BPHWT is strong in delivering prevention and treatment services to vulnerable populations. However, DCA recommended that BPHWT choose between expanding into new areas or improving services in existing areas in order to maximize program efficiency and effectiveness. Additionally, DCA suggested that BPHWT investigate decreasing numbers of treatments combined with escalating treatment costs. In response, BPHWT has organized more trainings in management skills and organizational development to maximize staff efficiency. BPHWT has also increased monitoring of drug receipt and usage, and will hire an outside expert to further investigate drug issues. Upon internal agreement and the recommendation of DCA, BPHWT has further agreed to hire a third party for full, unbiased external evaluation of the organization beginning in 2010.

The Canadian International Development Agency (CIDA) also conducted an evaluation of BPHWT and their other grantees working on the Thailand/Burma border in 2008 with the purpose of ensuring accountability and planning for future support. Specifically, CIDA aimed to evaluate the appropriateness of services funded by CIDA given the needs of the population, the potential for sustained impact beyond the CIDA grant period, the sufficiency of monitoring and evaluation structures, and the extent of coordination and collaboration between CIDA-funded organizations on the border. Evaluators utilized participatory tools to ascertain the experiences of grantees. The evaluation found that BPWHT and other CIDA-funded organizations have developed social capital that supports the development of long-term civil society building. In regards to BPHWT in particular, the evaluation found that health services had increased as BPHWT added additional teams and

that the BPHWT primary health care approach had been improved through an increase in prevention and education programs. CIDA concluded that BPHWT had sufficient systems for monitoring the quality of their services as well as monitoring health workers in the field. CIDA recommended an increase in funding and capacity building around general and operational management as well as a more thorough evaluation of BPHWT's drug management system by an outside expert.

IV. OBSTACLES IN PROGRAM IMPLEMENTATION

Major Barriers in BPHWT Program Implementation

In the areas affected by the SPDC's Four Cuts Policy, carrying backpacks full of medicine and collecting health and demographic information is dangerous work. However, BPHWT persists in providing health services to villagers in ceasefire and non-ceasefire areas, making Back Pack workers active targets as they try to circumvent the Four Cuts Policy as much as possible. The SPDC has regularly stolen and/or confiscated BPHWT's medical supplies. As of 2009, seven BPHWT workers have been killed and four arrested while delivering healthcare services. One health worker remains in prison today.

The Back Pack Health worker mobility is severely restricted by security concerns. Existing roads and bridges are often patrolled by SPDC soldiers, making it necessary for some health workers to walk as long as a month through hilly, often nearly impassable jungle terrain to reach a primarily rural and widely dispersed population. Health workers risk encountering landmines and military patrols along the way, making their journeys more difficult and even sometimes impossible.

Collection of health information is also especially risky in eastern Burma, as any evidence of data collection arouses the SPDC's suspicion. Individuals found in possession of medicines or patient data may be liable to arrest and abuse by the SPDC and its allies. Sometimes health workers must hide or destroy data, or leave it behind in the event of SPDC attack. Still, despite extraordinary challenges and dangerous circumstances, BPHWT health workers continue to provide care in the target areas, moving with internally displaced populations when necessary. Recruited from their own villages, Back Pack health workers, TBAs, and VHVs have essential knowledge needed to protect themselves. These health workers are dedicated to providing care to vulnerable and displaced populations, knowing that Back Pack services are often the only health care to which these people have access.

Monitoring and Evaluation: Caveats and Solutions

Population displacement within eastern Burma is an enormous barrier to collecting reliable census and health data. When villagers are forced to move or choose to move due to conflict or human rights violations, entire villages can disappear. Many villagers hide in remote jungle areas with limited access to food or health care. Frequent displacement of villagers and entire villages pose challenges to census activities, and the limited mobility of Back Pack health workers makes it extremely difficult to collect timely and accurate data on the size and location of BPHWT's target population. To address these problems, BPHWT developed and applied several innovative methods for collecting and analyzing data.

From the beginning, BPHWT has worked to develop methods of collecting population data that are feasible in their target areas and allow for the best monitoring and evaluation possible. In addition to collecting the number of people by age and gender in each area, health workers record their path through each BPHWT village tract, including information on dates of entry and exit from each village. This allows BPHWT to make adjustments to the data they collect based on the access they had to each area. When estimating the population of each village, health workers consult with local leaders using hand-drawn maps and discuss recent changes in the population due to security issues. Using this data, BPHWT is able to calculate morbidity rates that they can compare across years to monitor changes over time. However, because of the unique challenges of data collection in their population, the method used to calculate these rates differs from typical methods, so rates are not directly comparable with internationally-recognized health indicators.

Security constraints also limit the extent to which field leaders and program coordinators can observe health workers in the field for quality control purposes, and also the degree to which data can be reported back to the central office in Mae Sot. To address these issues, BPHWT has invested in walkie-talkies and satellite phones to improve communication with remote field sites, and has increased reliance on the Training-of-Trainers (TOT) model. Using this model, BPHWT trains senior health workers in Mae Sot and along the border, who are then able to go and train other health workers in the field. Utilizing this methodology, travel through dangerous conflict zones for training purposes by most BPHWT field staff is minimized.

V. COORDINATION AND COLLABORATION

Internal Coordination

BPHWT holds biannual field and general meetings to coordinate BPHWT program activities, as described in the Monitoring and Evaluation section. At each field workshop inside Burma, Field-in-Charges collect data from each Back Pack team in his or her tract, hold programmatic workshops, and evaluate health workers using examinations and surveys. The Field-in-Charge reviews the data, activities, and any issues with the Back Pack teams, and brings this information to the General Meeting in Mae Sot, Thailand. During the General Meeting, each Field-in-Charge presents his or her area report, and the meeting attendees discuss any problems or issues, making key programmatic and organizational decisions when necessary. Mae Sot staff also review and analyze field data during the meeting.

Collaboration with Local Communities and Community-Based Organizations

In eastern Burma, BPHWT primarily seeks to collaborate with the communities that they serve. BPHWT health workers are members of their communities, and therefore are familiar with the needs of the target population and the best strategies for providing them with health services.

BPHWT also collaborates with other local health organizations, institutions, and professionals that share the same community health vision. Within eastern Burma, each Field-In-Charge organizes a field meeting in their area every six months. This meeting includes coordinated activities with local health organizations, school teachers, and village leaders, in order to strengthen patient referral systems, educate and empower communities with health knowledge, and recruit health workers.

The Executive Board of BPHWT coordinates with other local health organizations that work on issues or programs related to BPHWT activities, such as Mae Tao Clinic, Burma Medical Association (BMA), local ethnic health departments, and the National Health and Education Committee (NHEC). These organizations work together to standardize treatment protocols among their programs, thereby working, for example, to prevent resistance to malaria therapy and antibiotics and to develop health policies and health systems along the border.

External Support and Advocacy Activities

To strengthen its work, BPHWT incorporates external support and collaboration from a variety of local and international partners. Global Health Access Program (GHAP) provides
BPHWT with technical assistance and works to build BPHWT's capacity to design, monitor, and evaluate health programs. BPHWT also coordinates with Johns Hopkins University, Columbia University, the International Rescue Committee, and Thailand's Ministry of Public Health on survey design and implementation, financial management, external monitoring, and management of disease outbreaks.

To advocate for the health and human rights of IDPs in Burma, BPHWT regularly attends international conferences and seminars and gives presentations about its programs to international NGOs and donors. BPHWT also releases a proposal, mid-year report, and annual report every year, which are available to the public. Full reports on population-based surveys are also available. Reports and updates can be found on BPHWT's website at:

www.backpackteam.org.

VI. CONCLUSION AND FUTURE GOALS

The humanitarian needs in the remote, conflict-affected areas of Burma are enormous, and the need for aid and financial and technical assistance continues. Basic health indicators collected by BPHWT in IDP areas of Burma show a striking disparity compared to official figures from Rangoon, which are already some of the worst in Asia.[72] Recent documentation of violence in eastern Burma indicates that the human rights situation is still in dire need of improvement. The SPDC recently attacked villagers in southern and central Karen State, inflicting physical violence, shooting children, sexually assaulting women, and burning villages and agricultural fields.[73,74]

Exacerbating the situation, the SPDC has been further tightening international NGO access through Rangoon, preventing outside organizations from providing much-needed aid to vulnerable populations.[75,76]

Given the increasingly violent stance taken by the SPDC in recent months, and the imposition of strict regulations on humanitarian access to the border areas, the international community should be mindful of the need for multifaceted relief and development approaches, ones that include continued and expanded support for community-based, border-managed groups such as
BPHWT. BPHWT has continued to provide services in an effective, accountable, and transparent manner by implementing programs utilizing members of the villages they serve, who are the key players in the long term, sustainable development of their own communities.[77]

As part of a comprehensive response to the humanitarian catastrophe in Burma, the overall political context in which human rights violations and lack of access to health services occur must be a central focus of any dialogue attempting to address such problems. The aim is not to "politicize" health issues, but to recognize that an intimate link exists. As one of BPHWT's health workers stated, "What is the point of building latrines and clean water systems if the people will be forced to move?" Health, education, and livelihood development problems do not occur in these populations randomly; they are driven by problems whose roots lie in political misgovernance by the Burmese military regime.[78] The health services that BPHWT provides to improve malnutrition and disease will do little to provide sustainable gains in population health until the upstream determinants of health - war and poverty - improve as well.[79]

Accordingly, ten years after BPHWT's inception, there is a continued need to address health crises in Burma in areas that international NGOs cannot reach. BPHWT now looks ahead to strengthening collaboration with local communities and organizations along the Thailand/Burma border, with external support from local and international organizations and donors. BPHWT looks for support, participation, and encouragement as it not only expands services and population coverage, but also:

- Improves community participation and coordination with local community-based organizations and ethnic groups. By increasing communication with local communities and part-

ners, BPHWT will be further equipped to address the needs of their target population, and communities will increasingly take part in building and managing their own healthcare systems.

- Increases participation with neighboring countries. The IDP areas along the borders suffer the bulk of morbidity and mortality from preventable and treatable conditions, and pose the worst potential for the spread of infectious disease to Burma's neighbors. Coordination with neighboring countries will help prevent the spread of drug-resistant malaria and other transmissible diseases across the border.

- Standardizes health worker education curricula and diagnostic and treatment protocols with community-based organizations working in and near Back Pack areas. While the standardization process has begun, further progress needs to be made in the coming years. Standardization will not only help prevent drug resistance, but increase the efficiency of patient care and referral systems.

BPHWT will continue to expand and strengthen its community-based primary healthcare system in the coming years. A cross-border approach to healthcare remains an effective solution for solving the health problems of IDP and vulnerable populations that lack humanitarian assistance from both the Burmese government and international aid agencies, who are unable to access these populations due to governmental restrictions. Furthermore, BPHWT will continue promoting broad health policy and health system development and inter-ethnic unity and trust as it works towards building a healthy society in Burma in collaboration with local organizations and ethnic groups. BPHWT hopes that such collaborative work helps to promote democracy in Burma, and that a sustainable healthcare system will remain in place regardless of whether the next decade brings continued conflict or peace.

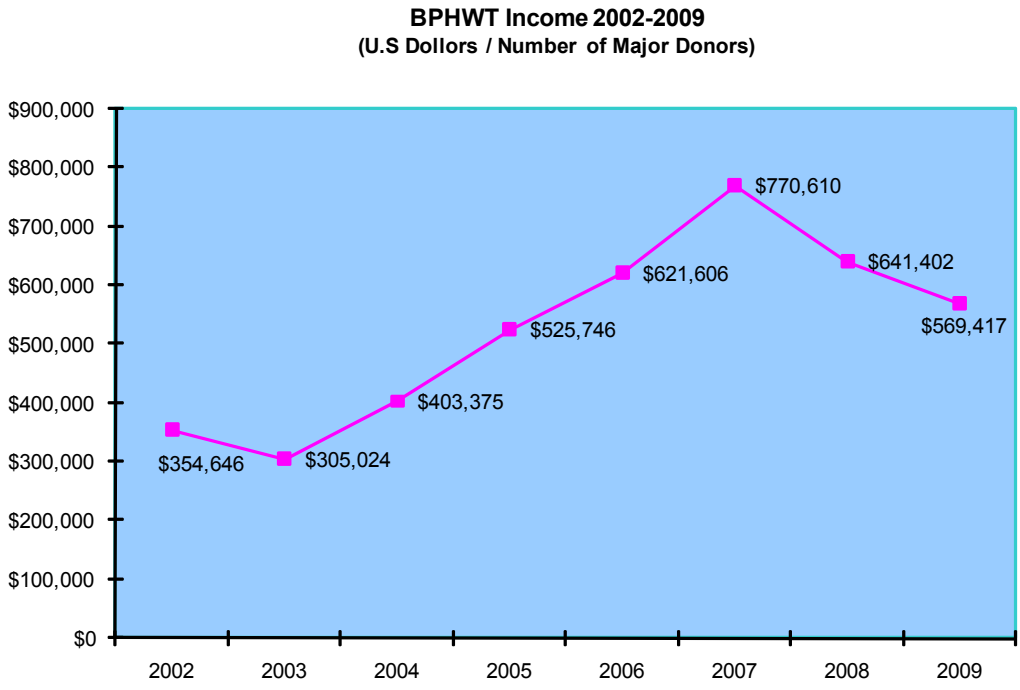
GLOSSARY

ARI	Acute Respiratory Infection
BBG	Burma Border Guidelines, the standard guidelines for diagnosis and treatment on the Thailand/Burma border
Black zone	Areas in Burma affected by active conflict and the Four Cuts Policy
BMA	Burma Medical Association
BPHWT	Back Pack Health Worker Team
BRC	Burma Relief Centre
CBO	Community-Based Organization
CHEPP	Community Health Education and Prevention Program
Confirmed malaria	Malaria diagnosis confirmed with a Rapid Diagnostic Test
DCA	Danish Church Aid
EBRMS	Eastern Burma Retrospective Mortality Survey
FiC	Field-in-Charge
Four Cuts Policy	A counterinsurgency campaign implemented by the Burmese government that aims to cut the four crucial links (food, funds, information, and recruits) between ethnic minority "insurgents" and local villages
GDP	Gross Domestic Product
GHAP	Global Health Access Program
HIS	Health Information Systems
HRV	Human Rights Violation
ICRC	International Committee of the Red Cross
IDP	Internally Displaced Person
IPIP	Internal Program Improvement Project
IPMT	Internal Performance Monitoring Team
KDHW	Karen Department of Health and Welfare
M & E	Monitoring and Evaluation
MCP	Medical Care Program
MCHP	Maternal and Child Healthcare Program
MTC	Mae Tao Clinic
NHEC	National Health and Education Committee
NGO	Non-Governmental Organization
NLD	National League for Democracy
ORS	Oral Rehydration Solution, a treatment used for acute diarrhea
Pf	Plasmodium falciparum, the most deadly type of malaria parasite
Pv	Plasmodium vivax, another type of malaria parasite
Presumptive malaria	Malaria diagnosed using clinical criteria, not a Rapid Diagnostic Test
RDT	Rapid Diagnostic Test, used for diagnosis of plasmodium falciparum malaria
SPDC	State Peace and Development Council, Burma's current military government
TBA	Traditional Birth Attendant
TOT	Training-of-Trainers
VHV	Village Health Volunteer
WHO	World Health Organization

APPENDIX

Map of BPHWT Target Areas in Burma

BPHWT Income and Major Donors[1] 2002-2009



Ten Years Report Research Resources

Most BPHWT reports and publications can be found on BPHWT's website: www.backpackteam.org

For further information, contact BPHWT.

Routine BPHWT Reports:

2010 Proposal
Annual and Mid-Year Reports, 2002-2009

Special BPHWT Reports and Publications:

Health Survey Analysis Summary Report. 2001.
Chronic Emergency: Health and Human Rights in Eastern Burma. 2006.
Internal Program Improvement Project Report. 2007.
Flu Outbreak in Papun District. November 25, 2009. www.backpackteam.org (accessed July 2, 2010).

Other Reports and Publications:

Beyrer, Chris, and Pizer, H.F., Eds. 2007. "Internally Displaced Persons in Burma," book chapter in Public Health and Human Rights: Evidence-Based Approaches. Baltimore: Johns Hopkins University Press.

Lee, Jane and Withaya Huanok. 2010. "Local Medics Respond to Flu Outbreak in Karen State." The Irrawaddy. February 12, 2010 (accessed June 5, 2010).

[1] A major donor is defined as one that gave 1% or more of BPHWT income in a given year.

Mahn M, Maung C, Shwe Oo EK, Smith L, Lee CI, Whichard E, Neuman C, Richards AK, Mullany LC, Kuiper H, Lee TJ. Multi-level partnerships to promote health services among internally displaced in eastern Burma. Global Public Health. 2008;3(2):164-86.

Mullany LC, Richards AK, Lee CI, Suwanvanichkij V, Maung C, Mahn Mahn, Beyrer C, Lee TJ. Population-based survey methods to quantify associations between human rights violations and health outcomes among internally displaced persons in eastern Burma. J Epidemiology Community Health 2007; 61: 908-914.

Richards AJ, Lee CI, Richard MG, Shwe Oo EK, Lee T, Stock L. 2009. Essential trauma management training: addressing service delivery needs in active conflict zones in eastern Myanmar. Human Resources for Health; 2009 Mar 3; 7(19).

ENDNOTES

[1] Spiegel PB, Checchi F, Colombo S, Paik E. 2010. Health-care needs of people affected by conflict: Future trends and changing frameworks. Lancet 375(9711): 341-345.

[2] Transparency International. 2009. Corruption Perceptions Index 2009. www.transparency.org/policy_research/surveys_indices/cpi/2009/cpi_2009_table (accessed April 2, 2010).

[3] Wallechinsky, David. 2009. "The World's 10 Worst Dictators." *Parade Magazine*. March 22, 2009. Available at: http://www.parade.com/dictators/2009/ (accessed J une 19, 2010).

[4] Assistance Association for Political Prisoners of Burma. 2010. www.aappb.org (accessed April 2, 2010).

[5] United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries, and Small Island Developing States. 2010. "Least Developed Countries: Country Profiles." Available at: http://www.unohrlls.org/en/ldc/related/62/ (accessed June 19, 2010).

[6] United Nations Children's Fund. 2008. Information by country and programme. www.unicef.org/infobycountry/index.html (accessed April 2, 2010).

[7] The UN Refugee Agency (UNHCR). 2010. "2010 UNHCR country operations profile—Thailand." www.unhcr.org/cgi-bin/texis/vtx/page?page=49e489646# (accessed June 8, 2010).

[8] Migrant Assistance Program Foundation. 2010. www.mapfoundationcm.org/map_en/ (accessed June 8, 2010).

[9] Thailand Burma Border Consortium. 2009. *Protracted Displacement and Militarisation in Eastern Burma*. www.tbbc.org/resources/resources.htm#reports (accessed June 8, 2010).

[10] Internal Displacement Monitoring Centre. 2009. "Estimates of internally displaced persons in Myanmar." www.internal-displacement.org/idmc/website/countries.nsf/%28httpEnvelopes %29/6F46495EAA014BF6C12576B70055687E? OpenDocument# 31.2.1 (accessed June 8, 2010).

[11] Human Rights Center at University of California, Berkeley and Center for Public Health and Human Rights at Johns Hopkins Bloomberg School of Public Health. 2007. Gathering Storm: Infectious Diseases and Human Rights in Burma. www.burmalibrary.org/docs4/GatheringStorm_BurmaReport_2007.pdf (accessed April 5, 2010).

[12] Beyrer, Chris, and Pizer, H.F., Eds. 2007. *Public Health and Human Rights: Evidence-Based Approaches*. Baltimore: Johns Hopkins University Press.

[13] Karen Human Rights Group. 2008. *Village Agency: Rural rights and resistance in a militarized Karen State*. www.khrg.org/khrg2008/khrg0803.html (accessed April 5, 2010).

[14] Human Rights Center at University of California, Berkeley and Center for Public Health and Human Rights at Johns Hopkins Bloomberg School of Public Health. 2007. Gathering Storm: Infectious Diseases and Human Rights in Burma. www.burmalibrary.org/docs4/GatheringStorm_BurmaReport_2007.pdf (accessed April 5, 2010).

[15] International Human Rights Clinic at Harvard Law School. 2009. *Crimes in Burma*. www.law.harvard.edu/programs/hrp/documents/Crimes-in-Burma.pdf (accessed June 9, 2010).

[16] Human Rights Center at University of California, Berkeley and Center for Public Health and Human Rights at Johns Hopkins Bloomberg School of Public Health. 2007. Gathering Storm: Infectious Diseases and Human Rights in Burma. www.burmalibrary.org/docs4/GatheringStorm_BurmaReport_2007.pdf (accessed June 9, 2010).

[17] Thailand Burma Border Consortium. 2008. *Internal Displacement and International Law in Eastern Burma*. www.tbbc.org/resources/resources.htm#reports (accessed April 5, 2010).

[18] International Human Rights Clinic at Harvard Law School. 2009. *Crimes in Burma.* www.law.harvard.edu/programs/hrp/documents/Crimes-in-Burma.pdf (accessed June 9, 2010).

[19] United States Department of State. 2010. 2009 Human Rights Report: Burma. www.state.gov/g/drl/rls/hrrpt/2009/eap/135987.htm (accessed April 2, 2010).

[20] Human Rights Center at University of California, Berkeley and Center for Public Health and Human Rights at Johns Hopkins Bloomberg School of Public Health. 2007. Gathering Storm: Infectious Diseases and Human Rights in Burma. www.burmalibrary.org/docs4/GatheringStorm_BurmaReport_2007.pdf (accessed June 9, 2010).

[21] Karen Human Rights Group. 2006. *Without Respite: Renewed Attacks on Villages and Internal Displacement in Toungoo District.* www.khrg.org/khrg2006/khrg0602a.html (accessed April 5, 2010).

[22] Thailand Burma Border Consortium. 2009. *Protracted Displacement and Militarisation in Eastern Burma.* www.tbbc.org/resources/resources.htm#reports (accessed June 8, 2010).

[23] Ibid.

[24] Burma Economic Watch. Generals as the axe handles of the neo-colonialists: Revisiting the Financing Health in Burma. http://burmaeconomicwatch.blogspot.com/2008/06/than-shwe-making-give-more-useless.html (accessed September 10, 2010).

[25] Burma's Economy 2010: A Fresh Look at Some Elemental Issues September 2010 Sean Turnell. Burma Economic Watch. UNDP Human Development Report 2009. http://hdrstats.undp.org/en/countries/data_sheets/cty_ds_MMR.html. (accessed September 10, 2010).

[26] United Nations Children's Fund. 2008. Information by country and programme. www.unicef.org/infobycountry/index.html (accessed April 2, 2010).

[27] World Health Organization. 2006. *Working Together For Health: The World Health Report 2006.* www.who.int/whr/2006/en/ (accessed May 18, 2010).

[28] Lee, C.I. et al. 2009. Internally displaced human resources for health: village health worker partnerships to scale up a malaria control programme in active conflict areas of eastern Burma. *Global Public Health* 4 (3): 229-241.

[29] Dondorp, A.M. et al. 2004. Fake antimalarials in Southeast Asia are a major impediment to malaria control: multi- national cross-sectional survey on the prevalence of fake antimalarials." *Tropical Medicine and International Health* 9 (12): 1241-1246.

[30] Johnston, Tim. 2010. Activists worry about 'black hole' of Burma. *Financial Times*. April 22,2010. www.ft.com/cms/s/0/90d20740-4ce6-11df-9977-00144feab49a, dwp_uuid= 8d6b86d2-4cd5-11df-9977-00144feab49a.html (accessed May 25, 2010).

[31] Human Rights Center at University of California, Berkeley and Center for Public Health and Human Rights at Johns Hopkins Bloomberg School of Public Health. 2007. *Gathering Storm: Infectious Diseases and Human Rights in Burma*. www.burmalibrary.org/docs4/GatheringStorm_BurmaReport_2007.pdf (accessed April 5, 2010).

[32] Human Rights Center at University of California, Berkeley and Center for Public Health and Human Rights at Johns Hopkins Bloomberg School of Public Health. 2007. *Gathering Storm: Infectious Diseases and Human Rights in Burma*. www.burmalibrary.org/docs4/GatheringStorm_BurmaReport_2007.pdf (accessed April 5, 2010).

[33] NHEC, BMA, MTC, and BPHWT. 2008. *The Role of Community-based, Border-Managed Humanitarian Assistance in Eastern Burma.*

[34] Beyrer, Chris, and Pizer, H.F., Eds. 2007. *Public Health and Human Rights: Evidence-Based Approaches.* Baltimore: Johns Hopkins University Press.

[35] Maung, Win. 2008. "Myanmar Thailand Border Area Healthcare Programmes." Presentation for Mekong Basin Disease Surveillance Office. www.mbdsoffice.org/ (accessed June 23, 2010).

[36] Human Rights Center at University of California, Berkeley and Center for Public Health and Human Rights at Johns Hopkins Bloomberg School of Public Health. 2007. *Gathering Storm: Infectious Diseases and Human Rights in Burma*.

[37] Thailand Burma Border Consortium. 2008. *Internal Displacement and International Law in Eastern Burma.* www.tbbc.org/resources/resources.htm#reports (accessed April 5, 2010).

[38] United States Department of State. 2010. *2009 Human Rights Report: Burma*. www.state.gov/g/drl/rls/hrrpt/2009/eap/135987.htm (accessed April 2, 2010).

[39] Thailand Burma Border Consortium (TBBC). 2004. *Internal Displacement and Vulnerability in Eastern Burma.* www.tbbc.org/idps/report-2004-idp-english.pdf (accessed April 5, 2010).

[40] Back Pack Health Worker Team. 2006. *Chronic Emergency: Health and Human Rights in Eastern Burma.* www.backpackteam.org/?page_id=208 (accessed June 10, 2010).

[41] Ibid.

[42] Ibid.

[43] Mullany LC, Richards AK, Lee CI, Suwanvanichkij V, Maung C, Mahn Mahn, Beyrer C, Lee TJ. Population-based survey methods to quantify associations between human rights violations and health outcomes among internally displaced persons in eastern Burma. *J Epidemiology Community Health* 2007; 61: 908-914.

[44] Mae Tao Clinic. 2010. www.maetaoclinic.org. (accessed April 5, 2010).

[45] Rijken, Marcus, ed. 2007. *Burmese Border Guidelines.* http://burmalibrary.org/docs4/BBG_2007-Bur.pdf (accessed June 21, 2010).

[46] Sa Mu Na Htoo, BPHWT Field-in-Charge. June 9, 2010. Personal Interview. Mae Sot, Thailand.

[47] Lee, Jane and Withaya Huanok. 2010. Local Medics Respond to Flu Outbreak in Karen State. *The Irrawaddy.* February 12, 2010 (accessed May 19, 2010).

[48] World Health Organization. 2008. World Malaria Report 2009. www.who.int/malaria/world_malaria_report_2009/en/index.html (accessed June 21, 2010).

[49] Richards AK, Smith L, Mullany LC, Lee CI, Whichard E, Banek K, Mahn Mahn, Shwe Oo EK, Lee TJ. 2007. Prevalence of *plasmodium falciparum* in active conflict areas of eastern Burma: a summary of cross-sectional data. *Conflict and Health*; 2007 Sep 5; 1:9.

[50] Ibid.

[51] Lee TJ, Mullany LC, Richards AK, Kuiper HK, Maung C, Beyrer C. Mortality rates in conflict zones in Karen, Karenni, and Mon States in eastern Burma. *Tropical Medicine and International Health;* 2006; 11(7): 1119-1127.

[52] Back Pack Health Worker Team. 2006. *Chronic Emergency: Health and Human Rights in Eastern Burma.* www.backpackteam.org/?page_id=208 (accessed June 10, 2010).

[53] Lee TJ, Mullany LC, Richards AK, Kuiper HK, Maung C, Beyrer C. Mortality rates in conflict zones in Karen, Karenni, and Mon States in eastern Burma. *Tropical Medicine and International Health;* 2006; 11(7): 1119-1127.

[54] International Campaign to Ban Landmines. 2008. "Landmine Monitor Report 2009: Toward a Mine-Free World." www.themonitor.org/index.php/publications/display?url=lm/2009/ (accessed June 22, 2010).

[55] Back Pack Health Worker Team. 2006. *Chronic Emergency: Health and Human Rights in Eastern Burma.* www.backpackteam.org/?page_id=208 (accessed June 10, 2010).

[56] Richards AJ, Lee CI, Richard MG, Shwe Oo EK, Lee T, Stock L. 2009. Essential trauma management training: addressing service delivery needs in active conflict zones in eastern Myanmar. *Human Resources for Health;* 2009 Mar 3; 7(19).

[57] International Campaign to Ban Landmines. 2008. "Landmine Monitor Report 2009: Toward a Mine-Free World." www.themonitor.org/index.php/publications/display?url=lm/2009/ (accessed June 22, 2010).

[58] Richards AJ, Lee CI, Richard MG, Shwe Oo EK, Lee T, Stock L. 2009. Essential trauma management training: addressing service delivery needs in active conflict zones in eastern Myanmar. *Human Resources for Health;* 2009 Mar 3; 7(19).

[59] Back Pack Health Worker Team. 2006. *Chronic Emergency: Health and Human Rights in Eastern Burma.* www.backpackteam.org/?page_id=208 (accessed June 10, 2010).

[60] Ascherio A, Biellik R, Epstein A, Snetro G, Gloyd S, Ayotte B, Epstein PR. 1995. Deaths and injuries caused by land mines in Mozambique. *Lancet*; 1995 Sep 16; 346(8977): 721-724.

[61] Krug EG and A Gjini A. 1999. Number of land mine victims in Kosovo is high. *British Medical Journal;* 319: 450.

[62] Meddings DR and O'Connor SM. 1999. Circumstances around weapon injury in Cambodia after departure of a peacekeeping force: prospective cohort study. *British Medical Journal;* 319: 412-415.

[63] Darlow, BA and Graham, PJ. 2007. "Vitamin A supplementation to prevent mortality and short and long-term morbidity in very low birth weight infants." *Cochrane Database of Systematic Reviews* 2007, Issue 4. Art. No.: CD000501. DOI: 10.1002/14651858. CD000501.pub2

[64] World Health Organization. 2003. "Vitamin A supplementation." Available at: www.who.int/vaccines/en/vitamina.shtml (accessed June 11, 2010).

[65] World Health Organization: Regional Office for South-East Asia. 2006. "Lymphatic filariasis: Mass Drug Administration." www.searo.who.int/en/Section10/Section2096_10585.htm (accessed June 10, 2010).

[66] Beyrer, Chris, and Pizer, H.F., Eds. 2007. *Public Health and Human Rights: Evidence-Based Approaches.* Baltimore: Johns Hopkins University Press.

[67] Back Pack Health Worker Team. 2006. *Chronic Emergency: Health and Human Rights in Eastern Burma.* www.backpackteam.org/?page_id=208 (accessed June 10, 2010).

[68] World Health Organization. 2010. "Maternal Mortality." www.who.int/making_pregnancy_safer/topics/maternal_mortality/en/index.html (accessed June 5, 2010).

[69] United Nations Children's Fund. 2010. Information by country and programme. www.unicef.org/infobycountry/index.html (accessed June 5, 2010).

[70] Christian P, West KP Jr., Khatry SK, et al. Maternal night blindness increases risk of mortality in the first 6 months of life among infants in Nepal. *Journal of Nutrition;* 2001; 131: 1510-1512.

[71] Tielsch JM, Rahmathullah L, Katz J. Maternal Night Blindness during Pregnancy is Associated with Low Birth weight, Morbidity, and Poor Growth in South India. *The Journal of Nutrition;* 2008 Apr; 138: 787-792.

[72] United Nations Children's Fund. 2008. Information by country and programme. www.unicef.org/infobycountry/index.html (accessed April 2, 2010).

[73] Karen Human Rights Group. 2010. "Latest News Reports and Field Bulletins." Available at www.khrg.org (accessed June 1, 2010).

[74] Free Burma Rangers. 2010. "Most Recent Reports." Available at www.freeburmarangers.org (accessed June 1, 2010).

[75] Emergency Assistance Team and the Center for Public Health and Human Rights at Johns Hopkins Bloomberg School of Public Health. 2009. *After the Storm: Voices from the Delta.* www.reliefweb.int/rw/RWFiles2009.nsf/FilesByRWDocUnidFilename/ASAZ-7PRKLM-full_report.pdf/$File/full_report.pdf (accessed June 5, 2010).

[76] Human Rights Watch. April 2010. *"I Want to Help My Own People": State Control and Civil Society in Burma After Cyclone Nargis.* www.hrw.org/en/reports/2010/04/29/i-want-help-my-own-people-0 (accessed June 1, 2010).

[77] NHEC, BMA, MTC, and BPHWT. 2008. *The Role of Community-based, Border-Managed Humanitarian Assistance in Eastern Burma.*

[78] Ibid.

[79] Beyrer, Chris, and Pizer, H.F., Eds. 2007. *Public Health and Human Rights: Evidence-Based Approaches.* Baltimore: Johns Hopkins University Press.

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