

# STRATEGIES THAT WORK NTD CONTROL AND ELIMINATION

IN THE PHILIPPINES

# LET'S END NEGLECTED TROPICAL DISEASES.

### **OVERVIEW**

Globally, there are 17 diseases that are categorized as NTDs, affecting more than a billion people in some 149 countries. NTDs lower the quality of life of those who are affected by causing malnutrition, poor health, physical deformities, disabilities, mental retardation, and sometimes even death. Also, NTDs may render people unfit to work productively. This leads to enormous economic losses for them, their families, the nations they live in, and even markets worldwide.

NTDs affect the world's poorest people, or the "bottom billion" in the socio-economic strata. They are highly prevalent in low- and middle-income countries of Africa, Asia, and Latin America; especially in places with tropical or subtropical climates. In the Philippines, 7 out of the 17 NTDs present in the world threaten the health and consequently, the livelihood of Filipinos.

The Philippines is a low middle-income country composed of 7,000 islands with a population of 92.3M, according to the population census of 2010. A greater amount of collaboration and management coordination is needed to eliminate any disease in this country, because there is devolution of social services. Also, the timely delivery of commodities (such as drugs, and services), the management of mass treatments, and overall communications and coordination of program activities may be affected by the country's archipelagic terrain.

The sad reality is that NTDs may sometimes be neglected by policy makers, non-governmental organizations (NGOs), multilateral and bilateral organizations, and by corporate foundations and philanthropists, despite their significant socioeconomic burden. This may be due to the fact that these tropical parasitic diseases do not cause instant death.

### **PURPOSES OF THIS PUBLICATION**

The purpose of this collection of selected best practices is to raise greater awareness about selected NTDs in the Philippines, namely: lymphatic filariasis (LF), schistosomiasis and soil-transmitted helminthiasis (STH).

This publication is also intended to raise the awareness concerning the feasibility of eliminating or controlling them, despite the geopolitical challenges of a devolved governance structure. Finally, these stories were compiled to hopefully motivate crucial stakeholders – local chief executives, health workers, educators, NGO workers and the public – to support the elimination and control programs in their localities.

### CURRENT SITUATION OF SELECTED NTDS IN THE PHILIPPINES

The 7 NTDs in the Philippines, collectively affect some 40 million Filipinos, mostly the poor living in rural areas or urban slums. These NTDs are dengue, food and waterborne diseases, leprosy, LF, rabies, schistosomiasis and STH.

The three most prevalent NTDs, not only in the Philippines but worldwide, will be the focus here – STH (composed of ascariasis, trichuriasis and hookworm infection), LF and schistosomiasis.

# LYMPHATIC FILARIASIS (LF)

### What is LF?

Lymphatic filariasis is a disease caused by parasites transmitted from person-to-person by female mosquitoes. From microscopic worms, the parasites grow into adulthood, mate and breed more microfilariae. When the parasites become adults and/or when they die, they affect the lymphatic system of the body – obstructing the ability to get rid of toxins and other impurities. The concentration of parasites in various lymph nodes causes swelling and hardening of limbs and extremities. LF is commonly known as elephantiasis because the legs are enlarged and are disfigured. The arms and genitalia may also suffer from such disfigurement.

# **Extent of Infection**

LF is endemic in 43 provinces, majority of which have 4th – 6th class municipalities. The country's annual economic loss due to decreased productivity amounts to USD 4.4M, as estimated by the Global Alliance to Eliminate LF. A study conducted by the University of the Philippines National Institute of Health (UP-NIH, 2000) showed that there is an estimated 645,232 Filipinos infected with LF, with 23 million Filipinos at risk for the disease.

# **Strategy to Eliminate LF**

The combination of the drugs albendazole and diethylcarbamazine citrate (DEC), given annually in a strategy of mass drug treatment is used to eliminate LF, as recommended by the World Health Organization (WHO). The two drugs are given to adults and children (<2 years of age). Mass treatment should be provided to (1) at least 85% of the population, aged two years and above, in each endemic area; (2) annually until the prevalence of microfilaria infection is less than 1%. Rigorous monitoring of the prevalence of the parasites, to determine the impact of mass drug administration, is done at regular intervals. Annual mass treatment stops only when the criteria for elimination are reached.

The pharmaceutical company GlaxoSmithKline donates albendazole to the Philippines, while the government purchases DEC.



# 2018 LF-FREE PHILIPPINES

### Accomplishments

Twelve out of the 43 endemic provinces eliminated LF in 2012, while 7 more provinces reached elimination levels in 2013 for a total of 19 LF-Free provinces. Other provinces are on their way to fulfilling the elimination criteria and are now undergoing the rigorous process set by WHO. The LF program started large-scale treatment in 2001 and the Department of Health (DOH) has targeted the year 2018 to eliminate LF entirely in the Philippines.

Government policies have been enacted to support the program, such as Administrative Order (AO) 157s-2004 declaring November as "Filariasis Mass Treatment Month", and Executive Order (EO) 369 specifying the different roles and responsibilities of each government and attached agencies on the anti-filariasis campaign.

DOH also allotted funds to help LF patients cope with the disability, both for home care disability management training and hospital operations.

# SCHISTOSOMIASIS

### What is Schistosomiasis?

Parasitic worms called Schistosoma japonicum that are released by a specific type of snail (Oncomelania quadrasi) cause schistosomiasis in the Philippines. This snail lives and thrives in freshwater basins and water tributaries. Infection happens when a person comes in contact with parasites that penetrate the skin. The worms enter the body, reside, grow and breed in human blood vessels. The adult worms produce millions of eggs that travel to the intestines, causing damage to different organs, and eventually excreted through the stools. When an infected person defecates in the habitat of the oncomelania snail, the eggs hatch and the young parasites enter the snail where they further develop and multiply. Schistosoma japonicum is one of the most difficult parasites to control due to its zoonotic nature. This means not only humans are infected but also other warm-blooded animals such as cows, carabaos, dogs. These animals have the capacity to transmit the infection and to infect bodies of water, which will in turn infect other humans and animals.

### **Extent of Infection**

Schistosomiasis in the Philippines affects 28 provinces, covering 12 regions, 190 municipalities and 2,230 villages or barangays. An estimated 3,012 bodies of water are infected with schistosomiasis. The total population at risk is approximately 12 million, and about 2.5 million people are directly exposed to the disease. Agriculture and fishing – the common occupation of the people – are conditions that increase schistosomiasis transmission in the Philippines. There are no data regarding the extent of infection among animals.

# Strategy to Control and Eliminate Schistosomiasis

Due to its complexity as a disease, the strategy to control (and eventually eliminate) schistosomiasis include mass treatment to arrest human infections, snail habitat control, management of the movement of animals, and environmental sanitation. These multiple schemes require inter-governmental agency collaboration.

For treatment of human infections, the drug of choice is Praziquantel. Mass treatment should be provided to at least 85% of those exposed to snail sites, from 5 to 65 years of age.

### Accomplishments

Mass drug administrations (MDAs) throughout all 28 endemic provinces began in 2009, following small pilot activities, but the MDAs were interrupted briefly in 2010 and 2011 in some areas due to a shortage of drugs. Coverage improved with the additional supply of Praziquantel donated by USAID through END in Asia and ENVISION in 2012, as a temporary emergency measure. The DOH has subsequently been able to increase their budget allocations for drug procurement to include sufficient Praziquantel for the MDAs in all endemic provinces. MDAs are organized annually in July.

Snail control begins with identifying snail habitats and determining the infection rate of snails. Trainings for specific local officials to perform those functions competently have been part of the priorities of the program. Medical doctors, in district and provincial hospitals, have also been given training on the clincial management of the disease in hospital settings.



### SOIL-TRANSMITTED HELMINTHIASIS (STH)

### What is STH?

STH is an intestinal worm infection, which may be caused by Ascarias lumbricoides (commonly known as ascaris), Trichuris trichiura (commonly known as whipworm), and Ancylostoma duodenale and Necator americanus (commonly known as hookworm). Children with STH suffer from stunted growth, decreased mental and physical ability. Pregnant women with STH can easily become anemic and are at risk of dying during childbirth. STH spreads when people defecate in open grounds, where the eggs are passed from the stool to the soil. The eggs are transmitted to humans, via direct contact with contaminated soil, poor personal hygiene or improper food preparation and handling.

# **Extent of Infection**

STH is endemic in all 80 provinces of the Philippines, with varying prevalence rates among provinces and among different population groups. For example, among children aged 6 to 14 years, the prevalence rate was 65 % (UP-NIH, 2003). In a 2004 survey by DOH, UP-NIH and UNICEF, the average prevalence rate among children 1 to 5 year of age was 66%. Per region, the highest prevalence rates are in Regions 1, 4B, 5, 8, 10, 12, followed by the ARMM provinces, then Region 6 and 3.

### Strategy to Effectively Control STH

To control STH, deworming is integrated with other key components – water, sanitation, hygiene, education, and deworming (WASHED). An integrated approach within relevant programs at the DOH is being operationalized. For example, coordination with the DOH unit handling environmental concerns is important to integrate all related efforts, thus ensuring better



complementation of resources, higher coverage and generation of better health outcomes.

Deworming in the Philippines is an intra- and inter-agency exercise. Currently, the target population is divided into school-age children (6-12 years of age) and pre-school children (1-5 years of age), enrolled and non-enrolled children, and special population groups. The 1 to 5 years age group are dewormed in Rural Health Units (RHUs) by the Family Unit of the DOH (a unit independent from the Infectious Diseases Office that is in charge of the NTD control and elimination programs). The 6 to 12 years age group that are enrolled are dewormed by the Department of Education (DepEd) Health and Nutrition Center. Non-enrolled children aged 6 to 12 years are dewormed in RHUs, together with special target population groups such as pregnant women, farmers, indigenous people, soldiers, food handlers and operators.

A special call from the Department of Social Welfare and Development (DSWD), following the implementation of its Conditional Cash Transfer Program, expanded the deworming program in 2011, in synchrony with the DepEd's revised school system (called K-12), to include deworming school children in high school. Key policy aspects and implementation guidelines, including a synchronized deworming schedule, need to cover these new emerging needs.

Policy revisions through AOs, joint AOs, or later on EO are underway.

### THE GOVERNMENT'S STAND IN THE CONTROL AND ELIMINATION OF THE NTDS

The DOH, via "Kalusugan Pangkalahatan" or universal health care, is committed to control and eliminate the NTDs.

The DOH has committed to the following targets to control and eliminate selected NTDs.

- Elimination of Lymphatic Filariasis as a public health problem by 2018
- Elimination of Schistosomiasis as a public health problem by 2020
- Reduction of the prevalence rate of Soil-Transmitted Helminthiasis to 25% by 2018



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PUBLICATION DATE March 2015











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This publication is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The content of this publication is the responsibility of the Department of Health (DOH) and does not necessarily reflect the view of USAID or the United States Government.



# DAVAO DEL SUR



# The Ultimate Quest to Schistosomiasis-Free Davao del Sur

by:

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Davao del Sur is located in the southern part of the Philippines in southeastern Mindanao. It is composed of an independent city (Davao City), a component city (Digos City), and 14 municipalities (see Figure 1). Davao del Sur's population of 2,317,986 (Census of Population and Housing, 2010) is of mixed cultures – Tagalogs, Visayans, Mindanaoans, Chinese; ethnic groups or indigenous peoples (IPs) or lumad, namely Ata, B'laan, Bagobo, Kagan, Klata-Djangan, Maguindanao, Maranao, Matigsalug, Ovu-Manuvo, Sama,Tagabawa, Tagacaolo, and Tausug.



The area is blessed with highly fertile soil best utilized for farming of rice, coconut, sugarcane, corn, bananas, mangoes, as well as green and yellow vegetables. A lengthy coastline of approximately 400 km in the East gives local fishermen opportunities for commercial business. Traditional methods of medicine still exist in some areas of the region. A number of people tend to seek the *albularyo* (quack doctor) or self-medicate to manage their illnesses; they just go to Health Centers if their conditions worsen. Also, some of the residents continue to disregard the importance of environmental sanitation, and there are still households that do not comply with the ordinance that requires them to have their own sanitary toilets.



# SCHISTOSOMIASIS: A NEGLECTED TROPICAL DISEASE (NTD) IN DAVAO DEL SUR

Schistosomiasis, otherwise known as Bilhariazis or snail fever, is one of the identified NTDs by the World Health Organization (WHO). Most victims are farmers and families residing in agricultural and fishing areas, more specifically those who have contact with fresh waters, due to their livelihood and location.

Schistosomiasis is a disease that persists in conditions of poverty and may lead to chronic sickness. Infection begins when the larval form (cercariae) of the parasite are released by freshwater snails – *Oncomelania quadrasi* – and penetrate the skin of humans and other warm blooded animals, like cows and carabaos that wade or immerse in the infested water. In the body, the larvae develop into adult schistosomes. Adult worms live in the blood vessels, where the females release eggs and become trapped in body tissues to cause an immune reaction and progressive damage to organs. Some eggs are released through feces to propagate the parasite's life cycle.

In the Davao region, Schistosomiasis may be found in 18 municipalities and 4 cities of three provinces, with 204 existing snail sites. Davao del Sur is considered as a low endemic province that ranked 22nd in the National Prevalence Survey in 2005-2008, with a 0.1% prevalence rate (see Figure 2).



#### A QUICK GLIMPSE OF HISTORY

#### The National Irrigation System Improvement Project II (NISIP II)

In 1979, the office of the National Irrigation Administration undertook irrigation and drainage system projects to achieve better farming practices and ensure control of water in various snail-infested rice fields. These significantly reduced the incidence of floods and overflowing of river waters that consequently lowered the prevalence rate of Schistosomiasis in the municipalities of Kibuaya and Hagonoy in Davao del Sur, and also Igpit and Colorado in Digos. An isolated snail site in Hagonoy, Davao del Sur – San Guillermo, was discovered in the early 1980's. However, regular clearing of vegetation and mollusciciding activities likewise eradicated this snail site.

Continuous ocular malacological survey, monitoring, surveillance, case finding and treatment of Schistosomiasis were done in 2 municipalities in 4 endemic barangays. The endeavor marked the decline and eventual eradication of snail sites, particularly in the areas of Sacub, Sinayawan, San Isidro and Balutakay.

By the 1990s, the Department of Health (DOH) hired contractual medical technologists and laboratory assistants to be assigned in Schistosomiasis-endemic municipalities through the Philippine Health Development Project (PHDP). They helped with active and passive case finding activities, together with the Schistosomiasis Control Team. Fig. 2. Davao del Sur prevalence rate (2004-2012)

# Creation of City Health Tropical Disease Unit in Davao City

In 2005, the Center for Health Development – Davao Region (CHD-DR) completely devolved the implementation of the Schistosomiasis Control and Prevention Program to the Local Government Units (LGUs), also providing National Guidelines that aided in the successful implementation of program activities.

A year after the devolution, Dr. Josephine Villafuerte, Davao City Health Officer, initiated the creation of the Tropical Disease Unit. The unit, headed by Dr. Villafuerte, is responsible for the assessment, monitoring and surveillance of Schistosomiasis and other tropical diseases (such as Malaria, Filariasis, Soil Transmitted Helminthiases, and Dengue). Medical health officers, medical technologists, nurses and Regional Sanitary Inspectors (RSIs) comprised the 16 active unit members. In 2006, the Region X Schistosomiasis Team, headed by Dr. Vincent Raguro of the Davao City Health Office. conducted a border operation in Buda (barangay at the boundary of Davao City and Bukidnon). Dr. Josephine Villafuerte, the DOH-Region XI Schistosomiasis Team, and the local government of Bukidnon helped in the endeavor. Border operations included case finding and mass treatment. Other NTDs like Lymphatic Filariasis, Soil Transmitted Helminthiases and Malaria, aside from Schistosomiasis, were also examined during the operation. Thus, the project was dubbed as "One-Stop-Shop Strategy".

The Basic Course on Malacological Surveillance was conducted in November 2008, by the DOH, to enhance the capacities of malacologists, Schistosomiasis point persons and Rural Sanitary Inspectors (RSIs) of each endemic municipality on the use of Global Positioning System (GPS) in snail survey and mapping of endemic foci, quantitative snail sampling methodologies and laboratory procedures on the quantification of snail data. Snail sites mapping was conducted and GPS coordinates were eventually obtained in February 2012 with the joint efforts of Davao Region malacologists. were part of the assessment and evaluation. Eventually, Davao del Sur accomplished the goal of 85% coverage treatment of the targeted age group (5 - 65 years old), among the residents in all endemic barangay/ puroks (AO 2009-0013). The following figure shows the mass treatment coverage of Davao del Sur and Davao City from 2009-2012.

#### SUSTAINING SUCCESS THROUGH INTERVENTIONS

#### Health Education and Advocacy Campaigns

To improve the knowledge and skills of the community on Schistosomiasis, a series of information dissemination was done. Barangay health workers (BHWs) included it during mother's class and immunization activities. Posters



were placed on barangay health centers and pamphlets were distributed. Regular *pulong-pulong* (meetings) were conducted to enhance residents' awareness of basic disease etiology, mode of transmission, and interventions.

#### Mass Treatment and Schistosomiasis Awareness Month

In April 2009, then Secretary of Health, Francisco T. Duque, III, released Administrative Order (AO) No. 2009-0013, declaring the month of July every year as the "Mass Treatment and Awareness Month" for Schistosomiasis in the established endemic areas in the Philippines.

Residents who refused mass treatment of Schistomiasis with Praziquantel, were encouraged to take the drug through health education campaigns that emphasized the importance of the medication. Home visits were done. The Parents – Teachers Association (PTA) or barangay Council alternated in providing meals prior to the drug administration. Pre- and post-conferences

# Parasitological Assessment and Case Finding Activities

In response to the AO 2009-0013, annual case finding and parasitologic assessment prior to mass treatment was conducted in the identified Schistosomiasis-endemic communities. A special diagnostic test - the Kato Katz technique, examined stools to detect not only schistosome eggs, but also other soil-transmitted helminths and parasites.

# Unity and dedication are the keys to eliminate the disease...

–Dr. Romeo P. Gamalong Jr. Municipal Health Officer, Hagonoy, Davao del Sur



The program will be effective if the officials from the municipality down to the barangay level will help eliminate Schistosomiasis.

- Rene Lingcon Rural Sanitary Inspector, Hagonoy, Davao del Sur

#### Organization of Schistosomiasis Control Workers

In 2010, Ms. Maria Ana Ebol, the Schistosomiasis Control Regional Program Manager for Davao Region initiated the organization of Schistosomiasis Control Workers (SCWs). The task force was composed of volunteer residents and their purok leaders (as the head of the task force). The roles and functions of barangay SCWs were to formulate plans, activities and resolutions, conduct information drives, mobilize the community, lobby plans to other stakeholders, conduct meetings for monitoring and evaluation, and assist the Tropical Disease Unit members in conducting environmental and Snail Site survey.

Bayanihan (concerted efforts) among SCWs, local residents, landowners, BHWs and barangay officials made regular clearing of vegetation possible on snail sites in various endemic areas. Clearing, improvement, and desilting of canals were also done. SCWs were provided with working materials and equipment for clearing. These included bolo, shovel, rakes, grass cutters, and personal protective equipment (PPEs) such as boots, gloves, field caps, sweat shirts. The CHD-DR provided meals and snacks, during these activities, subject to availability of funds.

#### Leadership Of The LGU

The Davao region LGU officials responded to the call of controlling NTDs by taking the full responsibility after the devolution, and formulating ordinances and resolutions pertaining to the Schistosomiasis Control Program. Most resolutions declared specific Oncomelania snail habitats as calamity areas, while one funded a flood control project. A city council resolution even requested the Office of the Davao city Mayor to declare the month of July as Mass Treatment and Awareness Month for Schistosomiasis, in accordance with the DOH AO 2009-0013.

#### Sanitation and Potable Water Systems

Because Schistosomiasis and other diseases can be associated with unsanitary health practices, local officials passed resolutions and ordinances that promoted sanitation to the residents in the different endemic areas of Davao del Sur and Davao City. The laws helped in the provision of safe potable water systems and sanitary toilets (see Figures 4 & 5).



Fig 4. Households with Sanitary Toilets in Endemic Areas in Davao City (2011)



Fig. 5. Status of Households with Access to Toilet Facilities Hagonoy, Davao, del Sur (2011)

Our goal of elimination of Schistosomiasis in Tugbok District is not over yet, but with the help of different stakeholders we can be assured that we can sustain zero new cases for the years to come.

 Maribel Tan-Camelotes, MD, DPAFP District Health Officer, Tugbok District, Davao City

# THE POWER OF UNITY AMONG STAKEHOLDERS

LGUs spearheaded the coordination among various sectors and stakeholders. They also provided financial and logistical support for the control program, as required.

Many things were achieved as people cooperated for the success of the program. The Cor Jesu College and the University of Mindanao Digos Campus, together with their students and alumni, contributed through clean-up drives and clearing operations that were done in Brgy. Igpit. Ticolo farms in Davao City, as part of their corporate social responsibility, assisted by giving slaughtered pigs or pork that were prepared for the workers during the conduct of case finding. Hedcor of the Aboitiz Corporation contributed by adopting areas to be cleaned and maintained, specifically in Calinan area, Davao City. Dona Luisa R. Lorenzo Community Development Foundation Incorporated and Prestine Meadows Agri Development Incorporated (Malalag Ventures Plantation Incorporated) were also among the stakeholders who helped out in the campaign.

#### SURPASSING THE CHALLENGES

#### **Insufficient Human Resource**

The City Health Office, particularly in Davao City, augmented health personnel by hiring additional workers on job orders. On the other hand, for Tropical Disease Unit operations, medical technologists, nurses, and district health officers from the three (3) Schistosomiasis-endemic districts of Davao City worked together in the annual case finding and mass treatment. During clearing operations and clean-up drives, barangay officials encouraged the local residents, landowners, BHWs, barangay officials, and the SCWs to participate.

#### **Limited Monetary Resources and Equipment**

Partnerships among the community, local government, and other sectors (PTA, Department of Education) sustain Schistosomiasis control operations, despite limited financial resources and supplies. For example, the Office of the Mayor has religiously provided supplemental foods, popularly called *Lugaw ni Mayor* or Porridge from the Mayor, since the launching of Mass Treatment in 2009.

The NISIP II was probably the biggest and the most effective investment to control the morbidity of Schistosomiasis. The estimated cost of this project was 50 million pesos in 5 years for the expenses of buildings and infrastructure, office supplies and equipment, medical and laboratory supplies and equipment, wages and salaries, and operational costs. Supposing there were 20,000 residents in endemic areas during that time, the cost/person/year was five hundred pesos (PhP 500). Meanwhile the operational cost after NISIP II for snail control, case finding activities, treatment, monitoring, and improvement and maintenance of drainage system is estimated to be 1 million pesos yearly or 50 pesos per person.

Over the past eight years, after the devolution of programs to the LGUs in 2005, Schistosomiasis control and interventions in Davao del Sur were focused on sustenance of programs implemented. The prevalence rate of Schistosomiasis is consistently less than 1% since 2008 and case finding activities no longer involved the whole community, rather a portion of the population comprised of 500 school children. Snail control during these years focused on clearing of vegetation in the identified snail sites. The CHD-DR organized the SCWs and provided them with Personal Protection Equipment (PPEs) and clearing



materials on a one-time basis only. Materials amounted to thirty three thousand pesos (PhP 33,000) per task force. CHD-DR also provided meals that totaled fifty-six thousand pesos (PhP 56,000) annually.

The estimated annual expenditures for the implementation of Schistosomiasis strategies in 2012 was PhP 319,250.00, covering the cost of sentinel surveillance, monitoring and evaluation, and mass treatment (including the provision for logistics). Meanwhile, the drug (Praziguantel) was provided by the DOH Central Office, with estimated cost of PhP 40,250.00 for the school population of Davao del Sur. Overall, the annual estimated expenditure in Davao del Sur is 12 pesos/ person at two endemic municipalities (based on the total projected population of 26,217 in 2012). It is guite difficult to express the overall benefit of reducing the prevalence of Schistosomiasis in terms of money. However, the reduction's assumed contribution to better health outcomes is invaluable. Effective snail control and mass treatment also resulted to better quality of life for farmers and other agricultural workers that contributed to productivity and production yield, making Schistosomiasis Disease-Free Zone a fruitful economic undertaking.

#### YIELDING RESULTS WITH CONTINUED EFFORTS

With years of unreserved efforts and countless hours of selfless service for the Schistosomiasis control program, Davao del Sur has sustained zero (0) new cases for the last five (5) years and is now the country's candidate for Schistosomiasis Disease-Free Province. Residents in endemic areas are also more aware about Schistosomiasis. Their wrong notions and misconceptions about the disease have been addressed.

In March 2012, Dr. Maribel Tan-Camelotes of Tugbok District Health Office, Davao City received a plaque of recognition for her exemplary contribution in the "Schistosomiasis Elimination Program" during the 75th Araw ng Dabaw Celebration.

Currently, the CHD-DR, the LGU and other concerned agencies are taking up measures to control the disease transmission not only among humans but animals as well. The CHD-DR is consistently providing technical assistance, and also allocating logistic support such as medicines, equipment and other supplies. Provincial Schistosomiasis coordinators and RSIs trained in the field of Malacology, now acting as Malacologist in their designated LGU, are still very active and working to achieve the mission and vision that by 2018 or earlier the Province of Davao del Sur will be Schistosomiasis disease-free. Moreover the contribution of the National Center for Disease Prevention and Control has helped in building stable partnerships with other government agencies and various civic organizations.

Strong intersectoral collaboration, partnerships and involvement of the community are critical elements to sustain good implementation practices. Likewise, sustained health advocacies, political will and support from the local government, and the community's unparalleled earnestness to serve and own the program are equally important. Making Davao del Sur a Schistosomiasis Disease-Free Province is a challenging task, but not an impossible goal. Data available indicate that it is almost at hand.

# CEBU PROVINCE



# **Controlling Soil-Transmitted Helminthiasis in Cebu Province**

by:

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#### CONTEXT AND BACKGROUND

This best practices analysis focused on the Soil-Transmitted Helminthiasis (STH) Control in Cebu, particularly in:

- the northern part of Cebu province comprised of the municipalities of Bantayan, Daanbantayan, Madridejos, Medellin, San Remigio, Santa Fe, Tabogon and Tabuelan in the 4th Congressional District and the municipalities of Borbon, Carmen, Catmon, Compostela, Liloan, Pilar, Poro, San Francisco, Sogod and Tudela and the city of Danao in the 5th Congressional District, and
- 2 Metro Cebu, composed of the cities of Cebu and Mandaue.



### THE NORTHERN CEBU PROVINCE

Fishing and farming are common forms of livelihood in most of the municipalities. Fishing is common in the islands of Bantayan, Madridejos, Santa Fe and Camotes. On the other hand, the municipalities of Tabogon, Carmen and Catmon practice farming. Lack of financial and social capital among the people greatly affects their hygiene and diet.

The nineteen (19) municipalities and cities had a total of 151,706 households (Cebu statistics, 2004). Out of the total number of households, 9.76% obtained water from either a spring, or a river, or rainfall. Moreover, 20.28% relied on dug well as water source. Of the 19 areas, the municipalities of Borbon (22.7%), Catmon (26.1%), Sogod (24.5%) and Tuburan (28.3%) were identified to have higher percentage of households that procured water from natural sources and rainfall. According to Joy A. Lumapas, Division-Nurse In-charge in Department of Education -DepEd Northern Cebu province, "nag salig ra sa ting-ulan" (many barangays or households in the area rely on rainwater).

In this area, 23.8% of the total 676,041 population did not have any proper waste disposal system. Around 2.1% used pail and other types of containers, while 12.12% used either open or closed pit. A number of municipalities in northern Cebu lacked toilet facilities –in Borbon, 43.0% of the total 5,978 household population; in Tuburan, 56.8% of the total 11.038

households; in Sogod, 39.8% of the total 5,846; in Danao, 34.8% of the total 19,411; and in Liloan, 22.1% of the total 13,381. According to key informants, parents passed on to their children the habit of defecating in the river, or behind trees and bushes due to the unavailability of toilets.

In Danao, there was 11% malnutrition prevalence rate (2011-2012). Although malnutrition was not solely attributable to STH, key informants considered it as a part of the observable health problem among students.



Folk religious practices and beliefs are deeply ingrained in the culture of some Cebuanos affecting their knowledge and attitudes toward medicine and science. For example, some people in the mountain barangays of Sogod and Tuburan refused to modify their practices. "Mao ni ang mga tawo nga *lisud na gyud nimo pasabton"* (these are the people who are most hard to convince), said Ms. Lumapas. Some parents do not allow their children to take the deworming tablet on a Tuesday or Friday, the days of kasakit (passion). There are also those who think that the albularyo (faith healer) is more trustworthy and reliable than the physician or health worker. Misinformation, compounded

> with folk tradition, further aggravated the already existing negative attitude towards medicine and proper hygiene. Some flawed beliefs were: (1) deworming should not be done when it rains, (2) socks should be worn when deworming children and (3) dewormed children cannot take a bath the next day or else they become blind.

Dr. Josephine Valencia, Medical Officer – MO III of DepEd Cebu City, specifically cited Alaska Mambaling as an example of a community that demonstrated the link between informal settlement and poor health. The area had 97% parasite prevalence during the 2001 survey of target students.

Although folk practices blended with superstition are uncommon in Metro Cebu, misinformation still affected some parents. There were those who refused to sign permission slips due to fear of worm migration. Valencia further added that there were a few others who believe that taking deworming pills can harm their children.



# THE METRO CEBU AREA

Cebu and Mandaue cities differed from the municipalities outside the metropolitan. Both cities thrived on businesses and investments as major sources of employment for its residents. Business Process Outsourcing or the Call-center industry was a leading trade in these urban centers, together with manufacturing companies, processing zones, and even small- and mediumscale industries, and other entrepreneurial activities.

Although developed in terms of infrastructure, communication and other key economic areas, both cities were not without problems. Among these was the increasing influx of migrants that led to informal settling, with serious implications to the people's health and nutritional status. Likewise, human waste disposal, garbage segregation and other sanitation concerns greatly affected the health of informal settlers in Metro Cebu.

As a whole, Metro Cebu had a high percentage of access to safe water, at 88% of the 345,351 households. But in some areas,

where there were pockets of poverty, access to clean or potable water was limited. These areas with poor households (5.7% of the 147,600 in Cebu city, and 0.3% out of 54,882 in Mandaue city) continued to rely on natural/ open sources of water (i.e., river, spring, etc.) and rainfall. Moreover, 13.4% of the total number of households in Metro Cebu, did not have any toilet facility. Open or closed pit was used by 6.4% as an alternative, while 1.9% used pail and other types of container.

#### INTERVENTIONS AND DECISIONS

Efforts or actions to minimize STH in the urban cities of Cebu and Mandaue as well as the northern part of the province may be grouped into three categories: Education, Action and Partnership – EAP (see Figure 1).

Education refers to initiatives that involved massive information campaign, annual seminar for parents and the incorporation of the campaign in the mainstream curriculum of students. On the other hand, action refers to the annual implementation of the deworming program through the Department of Health (DOH), and in cooperation with the DepEd. Lastly, partnerships with the private sector and the Local Government Units (LGUs) were forged to ensure sustainable efforts in improving the children's nutritional status through deworming.

Below is an enumeration of some of the successful interventions.

#### **CEBU AND MANDAUE CITIES**

Parents are oriented every year about the deworming program through the annual Parents-Teachers Community Association (PTCA) Assembly; open forum allows the parents to clarify basic questions/facts related to the program;

Room to room campaign on sanitation especially the importance of hand washing (mostly done during nutrition month)

#### **NORTHERN CEBU PROVINCE**

DepEd during the annual PTCA meeting provides basic orientation on sanitation and deworming to students;

Signing of Parents' Consent during enrolment or several weeks or days prior to the conduct of deworming activity;

Yearly seminars are conducted with the support of some Barangay Captains;

The DepED and the Nutrition Councils of the municipalities worked hand-inhand to deworm the pupils;

Health centers in cooperation with the DepED dewormed the school children and provided additional tablets;

After the deworming activity and weighing, the LGU conducted milk feeding activities for children found to be severely wasted and wasted

Northern Cebu Municipalities: DSWD provided supplementary feeding to malnourished children, especially Special Education learners;

PTCA officers, as chosen representatives of parents in the school, gave their full support during deworming and feeding of children;

The school Head and the teaching staff, especially the Clinic and the Nutrition teachers, spearheaded programs and projects

PARTN

Fig 1. Table of EAP interventions in Cebu city, Mandaue city and Northern Cebu province

EDUCATION

ACTION

In the beginning, the implementation of the deworming project was challenging due to the teachers' heavy school workload, and apprehension about the procedure and its consequences. Fortunately, it was resolved through constant orientation (in cooperation with the DOH) and the issuance of a DepED Memorandum (indicating that teachers can administer the deworming drugs, with the presence and supervision of the school nurse or a Rural Health Unit staff).

Diversity of the population in terms of their economic status, religion, education and

social affiliations also posed challenges in educating them about STH control. Even some Barangav officials needed more information about deworming to appease their concerns about its effects. However difficult, it was important to sustain the support momentum of the different stakeholders in the intervention process. Contingencies were designed to ensure an intensified Information.

Education and Communication (IEC) component and to prevent misconceptions about STH control. Other active stakeholders were also mobilized to initiate strategies that promote the advocacy component of the program.

#### **STAKEHOLDERS**

The DepEd was one of the government agencies that significantly helped in controlling and reducing STH. In Cebu City, DepEd tied up with the DOH in the search for the Best Schools Division Implementer on School-Based Deworming and Other Essential Health Care Services Program. The DepEd also conducted orientations on deworming for the parents at the start of the school year, as well as enhancement meetings with the school Heads.

In Lapu-lapu City, the DepEd was active and consistent in implementing its IEC component. Like its counterpart in Cebu City, partnership with the DOH facilitated annual orientation at the start of the school year and conducted information drive among parents.

In Danao of the Northern Cebu province, public schools, the Danao City Nutrition Council and the City Health Office (CHO) conducted yearly seminars for Barangay Captains and their constituents. The CHO also dewormed children 5 years of age and below, while the DepEd deputized public schools to conduct deworming for Grade School and High School students. The former also gave additional deworming tablets, when

the latter needed more supplies.

"So far walay municipality nga wala mo support ug DepEd" (So far there is no municipality that did not support the DepEd's deworming campaign) - Joy A. Lumapas, RN, Nurse In-Charge, DepEd Division of Cebu Province.

Another stakeholder that has greatly contributed to the best practices of deworming in both

Metro and Northern Cebu was the LGU. Among the identified forms of assistance extended by the LGU to the program are transportation, security, information dissemination, honoraria and moral support from the local executives.

From 2010-2012, the municipalities in northern Cebu were recipients of the Cebu Provincial Government's assistance with the Essential Health Care Package (EHCP) of toothbrush and hand-wash supplies. The EHCP was given to all Grades 1-6 pupils. In addition, the PTCA of different schools also contributed to the successful implementation of the STH Control program.

The LGU gave transportation assistance, especially for deworming in remote areas. Feeding programs were conducted in Danao and Sogod. Furthermore, the Barangay officials in Sogod, Pinamungahan and other areas in northern Cebu provided the manpower assistance, whenever there was



a deworming program. "Barangay health workers were deployed to the upland areas in order to disseminate information", added Ms. Lumapas.

Ms. Lumapas further recalled that when a water supply system in Brgy. Bagatayam was found to be unsafe, the barangay officials took the initiative of closing it and advised the residents to get water instead from the nearby Bgy. Binaliw. The Barangay Captain took further steps of deploying local *habal-habal* (motorcycle) drivers to announce the closure of the said water system.

Non-Government Organizations (NGOs) and the Sangguniang Kabataan (SK) were also identified as stakeholders by the key informants. Among the notable partners in the STH control program's implementation in Northern Cebu area were the SK Federation and WASAN (Water and Sanitation). The former has been sponsoring a year-round feeding program, specifically in Sogod, Cebu. As for WASAN, it funded the potable water supply and hand washing facilities in Cabalawan, Sogod, Other NGOs involved were the Fit for School (that conducted seminars on nutrition and distributed IFC. materials), the Feed the Children Foundation (that distributed vitamins and supplements to primary pupils), and the World Vision (that donated funds for the construction of potable water supply in selected schools in Metro and Northern Cebu).

#### **EFFECTS AND OUTCOMES**

The first significant effect of the STH control program was the nutritional status improvement of children. The DepEd's 2012 Report of the 4th and 5th Districts of Cebu province showed that 88% of the student population was classified as normal, and only 8.19% and 2.3% were wasted and severely wasted respectively.

Sustained information drives and implementation of the deworming program improved the knowledge and attitude of several communities. Improvement of the parents' reception to the program was evident in the last few years, particularly among communities where local knowledge is still rooted in traditional beliefs. Parents cooperated more and became understanding



of the program's importance. In Sogod and Tuburan, parents allowed tablets to be taken by their children on the days devoted to the Lord's passion. Also, most of the permission slips were signed by the parents/guardians during the last implementation of the deworming program.

Students already acquired the habit of washing their hands before eating. "...ning reklamo na gani ang admin kay kusog na kuno kaayo mang hugas sa kamo ang ilang mga estudyante" (...the administration has, in fact, raised concerns that because students [now] frequently wash their hands it might increase water consumption), quips Lumapas.

The achievement of the program objectives is translated to percentage increase of deworming coverage in the entire Region VII (see Figure 2), above the 85% target threshold since 2010. Concretely, this meant that in 2010-2011, 89.9% and 90.95% of the target student population in Central Visayas took deworming drugs in the 1st and 2nd rounds of the deworming program respectively. For the succeeding year 2011-2012, 94.53% and 90.7% of target students were dewormed in the 1st and 2nd rounds respectively; and 93.59% for the first round of 2012-2013.

The attainment of the target coverage would not have been possible without well established linkages with the LGUs and the private sector. Hence, the program has also enhanced the coordination and partnership between the DOH, the DepEd, the LGUs (province, municipalities, barangays) and the private sector.



#### COST AND DURATION OF BEST PRACTICE

The program would not succeed without adequate funds. What is notable in Metro Cebu and the selected areas in Northern Cebu is that financial resources were well-managed, and assistance came from partners and benefactors in the LGUs, NGOs and the private sector. Cost of the STH control program's implementation comprised of supplies/materials, food and travel allowance. After a year of implementation, the DOH has raised PhP728,000.00 of Harmonized Resource Transfer funds per annum. There was also an additional PhP228,000.00 sub-allotment fund from the Central DOH.

#### ACKNOWLEDGEMENTS

This research was made possible through the assistance of the following individuals:

Berna J. Ysulan, DMD (Officer-In-Charge, Health and Nutrition Section, DepEd Regional Office VII, Cebu City); Josephine D. Valencia, MD (MO III, DepEd Division of Cebu City); Aida A. Calamba, MD (MO III, DepEd Division of Bohol); Emma S. Mate, RN (Nurse II, DepEd Division of Negros Oriental); Joy A. Lumapas, RN (Nurse In-Charge, DepEd Division of Cebu Province); Minerva Perales, RN (Nurse II, DepEd Division of Cebu Province); Jocelyn P. Lataza, RN (Nurse In-Charge, DepEd Division of Cebu City); Romela V. Ceniza, RN (Nurse II, DepEd Division of Mandaue City); Jesvi Mae A. Catubig, RN (Nurse In-Charge, DepEd Division of Danao City); Carolyne P. Partosa, RN (Nurse In-Charge, DepEd Division of Dumaguete City, Negros Oriental); Ronald Y. Ferrer, RN (Nurse In-Charge, DepEd Division of Lapu-Lapu City); Arsenia Bumaya, RN (Nurse II, Health and Nutrition Section, DepEd Division of Cebu City).

# SOUTHERN LEYTE



# First Filariasis Free Province in the Philippines: The Southern Leyte Experience

Ma. Elena Joy D. Villarosa, Analiza L. Balila, Leonido P. Olobia





Lymphatic Filariasis is one of a group of neglected tropical diseases which are endemic in the Philippines. Control of Filariasis has been a goal for many years now, since the identification of its index case in 1906. The condition not only affects the health status for the general population in endemic areas, but also has significant social and economic impact. Thus, the successful implementation of a national elimination program is quite an ambitious challenge. However, one province in the Visayas region blazed the trail for this accomplishment.

Southern Leyte is one of 6 provinces within Eastern Visayas Region. It has been acclaimed as the first province among 44 endemic provinces in the Philippines to be declared filariasis-free in the Philippines. The Eastern Visayas Region or Region 8 was also the first region among 12 endemic regions to be declared filariasis-free in 2014. The campaign to eliminate lymphatic filariasis in Southern Leyte brought many lessons that became the basis for similar campaigns in other provinces. This experience is worth sharing.

### A SUCCESS STORY IN BRIEF

Southern Leyte is a 3rd class province, with population of 413,420 as of 2010 and 81, 893 households. It comprises 18 municipalities, 1 component city, and 500 barangays. In 1999, after an intensive mapping activity to determine the presence and extent of lymphatic filariasis (LF), Southern Leyte was declared an endemic province. The prevalence was 2.3 cases per 1,000 population. The mapping activities in several municipalities were done by the personnel from the Department of Health – Regional Office VIII (DOH-RO8), Provincial Health Office (PHO) and Rural Health Units (RHUs) of the Local Government Units (LGUs) and involved getting 18,188 blood smears from as many individuals, of which 92 smears turned out to be positive for microfilaria.



The program to eliminate LF aimed to decrease the province' prevalence rate to less than 1 case/1,000 population and eliminate LF as public health problem by mass drug administration (MDA). Social preparation was an indispensable step that was jumpstarted by the Memorandum of Agreement (MOA)signing between the provincial government and the league of municipalities. The PHO oriented and organized the health workers of the City/Rural Health Units including Barangay Health Workers (BHWs). The DOH supplied the drugs and gave technical assistance including during case finding. The Department of Education (DepEd) was tapped for giving the drugs to children in schools both private and public. For information dissemination and assistance, non–government organizations (NGOs) like GTZ and Plan International, people's organizations and the media were tapped. For monitoring, evaluation and updates of the program, district meetings and program implementation reviews (PIRs) were regularly conducted among the implementers as avenues for the stakeholders to discuss challenges met and victories achieved. There was still no Inter-Local Health Zone (ILHZ) when Southern Leyte started implementing the Filariasis Elimination Program. However, the province conducted district meetings every quarter, where challenges, victories, and program updates were discussed. These district meetings continued when the ILHZ was institutionalized in 2003-2004, and the program's monitoring even became more rigorous and systematic. When the province started to establish its The key to this success was the coordination among the different institutions that worked well especially among LGUs, RHUs, City Health Units, PHO, DOH-RO8 and the rest of the stakeholders involved in this concerted effort. After successfully passing the criteria for stopping MDAs, the Provincial Filariasis Coordinator expressed, "Hay salamat, makapahuway na dyud mi sa MDA" (Thank you, now we can rest from conducting MDA).

Province-wide Investment Plan for Health (PIPH), it became more conscious of having disease-free zones.

In 2001, all

municipalities in Southern Leyte simultaneously conducted the MDA. The health workers started the MDA with an exceptionally high coverage at 89% and they simultaneously did it every year for seven years with a coverage that



surpassed the national target or benchmark of 85% set by the National Filariasis Elimination Program of the DOH.

After the 5th round of MDA against filariasis, a survey was conducted in communities that were previously endemic using the Nocturnal Blood Examination (NBE) and Lot Quality Assurance Survey (LQAS 3000). In 2008, a final evaluation was conducted involving 3,000 school entrants in Southern Leyte by the joint team of the technical personnel of the DOH- RO8, LGUs and DepEd. After four (4) phases of evaluation, results showed zero (0) microfilarial rates, microfilarial densities and antigen rates in all communities.

Thus, Southern Leyte was proclaimed the first province to be filariasis-free in the Philippines, after a review of the past mid-sentinel surveys in 2006, 2007, cluster survey, LQAS 3000 and in consultation with experts from the World Health Organization (WHO) and the Technical Working Group of the Global Program to Eliminate Lymphatic Filariasis.

More so, it was the attitude of the implementers and public health workers that enabled Southern Levte to achieve this success—where there were challenges, the attitude was to find a solution, where there were issues among the implementers, the action was to discuss and resolve differences, where there was lack of resources, it's the make-do attitude that pushed the program to its success.

#### SHARING STRATEGIES THAT WORKED DURING THE EARLY YEARS

The LF elimination task commenced with a series of consultative workshops and conferences involving all the stakeholders concerned with the technical expertise provided by the DOH. Goal setting, as well as determination of strategies and methodologies, were done by using pertinent and validated data from the mapping/case finding activities. After a year of preparation, in 2000, the implementation began, with Maasin City as pilot area because of its high incidence. In 2001, all stakeholders committed to expand the MDA province wide.

All throughout the program, but especially during the early stages, several series of seminars and workshops were conducted. A roll-out strategy of orientation and capabilitybuilding was done. The DOH regional staff trained the technical section of the PHO, which in turn conducted roll-out activities to the RHU and city health unit workers. DepEd personnel were also provided orientation and training, as they were responsible for the MDA target population. In those seminars and workshops, exhaustive information or facts about filariasis were discussed, including its pathophysiology, vector mosquito, its transmission, treatment, prevention and control measures; as well as the risk factors present in the communities. Information about the drugs used in the MDA was tackled, including its pharmacology and possible side effects. The techniques in administering the drugs were also included in the discussions. The LGUs provided the logistic support for these activities.

#### THE MDA

With the results of the mapping activities on endemic areas available and the health workers' capability to implement the program in place, MDA commenced in 2001 covering all municipalities of the province. To ensure the full coverage of the said treatment, the following strategies were initiated:



a. All health workers subjected themselves to the treatment, from those in the PHO down to the BHWs. It was done to set as an example for the people to follow and to provide assurance about the drugs' safety.



b. The LGU personnel also followed what the health workers were doing. They also subjected themselves to treatment, from the local executives cascading up to the lowest rank and file personnel of the institution.



c. DepEd, as one of the program's stakeholders, also subjected its personnel to the drug administration involving the teachers, students and pupils, both in public and private schools.

d. The rural health midwives and the BHWs initiated the actual administration of the drugs to all targeted household members, under the close supervision of the Municipal Health Officers. They painstakingly and conscientiously went from one household to the other to ensure that they were able to give drugs to all targeted population.



e. The LGUs provided the transportation expenditures, support drugs for the program and constant advocacy among communities on filaria and the need to eliminate it.



For seven years, key stakeholders persisted in the renewal of efforts to eliminate LF in the province. This meant raising public awareness, year in and year out. It meant keeping the communication network alive and functioning. The hard work paid off in the end.

#### PROTOCOL DURING THE LAST FEW YEARS

After the 5th round of the MDA against lymphatic filariasis, in 2006, surveys to determine the presence of parasites were conducted in 12 communities using NBE. Another survey was done in 2007, in 4 more communities using the same evaluation test.

In 2008, a final evaluation was conducted involving 3,000 school entrants in Southern Leyte using the immunochromatographic test by the joint team of the technical personnel of DOH- RO8, LGUs and DepEd.

For all these evaluation phases, all stakeholders agreed to contribute their resources and their time. Reports were submitted on time and contained accurate data. Verification was done by the regional staff. Interventions were done when there are problems encountered – a result of not only regular monitoring but also good networking. While budget from the central office is available, it cannot pay for all the things needed (such as travel expenses or food allowances of BHWs). LGUs provided counterparts, in terms of manpower and also resources. After 4 phases of evaluation, Southern Leyte was declared as the first province in the Philippines to be Filariasis-free in February 24, 2009.

#### SUSTAINING LF-FREE STATUS

Four months after the declaration of Southern Leyte as a filariasis-free province, a border operation using NBE was conducted in 4 border municipalities: Maasin City, Bontoc, Sogod and Liloan. The border towns were between Southern Leyte and the LF-endemic province of Northern Leyte. The tests yielded negative results.

In 2009, Southern Leyte sustained its status as a filariasis-free province since its declaration. This was confirmed via a post-MDA evaluation through Transmission Assessment Survey 1 (TAS1) conducted among 1,700 school children, aged 6-7 years old. Again, a series of NBEs were conducted from May to December of 2012 by the Provincial Filariasis Team together with the RHU medical technologists, in 3 border municipalities



Advocacy campaign on Filariasis elimination

(Silago, Bontoc, Maasin City) with a total of 1,471 subjects; and on May 2013 in the municipalities of Liloan and San Ricardo involving 2,587 blood samples. Results were 0 and 0.058 microfilaria rate (MFR), respectively.

Then in September 2013, a border operation was again conducted through NBE in 4 barangays of San Ricardo. In this particular border operation, 611 blood samples were examined with zero microfilarial rate. In November 2013, a post-MDA evaluation or TAS2 was conducted in accordance to TAS Guidelines of the WHO. Only 1 case was positive among 3,082 grade 1 & 2 students in the selected schools of the province of Southern Leyte.

After the final evaluation in 2008 involving 3,000 school entrants conducted by the Joint Team of the technical staff of the DOH CHD – East Visayas, Local Government Units, DepEd and DOH representatives using the Lot Quality Assurance Survey 3000, the result showed zero (0) antigen rate in selected schools. All previous reviews of the past Mid – Sentinel Surveys in 2006 and 2007 also showed negative results. Thus, Southern Leyte was declared as the first filariasis – free province in the Philippines in 2009 and sustained its status up to the present. Regular border operations were conducted by the Provincial Filariasis Team and RHU Medical Technologists, utilizing the monetary support awarded by DOH to the province for such great achievement.

#### CONCLUSION

The overall success of the Filariasis Elimination Program in Southern Leyte is a reflection of the attitude and commitment of the implementers and the coordination among different institutions that worked well – LGUs, RHUs, PHO and the DOH-RO in Eastern Visayas. The following may be said to be key success factors: technical and political leadership, support mechanisms, efficient monitoring, supervision and evaluation.

The Hon. Mayor of Maasin City, Mayor Maloney Samaco once articulated, "Basta magtinabangay lang ta, nganong di man masulbar ang problema" (As long as we help one another, there is no problem we cannot solve). His inspiring words and supportive actions sent a message of strong political will that led to the elimination of lymphatic filariasis in Maasin City, the capital of Southern Leyte and once considered a highly endemic LGU. Regular district conferences and program implementation reviews were also held to reinforce monitoring and evaluation. With the institutionalization of Inter-Local Health Zones in 2003–2004, technical management meetings were also done. These meetings became avenues to discuss obstacles and challenges during the implementation process. Strategies for problem resolution, as well as the triumphs, were also shared by the frontliners. Moreover, new strategies were conceptualized from these consultative meetings. Some strategies identified for sustainability are the following:

Forging alliances, networking and cooperation between the endemic province of Leyte and the neighboring municipalities on filaria elimination and border operations

Continuous advocacy and surveillance Continuous border operation, especially in the neighboring municipalities

"It's the Southern Leytenos' commitment that made the difference", said Mr. Leonido Olobia, regional DOH coordinator for the Filariasis Elimination Program in Eastern Visayas.

The good results of the program, apart from boosting the morale of the health workers, the LGUs and other stakeholders, also highlight the importance of collective efforts. They now have authentic proof that nothing is impossible with commitment, hard work, dedication and collaborative efforts. The only challenge that remains is for the province to sustain the LF-free status.

# **ORIENTAL MINDORO**



# Transcending Cultural Barriers: Elimination of Lymphatic Filariasis in Oriental Mindoro

Lei-Ann Cabuyadao, Oscar Macam, and Faith Alberto, MD



Disease elimination had been a long battle for all, especially for the health sector. Millennium Development Goal 6 talks about what we need to do to win our battle against HIV/AIDS, malaria, and other diseases. However, every intervention must come with a conscious effort to consider the customs and traditions of the target population. In the process of alleviating poverty or reaching targets for enviable health outcomes, we should not think of them as means to a certain end but rather as ends in themselves.



### UNDERSTANDING THE CONTEXT AND BACKGROUND

Oriental Mindoro has 14 municipalities, with 1 component city and 426 barangays. It had a total population of 785,602, as per the Census of Population and Housing Report in 2010. The province had the biggest population in Region IVB. It is considered the "Fruit basket of Southern Tagalog", being the major producer of calamansi and bananas. Mangyans, the indigenous people (IP) of Mindoro constituted about 10% of the island's population, from which majority of the LF cases was detected. Aside from filariasis, the province is also endemic of malaria for the past years. Four (4) municipalities are endemic of schistosomiasis - Naujan, Victoria, Socorro and Pola respectively. It has not yet been declared a disease-free zone, but the province has currently zero (0) malaria case.

#### THE MANGYAN'S WAY OF LIFE

Most of the Mangyans had a nomadic life in remote forested highlands. They are grouped into smaller distinct tribes, namely: Furuan, Batangan, Hanuno'o, Alangan, Ratagnon, Tadyawan, Bangon, Pula, Buhid, Tau-buid and Iraya.

Among the concerns of the Mangyans was the inaccessibility of healthcare services because of the remoteness of their communities. When someone at home was sick, they would have to walk several kilometers to reach the nearest healthcare facility. Traditionally, they did not go to health facilities, but they slowly adapted

to the changing world by way of seeking medical attention for respiratory problems and various infections. Because of inadequate knowledge about health practices, basic home remedies and disease prevention, their health status was frequently compromised.

#### LYMPHATIC FILARIASIS IN ORIENTAL MINDORO

LF was first detected in Oriental Mindoro in 1962. The province's vast agricultural lands



with bananas were the preferred habitats of the mosquito LF carriers. Its discovery was accidental through malaria slides. Some positive cases in Puerto Galera were observed when a national survey was conducted by malaria personnel. The primary carrier of malaria, *Anopheles favirostris*, is the

secondary transmitter of LF. No follow-up on the cases was done then, not until the late 1980s, when deformities were observed and health personnel took action. Dr. Faith F. Alberto, malariologist of the Provincial Health Team Office (PHTO), conducted a thorough deformity survey in the province from the advice of the National LF Program Manager - Dr. Leda Hernandez.

A Nocturnal Blood Examination (NBE) was also conducted and many were found positive, especially in the municipalities of Baco and San Teodoro. Shortly thereafter, the prevalence of LF which was 15.53% was confirmed and Mass Drug Administration (MDA) was commenced. However, those who are living in geographically isolated and disadvantaged areas were not covered for two reasons: inaccessibility and the IPs' lack of confidence with the process.



Mr. Jovito Festin, retired Vectorborne Disease Coordinator of the Provincial Health Team Office in Oriental Mindoro

Ms. Eunice Calangay, Barangay Health Worker in Brgy. Bayanan who witnessed the beginnings of the Filaria Health Fair

Ms. Valeriana Barsugon, mother of the current Brgy. Captain of Brgy. Bayanan who had filariasis during her teens and is very thankful for the program

Kagawad o Hernandez experience Health Fair

#### SUCCESSFUL GOAL-DIRECTED INTERVENTIONS

To ensure good LF drug coverage, the Department of Health (DOH) needed to reach out to at least 85% of the population. The Oriental Mindoro Filaria Health Fair (FHF) started in 2000, as an offshoot of the concerted efforts by the different collaborating agencies. It was both a preventive and corrective intervention. The FHF was designed for the whole population of Oriental Mindoro, but especially intended for the minority groups. Considering the cultural differences between the Tagalogs and the IPs, the FHF was implemented to encourage the Mangyans to participate in the MDA for LF-elimination. Mr. Floro de Padua, Jr., Rural Sanitary Inspector of San Teodoro, Oriental Mindoro, further added that the FHF was conceived with the IPs in mind since "they are the ones who were mostly found positive in filariasis."

The community built a bahay-kubo (native cottage) for every sitio (smaller subdivision) of a barangay. They made it a contest, to

encourage participation. The activity was spearheaded by the staff from both the Municipal Health Office (MHO) and the PHTO. Health personnel from the Center for Health Development (CHD) IV-B and the DOH Central Office sent representatives to attend the event. Even the Department of Education (DepEd) joined the activity, with school children and teachers participating in the program. The staff organized games for the whole day activity, provided food and groceries. The teachers in Bayanan Elementary School thought that the involvement and presence of the different agencies during the activity encouraged community participation.

Ms. Eunice Calangay, Barangay Health Worker (BHW) of Brgy. Bayanan in Baco, Oriental Mindoro, described the FHF as a sort of a feast. The activities during the event motivated the people, especially the Mangyans, to go to the lowland and participate. Even Leonida Hernandez, Kagawad on Health, recalled the FHF days and how the community anticipated the activities. Once a year, the IPs had something for free to enjoy. But it



n Health, Leonida sharing her s on the Filaria Ms. Leah Ubusan, midwife assigned in Brgy. Bayanan, Baco which is one of the pilot areas of the Filaria Health Fair

was not only an opportunity to have free food and groceries, nor to just have fun and establish camaraderie, the event made the whole community (IPs, other locals and stakeholders) stronger in their battle against LF.

The municipality of Baco, having the most number of cases, was the pilot area for the FHF. On the same year, the FHF was simultaneously conducted in Roxas, Naujan, Bansud, Bulalacao and Puerto Galera. It was in San Teodoro, where the media network, ABS-CBN, covered the launching. The story of a Mangyan with LF was also featured in a primetime show, Magpakailanman. In the succeeding years, the activities were simplified into just feeding and the administration of drugs.

# IDENTIFYING AND TOPPLING THE BRICK WALLS

There were brick walls encountered in traversing the road to attain the LF-free status. But the stakeholders, especially the FHF implementers, were undaunted in working for the fulfillment of their goal. The first brick wall in the implementation of the program was cultural difference. Mangyans, being nomadic in nature, were mobile; this made it initially difficult for the implementers to ascertain their location and convince them to take medications.

Moreover, the IPs had three misconceptions about the disease: that it was brought by too much exposure in the mountains doing *kaingin* (slash and burn farming); or that the disease was hereditary; and that it was *kulam* (hex) performed by a witch. Paraya, as they call the curse, may happen because a certain person was angry with another individual. These misconceptions led IPs to believe that only natural actions cured LF such as going to the albularyo (herb doctor), who could cure them through traditional healing.

Ms. Leah Ubusan or Tita Leah to the locals, Barangay Bayanan Midwife, remembered how she strived to persuade the community, especially the IPs, to take the medicines provided. "They hesitated to take the meds because of the side effects like fever," said Tita Leah. They were also concerned about the number of pills they had to take and wrongly assumed that that the medication would bring immediate cure. Mangyans saw it more practical to work for the day and have food, than to take medicines that they felt made them unproductive.

Eunice, the BHW, recalled how she experienced rejection initially, when she invited the Mangyans to go to the lowland and participate in the FHF. The IPs hesitated to join because the fair was a new and foreign idea. She persevered in her convincing efforts and won them over.

The Brick Walls are there for a reason. The brick walls are not there to keep us out. The brick walls are there to give us a chance to show how badly we want something.

- Randy Pausch, The Last Lecture



Mass Drug Administration during the Filaria Health Fair in 2000 at Brgy. Caagutayan in San Teodoro, Oriental Mindoro



Taken during the Filaria Health Fair in San Teodoro, Oriental Mindoro which was attended by Dr. Faith Alberto, the then Malariologist of the province and Dr. Leda Hernandez, Division Chief of IDO-DOH Central Office

In addition, the vector-borne coordinators of San Teodoro stayed late at night in the Mangyan communities as they conducted the needed NBEs. They repetitiously dealt with the woes of the Mangyans and managed to do so without compromising the former's beliefs. Mr. Fernando Ilagan, one of the coordinators, believed in the importance of gaining the trust of the Mangyan people. Without trust, the Mangyans would not have submitted themselves for series of tests.

Another brick wall was the lobbying process. The initiative was from the PHTO and the DOH, but the implementation of the program greatly depended on the support of Local Chief Executives (LCEs), who had the power to command and mobilize the MHO staff. Part of the lobbying process was the inclusion of the program in the municipality's annual budget. Medicines were provided by the DOH but the funds for the event came partly from the respective municipalities. Even then, not all LCEs prioritized health outcomes. Politics got in the way, as it mattered for some officials that only few members of the IPs are voters.

The hardest challenge that the implementers encountered was when there was a death after the MDA. The community members associated the death with the medicines that were given through MDA for the past two years. On its third year, some participants no longer supported the event. Some hesitated to take the medications and became less cooperative. "We were back to zero, we had to go through the same process; re-orient them, especially the IPs, and assure them that the death has nothing to do with the drugs they had been taking," said Mr. Jovito Festin, vector-borne disease Coordinator of the Oriental Mindoro PHTO.

The allotted budget was also not enough to cover all the expenses, so the coordinators resorted to soliciting additional funds from generous people in the community. The coordinators overcame their embarrassment and embarked on solicitations for 5 years. Aside from finances, a large amount of time was spent by the coordinators of the FHF. They came to the venue a day before the event, decorated it and cooked meals, because the event started early the next day.

#### WORKING AS ONE FOR A SHARED GOAL

The elimination program's success became possible through cohesive efforts of different groups. The PHTO staff and the health personnel of the municipalities established a good working relationship. It also helped that they all viewed the FHF as a means to meet health outcomes in the most culture-friendly way.

Ms. Valeriana Barsugon or Nanay Baleng, resident of Barangay Bayanan in Baco, had filariasis during her teens. She was forced to live in poverty at the farthest part of the barangay that had banana plants, together with her siblings and their mother. As her feet began to swell, the only thing she thought of was that she was being hexed by someone. During the launch of the FHF, Nanay Baleng cited that the Barangay Leader was the one who took the medicine first. The aesture led the community members by example in joining the MDA. The same thing happened for the IPs. The coordinator claimed that convincing the leaders was a crucial step before the members followed.

#### MAXIMIZING ALL AVAILABLE RESOURCES

Conscientious allocation of available funds was instrumental for smooth implementation of the program. In San Teodoro, Oriental Mindoro, the municipality provided around PhP200,000 for the FHF program's three phases: pre-implementation phase, the FHF proper and the post-implementation phase.

The pre-implementation phase covered the following: orientation, series of meetings with stakeholders, trainings and the conduct of NBE. The municipality apportioned around PhP50,000 for pre-implementation, PhP40,000 of which was spent for food (during meetings and trainings), and the remaining amount was provided for gasoline



- JOVITO FESTIN Vector-borne disease Coordinator, Oriental Mindoro PHTO





Filaria Health Fair in Baco, Oriental Mindoro

and other logistic expenses. Trainings were usually conducted by CHD IV-B through the PHTO, in collaboration with the DOH.

The funds allotted for the FHF program proper amounted to PhP100,000 and covered the purchase of food and groceries (PhP50,000), logistic expenses (PhP40,000) and prize for the winner of the bahay-kubo contest (PhP10,000).

Program evaluation comprised the postimplementation phase. An allotment of PhP50,000 was for outlined monitoring activities to map out developments or changes in the behavior of community members, on the number of people with deformities that surface each year and on the lowering of LF prevalence.

The program began in 2000 with donors helping raise funds. The Local Government Unit of San Teodoro in Oriental Mindoro spent approximately PhP12.65 per constituent yearly, or a total of PhP63.25 per person in



Students performing at Filaria Health Fair in Roxas, Oriental Mindoro



Oriental Mindoro



Filaria Health Fair in San Teodoro, Oriental Mindoro

5 years (2000-2005). Drugs were provided by the DOH. The amount spent every year was not that big of an investment considering the outcome of better health for the community members

#### **MOVING TOWARDS HIGHER ASPIRATIONS**

Oriental Mindoro province was officially awarded the LF-free status last 2013. This LF-free status did not come easy. Aside from the required consistently high coverage rate for the period of five years, the launched program also required the involvement of the community members, including the IPs.

The implementation of the FHF was a demonstration of improving the state of community members towards the greater goal of national development. Not only did it mobilize the community members to participate in the campaign to eliminate LF, but it also made the participants of the program realize the significance of every member in societal well-being.

The success of the program implementation was demonstrated in the decreasing microfilaria rate – from its baseline of 15.53%. to the mid-term prevalence rate (after 2 years of conducting MDA) of 0.76%, and the prevalence of 0 that finally led to the declaration of Oriental Mindoro as LF-free.

# MOUNTAIN PROVINCE



# STH Infections Prevention and Control in Mt. Province: Best Practices

by:

Paulina Adanglao-Bawingan, PhD and Ursula Puyao-Segundo



"They're not heavy, they're family. " This statement summarizes the dedication and cooperative effort among the various sectors of Mt. Province in the control of infections by soil-transmitted helminthes (STH). Sometime ago, infection by geo-helminthes was considered one of the leading causes of morbidity in the province<sup>1</sup>, at present, STH infection is no longer regarded as such<sup>2</sup>. It has become a problem of the past, thanks to the strong commitment of the local government officials, barangay health workers, school teachers, principals and nurses, church leaders and other members of the community to effectively control this problem. According to Gracia Florentina Bragado, Records Officer, Sangguniang Bayan Office, Bauko, Mt. Province, "this success is due to 'tulong-tulong' (cooperation) among school and health personnel, local officials from barangay up to province level".

Soil helminthes are prevalent in school children living in areas where there is poor sanitation, inadequate hygiene and poor health care systems and facilities<sup>3</sup>. Most of the time the poor are susceptible to infections by soil helminthes due to unsanitary crowded living conditions, lack of clean water supply and accessibility to health care, and low levels of education <sup>4</sup>. Social indifference and neglect to control the infections due to soil helminthes make the situation worse. Globally, approximately 300 million people suffer from severe morbidity that result in 10,000–135,000 deaths annually; however, the greatest impact of STH infection is through the impairment of physical and mental development in children, which ultimately retards educational advancement and economic productivity <sup>5</sup>.

Mt. Province is located in the central part of the Cordillera Region, northern Luzon, Philippines. Mt. Province belongs to the 4<sup>th</sup> class category in terms of socio-economic data<sup>6</sup>. For its source of income, the province relies on agriculture, local industries, and retail trading. NSO's projected population of the province for 2011 is 154,799 with 31,369 households and 34,835 families. Bauko is the most populated municipality while

**MOUNTAIN PRO** 

Barlig has the lowest actual population. In the 2012 survey on socio-economic status, the number of households identified as poor is 7,145 (~ 4.6%). Out of these households, there are 5,858 identified as beneficiaries of the *Pantawid Pamilyang Pilipino Program* (4Ps) for 2013. Mt. Province has multi-tribal communities.

A decade or more ago, soil-transmitted helminthiasis was a major health concern in the province due to the lack of sanitary toilets, poor hygiene among children and adults, malnutrition, and lack of accessibility to health care services. Due to the lack of water sealed toilets feces disposal was done in pits, in pig pens, or worse, anywhere in the open. Children were not properly trained on sanitation and hygiene because parents lack the time for true parenting; many leave their homes early to go to the farm and come home late in the afternoon. Most of the time children had to fend for themselves. Many of the early folks did not receive proper education; hence, going to school was not also given much priority. Due to poverty, lack of proper diet resulted to families which are either undernourished or malnourished. Since the region is mountainous, lack of roads made health services inaccessible to many communities. A sick person was usually carried in a hammock for many hours to reach a hospital that also lacks proper facilities and equipment.

Recognizing STH to be a global concern, international initiatives were established in the past decade with the aim to either reduce or to eliminate the disease burden caused by STHs and other helminthic parasites prevalent in the resource-poor regions of the world <sup>7</sup>. Participating in this endeavor, the Philippines, established the Integrated Helminth Control Program (IHCP) in 2006. This program envisions healthy and productive Filipinos in the 21st century. It aims to "reduce the prevalence of STH infection to below 50 percent among the 1- to 14-year-old children by 2016 and lower STH infection among adolescent females, pregnant women and other special population group"<sup>8</sup>. The IHCP interventions consist of washing, sanitation and hygiene and deworming (WASHED) and several behavior changing approaches.



The success of these interventions, however, depends on the existence of supportive members of the society. This is exactly what the Mt. Province leadership and communities had provided and the main reason for the significant decline in STH infections in the area.

#### HOW MT. PROVINCE IMPLEMENTED THE IHCP

#### Chemotherapy or Deworming

To implement this principal means of helminth control, the Department of Health (DOH) and the Department of Education (DepED) became partners. The DOH is the lead agency in the deworming of all children of non-school age and those who are nonenrolled while the DepED is in charge of deworming all school children enrolled in public schools <sup>9</sup>. The recommended drug for mass treatment is either Albendazole or Mebendazole. Community-based and schoolbased deworming is strictly done twice a year.

To make this fully effective, teachers and barangay health workers (BHWs) were given training on how deworming is to be implemented. To ensure cooperation of parents and children, meetings were held with the Parents Teachers Community Association (PTCA) to explain the benefits of the program. Barangay officials helped in the distribution of deworming tablets and visited Day Care centers to monitor the *"kontra-bulate"* program. Likewise, DOH personnel monitored



the implementation of these deworming activities. School visits were undertaken and availability of deworming tablets was checked to determine needs of the different schools.

During its first year of implementation in 2007, many children experienced passing out many worms. Some experienced erratic worm migration through the oral route after drug intake indicating heavy worm infestation. According to the teachers this did not scare or deter the children from taking the drug during the next deworming schedule. The presence of worms in their feces made them realize the gravity of their worm infestation, hence, the need for periodic deworming. Consequently, there are no more reports of erratic worm migration or heavy worm release after the deworming periods.

The success of this deworming campaign in Mt. Province, particularly for the schoolbased program resulted to the Division of Mt. Province being awarded one of the Outstanding Implementers of the Helminth (Deworming) Prevention and Control Program by DOH-CAR for sustaining an 85% and above implementation rate for five years in 2011; this award was again received in 2012 for the Division's outstanding coverage of 98 percent on school-based deworming and worm-free schools initiatives.

#### WATER, SANITATION, AND HYGIENE (WASH)

In Mt. Province, as early as 1994, erstwhile Governor Maximo Dalog issued a memorandum for all government employees and elected officials from the barangay to province level for the construction of sanitary toilets. To make this possible, fund was appropriated by the Provincial Government for the purchase of toilet bowls which were distributed to all households to augment toilet bowls that were provided by the Department of Health (DOH). In a way, these reduced open toilets or open defecation in many barangays; however, due to financial inability to construct water-sealed toilet bowls, many households did not use the plastic toilet bowls distributed. Governor Dalog issued another Memorandum in 2007 requiring all government employees and elected officials to have sanitary toilets in their houses otherwise their salaries, honoraria and/ or incentives are to be withheld. Barangay officials with constituents not having toilets in their houses will likewise be denied their incentives. According to Sanitary Inspector Caridad De la Pena of the Provincial Health Office, this directive necessitated many households to construct sanitary toilets except probably those who cannot really afford. In 2013 with the implementation of the 4Ps – Pantawid Pamilyang Pilipino Program - indigent families who were given incentives were required to build sanitary toilets in their homes. Moreover, school children of the beneficiaries of the 4Ps were required to undergo deworming before they were given their cash incentives.

Besides sanitary toilets, water supply is also given attention. In the different barangays of Mt. Province, sanitary inspectors were directed to inspect and monitor water supplies to ensure clean and sufficient water for the different households. Majority of the barangays have enough water supplies, albeit some municipalities encounter lack of water especially during the summer months.

#### Essential Health Care Package (EHCP)

In 2006, Mt. Province was selected as one of two Pilot Division for the implementation of the EHCP. The EHCP is a means to implement the "Fit for School" program of

the Philippine Government. In this program, schools in cooperation with the community are to undertake simple, evidence-based interventions to address health issues that may affect the learning and development of children. EHCP included the school-based bi-annual deworming, handwashing, and tooth-brushing. EHCP in Mt. Province became successful.

The "Fit for School" program was implemented within the education sector. while the responsibility to finance and procure the needed consumables (soap, toothpaste, toothbrush and medication) lies with the health sector of the provincial governments. Initially, EHCP materials were provided by the German Development Corporation and GlaxoSmithKline. Subsequently, active participation of the local government unit and the PTCA made the program a success. For instance, Governor Leonard Mayaen approved the release of Ph 400,000.00 in 2012 for the purchase of toothbrushes and polypastes for all school children. The EHCP materials were given to all 200 elementary schools in SY 2012-2013. These materials can be observed in the different Health Corners of the classrooms.

Water troughs were also constructed for mass and individual hand washing and tooth-brushing by the school children. Many of these water troughs were projects of the PTA/PTCA in cooperation with barangay officials and the school teachers. Barangay officials appropriated fund for the purchase of materials. PTA/PTCA, NGO's and church organizations helped provide materials and labor (e.g. in Bangaan, Sagada the Episcopal Church helped; in Leseb, Bauko, the Baptist Church started the construction of the water troughs and continued by the PTCA and barangay officials). All schools that were visited in Mt. Province have their water troughs.

To ensure sufficient water supply for the schools, water tanks were provided and partly funded by the barangay officials like in Leseb (Bauko), Busa (Sabangan), and Bangaan (Sagada); in Kayan (Tadian), water pipes were installed for the elementary school. In some schools (Tadian, Guinzadan and Kayan), plastic bottles which are used to store water to be used by the school children for hand washing and tooth brushing, were observed inside the classrooms.

Hand washing and tooth brushing became essential components in the daily classroom program of the schools. Teachers and school nurses demonstrated proper hand washing and tooth brushing to school children. Some kindergarten schools showed films on proper hand washing and tooth brushing to their pupils. Every day, school children were required to do mass hand washing and tooth brushing.





To ensure supply of soap for the schools, the Provincial Government appropriated fund for the purchase of soap to be distributed to the different schools. In addition, workshop on soap-making was also conducted for all school nurses and health scouts. Health scouts are Grade 5 and Grade 6 school children and were tasked to supervise hand washing and tooth brushing by the pupils in the lower grades. They also cut the fingernails of the younger school children. In some schools, soaps were donated by the PTA and NGO's. In Leseb Elementary School, the teachers volunteered to donate soap as their counterpart in the program. When asked if this is not considered a burden to them, one of the teachers (Esther Pelwigan) said that "bassit nga tulong mi dayta para iti programa" (it is a small help for the program).

To advocate further the value of hand washing, the Division Office of Mt. Province actively participates in the celebration of the Global Hand Washing Day every October 15 of every year. Last October 15, 2012, in the celebration of the Global Handwashing Day, forty elementary schools and nine secondary schools participated in the various events which included the following: lectures by teachers, Registered Nurses for Health Enhancement and Local Service (RN HEALS) and school nurses; film showing; demonstration of hand washing; mass hand washing by the children per grade level; finger nail-cutting of pupils by teachers and health scouts; presentations like songs, rhymes, skits, dances, and poems focused on cleanliness; and posting of streamers and posters on proper hand washing. In Bauko, the Tipunan National High School went further by conducting a 4-hour workshop entitled Global Handwashing and Environmental Awareness with the theme "Sufficient Water for Hand Washing Anchored on Environmental Protection and Watershed Sustainability." In Guinzadan Elementary School, contest by grade level on proper hand washing was conducted; these were judged by representatives from among the stakeholders.

The Mt. Province division was recognized nationwide by the DepED Central Office and Fit for School, Inc. for its implementation of FHCP. In 2009, the division was awarded the Model Pilot Division: in 2010, Best Implementing Division on the installation of EHCP support facilities; in 2011, Outstanding Implementer of the EHCP's Online Monitoring System (OMS). To encourage all the schools, awards were given to the Best EHCP Implementers. Leseb Elementary School received one set of desktop computer with printer; Busa Elementary School received a 26" LCD Flat Screen TV with DVD Plaver: Guinzadan Norte Elementary School received the cash award of Ph 5.000.00. Several consolation prizes were given to nine elementary schools.



Not only were the schools awarded for their hard work in implementing health programs, deserving local government units and officials were also given due recognition. For instance, in Central Bontoc, the barangay captain of Caluttit was awarded the most supportive barangay captain in the promotion of sanitation and health in his barangay. Several activities were conducted by the barangay relative to maintaining good health in the community which include periodic clean-up drive, practicing solid waste management, providing free massage, participating in sport activities among others. To realize some of these activities, government scholars or municipal grantees were tapped and required to render community service by joining in these health-related endeavors. In addition, many ordinances to promote health in the community were passed by the Barangay Council; general assemblies in the different sitios were held to explain these ordinances to the residents as well as to get feedback from them. One important ordinance that was passed was Barangay Ordinance NO.3 s 2012 - Children's Code of Barangay Caluttit which provides for safeguarding children's welfare and maintaining their good health.

According to Barangay Captain Jimmy Cherwaken, he had very cooperative barangay health workers and officials to implement the programs. The barangay health workers (BHWs) helped implement health programs voluntarily although they are given very minimal cash incentives. According



to the BHWs they do not mind doing the work because the children whom they attend to and monitor are their own children, they are part of their families. As aptly put by one of the BHWs, "Agfollow-kami uray awan sweldo ta pamilya met isuda, annak mi isuda," (we follow-up even if we receive no salary, because they are our children, they are our family), Godaliva Afidchao, BHW, Bontoc. This was confirmed by the Provincial Health Team Leader, Dr. Natividad Orprecio when she said that "Success of STH prevention in barangays" is due to commitment and dedication of all barangay health workers."

In Bauko Municipality, there were also barangays recognized for best health practices: Bagnin, Bila, and Bilantaugan. Bagnin was also awarded for the Best Mother and Child Care Practices. Bauko was a pilot area for the implementation of the Sustainable Sanitation in Asia (SuSiA) project in 2008 – 2010. STH prevention is one of their main health concerns. The project focused on safe water, promotion of sanitary toilets and handwashing, and capability building of health workers on STH prevention. In addition, the DOH constructed a Water Laboratory in the area to ensure water safety. Water analysis is being done regularly and it offers free laboratory testing within the municipality except for request from private sectors and other municipalities of the province. On food establishments. the health personnel conducts seminar on food handling and proper hygiene prior to issuance of health certificates. School canteens are also enforced to obtain their health certificates. To increase access to sanitary toilets, the LGU provides 50 percent for the cost of toilet construction for senior citizens and the owners handle half of the expenses. The conduct of health advocacy during People's Day was a monthly activity of the local officials. According to Dr. Samuel Masidong, Municipal Health Officer of Bauko, "The traumatic experience of having feces with worms that I had when I was a child should not be passed on to our children. The prevention and control program for soiltransmitted helminthiasis (STH) should be taken seriously not only by the health workers but by everyone. It is a prestige to live in a worm-free environment "



Overall, the success of STH infection control and hopefully elimination in the Mt. Province is largely due to strong commitment of the DOH and DepED officials and personnel who worked hand in hand to ensure successful execution of the Integrated Helminth Control Program strategies. The Essential Health Care Package was competently and efficiently implemented. All stakeholders made sure that every child is accorded attention to attain good health. As Dr. Peckley (Physician, DepEd, Division of Mt. Province) had adroitly stated, "poor health means poor learning."

To top this, there is strong support from the Provincial Governor down to the barangay officials. As the results of the survey show, many barangay officials performed their responsibility to help attain health, and sanitation effectively and satisfactorily. It can be said that this is made possible due to command responsibility from the top. Roughly, almost a million pesos was disbursed by the provincial coffers to support STH prevention and control program of the DOH since 2007. This is just a small amount to pay to attain an environment that promotes better health for the people. After all, a strong and healthy citizenry means a more progressive nation

With all the activities conducted related to health and sanitation in schools and in the barangays, not only have the educated but also the uneducated understand the importance of maintaining good health, said Gracia Florentina Bragado, Bauko Records Officer, Sangguniang Bayan Office. In Mt. Province, the efforts of all stakeholders can be summarized in the well- known adage: "In unity there is strength."

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# MAGUINDANAO



# Empowering the Schistosomiasis Control and Elimination Program: The Maguindanao Experience

Lea Yonting, Karen Kadatuan, Ma. Geraldine Macapeges, MD



Maguindanao's provincial schistosomiasis control and elimination program coordinator dreamed of being able to eliminate the disease that she has been in charge of for 25 long years.

Ms. Tuladan Manibpel inherited the program from Region 12 when the province of Maguindanao was moved into the jurisdiction of the ARMM in 1989.

Ms. Manibpel inherited a program but none of the human, financial or material resources needed to run a good program. She wondered if her dream would ever become reality....

Onchomelania hupensis quadrasi

### PROFILE OF THE PROVINCE

Maguindanao is one of the five provinces in the Autonomous Region in Muslim Mindanao (ARMM). The province is located in the central part of the Mindanao Island in Southern Philippines. It is bounded in the north by Lanao del Sur Province, and in the east by North Cotabato, in the south by Sultan Kudarat Province, and in the west by Illana Bay.

The province has a total land area of 5,425 sq.km. It is divided into 2 congressional districts with 36 municipalities subdivided into 508 barangays. There are 204 barangays (54%) that are classified as geographically isolated and disadvantaged areas (GIDAs). Based on 2010 NSO census, Maguindanao has a total population of

produced. Fishing is another source of income considering the abundance of inland waters. Trade and commerce in certain areas is easily facilitated where good road network is available but worst where roads are only passable by foot, single tire motors or horseback ride.

The ARMM has a devolved set-up that is different from the rest of the country. Most of the government line agencies are devolved to the Autonomous Regional Government but not to the Local Government Units (LGUs). The Integrated Provincial Health Office of Maguindanao (IPHO-Maguindanao) operates

944,719.



Majority of the populace practice Islam, about 90%. The remaining 10% are divided into several religious affiliations. The mother tongue of the province is Maguindanaon, since majority of the ethnic groups are Maguindanaon. The minority groups are Iranon, Tiruray, B'laan, Ilocano and Ilonggo, but Cebuano and Tagalog are also widely-used as

in a non-devolved set-up. This means that the health workforce is still under the direct administrative supervision of the Provincial Health Officer (PHO) and not to the chief executives of their respective LGUs. This unique non-devolved set-up drastically affects the provision of health services in the area, specifically the funds' sources and flow for the delivery of health services.

Based on the 1997 economic survey, the poverty incidence was 49%. This may be strongly attributed to the unstable peace and order situation of the province causing frequent population displacement. Though over the years, economic condition of average Maguindanaoan family has shown improvement, there remain some financially challenged families striving hard to make both ends meet. Rice and corn are the major products of the province. Copra, root crops, vegetables and fruits are sufficiently medium of communication.

#### EXTENT OF SCHISTOSOMIASIS IN MAGUINDANAO

Ten (10) out of the 36 municipalities in Maguindanao have schistosomiasisendemic barangays. These municipalities are Ampatuan, Datu Anggal Midtimbang, Datu Abdullah Sangki, Datu Odin Sinsuat, Datu Paglas, Datu Unsay, Rajah Buayan, Guindulungan, Mangudadatu, and Talayan. Most of these endemic barangays are contiguous, as can be seen on map (Figure 1).

#### HISTORY OF DISCOVERY OF THE DISEASE

Schistosomiasis cases in Maguindanao were reported as early as 1960's but people believed that it was caused by evil spirits, black magic or inherited.



Fig 1. Map of schitosomiasis-endemic barangays in Maguindanao municipalities

One community member disclosed "may commander dito na sobrang sakit ang ulo niya. Akala nila pantak o black magic, nang ipasuri ang tae nya schisto pala ang sakit niya (there's an army commander here who suffered severe headache, his family thought it was a hex or black magic), when they had his stool examined, it was found out that he had schistosomiasis."

Some residents thought that schistosomiasis may be inherited or passed on by pregnant mothers to their children. On the other hand, there are others who believed that animals (like cows and carabaos) may also spread the condition.

In 1980s, a patient from Brar, Talayan was confirmed to have schistosomiasis during her stay in Midsayap, North Cotabato. In 1982, a malacological survey was conducted at Brar, Talayan by the Schistosomiasis Team from Palo, Leyte. Thereafter, a schistosomiasis team from Region 12 monitored cases and gave praziquantel to affected persons. Unfortunately, the patients complained that the medication had an awful smell and caused severe reactions, prompting them to turn back to their usual practice of expelling spirits for cure.

# THE TOP SCHISTOSOMIASIS-ENDEMIC PROVINCE

In 1997, Maguindanao ranked first in terms of schistosomiasis prevalence from the list of schistosomiasis-endemic provinces in the Philippines, with prevalence rate of 18.9%. From the year 2003, a schistosomiasis team composed of a nurse and 2 medical technologists from Region 12 was detailed in Maguindanao to implement program activities such as case-finding and case-management.



In 2009, the implementation of preventive chemotherapy through Mass Drug Administration (MDA) using praziquantel was started in all endemic barangays of the province, however, it was limited in scope and done together with the Garantisadong Pambata activities in October. Treatment was initiated for individuals, who were reported to be in the chronic phase and showing clinical manifestations. In the same year, the medical technologists and sanitary inspectors of the province were oriented on identification of snails, for better case-identification and management. Training did not involve health workers though due to fund constraints.

#### INVIGORATING THE MAGUINDANAO SCHISTOSOMIASIS CONTROL AND ELIMINATION PROGRAM

Fortunately, in 2013 a partnership with USAID through FHI 360, and the DOH, garnered focused-funding for the province. In 2013, Dr. Tahir Sulaik, the PHO II, ordered the creation of the IPHO-Maguindanao Schistosomiasis Task Force assigned to coordinate the implementation of program activities in the schistosomiasis-endemic areas. He also encouraged the Municipal Health Officers to organize Technical Working Groups at the municipal and barangay levels. Close coordination among local officials, as well as the conduct of a thorough parasitological and malacological survey were set in place.

The parasitological survey was massive and thorough covering all endemic barangays, with a high sample of 250 subjects per barangay using two-stool collection with two aliquot preparation. The IPHO mobilized its human resource, the small financial and material resources it had, and the support of funds from USAID, to make the extensive survey happen. The funds supported the training of medical technologists, the collection of stools by the community health workers, and the subsequent reading of slides. The 250 subjects were given a token of soap and hand-towel after they submitted their second and final stool specimen. All medical supplies and materials were also purchased using USAID funds.

The malacological survey was likewise conducted using USAID funds with the purchase of all materials needed such as personal protective equipment, ropes, notepads and others. USAID funded the





preparatory training and the post-survey workshop of malacologists; and also made possible the provision of small meal and transportation allowances for all sanitary inspectors, volunteer GPS mappers, volunteer malacologists.

# ENGAGING LGUS AND THE LOCAL HEALTH TEAMS

On May 6, 2014, an orientation about schistosomiasis, its current status and the upcoming survey was conducted with barangay key officials. Their support and involvement was solicited with emphasis on the duties and responsibilities of different stakeholders. This was also participated in by the Municipal Health Officers (MHOs), Public Health Nurses (PHNs), Rural Health Midwives (RHMs), community volunteers and IPHO staff. At the end of the meeting, each barangay drafted an action plan for four weeks.

On May 5-6, 2014, a Refresher Course for medical technologists on laboratory diagnosis was conducted, followed by the training of sanitary inspectors and community volunteers on snail site mapping, GPS marking and collection of snails on May 6-9, 2014.

# PARASITOLOGICAL AND MALACOLOGICAL SURVEY RESULTS

After the trainings, medical technologists selected and oriented the stool collectors for the parasitological survey. The workforce

that made the parasitological survey happen was composed of 7 medical technologists, 16 RHMs, 80 stool collectors and 2 data encoders over a span of 4 weeks.

Out of 4,000 expected respondents, the over-all response rate was 91.75%, with the lowest response rate of 29.2% at Kapinpilan, Ampatuan. There were 52% female and 48% male subjects. Around half of the respondents, 50.4% were of less than 16 years of age. The findings showed 5 respondents from 3 endemic barangays with a positive result for schistosomiasis. Considering the consistently high coverage of deworming activity during Garantisadong Pambata in the past years, it could be said that much effort should be redirected towards improving environmental sanitation and proper hygiene to avoid re-infection.

The survey was not without challenges. These included flooding in some areas, peace and order issues in some barangays, shortage of needed supplies (in some instances), as well as competing program activities of health workers. In some areas, stool collectors also got sick and quit, while delay in collection also occurred when participants were embarrassed to give samples.

Despite these challenges the response rate of 91.74% was acceptable to the trainors and resource persons from UPCPH. The slides were also revalidated by external readers. The positive cases were immediately given treatment.

For the malacological survey, each barangay had an assigned team composed of sanitary inspector, barangay volunteers, and GPS mapper. The 6 trained sanitary inspectors and 6 community volunteers used transect lines as snail sampling technique for linear bodies of water. After informing the local leaders in the area, they did an ocular survey of the snail sites. They located, identified and collected all kinds of snails found in the area. After collection, the snail intermediate host, *Oncomelania hupensis quadrasi*, was separated and crushed to determine the snail infection rate.

Before mapping sessions, a courtesy call was conducted, health education sessions for the people were also done subsequently. Causes and manifestations of the disease, preventive measures with emphasis on environmental sanitation and use of latrines were the topics tackled during the health education sessions.

Out of 33 previously identified snail sites, 26 were surveyed, 18 of which were positive for Onchomelania hupensis quadrasi snails, while 8 sites were found negative. The highest snail population density was found in Datu Anggal Midtimbang with 40 snails/sgm, followed by Datu Odin Sinsuat, Datu Abdullah Sangki, DatuPaglas, Datu Unsay, Guindulungan, and Talayan respectively. Out of 18 positive snail sites, 4 were positive for infected snails. Brgy. Sepaka, Datu Paglas showed highest snail infection rate of 2.08%, followed by Brgy. Banaba, Datu Abdullah Sangki with 1.85%, Brgy. Brar in Datu Anggal Midtimbang with 1.00% and 0.52% in Brgy. Benolen, Datu Odin Sinsuat. All snail sites positive for snails were found either close to human habitation or sites of frequent human water contact.

Some volunteers experienced difficulty in determining the snail infection rate, perhaps due to their constrained experience with the GPS and fear brought about by the unchartered vegetations. There was also a lack of sanitary inspectors and microscopists in some areas.

It was decided that health workers still need to re-survey the snail sites found negative of snails to ensure that there is absence of snails in the area. Barangays that were not mapped due to flood or peace and order issues will be revisited and re-surveyed.

Both parasitological and malacological survey results and findings were initially presented to the barangay officials and health workers last June 10, 2014, at Cotabato City. The results were also disseminated through an advocacy meeting and forum among local chief executives and other municipal officials last June 18, 2014, at Davao City.

#### **CONTINUING INVOLVEMENT OF THE LGUs**

The following months of July and August were mass treatment months in the endemic barangays. The coverage noticeably increased because of more cooperation from the people and the local chief executives. Some barangays passed a resolution on the



prohibition of water activities in snail-infested areas. Talayan and Guindulungan LGUs hired municipality-paid sanitation inspectors.

On November 14, 2014, the post-mass treatment conference and planning workshop was conducted at Maguindanao Provincial Hospital, Datu Hoffer, and attended by PHNs, RHMs and MHOs of endemic areas.

During this workshop, the accomplishments and gains were celebrated. The gaps and challenges were identified, such as the need for more training on disease management, more sanitary inspectors to be hired, a more thorough system of documenting adverse effects of drugs, augmented funds for transportation during mass treatment, more supportive drugs needed to be procured, more protective gears for health workers in endemic areas. Likewise, stronger support from barangay LGUs to provide transportation to geographically isolated depressed areas, more foot bridges and signages on infected bodies of water, more households using sanitary toilets are going to be helpful.

#### LOOKING TOWARDS A BRIGHTER FUTURE

Dr. Sulaik, Provincial Health Officer of Maguindanao, is positive that despite the challenges still at hand, these series of activities have reenergized the PHO, the communities, health workers, local chief executives and their LGUs. He said that, "this is a sustainable way of funding because we all remember the saying: give a man fish and he will eat for a day but teach him how to fish and he will have food everyday."

When offered more funding, PHO Maguindanao requested for what is most needed: training and orientation of human resources. Municipal Health Officers, Public Health Nurses, Rural Health Midwives not only from all endemic barangays and muncipalities but also from non-endemic barangays were oriented on schistosomiasis and deepening their knowledge on case management. 220 volunteer Community Health Teams were oriented on schistosomiasis and other essential health care packages and were organized to take care of 20 to 25 households in endemic barangays. A forum to solicit lasting support of Local Chief executives was organized in terms of ordinances to cover various complimentary strategies necessary to control and maybe eliminate schistosomiasis

such as constructing footbridges, signages, canal clearing and other malacological work, constructing community toilets, designating communal laundry areas away from infected bodies of water, designating work animals schisto-free wading pools, among others.

Dr. Gina Macapeges, Chief of the Technical Division for public health at the PHO, has reiterated time and again that the focusedfunding provided in Maguindanao should be maximized to effectively control and eventually eliminate schistosomiasis in the province. She further said that the PHO must remain vigilant, since parasitological and malacological results at present still indicate that there is active transmission of infection.

Ms. Tuladan Manibpel, Provincial Coordinator of the program, is going to retire in a few years time, but she is more hopeful these days compared with her sentiments 25 years ago. With a smile on her lips, she quips: "...this is the beginning of the realization of my dreams. We are now working hard towards making sure schisto will no longer be a burden to my fellow Maguindanaons."

Maguindanao is one of the 28 provinces endemic of schistosomiasis in the Philippines. Anecdotal history revealed that despite observation and evidence of many chronic and complicated cases of schistosomiasis as early as the 1960s, it was only in 1980s that a case was confirmed by parasitological method. This paved the way for further investigation, finding of additional cases and the intermediate host of the disease. Unlike other endemic provinces or areas however, addressing the issue in Maguindanao is challengingly different due to the diverse socio-cultural, demographic and economic characteristics of the place and populace; the topographical and geographical landscape; as well as the peace, safety and security status in the area that affect the delivery of basic social services.

For the past decade, the control and prevention of schistosomiasis in Maguindanao have been dramatic. Despite the unique attributes and unstable environmental conditions, whether caused by natural or man-made factors, the progress in control has been quite impressive.

It is my strong belief that instrumental to this is the political will exemplified by leaders as the key to change. Equally important is the buy-in of the local government to health activities as a result of good advocacy, and constant coordination and collaboration work.

As a final word, the work and experience in Maguindanao is worthwhile; and it is the aspiration of the National Schistosomiasis Control and Elimination Program (NSCEP) that other areas will hopefully emulate it.

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