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Philippines: Towards Expanding Access to Healthcare Services - A Policy Simulation Report

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ABBREVIATIONS

Asian Development Bank (ADB)
Annual Poverty Indicators Survey (APIS)
Barangay Health Stations (BHS)
Basic Emergency and Obstetric Newborn Care (BEmONC)
Benefit Delivery Review (BDR)
Center for Research and Communications (CRC)
Civil Servants' Medical Benefit Scheme (CSMBS)
Community-Based Health Insurance (CBHI)
Community Health Teams (CHTs)
Department of Budget and Management (DBM)
Department of Health (DOH)
Department of Interior and Local Government (DILG)
Department of Social Welfare and Development (DSWD)
Family Income and Expenditure Survey (FIES)
Gross National Income (GNI)
Gross Regional Domestic Product (GRDP)
Groupe de Recherches et d'Echanges Technologiques (GRET)
Health Care Fund for the Poor (HCFP)
Health Equity Funds (HEF)
Health Facilities Enhancement Program (HFEP)
Health Policy Development Program (HPDP)
Household Final Consumption Expenditure (HFCE)
Indigent Program (IP)
Kalusugang Sigurado at Abot-Kaya sa PhilHealth Insurance Program (KASAPI)
Local Government Units (LGUs)
Millennium Development Goals (MDGs)
National Demographic and Health Survey (NDHS)
National Health Insurance Program (NHIP)
National Household Targeting System for Poverty Reduction (NHTS-PR)
National Statistics Office (NSO)
Non-Governmental Organizations (NGOs)
Official Development Assistance (ODA)
Philippine Health Insurance Corporation (PhilHealth)
Philippine Health Statistics (PHS)
Philippine Institute for Development Studies (PIDS)
Provincial Health Offices (PHO)
Public-Private Partnerships (PPP)
Registered Nurses for Health Enhancement and Local Services (RNheals)
Rural Health Units (RHUs)
Social Health Insurance (SHI)
United Nations Development Program (UNDP)
United States Agency for International Development (USAID)
University of the Philippines School of Economics (UPEcon)
World Health Organization (WHO)

PHILIPPINES: TOWARDS EXPANDING ACCESS TO HEALTHCARE SERVICES

Health being one of the important aspects of human development, healthcare services should essentially be accessible to all. However, many people, especially the poor are often unable to access these services due to various reasons such as financial constraints, lack of quality infrastructure and equipment geographical barriers, and many other problems. Given that such a situation prevails in the Philippines, President Benigno Aquino III developed an agenda to address the health-related problems of Filipinos in terms of access to healthcare services. The Aquino Health Agenda (implementation from 2012 to 2016) is focused on three strategic areas of action: to upgrade the healthcare facilities, to expand health insurance coverage to the poor, and to achieve the health-related Millennium Development Goals (MDGs). Since this agenda is crucial in expanding access to healthcare services, the policies under it should be simulated to determine if they are really pro-poor and cost effective. This study, aimed at expanding access to healthcare services, simulates the effects of two policies under the Aquino Health Agenda — upgrading the healthcare facilities under the Health Facilities Enhancement Program (HFEP), and expanding health insurance coverage under the National Health Insurance Program (NHIP) — specifically in terms of increasing the number of live births attended by skilled health personnel in Western Visayas, using the Benefit Incidence Analysis and Cost Effectiveness Analysis.

Western Visayas is the selected research locale of the study since it has the highest percentage share of the total number of National Household Targeting System – Poverty Reduction (NHTS-PR) families[1] who are the beneficiaries of the above agenda (8.8489 percent), and the fourth highest percentage share (7.8011 percent) in the total number of health facilities to beupgraded under the same agenda. This signifies that the Western Visayas region stands to gain significantly from the Aquino Health Agenda.

Increasing the number of live births attended by skilled health personnel is chosen to be the specific policy goal of this study, since the Philippines has low probability of improving maternal health in 2015, according to the United Nations Development Program (UNDP).[2] At the same time, most of the equipment that will be upgraded under the Aquino Health Agenda is aimed at reducing child mortality and improving maternal health.[3]

The two policy options — upgrading the health facilities under HFEP and expanding the health insurance coverage under NHIP — are both complementary policies that may help in the expansion of access to healthcare services, specifically in increasing the number of live births attended by skilled health personnel in the region. However, it is important to determine which of these two policy options is pro-poor and cost effective. Determining the benefit incidence and cost effectiveness of the policies is beneficial in making policy-related decisions. Thus, the two policies of the Aquino Health Agenda were simulated in this study using the benefit incidence analysis and cost effectiveness analysis.

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[1] Poor families as determined by the Department of Social Welfare and Development (DSWD).

[2] United Nations Development Program (UNDP), "The Millenium Development Goals," UNDP in the Philippines, http://www.undp.org.ph/?link=goal_5 (accessed 1 February, 2013).

[3] Villaverde, Mario. Interview by Rachel Lynn Belandres. Personal Communication. Ateneo de Manila University, 28 January, 2013.

The Benefit Incidence Analysis is an empirical framework used to measure the distributional incidence of the benefits of public spending on health (including the two policies) for different income deciles in Western Visayas. It also determines whether or not the government spending on health is pro-poor. On the other hand, the Cost Effectiveness Analysis is a method used to evaluate the social intervention programs according to their costs and effects with regard to producing an expected outcome. In this study, it will be used to analyze the two programs under the Aquino Health Agenda, which are HFEP and NHIP for NHTS-PR families.

The first policy option is intended to improve the condition of the public health facilities, especially with regard to their construction, infrastructure and equipment — all of which are essential for the provision of quality healthcare. The second policy option is aimed at providing health insurance to the poor, since the poor do not have the resources to access healthcare services. Looking at the description of the two policies, the second policy option is seen to be targeted more specifically at the poor, a fact that is further strengthened by the results of the benefit incidence analysis.

These results show that the second policy option, which is expanding the health insurance coverage, is more pro-poor compared to the first policy option, which is about upgrading the health facilities. In terms of resources, the NHIP has a higher budget compared to HFEP, which in real terms is equivalent to 812.865 million pesos for Western Visayas. The HFEP, on the other hand, has a budget of 47.010 million pesos only for the same region. Hence, the NHIP budget is 765.855 million pesos higher compared to the HFEP budget.

However, in terms of percentage distribution of health subsidy, the shares of the first and the second income deciles have increased when the NHIP budget is added to the government spending on government hospitals, rural health units, barangay health stations and all public health facilities in Western Visayas in 2012, while they have remained the same when the HFEP budget is added. In terms of government spending on government hospitals, the shares of the first and the second income deciles have increased from 9.37 to 24.77 percent and from 12.36 to 32.67 percent respectively, when the NHIP budget is included, while in terms of government spending on rural health units, they have surged from 13.61 to 28.93 percent and from 19.73 to 41.92 percent correspondingly. Conversely, in terms of government spending on barangay health stations, the shares have gone up from 17.38 to 33.23 percent and from 22.57 to 43.15 percent respectively, while they have increased from 12.56 to 28.44 percent and from 17.14 to 38.81 percent correspondingly.

In terms of benefit incidence in both absolute and relative terms, government spending on all health facilities in Western Visayas in 2012 is progressive when both the HFEP and the NHIP budgets are added. However, the suits indices of all public health facilities, when the NHIP budget is included are more negative compared to the suits indices of all public health facilities when the HFEP budget is added. When the HFEP budget is included in the government spending on government hospitals, rural health units, barangay health stations and total health, the suits indices of these health facilities are -0.10868685, -0.3213812, -0.386845 and -0.243321 respectively. Conversely,when the NHIP budget is included in the government spending on government hospitals, rural health units, barangay health stations

and total health, the suits indices of these facilities are -0.417777,-0.580390, -0.629596and -0.532408 correspondingly.This implies that the poor have higher shares in government spending on all health facilities including the NHIP budget than in government spending on all health facilities including the HFEP budget.

With regard to subsidy rates, the inclusion of both the HFEP and NHIP in government spending on health in Western Visayas in 2012 has contributed to the increase in the percentage share of health subsidy in covering the expenses of the poor, who are from the first and second income deciles. However, NHIP has a higher contribution in the increase in the percentage share of health subsidy in covering the expenses of the poor compared to HFEP. Subsidy rates for government hospitals of the first and second income deciles have increased from 0.4973 to 0.5233 percent and from 0.4375 to 0.4604 percent respectively, when the HFEP budget is added, while they have surged from 0.4973 to 2.4166 percent and from 0.4375 to 2.1261 percent correspondingly when the NHIP budget is included. On the other hand, subsidy rates for rural health units of the first and second income deciles have increased from 0.6144 to 0.6575 percent and from 0.5938 to 0.6355 percent respectively when the HFEP budget is added, while they have surged from 0.6144 to 2.9860 percent and from 0.5938 to 2.8859 percent when the NHIP budget is included. Subsidy rates for barangay health stations of the first and second income deciles have increased from 0.4385 to 0.4775 percent and from 0.3797 to 0.4134 percent respectively when the HFEP budget is added, while they have surged from 0.4385 to 2.1312 percent and from 0.3797 to 1.8454 percent correspondingly when the NHIP budget is included.

Moreover, NHIP is meant to benefit only the poor income deciles, while HFEP benefits people from all income deciles. Hence, the effect of NHIP in terms of benefiting the poor is greater compared to that of HFEP. This makes the government spending on expanding health insurance coverage for greater access to healthcare services more pro-poor — specifically in terms of increasing the number of live births attended by skilled health personnel in Western Visayas — compared to the government spending on upgrading the health facilities in the region.

On the other hand, in simulating the two policies using cost effectiveness, HFEP or the first policy option of upgrading the health facilities is the most cost effective, since HFEP in Western Visayas has a cost effectiveness ratio of 15,970.23 pesos per live birth attended by skilled health personnel, while NHIP in the same region has a cost effectiveness ratio of 24,114.88 pesos per live birth attended by skilled health personnel. This is due to the fact that this region has the highest share in the total number of NHTS-PR families in the Philippines, and thus, the cost of extending health insurance coverage here is the highest. Consequently, the HFEP costs in Western Visayas will be lower compared to the NHIP costs, which also implies that less cost is incurred in HFEP in increasing the number of live births attended by skilled health personnel, as compared to NHIP.

In Iloilo, Negros Occidental, Bacolod City and Aklan, HFEP is the most cost effective program. This is triggered by the higher costs of NHIP compared to HFEP in these provinces. In addition, even though Iloilo and Negros Occidental have the highest shares in HFEP and NHIP costs in the region, they still have a higher number of live births attended by skilled health personnel as compared to other provinces, which proves that it is cheaper to

increase the number of live births attended by skilled health personnel in Iloilo, Negros Occidental, Bacolod City and Aklan with HFEP, as compared to NHIP. Iloilo, Negros Occidental, Bacolod City and Aklan have cost effectiveness ratios of HFEP equal to 13,900 pesos, 23,100 pesos, 2,018 pesos, and 9,528 pesos per live birth attended by skilled health personnel respectively. On the other hand, they have cost effectiveness ratios of NHIP equivalent to 24,767 pesos, 55,197 pesos, 2,823 pesos, and 21,049 pesos per live birth attended by skilled health personnel correspondingly.

In Iloilo City, Antique and Guimaras, the NHIP is more cost effective compared to HFEP. This is because these provinces have small numbers of NHTS-PR families who are the beneficiaries of the health insurance under the Aquino Health Agenda. Hence, the NHIP cost is lower in these places as compared to the HFEP cost. This also means that the implementation of the NHIP helps to increase the number of live births attended by skilled health personnel at a lower cost as compared to HFEP. In the case of NHIP, the Iloilo City, Antique and Guimaras have cost effectiveness ratios of 5,892 pesos, 25,755 pesos, and 19,233 pesos per live birth attended by skilled health personnel respectively. For HFEP, they have cost effectiveness ratios of 17,394 pesos, 28,876 pesos, and 32,364 pesos per live birth attended by skilled health personnel correspondingly.

Even though expanding the health insurance coverage is more pro-poor than upgrading the health facilities, and the latter is more cost effective than the former, both the policy options should be implemented in the Western Visayas by the Aquino administration as they are both complementary to each other. Also, these policies address the different problems in accessing the healthcare services. Upgrading the healthcare facilities addresses the problem of their low accessibility to the poor, and the lack of quality infrastructure and equipment in these facilities, whereas expanding the health insurance coverage is essential in addressing the financial problems of the poor in accessing the healthcare services. When implemented singly, neither of these two policy options will have a significant impact on the achievement of the policy goals. For example, if upgrading the health facilities is the only policy option implemented, the poor will still face difficulties paying the fare to and from the health facility or paying for health consultations, medicines and other medical expenses. On the other hand, if the expansion of health insurance coverage is the only policy option implemented, the poor, though they will be in a position to afford treatment will not be able to do so given the lack of infrastructure, equipment, medicine stocks and staff within the health facilities. Thus, they will still be denied access to healthcare services. Hence the implementation of both the policy options will go a long way in ensuring significant expansion of access to healthcare services, specifically in achieving high numbers of live births attended by skilled health personnel in Western Visayas.

INTRODUCTION

Human development is an important aspect of a person's life. It is the "process of enlarging people's choices and building human capabilities, enabling them to live a long and healthy life, have access to knowledge, have a decent standard of living and participate in the life of their community and the decisions that affect their lives,"[4] as defined by the United Nations Development Program (UNDP). Based on this definition, an importantcomponent of human development is health, which takes into account the longevity and nutritional needs of individuals. This is the reason why health organizations the world over advocate improvements in healthcare for the achievement of health-related Millennium Development Goals (MDGs). Improved access to healthcare services can lead to positive developments in health outcomes and eventually, to human development, through providing solutions to the difficulties faced by people with regard to health.

Unfortunately, not everyone has access to healthcare services, like the poor and the marginalized, as is the case in some countries — Philippines being one among them. Here, families from the lower income class, estimated to be 10.8 million,[5] are generally the ones who experience difficulty in terms of access to healthcare services. Based on the 2008 National Demographic and Health Survey (NDHS) of the National Statistics Office (NSO), the top five problems that Filipinos in the lowest quintile face in relation to accessing healthcare services are: (1) getting money for treatment (74.0 percent of respondents), (2) concern that no drugs are available (71.0 percent), (3) distance to the health facility (57.8 percent), (4) having to take transport (56.1 percent) and (5) concern that no provider is available (54.0 percent). Majority of these problems are related to the financial concerns of the poor, low accessibility healthcare services; and lack of quality infrastructure and equipment in health facilities. Hence the problems in accessing healthcare are multidimensional.

One reason why the poor face these problems in accessing healthcare is because their average monthly income of 3,460 pesos[6] is not enough to cover their basic needs. As such, people from the lowest quintiles are often left to decide whether to seek medical treatment at the expense of missing meals, foregoing the education of their children, or facing financial ruin and destitution. Another reason is that the average travel time of the poorest quintile to the nearest health facility or provider is about 46.8 minutes, while that of the highest quintile is about 34.6 minutes.[7]There is a difference of 12.2 minutes between the average travel time of the lowest and the highest quintile. At almost a quarter of an hour, these valuable minutes lost could mean a difference between life and death. This situation may also arise on account of geographical barriers, where there is a long distance to be covered between the house of the poor and the health facility, or there are problems of transportation in reaching the health facility.

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[4] United Nations Development Program (UNDP), "Support Package for Human Development Report Focal Points," UNDP, http://hdr.undp.org/en/media/SupportPackage_eng.pdf (Accessed August 29, 2012).
[5] Department of Health, *Department Order No. 2011-018,* (Manila, 2011).
[6] National Demographic and Health Survey (2008)
[7] Ibid.

In order to improve access to healthcare services, the government can either tackle the financial problems of the poor, the lack of quality infrastructure and equipment inhealth facilities, or the accessibility issues of the poor to the health facilities. They can adopt multi-dimensional policies that are complementary in addressing the problems related to access to healthcare. Some solutions to these problems lie in: upgrading the health facilities and expanding the health insurance coverage. The latter can protect the poor from financial risks. On the other hand, upgrading the health facilities can lead to the expansion of these facilities to rural areas, where majority of the poor live, and to improvements in infrastructure and equipment, which are essential to the provision of quality healthcare.

Given this scenario, and as if in response to the cries of the Filipinos, on 30 June, 2010, while giving his inaugural address, the newly elected President Benigno S. Aquino III promised to improve public health services within the following three years.[8] By 16 December, 2010, the Department of Health (DOH) released Administrative Order No. 2010-0036 (AO2010-0036), titled "The Aquino Health Agenda: Achieving Universal Health Care for All Filipinos," which provided the initial steps to achieve universal health coverage. Three main "strategic thrusts" were the fruits of this first administrative order: First, there is to be rapid expansion in enrolment and benefit delivery of the National Health Insurance Program (NHIP) for the poorest families, who are part of the National Household Targeting System for Poverty Reduction (NHTS-PR) of the Department of Social Welfare and Development (DSWD). Second, there is to be accelerated upgrades for public health facilities in order to improve access to quality hospitals and healthcare facilities. Finally, in order to attain health-related MDGs, additional effort and resources are to be applied in localities with high concentration of families who are unable to receive critical public health services.

Thus, this study of the Center for Research and Communications (CRC) aims to simulate two complementary policy options under the Aquino Health Agenda: the expansion of health insurance coverage to the poorest families, and the upgrading of the public health facilities. Simulation is done using the Benefit Incidence Analysis and Cost Effectiveness Analysis. The study also aspires to determine which of these two policy options is more pro-poor and more cost effective in expanding access to healthcare services, especially to the poor at Region VI or the Western Visayas.[9] The team has chosen Western Visayas as the research locale, since the majority of the poorest families enrolled in the NHTS-PR are from the Western Visayas.[10] Also, Iloilo and Negros Occidental, which are the main provinces of Western Visayas, are said to be where the problems of access to healthcare services dominate, according to the DOH. The results of this study are also expected to help refine the provisions indicated in the policy programs of the health sector stakeholders. Moreover, the study should aid the crafting of the future policies in the health sector.

[8] Benigno S. Aquino III, "Inaugural Address of President Benigno S. Aquino III (English Translation), 30 June, 2010,"http://www.gov.ph/2010/06/30/inaugural-address-of-president-benigno-s-aquino-iii-english-translation/ (Accessed 15 March, 2012).

[9]Refer to Annex for a brief description of Western Visayas.

[10]Refer to Annex for the distribution of the NHTS poor families by region.

1. LITERATURE REVIEW

A. BENEFITS OF ACCESS TO HEALTHCARE SERVICES

Among the policies implemented by different countries to expand access to healthcare services are: developing health insurance coverage, and upgrading the health facilities. Thus, to determine the benefits of access to healthcare services, some benefits of health insurance and wider health insurance coverage and of upgrading the health facilities are given in this literature review.

A.1. BENEFITS OF HEALTH INSURANCE AND WIDER HEALTH INSURANCE COVERAGE

Health insurance can cover a broad range of benefits, depending on the patients' needs and wants. However, on the basis of different studies, it generally protects patients from health-related and financial risks.

One study in the United States, by James B. Kirby and Toshiko Kaneda, titled "Unhealthy and Uninsured: Exploring Racial Differences in Health and Health Insurance Coverage Using a Life Table Approach," states that insurance is beneficial when individuals are at their less-healthy stage or when they are nearing old age. However, based on the results using the Life Table Approach,[11] Americans with no insurance can still spend on their health treatment for 4.8 years when they reach the less-healthy stage of their lives (50–54 years), but this still leads to risks of medical debt.[12]

Moreover, this research further elaborates that the uninsured, usually the poor and the marginalized (blacks and Hispanics) have poor access to medical care, which makes them more prone to sickness. The uninsured are also burdened with financial risks, which may drain the resources of their families or communities, if they go for healthcare. In 2008, majority of the 46 million uninsured Americans were the blacks and Hispanics, for they are the ones who usually do not have the resources to purchase an insurance package, and who work in institutions that do not provide health benefits. As a result, a wide gap in insurance coverage between the blacks and whites at the less-healthy stage of their lives persists.[13] Hence, there is a need for health insurance to protect patients from health and financial risks, and at the same time, to widen the coverage of health insurance to let more people have access to medical care.

One example where patients had sure protection against health risks is cited in the research study by Paul Newacheck and his co-authors,titled "Health Insurance and Access to Primary Care for Children." The authors of the study argue that in the United States, health insurance for children improved access to primary care for children. This is based on the comparisons done between children who were insured (87 percent) and who were uninsured (13 percent) during the period 1993 to 1994. It was found that insured children were more likely to have consultations with regular physicians, access to medical care after

[11] Life Table Approach is a tool used to calculate the expected years remaining in the lives of persons in various health and insurance states for different age groups and races.

[12] James B. Kirby and Toshiko Kaneda, "Unhealthy and Uninsured: Exploring Racial Differences in Health and Health Insurance Coverage Using a Life Table Approach," *Demography* 47, no. 4 (November 2010): 1035–51.

[13] Ibid.

normal business hours, and families that were satisfied with at least one aspect of their care than uninsured children. Also, they had more opportunities in accessing medical, dental, and other general healthcare services compared to children who were not under the insurance coverage. Thus, a strong insurance coverage was associated with high rate of access to primary care of children. Because of this, a new health insurance program for children under the Balanced Budget Act of 1997 of the United States was implemented to strengthen access to and use of primary care by children, especially those who belong to the poor income groups.[14]

However, when obtaining a health insurance cover, the quality of the health insurance also needs to be taken into consideration, especially that of social health insurance, which usually addressesthe needs of the poor and the marginalized. One case study by James Zhang, Elbert Huang, Melinda Drum, Anne Kirchhoff, Jennifer Schlichting, Cynthia Schaefer, Loretta Heuer and Marshall Chin, titled "Insurance Status and Quality of Diabetes Care in Community Health Centers" describes how in the United States, American diabetes patients with varying insurance status (no insurance, Medicaid,[15] Medicare,[16] both Medicaid and Medicare, private insurance, others[17]) receive different quality of diabetes care at community health centers. Patients with Medicare receive better quality care in that they are provided access to diabetes-related tests, etc., than those with no insurance or with Medicaid only as insurance. One reason for this is that Medicare patients, aside from receiving assistance from the insurance package, have other support for their out-of-pocket medical expenses, while patients with no insurance or Medicaid only as insurance, cannot bear these out-of-pocket costs, which discourages them from seeking treatment for diabetes. Therefore, it is important to find ways to assist the poor to achieve wider health insurance coverage and eventually, access to quality diabetes treatment.[18]And one way to improve the quality of health insurance for the poor is to ensure that obtaining a health insurance cover will not mean that they will have to spend more.

Thus, health insurance can surely lessen the health and financial risks to patients. It can also help patients have access to different types of medical care. If everyone has access to quality health insurance, then all patients, especially the poor, can have access to quality healthcare, and consequently, the expansion of access to healthcare services can be achieved.

A.2. BENEFITS OF UPGRADING THE HEALTH FACILITIES

Upgrading the health facilities can refer to the construction of new health facilities; expansion, renovation or repair of the existing health facilities; or equipping the existing

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[14]Paul W. Newacheck et al., "Health Insurance and Access to Primary Care for Children," *The New England Journal of Medicine* 338, no. 8 (19 February, 1998): 513-19.

[15] Medicaid is a health insurance program for the poor provided by the United States state and federal governments.

[16] Medicare is a health insurance program for Americans ages 65 and older and with disabilities funded by the United States federal governments.

[17] Others refer to American patients with mixed medical payment methods like grants, etc.

[18]Zhang, James X., PhD., Elbert S. Huang M.D., Melinda L. Drum PhD., Anne C. Kirchhoff M.P.H., Jennifer A. Schlichting M.A., Cynthia T. Schaefer M.S., Loretta J. Heuer PhD., and Marshall H. Chin M.D. "Insurance Status and Quality of Diabetes Care in Community Health Centers." *American Journal of Public Health* 99, no. 4 (2009): 742-7. http://search.proquest.com/docview/215086868?accountid=28547.

health facilities. This also includes the training of staff, increasing the stocks of medicines, etc. Strengthening the health facilities does not only imply increasing the number of health facilities, but it also involves improving the quality of the healthcare provided to patients. Thus, its benefits do not only cover greater access to health facilities, but also include ensuring that patients, when visiting a health facility, are provided proper care as per their needs.

A study by Christina Pagel, Sonia Lewycka, Tim Colbourn, Tarek Meguid, Grace Chiudzu, Martin Utley and Anthony Costello, titled "Estimation of Potential Effects of Improved Community-Based Drug Provision, to Augment Health-Facility Strengthening, on Maternal Mortality due to Post-Partum Haemorrhage and Sepsis in sub-Saharan Africa: an Equity Effectiveness Model" shows that strengthening the health facilities can certainly decrease maternal deaths due to post-partum haemorrhage[19] and sepsis[20] in Malawi and sub-Saharan Africa. Using a researcher-made mathematical model grounded in the probability theory, strengthening the health facilities by adding stocks of oxytocin to prevent post-partum hemorrhage, and antibiotics to stop sepsis can lessen maternal deaths in Malawi by about 210 (7 percent) out of 2,860 annually. On the other hand, it can decrease maternal deaths in sub-Saharan Africa by about 21,300 (12 percent) out of 182,000 annually. This signifies that strengthening the health facilities is beneficial in achieving the fifth MDG, which is to improve maternal health. However, this study further recommends that strengthening the health facilities should be accompanied by community-based drug provision to cover women who give birth in their homes and not at the health facilities. If the strengthening of the health facilities is accompanied by improved drug provision through antenatal-care appointments and community health workers, then maternal deaths will decrease by about 720 (25 percent) out of 2,860 in Malawi and 43,800 (24 percent) out of 182,000 in sub-Saharan Africa annually. On the other hand, if community-based drug provision through female volunteers in villages is included, then maternal deaths will decline by about 1,020 (36 percent) out of 2,860 in Malawi and 59,000 (32 percent) out of 182,000 in sub-Saharan Africa annually.[21]

Failure to upgrade or strengthen the health facilities might result in non-achievement of MDG targets related to health in 2015, and to further escalation of health problems. "Health-System Strengthening and Tuberculosis Control," a study by Rifan Atun, Diana Weil, Mao Tan Eang and David Mwakyusa, discusses that health system strengthening can lead to improved chances of achieving the health-related MDGs and other objectives related to health like Tuberculosis control. Generally, to improve the health system, the following factors should be taken into consideration: (1) governance, (2) financing, (3) supply chain management, (4) human resources, (5) health-information systems, and (6) service delivery.

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[19]Post-partum haemorrhage refers to loss of more than 500ml of blood following vaginal delivery, or 1000ml of blood following caesarean section.

[20]Sepsis refers to having the whole body in inflammatory state due to infection. This also refers to blood poisoning.

[21] Pagel, Christina, Sonia Lewycka, Tim Colbourn, Charles Mwansambo, Tarek Meguid, Grace Chiudzu, Martin Utley, and Anthony M. L. Costello. 2009. "Estimation of Potential Effects of Improved Community-Based Drug Provision, to Augment Health-Facility Strengthening, on Maternal Mortality due to Post-Partum Haemorrhage and Sepsis in Sub-Saharan Africa: An Equity-Effectiveness Model." *The Lancet* 374 (9699): 1441-8. http://search.proquest.com/docview/199047263?accountid=28547.

These involve proper implementation of healthcare services, enough funding for the expansion and improvement of the health facilities, adequate stock of medicines and other medical equipment in every health facility, training and fair compensation for health workers, proper documentation of tuberculosis cases, and instant access to healthcare, especially for the poor. However, to determine what policy to implement for strengthening the health system largely depends on the characteristics of a country.[22]

Thus, upgrading the health facilities, especially in communities or rural areas, can lead to improved access to quality healthcare, and consequently to fewer health-related problems and deaths.

B. THE DIFFERENT SCHEMES USED IN EXPANDING ACCESS TO HEALTHCARE SERVICES

Countries have their own strategies in improving access to healthcare services, because not all schemes may be applicable or effective in all countries.

The World Health Organization (WHO) is known for its in-depth case studies of various health financing systems in the ASEAN region. These studies have been compiled in a work they published in 2005, titled *Social Health Insurance: Selected Studies from Asia and the Pacific*.[23] It features Thailand, Cambodia, and Vietnam.

For Thailand, there were two health insurance schemes: the Social Welfare Scheme and the Civil Servant's Medical Benefit Scheme (CSMBS). The social welfare scheme started in 1975 and covers the low-income households and provides them with free healthcare services from public health facilities. The CSMBS started three years later. Unlike the social welfare scheme, the CSMBS covered mainly civil servants, pensioners and their dependents. The CSMBS works through a fee-for-service reimbursement model wherein the patient pays the healthcare fee and later gets it reimbursed from the Ministry of Finance.

The social welfare scheme had one major issue: poor targeting of recipients of funds. The real indigents were not really covered. The method they used to test the poor was community-based, which later proved inefficient because of nepotism and prejudice. The CSMBS too had a major issue: it drained the government funds, making the dependents co-payers to the scheme.

In 1983, the Voluntary Health Cards scheme was established. It is a community-based health insurance scheme which provides primary healthcare to the beneficiaries and in-patient care in district hospitals. This scheme was later reformed by the government and turned into a publicly subsidized voluntary health insurance scheme.

Later, in 2001, the social welfare scheme and voluntary health cards were replaced by the Universal Coverage Scheme. Beneficiaries were required to pay 30 Thai baht for every hospital admission or health visit. Other than the 30 Thai baht, beneficiaries were no longer

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[22] Rifat Atun et al., "Tuberculosis 7: Health-System Strengthening and Tuberculosis Control," *The Lancet* 375 (19-25 June, 2010): 2169-78.

[23] World Health Organization (WHO), *Social health insurance: Selected case studies from Asia and the Pacific* (India: World Health Organization, 2005).

required to make co-payments. This scheme provided the beneficiaries with 1,400 Thai baht annually from tax revenues. By the end of 2002, a total of 76 percent of the Thai population was covered by this health insurance scheme and majority of the remaining population was covered by the CSMBS.

Different sectors were incharge of the targeting and monitoring of the different schemes. They solved their problem of poor targeting (of the beneficiaries) by proper monitoring through fieldwork, surveys, interviews, and hospital and patient records. Efficient targeting and monitoring led to all the sectors being covered by insurance.

Cambodia implemented two health insurance schemes: the Health Equity Funds (HEF) and Community-based Health Insurance (CBHI). The HEF is unique to Cambodia. It is district-based healthcare subsidies for the poor. The scheme is funded by donors and non-governmental organizations (NGOs) who want to help in its implementation. Its goal is "to provide improved access to health services for the poor, protect the poor from excessive health expenditures and reduce dependence on debt and asset sales to pay health costs." The CBHI, on the other hand, is designed to protect the non-poor. In 1998, the Groupe de Recherches et d'Echanges Technologiques or GRET, a French NGO, created the first CBHI called SKY.[24] The scheme enabled them to provide substantial insurance services to suit the households' financial capacity, to set operational procedures with a skilled team implementing the program, and to develop effective partnership with public health facilities.

In 2005, the social health insurance (SHI) master plan was released. It was to develop alternative health financing schemes. The plan incorporated social health insurance in the formal sector, the HEF and CBHI. It identified the following approach to achieve universal health coverage: (1) compulsory social health insurance through a social security framework for the formal sector salaried workers and their dependents; (2) voluntary insurance through the development of CBHI schemes for the informal sectors, non-salaried workers and their families who can afford to contribute; and (3) social assistance through the use of district-based HEF.[25]

The identification or the targeting of the poor is done in two ways: pre-identification and post-identification. Pre-identification happens before patients have access to healthcare services. The poor are identified by scanning the lists made by the local people and through the surveys conducted by external actors. This reduces the risk of any errors in identifying the poor. Post-identification, on the other hand, happens after the poor have received medication for their illness. Poverty criteria are applied to verify the patients' eligibility. This method of identifying the poor has proved to be successful and effective.

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[24] International Labor Organization, "Cambodia: SKY Health Insurance Scheme," Social Security Extension Initiatives in East Asia, http://www.ilo.org/public/english/region/asro/bangkok/events/sis/download/paper29.pdf. Accessed on 15 March, 2012.

[25] Peter Leslie Annear, "Cambodia: Developing a Strategy for Social Health Protection," United Nations Economic and Social Commission for Asia and the Pacific Discussion Paper: Promoting Sustainable Strategies to Improve Access to Health Care in the Asian and Pacific Region: pp. 1-36, (Bangkok, 2008).

Conversely, in Vietnam, the health insurance systems started as early as in 1989. In the Health Decree of 1992, compulsory social health insurance was introduced to help the formal sector with their healthcare needs. Unfortunately, only those who could afford health insurance benefited from the healthcare services.

The health insurance system of Vietnam was divided into three categories: compulsory, voluntary, and Health Care Fund for the Poor (HCFP). The compulsory health insurance covered civil servants from the public sector and employees from the private sector, but did not cover their dependents. Because of this limitation, the voluntary health insurance was implemented in 1994, which covered the dependents of the public and private sector employees. The beneficiaries were still required to co-pay the user fees under these schemes, which left the poor unable to afford the health insurance. Consequently, the HCFP was established, in which 75 percent of the fee is funded by the government and the remaining 25 percent is donor-funded.

The establishment of the HCFP tripled the coverage of the poor since they were no longer required to make any payments to avail ofhealthcare. The decentralization of social health insurance to the community also widened its coverage in the formal and informal sectors. This, however, required proper targeting and monitoring to ensure that the premiums of compulsory members and contributions of voluntary members are paid.

C. ACCESS TO HEALTHCARE SERVICES IN THE PHILIPPINES

As stated in the Aquino Health Agenda, the Philippines adopts the expansion of social health insurance and the upgrading of the health facilities in the entire region to achieve the expansion of access to healthcare services.

C.1. SOCIAL HEALTH INSURANCE IN THE PHILIPPINES

Established in 1995 through the National Health Insurance Law, the Philippine Health Insurance Corporation (PhilHealth) was created to provide accessible, affordable, and adequate healthcare services to all Filipinos. Furthermore, it was expected that the agency would deliver quality healthcare insurance to all. A social health insurance system in place would surely help users gain better access to healthcare services. However, 15 years later, out-of-pocket payments were still much higher than the social health insurance and a large number of Filipinos were still not insured by the agency.

Out of almost 90 million people, only 22.46 million are covered by PhilHealth; majority of them (7.86 million) are employees of private companies (Table 1). Apart from the employees of private companies, government employees and self-employed Filipinos are also members of PhilHealth, while poor families and the elderly complete the different sectors of the agency’s registered members.

Table 1: Registered members of PhilHealth by sector (in millions), 2010.

Sector	Members
Employed[a]	9.81
GovernmentEmployed	1.95
Private Employed	7.86
Sponsored Program[b]	3.75
Individually-Paying[c]	6.06
Lifetime Members[d]	0.50
Overseas Workers Program	2.34
Total	**22.46**

Source: PhilHealth (2010)

Notes:

a. The Employed sector consists of those who are employed under the government and private sectors.
b. The Sponsored Program, which consists of Filipino indigents, is subsidized by the national and local government or by a sponsor (Miñoza 2010).
c. Members under the Individually-Paying Program are self-employed and those who work under the informal economy.
d. Lifetime members consist of the elderly retirees and pensioners of the GSIS and SSS aged 60 and above.

Since the poor are its priority, PhilHealth created the Kalusugang Sigurado at Abot-Kaya sa PhilHealth Insurance (KASAPI) program and the Indigent Program (IP).

The KASAPI program is aimed at increasing and maintaining its coverage of the informal sector. It consists of individually paying members. It also plans to partner with microfinance institutions, cooperatives, NGOs, and among others, to reach out to the informal sector.

The IP, on the other hand, serves as a tool to ensure that the poor have access to quality healthcare services.Unlike the KASAPI program wherein the members pay individually, the IP is fully subsidized by the government. The national government, local government units and private corporations pay a premium of 1,200 pesos under the said program. However, due to the recent reforms by the Aquino Health Agenda, the national government is playing a more significant role in paying the premium of 2,400 pesos per person. This is twice the amount paid in theprevious years.

In 2010, PhilHealth insured 3.75 million low-income individuals under the Sponsored Program and 6.06 million individuals from the informal sector**.** Unfortunately, this is just a small number compared to the 23.1 million Filipinos living in poverty who are still in need of health insurance. So PhilHealth still has a long way to go.

Social health insurance becomes more important now than ever before, since about 70 percent of the Filipino population cannot afford to pay for healthcare services due to poverty and high cost of healthcare services.[26] Consequently, this burden greatly reduces their disposable income and deprives them of other basic necessities such as food and education. Resolving the problems related to access to healthcare and insurance will greatly

[26] Medical Action Group, 2011. *Achieving Universal Health Coverage: Rx for the ailing health sector: PhilHealth reforms.* Accessed from http://philrights.org/?p=1730 (Accessed on October 2011).

impact the performance of the Philippines in achieving its MDGs by 2015, not only in health, but maybe in terms of education and poverty too.

C.2. HEALTH FACILITIES IN THE PHILIPPINES

Apart from health insurance coverage, another critical step in expanding access to healthcare services is the improvement of the country's public health facilities such as government hospitals, rural health units (RHUs), barangay health stations (BHS), provincial clinics, provincial health offices (PHO), etc., that play a vital role in the achievement of the desired MDG outcomes, particularly infant and maternal health. This is because public health programs such as maternal and child care, prevention and control of infectious diseases and promotion of healthy lifestyle, as well as basic ambulatory curative care are usually delivered at this level. Moreover, more Filipinos from the low income deciles access the said facilities compared to the upper income deciles, as shown in Table 2.

Table 2: Families with at least one member who visited any health facility during the past six months, by type of health facility, 2007

Income Decile	Government Hospitals	Rural Health Units	Barangay Health Stations	Others
First	49,745	54,082	47,208	7,020
Second	60,207	48,680	39,138	3,193
Third	73,089	49,005	41,850	4,409
Fourth	68,500	45,073	32,640	2,621
Fifth	73,784	43,685	27,031	3,969
Sixth	70,487	42,768	29,305	4,126
Seventh	72,021	31,321	24,851	2,949
Eighth	84,819	30,922	26,416	4,278
Ninth	66,076	23,205	16,378	4,278
Tenth	61,534	13,992	10,354	2,606
Total	**682,587**	**395,154**	**304,998**	**39,560**

Source: Annual Poverty Indicators Survey (APIS) (2007)

Spending more on public health facilities, therefore, will benefit most of the poor Filipinos. Since the less privileged are more vulnerable to diseases and suffer poor health, adding more public health facilities and enhancing the capacity of these to deliver improved health services will have positive implications on the health outcomes of the country. These can address the issues reported by the 2008 NDHS, wherein the respondents complained about geographical barriers to accessing healthcare. Yet, it must be noted that these solutions by themselves are not enough. Besides, it is assumed that by building more public health facilities, the government will also invest in proper training of personnel and the provision of appropriate equipment, drugs, etc., for the facilities.

C.3. THE AQUINO HEALTH AGENDA

Administration after administration, the issue of the inadequacies of the Philippine healthcare system remained unaddressed. This is reflected in 1) the lack of coverage and inefficiencies of PhilHealth, and 2) the inadequacies and poor quality of the health facilities and healthcare workers.

To address the problems in the Philippine health system, the DOH released the Administrative Order No. 2010-0036 (AO2010-0036), titled "The Aquino Health Agenda: Achieving Universal Health Care for All Filipinos." Three main "strategic thrusts" of this agenda were advocated to expand access to healthcare services to Filipinos. The first is the rapid expansion in enrolment and benefit delivery of the NHIP for the poorest families. The second is the accelerated upgrades for public health facilities in order to improve access to quality hospitals and healthcare facilities. The last one is to attain health-related MDGs; additional effort and resources are to be applied in localities with high concentration of families who are unable to receive critical public health services.

The three strategic thrusts of the A.O. 2010-0036 were developed after a joint Benefit Delivery Review conducted by the DOH and PhilHealth. Their study showed that, at the time, only 53 percent of the entire population was covered under the NHIP — a long shot from the 'universal' goal.[27] The study also revealed that public hospitals and health facilities have suffered due to poor budgetary allocations for the upgrades meant to expand the capacity and improve the quality of the services. This was shown by the number of hospitals and rural health units — 99 and 892, respectively — that had yet to qualify for PhilHealth accreditation at the time. Finally, their study also showed the poor performance of the Philippines in terms of achieving health-related MDGs. This fact is highlighted in the 2010 Philippine Progress Report on the Millennium Development Goals.

After its announcement in December 2010, there was much speculation as to how the administration would execute the Aquino Health Agenda. Members of the academe and various institutions were quick to provide their input to the debate. One of the most extensive recommendations was published in February 2011 by the Philippine Institute for Development Studies (PIDS). Dr. Rouselle F. Lavado, a senior researcher at the institute, offered possible policies for the Aquino administration to adopt as per the schemes provided in the December administrative order. This included a proposal to enroll every Filipino with a primary care provider who will then be paid by PhilHealth through capitation.[28] Prior to this report, Dr. Lavado had also published a policy brief with PIDS (Policy Brief No.5, 2010) titled "Is PhilHealth's Sponsored Program Reaching the Poorest of the Poor?" In this policy brief, even pre-dating the DOH Administrative Order, Dr. Lavado suggested that the national government, rather than the local government units, should guarantee the coverage of the poorest of the poor. The problem, as other scholars have noted, seems to be rooted in the heavily politicized interaction between the local government units and their constituents. This resulted in poor provisions of healthcare services and increased political capital for the local government units (LGUs). Of the two recommendations provided by Dr. Lavado, it appears that the latter, concerning the more prevalent role of the national government in subsidizing healthcare, is the one that has appealed most to the Aquino Administration, and is therefore being implemented.

By August 2011, the DOH released a Department Order (No.2011-0188), which outlines the plan for executing the universal healthcare, or the*Kalusugan Pangkalahatan* plan (Table

[27]Department of Health, *Administrative Order No. 2010-0036,* (Manila, 2010).
[28]Rouselle F. Lavado, "New ideas to help the Aquino administration to achieve its health agenda," *Policy Notes* No. 2011-03 (February 2011), (Manila,2011).

3).[29] The administrative order is meant to act as a guideline for the implementing body or the executing arm. In section IV, it gives a detailed account of the implementation road map. The first part of the plan is the Launch Phase, which was scheduled for August to December 2011. The launch phase has the goal of enrolling 4.89 million of the poorest households targeted by the NHTS-PR into the NHIP Sponsored Program, using the 3.0 billion pesos from the 2011 General Appropriations Act subsidy for the NHIP premium for indigents allocated to the DOH. It also mandates the training of 10,000 Registered Nurses for Health Enhancement and Local Services (RNheals), the procurement of drugs, medicines and supplies, the upgrading of various health facilities, distribution of treatment packs for hypertension and diabetes, and other public health commodities that can help in achieving the health-related MDGs. The launch phase is also supposed to prepare for the scale-up process in 2012. These preparations include amendments to the Implementing Rules and Regulations of RA 7875, creation of new NHIP inpatient and outpatient benefit packages, improvement in the financial management system in PhilHealth, and the development of a new Health Facilities Enhancement Program (HFEP).

The Aquino administration has planned for 2012–2013 to be the Scale-Up Phase of the program. As such, the goal is to rollout a new Sponsored Program of PhilHealth with full national government premium subsidy to 5.2 million indigent families identified by the NHTS-PR. Moreover, the second phase intends to introduce new outpatient and inpatient benefits for 2013, to upgrade more health facilities, mobilize at least 100,000 Community Health Teams (CHTs) to be trained and supervised by 21,070 RNheals nurses, and to create an MDG breakthrough strategy that focuses resources and efforts on 12 areas with the highest concentration of the NHTS-PR poor. To this end, the national government has allotted 12.08 billion pesos for the enrolment of 5.2 million indigent families into the NHIP. Meanwhile, the HFEP was allotted 5.078 billion pesos that is intended for upgrading and improving the facilities of the DOH and LGUs, with the goal of addressing the issue of maternal health.[30]

The final part of the Aquino Administration's health agenda's execution plan is the Sustainability Phase for 2014–2016. This final phase has plans for sustained coverage of at least 10.8 million NHTS-PR indigent households in the NHIP, continued enhancement of the outpatient and inpatient benefits, sustained provision of quality care at the DOH-retained hospitals and upgrades for the local health facilities through the HFEP, deployment of CHTs and RNheals to serve the identified families, and the attainment of health-related MDGs.

[29] Department of Health, *Department Order No. 2011-018,* (Manila, 2011).
[30] Department of Budget and Management, *General Appropriations Act for 2012*, (Manila, 2012).

Table 3: Target outputs or Deliverables for 2011 – 2016 KP Implementation

KP Thrusts	2011	2012	2013	2014	2015	2016
Poor families with full national government subsidy	5.2 million *includes the 4.89 million to be enrolled in NHIP sponsored program of which 2.3 million from 4Ps are part	5.2 million	5.2 million	5.2 million	5.2 million	5.2 million
Poor families with LGU subsidy		5.6 million	5.6 million	5.6 million	5.6 million	5.6 million
Families with no government subsidy			10 million	10 million	10 million	10 million
NHIP Benefits	Current	New NHIP Outpatient and Inpatient Benefit Package with no balance billing *increased premium	Same as 2012 with Catastrophic Care	Same	Same	Same
HFEP	15 DOH-retained hospitals, 41 provincial hospitals, 268 district hospitals and 1,178 RHUs upgraded	Implementation of new HFEP frame and delivery mechanism 27 provincial hospitals, 118 district hospitals, 973 RHUs upgraded; 25 DOH-retained hospitals upgraded through PPP	33 DOH-retained hospitals, 34 provincial hospitals, 241 district hospitals, and 1,178 RHUs upgraded *counts subject to validation Upgrading gap closed	Sustained provision of quality care at facilities	Sustained provision of quality care at facilities	Sustained provision of quality care at facilities
MDGs	New MDG breakthrough strategy designed	Implement breakthrough strategy in initial 12 areas	Continued implementation of MDG breakthrough strategy	Continued implementation of MDG breakthrough strategy	MDG goals attained	Sustained MDG efforts
CHTs and RNheals	20,000 CHTs 10,000 RNheals	50,000 CHTs 12,000 RNheals	100,000 CHTs 21,070 RNheals	Same	Same	Same

Source: DOH

While it appears that the Aquino administration is set on implementing the Aquino Health Agenda, there are those in the academe who still question its effectiveness. In a discussion paper released in December 2011 titled, "Expanding Social Health Insurance Coverage: New Issues and Challenges," Dr. Rosario G. Manasan of PIDS expresses her disappointment with

the overall efficacy of the Aquino Health Agenda both in the way it has been formulated and the manner of its implication. For Manasan, the problem is not so much the goal or the tools of analysis that were used by the policymakers. She agrees, for example, that the NHTS-PR of the DSWD is the best tool to identify poor families that will and should be enrolled in PhilHealth's Sponsorship Program. Moreover, she also agrees that the national government, more than the LGUs, should play a more prominent role in subsidizing the premium contributions of the poor families in order to minimize the politicization of extending the health benefits, lessening the burden on LGUs while ensuring that the marginalized receive the subsidies, and finally ensuring greater stability in the enrolment of indigent families. She believes, however, that increasing the budget and implementing a roadmap will not be enough. In order for universal healthcare to become a reality in the Philippines, the current interventions must also include reforms in the Local Government Code and LGU interactions with the DOH and the national government in matters relating to healthcare assistance for indigents.[31] As such, Manasan also believes that additional funds are necessary for these series of reforms and upgrades to be successful.

D. OTHER STUDIES RELATED TO ACCESS TO HEALTHCARE SERVICES

The inefficiency and poor performance of PhilHealth has been a subject of studies by various Philippine universities and think-tanks. In 2009, Dr. Joseph J. Capuno, an Associate Professor of Economics at the University of the Philippines, and a number of his colleagues published a paper titled "Household out-of-pocket health spending, health insurance coverage and children's school attendance in the Philippines."[32] In the paper, Capuno et al. argue that there is a correlation between enrolment in PhilHealth and an increase in the share of out-of-pocket health expenditures which have severely curtailed children's enrolment in school from certain households. Their study attempts to show the intricacies that go into a family's decision-making process with regard to the use of their limited resources. As such, they recommend that for social health insurance and other social protection policies to be truly effective, policymakers must take into account the way that families decide between health, education, and other expenses. While this study has been broad, it does shed some light on the ineffectiveness of social health insurance in the country. Due to the large percentage of out-of-pocket spending, families are forced to invest either in education or in health and welfare. This leads to families spending only on one or a few important aspects of human development, and foregoing the other essentials.

In 2006, Dr. Capuno also published "Social Health Insurance for the Poor: Programs of the Philippines and Vietnam," which compares the design features and implementation of the social health insurance programs that target the poor in the Philippines and Vietnam. Currently, his research projects include, "The poor, the politician and the political indigents: An analysis of PhilHealth's Sponsored Program," and "Health Equity and Financial Protection in Asia: Philippine Study," which he is undertaking with several of his colleagues at the University of the Philippines.

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[31] Rosario G. Manasan, "Expanding Social Health Insurance Coverage: New Issues and Challenges," *Discussion Paper Series No.2011-21* (December 2011), (Manila, 2011).

[32] Joseph J. Capuno et al., "Household out-of-pocket health spending, health insurance and children's school attendance in the Philippines,"*Philippine Review of Economics* XLVI (2) (Dec. 2009):155-182.

The PIDS has also contributed a lot to the debate concerning social health insurance in the Philippines. In November 2007, Dr. Gilberto M. Llanto published a policy brief discussing PhilHealth's KASAPI program, which has been introduced to expand enrolment by inducting the informal sector workers into the NHIP.[33] This policy note describes the features of the KASAPI program, while identifying the possible areas for improvement. His study includes addressing the issue of geographic inaccessibility of the health facilities and the ongoing development and marketing of suitable and affordable outpatient and inpatient packages for informal workers. Both these recommendations seem to have been considered in the Aquino administration's universal healthcare execution plan.

Aside from Dr. Llanto, the PIDS has also produced other works that directly address the new policy initiatives of the Aquino administration through the works of Dr. Rouselle F. Lavado and Dr. Rosario G. Manasan. The contents of these works have already been examined above. To date, the work of PIDS has been greatly influential in bringing about the policy changes adopted by the different administrations.

Another reported study is the joint DOH and PhilHealth Benefit Delivery Review (BDR). The BDR, along with the joint project of United States Agency for International Development (USAID) and University of the Philippines School of Economics (UPEcon), the Health Policy Development Program (HPDP), has been influential in constructing the policy direction of the Aquino administration.

In August 2009, Hyun H. Son, senior economist at the Asian Development Bank (ADB), also published a paper titled "Equity in Health and Health Care in the Philippines." Son's study showed that access to healthcare is becoming more difficult for the poor. The difficulty has been brought about by the sharp inequality in access between the poor and non-poor. According to the ADB study, "equity in health care has worsened during the period under consideration: the non-poor who are less burdened by illness or diseases receive more health care services, while the poor who bear a greater burden of illness receive less health care."[34]

Moreover, the study shows a decline in the use of healthcare facilities over the period of the study (from 1998 to 2007). The ADB cites "the lack of ability to pay for health services" as one possible reason for the decline in healthcare facilities use, thereby underscoring the need for policy reforms in providing financial access to the poor. Another interesting point that the study discusses is the decrepit state of most RHUs. These stations are intended to provide primary care services to all. The problem, however, is that they are usually undermanned (left without qualified personnel to run them) and are also generally perceived as providers of low-quality health services. Both these issues appear to be a priority on the Aquino Administration's Health Agenda.

The ADB has produced numerous studies on social healthcare in the Philippines and the entire region. In 2010, it published the proceedings from a July 2009 Regional Workshop on

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[33] Gilberto M. Llanto, "Protecting the Vulnerable through Social Health Insurance: PhilHealth's KASAPI as a Strategy," *Policy Notes* 2007-03 (November 2007), (Manila, 2007).

[34] Hyun H. Son, "Equity in Health and Health Care in the Philippines," *ADB Working Paper Series*no. 171 (August 2009), *p*.25, (Mandaluyong City, 2009).

Social Assistance and Conditional Cash Transfers. The fourth chapter of the work titled *Enhancing Social Protection in Asia and the Pacific: The Proceedings of the Regional Workshop*, focuses on health insurance initiatives. It includes a case study on the development of health insurance in Mongolia, the work of Dr. Dorjsuren Bayarsaikhan, who produced a situationer on social insurance in Asia and the Pacific, and Dr. Axel Weber, who made a presentation on the challenges and opportunities in financing social health insurance. The proceedings also feature Dr. Rosario Manasan of PIDS, who presented her assessment of social welfare and social safety net programs in the Philippines.

The World Bank has also contributed to the discussion on the path to universal health coverage. Their contributions are in acknowledgement of the important developments in East Asia and the Pacific. In 2011, John C. Langenbrunner and Aparnaa Somanathan published *Financing Health Care in East Asia and the Pacific: Best Practices and Remaining Challenges,* with the help of the World Bank and USAID. Their key observations in the study include: the fiscal inequality in the region, despite the advancements in reducing poverty in the region, and the lack of efficiency and equity in health financing in numerous countries in the region. Langbrunner and Somanathan also discuss methods to increase government collections that can serve as pre-payments for social insurance. These include discussions on the importance of economic growth, and the enlargement of the formal labor force where governments can collect via payroll contributions and the use of "sin taxes" on tobacco and alcohol.[35]

In December of 2011, the World Bank also released guidelines in a book titled *Health Insurance Handbook: How to Make it Work*. The book has been prepared with the intention of sharing detailed bestpractices that policymakers and health insurance designers may use in their own designs without being prescriptive, dogmatic, or ideological. It also tries to help policymakers and health insurance designers identify challenges to the design and implementation of insurance, and to define realistic steps on how to scale-up health insurance to make it more efficient, equitable, and sustainable, and to understand health insurance concepts.[36]

Apart from the ADB and the World Bank, the WHO has also published various studies on social health insurance and health systems financing. In 2010, WHO published *The World Health Report – Health Systems Financing: The Path to Universal Coverage*. The study was commissioned on request from both developed and developing countries for practical guidance on improving the financing of healthcare. The recent economic downturn, compounded by an aging population and increasing healthcare costs has made it all the more necessary to understand how to provide for the healthcare needs of the population. As a report that also tries to encourage policymakers to use valuable resources more efficiently, it identifies 10 specific areas where better practices and policies can increase the impact of the expenditures. In a disclaimer, however, the report also warns policymakers that effective strategies for health financing and services must take into account the unique

[35]John C. Langenbrunner and Aparnaa Somanathan, *Financing Health Care in East Asia and the Pacific: Best Practices and Remaining Challenges*, (Washington, 2011).
[36]World Bank, *Health Insurance Handbook: How to Make It Work, World Bank Working Paper No. 219*, (Washington, 2011).

circumstances of each state. There is no magic pill in extending coverage; only an array of homegrown remedies tailor-made to suit each country's unique situation and needs.

I. POLICY GOALS AND OPTIONS

A. POLICY GOAL

The goal of the Aquino Health Agenda is to achieve universal health coverage for all Filipinos. This signifies that its objective is for the entire Filipino population to have equitable access "to appropriate promotive, preventive, curative, and rehabilitative health services, when they need it and at an affordable cost."[37] However, this goal seems impossible to achieve in such a short time, particularly within a period of three to six years. ***Therefore, this study, instead, focuses on expanding access to healthcare services, especially to the poor as a policy goal. Expanding access to healthcare services specifically refers to increasing the number of live births attended by skilled health personnel.***This is the chosen specific policy goal of this study, since the Philippines has low probability of improving maternal health by 2015, according to the United Nations Development Program (UNDP).[38] At the same time, most of the equipment that will be upgraded under the Aquino Health Agenda is targeted at reducing child mortality and improving maternal health.[39] To achieve the policy goal of expanding access to healthcare services, specifically of increasing the number of live births, the government may choose to implement multi-dimensional policies that address either the financial concerns of the poor, their low access to healthcare services, or thelack of quality infrastructure and equipment in the health facilities. It may also implement these policies individually or simultaneously.

The Aquino Health Agenda implements three strategic thrusts to achieve the above policy goal in this study: rapid expansion in enrolment and benefit delivery of the NHIP for the poorest families; accelerated upgrades for public health facilities; and additional effort and resources for localities with high concentration of families who are unable to receive public health services. However, this report will simulate only two policies of the said agenda to determine which is more pro-poor and cost effective in achieving the policy goal of expanding healthcare services, especially to the poor in Western Visayas. The two policy options to be analyzed by the authors of this study are: the expansion of health insurance coverage to the poor, which resolves their financial problems, and the upgrading of the health facilities to improve the accessibility of the healthcare services and lack of quality infrastructure and equipment inthe health facilities.

B. POLICY OPTION 1: UPGRADING THE HEALTH FACILITIES

A large number of Filipinos are denied crucialmedical attention when they are sick, and often with tragic consequences simply because they cannot find a health facility in their area. There is still a glaring imbalance between the number of public health facilities and the

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[37] Medical Action Group, "Achieving Universal Health Coverage: Rx for the ailing health sector: PhilHealth reforms," *Philippine Human Rights Information Center,* http://philrights.org/?p=1730 (Accessed October 2011).
[38] United Nations Development Program (UNDP), "The Millenium Development Goals," UNDP in the Philippines, http://www.undp.org.ph/?link=goal_5 (accessed 1 February, 2013).
[39] Villaverde, Mario. Interview by Rachel Lynn Belandres. Personal Communication. Ateneo de Manila University, 28 January, 2013.

number of people who need medical attention. Moreover, the lack of equipment and non-availability of essential medicines further aggravates the situation.

The unfortunate reality that there is shortage of public health facilities has serious implications on achieving the health-related MDGs of the country and in addressing other health problems. Filipinos from the low-income deciles access public health facilities more often compared to the upper income deciles. Therefore, spending more on public health facilities, it is assumed, will benefit many poor Filipino families.

Since the less privileged are more vulnerable to diseases and suffer poor health status, upgrading the health facilities may have significant implications on the health outcomes of the country. Hence one policy alternative of the Aquino Health Agenda to achieve the goal of expansion of access to healthcare services, specifically in terms of increasing the number of live births, is upgrading the health facilities through the Health Facilities Enhancement Program (HFEP). This involves the construction of new health facilities; expansion, renovation or repair of the existing facilities; and equipping the existing facilities. It might also include the training of staff, increasing the stocks of medicines, and other ways which can improve the quality of healthcare in the health facilities. However, the HFEP only includes the construction, expansion, renovation, repair and equipping of the health facilities. Despite its limitations, it can still improve the accessibility of the poor to quality healthcare services and can provide solutions to the lack of quality infrastructure and equipment inthe facilities.

B.1. TARGET IMPLEMENTATION OF THE GOVERNMENT PLAN

The HFEP of the Aquino Health Agenda plans to upgrade the health facilities from the year 2011 to 2013, and to sustain the provision of quality healthcare through these facilities from 2014 to 2016. In 2011, the program should have already upgraded 15 DOH-retained hospitals, 41 provincial hospitals, 268 district hospitals and 1,178 rural health units, while in 2012, it seeks to improve 27 provincial hospitals, 118 district hospitals, 973 rural health units and 25 DOH-retained hospitals through public-private partnerships (PPP) at the national level. In 2013, it will close the existing gap in quality of services through upgrading, and from 2014 to 2016, it will carry on providing quality healthcare services at the health facilities.[40] For Western Visayas, a minimum of 160 health facilities will be upgraded under the HFEP, comprising 8 hospitals, 56 rural health units, 93 barangay health stations, 2 clinics and 1 provincial health office.[41]

B.2. SOURCES OF FUNDS

Funds for the health facilities come from two main sources: (1) the LGUs and (2) the national government. Other possible sources of funding can be the PPPs, official development assistance (ODA) and many others. However, this study will focus only on the LGUs and the national government — the two main sources of funding for the HFEP in the selected regions of the Philippines.

[40] Department of Health, *Department Order No. 2011-018,* (Manila, 2011).

[41] Department of Health, *List of Health Facilities (Region 6 – Western Visayas) for Upgrading/Establishment to provide BEmONC Services to be funded under the Department of Health (DOH) CY 2011 Health Facilities Enhancement Program (HFEP)*

Getting more funds allocated for the health facilities is no easy task. The devolution of the health services to the local government units makes it harder for the DOH to oversee the health-related initiatives at the local level. Their control over the training of thehealth personnel, facilities management, and program implementation too has diminished. Following the devolution of the services, the usage of funds is now left to the discretion of the local chief executives. More often than not, the budget meant for health is used for other purposes depending on the preference of the *mayor* or the*barangay* captain. This has contributed to the low spending on public health facilities and health-related programs. The DOH has only established an incentive system to persuade the local executives to allocate funds for health. They have established a scorecard system, which indicates health as one of the major components in getting a satisfactory score on local governance. Unfortunately, this has proved insufficient since the situation at the local level is that not all the LGUs are spending enough money on health. By earmarking special funds, spending on health at the local government level is assured. This is one of the ways in which funds can be sourced for the building and upgrading of the health facilities.

It will take more than the DOH to persuade the local government units, especially those in Western Visayas to give more importance to healthcare. Since they can only persuade the LGUs to spend on health, the DOH must engage with the Department of Interior and Local Government (DILG) to make this policy viable. The DILG is in-charge of ensuring peace and order in the country, of helping improve governance, and promoting social and economic development at the local level. They are also responsible for the crafting of the local government code, which granted autonomy to the LGUs and made it harder for the DOH to implement important health policies at the local level. To address this problem, the author is exploring the possibility of forging a convergence program between the DILG and DOH to boost healthcare services at the local level. Thus, an estimate of 1.075 billionpesos[42] per year can be expected to be raised from the LGUs in Western Visayas for expenditure on health facilities. The said amount is enough to cover the salaries of the health personnel, medicine costs, costs for tests, and other costs of the upgraded health facilities for one year.

Apart from the funds that will come from the LGUs, the DOH or the national government should also allot more funds for the improvement of the health facilities. Usually, the national government allots about 3.31 percent of the total budget to the health sector, according to the 2012 budget of expenditures of the Department of Budget and Management (DBM).[43] Fortunately, the improvement of the country's health facilities is on the health agenda of the current president. It is under the Administrative Order No. 2010-0036, that the government aims to enhance the health facilities in the country. It plans to upgrade the following facilities: 20 percent of the DOH-retained hospitals; 46 percent of

[42] This was based on the author's estimations.
Ross McCleod, "Costing of Philhealth's Outpatient Benefit Package," Department of Health(DOH), http://www.doh.gov.ph/sites/default/files/Costing%20of%20PhilHealth%20Outpatient%20Benefit%20Package.pdf (accessed 1 September, 2012).
Tsolmongerel Tsilaajav, "Costing Study for Selected Hospitals in the Philippines," Department of Health (DOH), http://www.doh.gov.ph/sites/default/files/Costing%20Study%20for%20Selected%20Hospitals%20in%20the%20Philippines.pdf (accessed 26 January, 2013).

[43] Refer to Annex for the sectoral distribution of public expenditures in the Philippines by the national government in 2012.

provincial hospitals; 46 percent of district hospitals; and 51 percent of rural health units.[44] This is to ensure that the country's 10.8 million poor families under NHTS-PR will have access to inpatient and outpatient healthcare. At the time of writing this, the Philippine government has already started rolling out the plans indicated in the *Kalusugang Pangkalahatan* (Healthcare for All) program.

For Western Visayas, a minimum of 160 health facilities will be upgraded under the HFEP, comprising 8 hospitals, 56 rural health units, 93 barangay health stations, 2 clinics and 1 provincial health office.[45] Also, 960,981 poor households or families in the said region are part of the NHTS-PR of the DSWD.[46] These families are the target beneficiaries of the HFEP in the said region. Being under the HFEP, they will be assured that they will have access to healthcare services and eventually, will have more live births.

Based on the above administrative order of the DOH, the budget for the improvement of the health facilities at the national level is 14.068 billion pesos from the HFEP funds. Of this, 1.79 billion pesos will be sourced from the HFEP calendar year (CY) 2010 and 7.2 billion pesos from HFEP (CY) 2011.[47] In addition, 5.078 billion pesos will be sourced from the HFEP calendar year (CY) 2012, based on the 2012 DOH budget.[48] In addition, the authors estimate that all LGUs are to contribute about 83.005 billion pesos for the current operating expenses of all the upgraded health facilities from 2012 to 2016.[49] Thus, the total budget for HFEP at the national level, including the contribution of the LGUs is estimated to be equal to 102.151 billion pesos.

On the other hand, the HFEP budget for Western Visayas was estimated on the basis of the 2010 to 2012 DOH budgets. The author calculated the 2010 and 2011 HFEP budget for this region by multiplying the percentage share of Western Visayas in the total HFEP infrastructure and equipment costs by the 2010 and 2011 HFEP budget. Western Visayas has a share of 4.51 percent in the total HFEP infrastructure and equipment costs,[50] while the HFEP budget for 2010 and 2011 totals to 8.99 billion pesos. Thus, the estimated 2010 and 2011 HFEP budget for Western Visayas is 405.449 million pesos. In the 2012 HFEP budget, Western Visayas is assigned 439 million pesos. Together with the 5-year budget from the

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[44] DOH, *Department Order No. 2011-0188.*

[45] Department of Health, *List of Health Facilities (Region 6 – Western Visayas) for Upgrading/Establishment to provide BEmONC Services to be funded under the Department of Health (DOH) CY 2011 Health Facilities Enhancement Program (HFEP)*

[46] DOH, *Department Order No. 2011-0188.*

[47] Ibid.

[48] DOH Budget 2012

[49] This was based on the author's estimations.
Ross McCleod, "Costing of Philhealth's Outpatient Benefit Package," Department of Health (DOH), http://www.doh.gov.ph/sites/default/files/Costing%20of%20PhilHealth%20Outpatient%20Benefit%20Package.pdf (accessed 1 September, 2012).
Tsolmongerel Tsilaajav, "Costing Study for Selected Hospitals in the Philippines," Department of Health (DOH), http://www.doh.gov.ph/sites/default/files/Costing%20Study%20for%20Selected%20Hospitals%20in%20the%20Philippines.pdf (accessed 26 January, 2013).

[50] This was based on the author's estimations and data from the DOH. Western Visayas, as per the DOH data, has a total of HFEP infrastructure and equipment costs that equal 258.035 million pesos, while at the national level, the total HFEP infrastructure and equipment costs work out to 5.722 billion pesos.

LGUs in Western Visayas[51] that will be the current operating expenses from 2012 to 2016, the HFEP budget for the said region is estimated to be 6.218 billion pesos.

B.3. PROJECTED OUTCOMES OF THE POLICY OPTION

The implementation of this policy option will lead to investments in new equipment and new infrastructure for public health facilities in Western Visayas. Through this, the poor will have greater access to public health facilities and eventually, to better quality healthcare services. This will result in positive outcomes for health-related MDGs and in fewer health problems in Western Visayas.

C. POLICY OPTION 2: EXPANSION OF HEALTH INSURANCE COVERAGE

The average income of poor families in the Philippines is 3,460 pesos[52] per month; not enough to comfortably cover all their monthly expenses. They are, therefore, inclined to sacrifice some essential needs that are crucial to human development, like health and education,in order to meet their basic needs such as food, shelter, etc. — a situation that could potentially expose them to serious health risks. Hence, there is an urgent need to provide adequate financial support to the poor to avoid the prospect of staking their health and education. One way of helping the poor to comfortably cover their expenditures, especially with regard to health, is through providing them insurance. This is why another policy alternative of the Aquino Health Agenda to expand healthcare access is directed at extending health insurance coverage to some 5.2 to 10.8 million poor families. These families are part of the NHTS-PR of DSWD, and are targeted to be covered under the NHIP of the PhilHealth. In Western Visayas, the NHIP aims to cover about 480,491 (year 2012 to 2013) to 960,981 (2014 to 2016) NHTS-PR families.

The purpose of health insurance is to provide protection to people against financial risks. Therefore, under the Aquino Health Agenda the national government has already provided health insurance packages with an annual premium of 1,200 pesos to 2.3 million families who are beneficiaries of DSWD's Pantawid Pamilyang Pilipino Program (the 4Ps). The government also plans to subsidize the annual insurance premium of 2,400 pesos to 5.2 million NHTS-PR families from 2012 to 2013 and 10.8 million NHTS-PR families from 2014 to 2016. The PhilHealth insurance is also intended to cover the dependents of the enrolled PhilHealth members (at least one member per family).

In Western Visayas, the authors assume that 204,649 poor families[53] are beneficiaries of the 4Ps and have received the annual premium of 1,200 pesos in 2011. On the other hand,

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[51] Based on the author's estimations. The author multiplied the total annual expenditure of all the health facilities in Western Visayas (1.075 billion pesos) by 5 years. This worked out to 5.373 billion pesos.
Ross McCleod, "Costing of Philhealth's Outpatient Benefit Package," Department of Health (DOH), http://www.doh.gov.ph/sites/default/files/Costing%20of%20PhilHealth%20Outpatient%20Benefit%20Package.pdf (accessed 1 September, 2012).
Tsolmongerel Tsilaajav, "Costing Study for Selected Hospitals in the Philippines," Department of Health (DOH), http://www.doh.gov.ph/sites/default/files/Costing%20Study%20for%20Selected%20Hospitals%20in%20the%20Philippines.pdf (accessed January 26, 2013).

[52] 2008 NDHS

[53] This is based on the authors' estimation by calculating 21.30 percent of 960,961 families who are from Western Visayas and are part of NHTS-PR of DSWD. This 21.30 percent is the percentage share of poor families under the 4Ps, to the total number of poor families in NHTS-PR.

480,491 NHTS-PR[54] families in the same region will receive the annual premium of 2,400 pesos from 2012 to 2013, while 960,981 poor families[55] will get annual premium of 2,400 pesos from 2014 to 2016.

C.1. TARGET IMPLEMENTATION OF THE GOVERNMENT PLAN

The national government plans to increase the insurance premium for indigents from 1,200 pesos in 2011 to 2,400 pesos in 2012 (Table 3). Besides, it wants to introduce the new NHIP Outpatient and Inpatient Benefit Package with no balance billing in 2012, and wishes to continue these benefits until 2016. In 2013, it will also add catastrophic care for severe diseases.

C.2. SOURCES OF FUNDS

The funds for the NHIP for indigents will come from the 3 billion pesos allotted by the national government under the 2011 General Appropriations Act for Premium Subsidies to Indigents and the 12.08 billion pesos allotted by it under the 2012 General Appropriations Act for Premium Subsidies to Indigents. These amounts have been allotted as part of the DOH budget for 2011 and 2012 respectively. A major outcome of this is that LGU is no longer required to provide a counterpart spending of 50-50 share with the government in the previous scheme. In addition, the authors assume that the government will allot the same amount for NHIP for indigents until 2013, and that from 2014 to 2016, it will double the subsidy in accordance with its plan to double the number of poor families enrolled in the NHIP. Thus, the total budget for NHIP for indigents from 2011 to 2016 is estimated to be 99.64 billion pesos.

To estimate the NHIP budget for Western Visayas, the authors multiplied the total budget for NHIP with the percentage share of this region in the total number of NHTS-PR families under DSWD. Western Visayas has a total number of 960,981 NHTS-PR families, or 8.85 percent of the total number of NHTS-PR families in the Philippines. Thus, the total estimated NHIP budget for Western Visayas, from 2011 to 2016, is 8.818 billion pesos.

C.3. PROJECTED OUTCOMES OF THE POLICY OPTION

There are three expected outcomes of the implementation of the NHIP for indigents in Western Visayas. First, it will allow the indigent families in the region to visit any PhilHealth accredited facility, present their membership card and expect to receive health services without having to pay for anything (no balance billing policy). As such, they will be entitled to inpatient and outpatient benefits[56]as per their needs,without having to worry about the costs involved. Moreover, they will not have any difficulty getting admitted to accredited health facilities. Second, health facilities in Western Visayas will receive capitation funds from PhilHealth to provide health services tothe members, who will be given vouchers which they can use to access the health services that they need from the health facilities. The health facilities in turnwill submit these vouchers to PhilHealth and get fair compensation for the services rendered by them to their members. Third, indigent families will have better access to healthcare services assuming that there will be fewer geographical barriers. Thus, these three expected outcomes of NHIP implementation, it is

[54] This number includes the 204,649 families who are beneficiaries of the 4Ps.
[55]This number includes the 480,491 families under the NHIP program from 2012 to 2013.
[56]Refer to Annex for the complete benefit package that indigents receive under the NHIP.

anticipated,would have positive impact vis a vis the achievement of health-related MDGs and also in reducing health and financial risks for the poor families in Western Visayas.

II. METHODOLOGY

The two policies under the Aquino Health Agenda, i.e. upgrading the health facilities and expansion of health insurance coverage, were analyzed using two tools: the benefit incidence analysis and the cost effectiveness analysis.

A. BENEFIT INCIDENCE ANALYSIS

A.1. DATA NEEDED[57]

To simulate the policy options 1 and 2 using the benefit incidence analysis, the researchers gathered the following information:

1. The 2012 national government spending on health in Western Visayas.Data on the 2012 national government spending on health in Western Visayas were gathered from the 2012 regional allocation of the expenditure program of the Department of Budget and Management (DBM).
2. Total budget allotted for HFEP in Western Visayas in 2011 and in 2012.Data on the 2011 and 2012 HFEP budget in Western Visayas were taken from the 2012 DOH budget and from the authors' computations.
3. Total budget allotted for NHIP in Western Visayas in 2012.Data on the 2012 NHIP budget in Western Visayas were taken from the 2012 DOH budget and the authors' computations.
4. Number of users of health facilities in Western Visayas classified by income deciles in 2012.Data on the 2012 number of users of health facilities in the region, classified by income deciles were estimated and derived from the 2007 Annual Poverty Indicators Survey (APIS) of the National Statistics Office (NSO), and from the projected populations in the selected regions in the Philippines, which will be taken from the Philippine Health Statistics (PHS) of the DOH.
5. Total family income in Western Visayas classified by income decile in 2012.Data on the total family income in this region, classified by income deciles were obtained from the 2009 Family Income and Expenditure Survey (FIES) of the NSO and from the authors' estimations.
6. Total family expenditure in Western Visayas classified by income decile in 2012.Data on the total family expenditure in Western Visayas, classified by income deciles were obtained from the 2009 Family Income and Expenditure Survey (FIES) of the NSO and the authors' estimations.
7. Other data needed for the implementation of the Benefit Incidence Analysis:
    - Percentage Shares of personnelservices, maintenance and other operating expenses and capital outlays in the DOH budget in 2012.Data on the percentage shares of the above were obtained from the DOH website.
    - Percentage Shares of Western Visayas in the total HFEP infrastructure and equipment costs.These data were obtained from the DOH, specifically from the list

[57]Refer to Annex for data estimations for the benefit incidence analysis.

of health facilities for upgrading or establishment to provide Basic Emergency Obstetric and Newborn Care (BEmONC) services to be funded under DOH CY 2011 HFEP, and from the authors' computations.

- Percentage Shares of Western Visayas in the total number of NHTS-PR beneficiaries.Data on the percentage shares of Western Visayas in the total number of NHTS-PR beneficiaries were obtained from the DOH, specifically from the Department Order No. 2011-0188 titled *Kalusugan Pangkalahatan* Execution Plan and Implementation Arrangements, and from the authors' computations.
- 2009 and 2012 Consumer Price Index (2006=100) of Western Visayas.Data on the 2009 and 2012 Consumer Price Index (2006=100) of Western Visayas were gathered from the 2012 Philippine Statistical Yearbook (PSY) of the National Statistical Coordination Board (NSCB).
- Projected Population from 1960 to 2012 in Western Visayas.Data on the projected population from 1960 to 2012 in Western Visayas were taken from the PHS of the DOH and from the authors' estimations.
- Usage life of Hospital Infrastructure.Data on the usage life of hospital infrastructure were derived from a DOH study titled "Costing Study for Selected Hospitals in the Philippines."
- Usage life of Medical Equipment.Data on the usage life of medical equipment were derived from a DOH study titled "Costing Study for Selected Hospitals in the Philippines."
- Gross National Income of the Philippines from 2009 to 2012.Data on the Gross National Income of the Philippines from 2009 to 2012 were gathered from the NSCB website.
- Household Final Consumption Expenditure of the Philippines from 2009 to 2012.Data on the Household Final Consumption Expenditure of the Philippines from 2009 to 2012 were gathered from the NSCB website.

A.2. ASSUMPTIONS

To run the policy simulation using the benefit incidence analysis,and given the limited information available on the health sector in the Philippines, the authors made the following assumptions:

1. All users will utilize the upgraded health facilities and the provided health insurance.
2. There is still a similar distribution of users by health facility level and by income decile from 2007 to 2012.
3. The growth rate in the number of users of health facilities from 2007 to 2012 is equal to the population growth rate from 2007 to 2012.
4. The figures of HFEP and NHIP budget in the 2012 DOH budget are the actual government spending on these two programs for 2012.
5. Regional budget allocations for health in 2012 do not include budgets for NHIP and HFEP.
6. Government spending data at the national level are the only government spending data included in the analysis. Government spending data at the local level are excluded.
7. Government spending at the national level for upgrading the health facilities only includes infrastructure and equipment costs, while government spending at the local level is on annual operating costs.

8. All income deciles are to benefit from government spending on upgrading the health facilities, while only the first two deciles are to benefit from government spending on expanding health insurance coverage.
9. The first two income deciles are part of the NHTS-PR.
10. Hospital infrastructure is estimated to depreciate by 30 years, while medical equipment is estimated to depreciate by seven years.[58]
11. The growth rate of total family income from 2009 to 2012 is equal to the growth rate of the Gross National Income (GNI) from 2009 to 2012.
12. The growth rate of family expenditure from 2009 to 2012 is equal to the growth rate of Household Final Consumption Expenditure (HFCE) from 2009 to 2012.
13. Assumptions of the benefit incidence analysis still apply.

A.3. DESCRIPTION OF THE BENEFIT INCIDENCE ANALYSIS

The Benefit Incidence Analysis (BIA) is a tool used to measure the distributional incidence of the benefits of public spending on a certain service for different groups of households (usually income or expenditure groups) in a certain nation or area. The analysis is conducted to determine if government spending on a certain service is pro-poor, meaning that the actual share of the poor in total government spending on a certain service is higher than the ideal share in benefits across different groups. In addition, the BIA is used to find out if poor households have higher shares in total government spending on a certain service compared to their total income or expenditure.

In this study, the BIA will be used to measure the distributional incidence of benefits of public spending on health for different income deciles of households in Western Visayas. It will also be used to determine if government spending on health in this region is pro-poor, and if the poor in the region have higher percentage shares in total government spending on health compared to their total income or expenditure. In addition, the BIAwill be used to determine which of the two Aquino Health Agenda policies, i.e. the upgrading of the health facilities under HFEP and the expansion of health insurance coverage under the NHIP will give more benefits to the poor.

Data needed for the Benefit Incidence Analysis are: local government spending on a certain public service and the utilization of this service by groups of individuals and households.

In addition, the methodology of the benefit incidence analysis involves a six-step process that can be done easily in a spreadsheet software program like Microsoft Excel. The following are the six steps:[59]

[58] Tsolmongerel Tsilaajav, "Costing Study for Selected Hospitals in the Philippines," Department of Health (DOH), http://www.doh.gov.ph/sites/default/files/Costing%20Study%20for%20Selected%20Hospitals%20in%20the%20Philippines.pdf (accessed 26 January, 2013).

[59] Ibid.

1. Obtain the average unit cost or the unit subsidy[60] of providing a public service[61] by dividing government spending on the service[62]by the total number of users of the service. The unit subsidy or the unit cost is computed as follows:

   Unit Subsidy (or Unit Cost) = S_i/E_i (1)

   S_i = the government net spending on a public service
   E_i = the total number of users of the service

2. Define the average benefit from government spending on a service as the average unit cost of providing the service, which is similar to Equation 1.

   Unit Subsidy (or Unit Cost) = S_i/E_i (1)

   S_i = the government net spending on a public service
   E_i = the total number of users of the service

3. Rank the user population from poorest to the richest using a welfare measure[63] and aggregate them into groups[64] with equal number of users.
4. Derive the distribution of the benefits by multiplying the average benefit derived from Equation 3 by the number of users of the service in each income or consumption group.

The fourth step will concentrate on government spending on health. Total benefits from government spending on all public health facilities, i.e. government hospitals, rural health units, and barangay health stations, accrued to welfare groups can be summarized in Equation 2.

$$X_j = \sum_{i=1}^{3} E_{ij} \frac{S_i}{E_i} = \sum_{i=1}^{3} \frac{E_{ij}}{E_i} S_i \qquad (2)$$

X_j = benefit incidence in local currency accrued to income group j
j = income or consumption group
E_{ij} = number of beneficiaries in sector level i and income or consumption group j
E_i = number of beneficiaries across the sector level i
S_i = government net spending on sector level i
i = sector levels or sub-sectors of health (government hospitals, rural health units, barangay health stations).

[60]Unit subsidy is the average net government spending on a public service per user.
[61] In this study, public service refers to the provision of healthcare services through upgrading the health facilities and expanding the health insurance coverage.
[62] Government spending on the service should be the net of any cost-recovery fees and out-of-pocket expenses by the users.
[63]In this study, the welfare measure that will be used is total family income.
[64]In this study, users will be classified according to income deciles.

To get the share of benefits accrued to the income or consumption group *j* in the total subsidy on health, both sides of the above equation should be divided by the total government spending on health. This is shown in Equation 3.

$$x_j = \sum_{i=1}^{3} \left(\frac{E_{ij}}{E_i}\right)\left(\frac{S_i}{S}\right) = \sum_{i=1}^{3} e_{ij} s_i \qquad (3)$$

x_j = Xj/S; share of benefits accrued to income or consumption group j in the total government spending on health
j = income or consumption group
E_{ij} = number of beneficiaries in sector level i and income or consumption group j
E_i = number of beneficiaries across the sector level i
S_i = government net spending on sector level i
S = total government spending on health
e_{ij}= share of income group j in the total number of users of public health facilities, government hospitals, rural health units, barangay health stations, and other health services
s_i = share of government spending for sector level i, in the total government spending on health
i = sector levels or sub-sectors of health (government hospitals, rural health units, barangay health stations).

5. Analyze and evaluate the benefit incidence or distribution of benefits in absolute and relative terms.

There are two ways of analyzing the benefit incidence or the distribution of benefits in absolute and in relative terms: graphical analysis and statistical analysis.

GRAPHICAL ANALYSIS

To determine if government spending on a specific public service is pro-poor, and if the poor have higher percentage shares in total government spending on a certain public service than in total income or expenditure by means of graphical analysis, the benefit incidence graph or concentration curve is used. The concentration curve is the graph of the cumulative distribution of subsidy, or of total benefits across income or consumption groups.

Apart from the concentration curve, the perfect equality line and the Lorenz curve are also used in the analysis of the benefit incidence. The former is a 45 degree line which graphs the ideal share of the benefits across income or expenditure groups and serves as a benchmark in determining whether government spending on a specific public service is progressive or regressive in absolute terms. In other words, it is used to establish if the spending on the service is pro-poor. The Lorenz curve, on the other hand, is the graph of the cumulative distribution of income or expenditure across income or expenditure groups. This too serves as a benchmark in determining if the government spending on a specific public service is progressive or regressive in relative terms. Hence, the curve is used to find out whether the

poor income households have higher or lower shares in the total subsidy for a specific public service relative to their total income or expenditure.

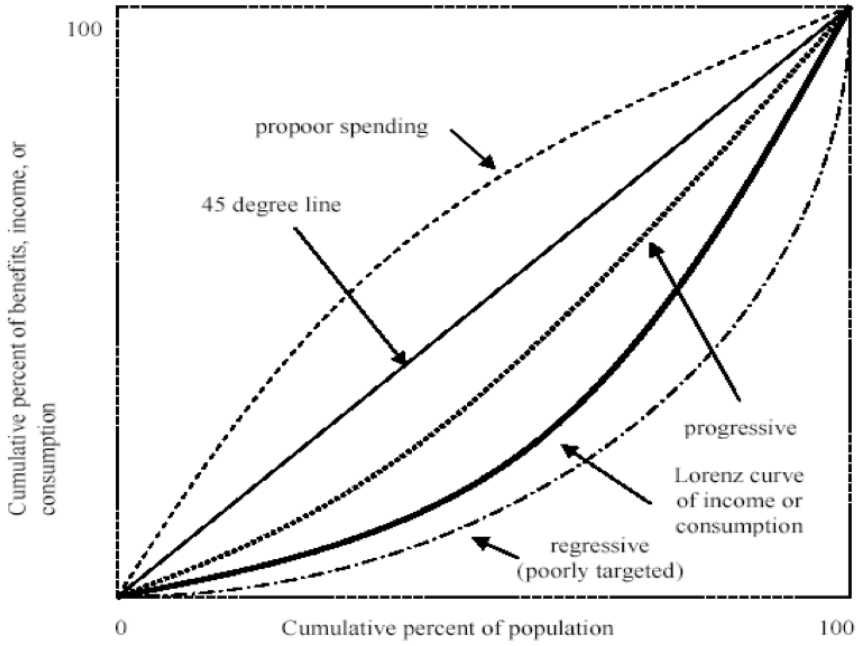
As shown in Table 4 and Figure 1, if the concentration curve is above the 45 degree line or the perfect equality line, then government spending on a specific public service is said to be pro-poor and at the same time, poor income households have higher shares in total subsidy compared to their total income or expenditure. In addition, it is progressive both in absolute and relative terms. On the other hand, if the concentration curve is between the 45 degree line and the Lorenz curve, then government spending on a specific public service is not pro-poor, but the poor households have higher shares in government spending than in their total income or expenditure. Also, it is regressive in absolute terms, but progressive in relative terms. If the concentration curve is below the Lorenz curve, then government spending is not pro-poor; at the same time, the poor households have lower shares in government subsidy compared to their total income or expenditure. In addition, government spending is regressive both in absolute and relative terms.Table 4is a summary on how to interpret the concentration curves, while Figure 1explains the benefit incidence graphs.

Table 4: Interpreting the concentration curves

Concentration Curve	Government Spending in Absolute Terms	Government Spending in Relative Terms
Above the Perfect Equality Line	Progressive; Pro-poor	Progressive; the poor have higher shares in government spending on a specific public service relative to their total income or expenditure.
Between the Perfect Equality Line and the Lorenz Curve	Regressive; Poorly Targeted	Progressive; the poor have higher shares in government spending on a specific public service relative to their total income or expenditure.
Below the Lorenz Curve	Regressive; Poorly Targeted	Regressive; the poor have lower shares in government spending on a specific public service relative to their total income or expenditure.

Source: Demery 2003

Figure 1. The Benefit Incidence



Graphs

Source: Demery 2003

STATISTICAL ANALYSIS

There are cases, however, when the concentration curve intersects either the 45 degree line or the Lorenz curve. This is when the statistical analysis is required. It is also another way of analyzing the benefit incidence across income or expenditure groups. The statistical analysis in the Benefit Incidence Analysis is done by computing the Suits Index and the Gini Coefficient. The Suits Index is the most common summary measure of the benefit incidence. It is based on the concentration curve, which shows the distribution of benefits across income or consumption groups. The Gini Coefficient, on the other hand, is the most common summary measure of income or expenditure. It is based on the Lorenz curve, which shows the distribution of income or expenditure across income or consumption groups. The same equation is used to compute the Suits Index and the Gini Coefficient. Equation 4 presents the formula in computing either the Suits Index or the Gini Coefficient.

Suits index or Gini Coefficient = 1 – [$\sum_{i=1}^{N}$(Ci ((i / N) Cn)] (4)

Cn = 1

Ci = cumulative distribution of the original cumulative distribution[65]

N = number of equal divisions of individuals or households.

If the concentration curve intersects with the 45 degree line, the sign of the Suits Index can accurately determine if the government spending on a specific public service is pro-poor(Table 5). If the Suits Index is negative, then the spending on the specific service is pro-poor and is progressive in absolute terms, but if it is positive, then the spending on the service is not pro-poor and is regressive in absolute terms. On the other hand, if the concentration curve intersects with the Lorenz curve, then the Suits Index should be

[65]Original cumulative distribution might refer to either the cumulative distribution of a subsidy or the benefit incidence for the Suits Index, or cumulative distribution of income or expenditure for the Gini Coefficient.

compared with the Gini Coefficient to determine if the poor households have higher shares in government spending on a specific public service compared to their shares in total income or expenditure. If the Gini Coefficient is algebraically greater than the Suits Index, then the poor households have higher shares in government subsidy on a certain public service compared to their shares in total income or expenditure. This also signifies that government spending on the public service is progressive in relative terms. Conversely, if the Gini Coefficient is algebraically less than the Suits Index, then the low income groups have lower shares in government spending on a public service compared to their shares in the total income or expenditure. This also means that the spending on the service is regressive in relative terms.Table 5is a summary on how to interpret the benefit incidence results using the Suits Index and the Gini Coefficient.

Table 5: Interpreting Benefit Incidence Results using the Suits Index and Gini Coefficient

Suits Index	Interpretation of Government Spending
Negative (-)	Progressive in absolute terms; pro-poor; majority of benefits goes to poorest group
Positive (+)	Regressive in absolute terms; poorly-targeted; majority of benefits does not go to poorest group
Algebraically Greater than the Gini Coefficient	Regressive in relative terms; poorest group gets a smaller share of benefits from government spending than they do of income or expenditure
Algebraically Less than the Gini Coefficient	Progressive in relative terms; poorest group gets a larger share of benefits from government spending than they do of income or expenditure

Source: Demery 2003

6. Compute the subsidy rates. Subsidy rate is equal to the total subsidy per income or consumption group divided by the total expenses per group, as shown in Equation 5. It is also used to determine the percentage share of government subsidy on a specific public service allotted to an income or expenditure group in the total expenses of the said group. Thus, it describes the proportion of the expenses of a group that government spending on a certain public service can cover. If the poorest income or expenditure group has the highest subsidy rate on a specific public service relative to other such groups, then government spending on that public service is also relatively advantageous to the poor.

$$\text{Subsidy Rate} = \frac{\text{Total Subsidy per Income Group}}{\text{Total Expenditure per Income Group}} \quad (5)$$

I. COST EFFECTIVENESS ANALYSIS

A.1. DATA NEEDED[66]

To simulate the policy options 1 and 2 using the cost effectiveness analysis, the researchers gathered the following information:

[66]Refer to Annex for data estimations for the cost effectiveness analysis.

1. Cost Data
    - Infrastructure costs of upgrading each health facility in Western Visayas.Data on the infrastructure costs of upgrading each health facility in this region were derived from the list of health facilities for upgrading or establishment to provide Basic Emergency Obstetric and Newborn Care (BEmONC) services to be funded under DOH CY 2011 HFEP.
    - Equipment costs of upgrading each health facility in Western Visayas.Data on the equipment costs of upgrading each health facility in the selected regions of Western Visayas were derived from the list of health facilities for upgrading or establishment to provide Basic Emergency Obstetric and Newborn Care (BEmONC) services to be funded under DOH CY 2011 HFEP.
    - Estimated annual current operating costs[67] of each health facility from 2012 to 2016 in Western Visayas.Data on the estimated annual current operating costs of each rural health unit and each barangay health station from 2012 to 2016 in Western Visayas were gathered from a DOH study titled "Costing of PhilHealth's Outpatient Benefit Package" and from the authors' estimations. Data on the estimated annual current operating costs of each primary, secondary and tertiary hospital from 2012 to 2016 were gathered from another DOH study named "Costing Study for Selected Hospitals in the Philippines" and authors' estimations.
    - PhilHealth insurance premium costs for NHTS-PR families from 2012 to 2016 in Western Visayas.Data on the PhilHealth insurance premium costs for NHTS-PR families from 2012 to 2016 in Western Visayas were estimated using the insurance premium cost per indigent, according to PhilHealth, and the number of NHTS-PR families in the said region.

2. Other Data Needed for the Estimation of Costs
    - Beneficiaries of the Aquino Health Agenda in Western Visayas.68Data on the beneficiaries or the number of users of the Aquino Health Agenda, who are the NHTS-PR families,were derived from the DOH, specifically from the Department Order No. 2011-0188 titled Kalusugan Pangkalahatan Execution Plan and Implementation Arrangements.
    - Usage life of Hospital Infrastructure.Data on the usage life of hospital infrastructure were obtained from a DOH study titled "Costing Study for Selected Hospitals in the Philippines."
    - Usage life of Medical Equipment.Data on the usage life of medical equipment were obtained from a DOH study titled "Costing Study for Selected Hospitals in the Philippines."

[67]Annual Current Operating Costs include personnel services cost, drugs and medical supply costs and maintenance and other operating expenses (MOOE).

[68]The beneficiaries of the Aquino Health Agenda in Western Visayas are the NHTS-PR families in the region.

3. Effectiveness Data
    - Estimated number of live births attended by skilled health personnel from 2012 to 2016 in Western Visayas.[69]Data on the estimated number of live births attended by skilled health personnel from 2012 to 2016 from Western Visayas were forecasted using the compounded growth rate formula and were derived from the number of live births attended by skilled health personnel from 1960 to 2009 in the said region.[70]

4. Other Data Needed for the Estimation of the Effectiveness Data
    - Number of live births attended by skilled health personnel from 1960 to 2011 in Western Visayas.Data on the number of live births attended by skilled health personnel from 1960 to 2011 in this region were derived from the PHS of the DOH and from the authors' estimations.

A.2. ASSUMPTIONS

To run the policy simulation using the cost effectiveness analysis, given the limited information available on the health sector in the Philippines, the authors made the following assumptions:

1. The implementation of the Aquino Health Agenda will start in 2012 and will end in 2016.
2. Infrastructure costs include the salaries of the construction workers, materials and equipment, and other expenditures related to the construction of the health facilities.
3. The estimated annual current operating cost of one rural health unit is equal to the estimated annual current operating cost of any other type of public health facility, with the exception of government hospitals.
4. Primary and secondary government hospitals have the same annual operating costs.
5. From 2012 to 2013, half of the NHTS-PR families in Western Visayas, ARMM, Eastern Visayas, Central Luzon and Bicol Region will be recipients of the PhilHealth insurance, while from 2014 to 2016, all NHTS-PR families in these same regions will utilize the said insurance. Beneficiaries will utilize the PhilHealth insurance annually.[71]
6. Live births attended by skilled health personnel are live births in the health facilities.
7. Live births attended by skilled health personnel grow annually by the average annual growth rate of live births from 1960 to 2009.
8. The growth in the number of live births in the selected regions in the Philippines is dependent on the two Aquino Health Agenda policies, namely, the upgrading of the health facilities and the expansion of the health insurance coverage.

[69]Number of live births attended by skilled health personnel was used as effectiveness data in this study instead of number of live births in health facilities, due to data constraints. In this study, skilled health personnel refers to health personnel in health facilities.

[70]The number of live births attended by skilled health personnel data in Guimaras does not start from 1960; it started in 1993.

[71]Based on the target implementation of the Aquino Health Agenda, 5.2 million NHTS-PR families — almost half the total number of 10.8 million NHTS-PR families — will benefit from the NHIP from 2012 to 2013. On the other hand, from 2014 to 2016, all of the NHTS-PR families should benefit from the NHIP.

9. There are other costs involved in the provision of PhilHealth insurance premium to indigents (administrative and legal), aside from the premium cost. However, due to data constraints, this study will only include insurance premium cost for the cost effectiveness analysis of the second policy option, which is, expanding the health insurance coverage.

A.3. DESCRIPTION OF THE COST EFFECTIVENESS ANALYSIS

Cost Effectiveness Analysis (CEA) refers to the evaluation of the social intervention programs based on their costs and effects vis a vis producing an expected outcome. When comparing two or more programs using this method, it is important to note: (1) only programs with similar or identical goals can be measured, and (2) a common measure of effectiveness should be used to assess them.[72]

The CEA is essential to this study, as it can act as a guide in the decision-making process of the government by determining which programs can be implemented with greater effectiveness, and at the same time, with the least cost.[73]

In doing the CEA, the following data are required: (1) the costs of a program and (2) the outcome or effectiveness data of a program. Costs refer to all the financial resources utilized by a specific program to achieve a goal. Program costs usually include the personnel costs, costs of facilities, equipment and materials, other program inputs and the required client inputs. The outcome or effectiveness of a program has to do with the results of an intervention. The measure of effectiveness or an outcome must closely reflect the main goal of the programs analyzed. It should also be available, verifiable, as well as be a valid indicator of the declared outcome.[74]

In computing the cost-effectiveness ratio of a particular program, the costs of that program should be divided by the effectiveness data, which is the measure for the outcome or effectiveness of the program. The cost-effectiveness ratio can be summarized as in Equation 6.

$$\text{Cost Effectiveness Ratio} = \frac{\text{Total Costs of a Program}}{\text{Effectiveness Data}} \qquad (6)$$

After computing the cost-effectiveness ratio of a program, this ratio is compared with the cost-effectiveness ratios of other programs. If found higher compared to the other ratios, then the program is the least cost effective compared to the other programs. If, on the other hand, this ratio is the lowest, then the program is the most cost effective compared to the other programs. For a program to be cost effective, its implementation should involve the least cost; at the same time, it needs to have greater impact in terms of influencing the expected outcomes.

[72] Henry Levin and Patrick McEwan, *Cost Effectiveness Analysis*, 2nd ed. (USA: Sage Publications, 2001)
[73] Ibid.
[74] Ibid.

In this study, the CEA will be used to determine the cost effectiveness of HFEP, which is involved in upgrading the health facilities in Western Visayas, and NHIP, involved in expanding the health insurance coverage in the same region, in order to expand access to healthcare services by achieving the maximum number of live births attended by skilled health personnel.

II. RESULTS AND DISCUSSION

The results and discussionsection of this study is in two parts: (A) Benefit Incidence Analysis and (B) Cost Effectiveness Analysis.

A. BENEFIT INCIDENCE ANALYSIS (BIA)

The Benefit Incidence Analysis (BIA)consists of four parts: (1) benefit incidence analysis without policy intervention, (2) benefit incidence analysis with the first policy option,i.e. upgrading the health facilities, (3) benefit incidence analysis with the second policy option,i.e. expanding the health insurance coverage, and (4) comparison of the results.

A.1. BIA WITHOUT POLICY INTERVENTION

A.1.A. TOTAL GOVERNMENT SPENDING ON HEALTH

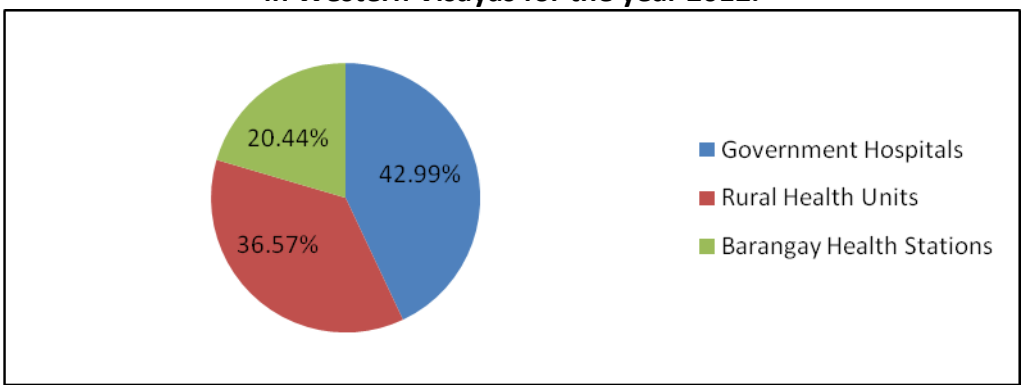
According to the Department of Budget and Management (DBM), the expenditure program on health in Western Visayas in 2012 is 1.164 billion pesos in nominal terms. It surged by 109.31 percent from 2011 to 2012, given that the 2011 expenditure program on health in this region is 556.113 million pesos in nominal terms. Also, in the 2012 expenditure program on health, Western Visayas has a share of 2.69 percent, while in the 2011 expenditure program, it has a share of 1.67 percent.[75] This signifies that the share of this region in the total expenditure program on health has increased by 1.02 percent. In real terms, government spending on health in Western Visayas in 2012 is 889.109 million pesos. In real terms, this spending increased by 102.73 percent from 2011 to 2012, given that the 2011 expenditure program on Western Visayas in real terms is 438.575 million pesos.

The current spending on health, comprising of personal services, maintenance and other operating expenses in Western Visayas is estimated to be 709.032 million pesos.[76] In terms of health facilities, government hospitalsare estimated to have the highest percentage share in the total current government spending on health in this region in 2012 (Figure 2), with a percentage share of 42.99. On the other hand, rural health units and barangay health stations have percentage shares of 36.57and 20.44respectively on total government spending on health in Western Visayas in 2012, signifying that government hospitals here are a top priority to the government compared to other health facilities, since majority of the users of public health facilities in this region visit government hospitals more often compared to the other types of public health facilities. This might be due to improvements in the condition of the roads in the provinces carried out during the Arroyo Administration, existence of government hospitals in some town centers, and the availability of transportation to town centers and city proper.

[75]Refer to Annex for the 2012 and the 2011 regional allocation of the expenditure program for the Department of Health in nominal terms.

[76]Refer to Annex for data estimations for the benefit incidence analysis.

Figure 2 shows the percentage distribution of government spending on health per sector in Western Visayas for the year 2012.



Source: DBM and Authors' estimations

A.1.B. DISTRIBUTION OF INCOME AND HEALTH SUBSIDY PER SECTOR IN WESTERN VISAYAS IN 2012

Distribution of income: the first or the poorest decile has a percentage share of 2.3441, while the share of the tenth or the richest decile is 33.9854 percent(Table 6). There is an income gap of 31.6413 percent between the first and the tenth decile. The second up to the ninth deciles have percentage shares of 3.6147, 4.4571, 5.2684, 6.2854, 7.4233, 9.0257, 11.5149 and 16.0809 respectively in the region's total income in 2012.

Total health subsidy: the second decile has the highest percentage share of 17.1430 while the tenth decile has the lowest percentage share, of 3.9567(Table 6), indicating that those in the poorer income deciles are more frequent users of all public health facilities than people from the richer income deciles.

Subsidy for government hospitals: the third income decile has the highest percentage share of 15.1892(Table 6). Conversely, the ninthincome decile has the lowest percentage share (6.4860 percent) in the total subsidy for government hospitals, indicating that people from the lower deciles utilize government hospitals more often than those from the ninth and tenth deciles.

Subsidy for rural health units: the second income decile has the highest percentage share, while the tenth has the lowest percentage share(Table 6). The second decile has a share of 19.7286 percent in the total subsidy for rural health units, whereas the tenth decile has a percentage share of 1.5407 in this total subsidy. This means that the poorer income deciles visit the rural health units more often compared to the richer income deciles.

Subsidy for barangay health stations: the second income decile has the highest share of 22.5710 percent(Table 6). On the other hand,the eighth income decile has the lowest share of 1.6598 percent. This implies that people from the poor income deciles visit barangay health stations more often than those from the rich income deciles.

The rich income deciles have the highest shares in the total income in Western Visayas. Thus, they can afford to avail healthcare services from private health facilities. On the other hand, the poor income deciles have low shares in the region's total income. This means that they need to have much greater access to public health facilities to avail of free or low-cost

healthcare services. This is the reason why people from the poor income classes access public health facilities more often than the rich classes.

Table 6: Projected percentage distribution of income and health subsidy per health sector in Western Visayas (in deciles), 2012[77]

Decile	Income	Government Hospital	Rural Health Unit	Barangay Health Stations	Total Subsidy
First Decile	2.3441%	9.3709%	13.6126%	17.3821%	12.5595%
Second Decile	3.6147%	12.3631%	19.7286%	22.5710%	17.1430%
Third Decile	4.4571%	15.1892%	18.1380%	16.9128%	16.6198%
Fourth Decile	5.2684%	13.4749%	12.9351%	14.7001%	13.5279%
Fifth Decile	6.2854%	10.5367%	12.5518%	11.0142%	11.3712%
Sixth Decile	7.4233%	7.5309%	9.7251%	5.6948%	7.9580%
Seventh Decile	9.0257%	8.0904%	3.4921%	5.4693%	5.8731%
Eight Decile	11.5149%	10.1813%	5.3597%	1.6598%	6.6763%
Ninth Decile	16.0809%	6.4860%	2.9163%	2.2482%	4.3144%
Tenth Decile	33.9854%	6.7766%	1.5407%	2.3478%	3.9567%
Total	100.0000%	100.0000%	100.0000%	100.0000%	100.0000%

Source: APIS 2007, DBM, FIES 2009, NSCB and authors' estimations

A.1.C. ANALYSIS OF BENEFIT INCIDENCE IN ABSOLUTE AND RELATIVE TERMS

In the benefit incidence graph shown in Figure 3, the concentration curves of rural health units, barangay health stations and total subsidy are above the perfect equality line or the 45 degree line. In addition, the rural health units, barangay health stations and total health have suits indices equal to -0.321381225, -0.386845238 and -0.243320738 respectively as shown in Table 7. This indicates that government spending on these facilities in Western Visayas in 2012 is progressive both in absolute and in relative terms, besides being pro-poor. It also implies that the poor in the region have higher percentage shares in government spending on the rural health units, barangay health stations and total health in 2012 compared to their total income for the relevant period.

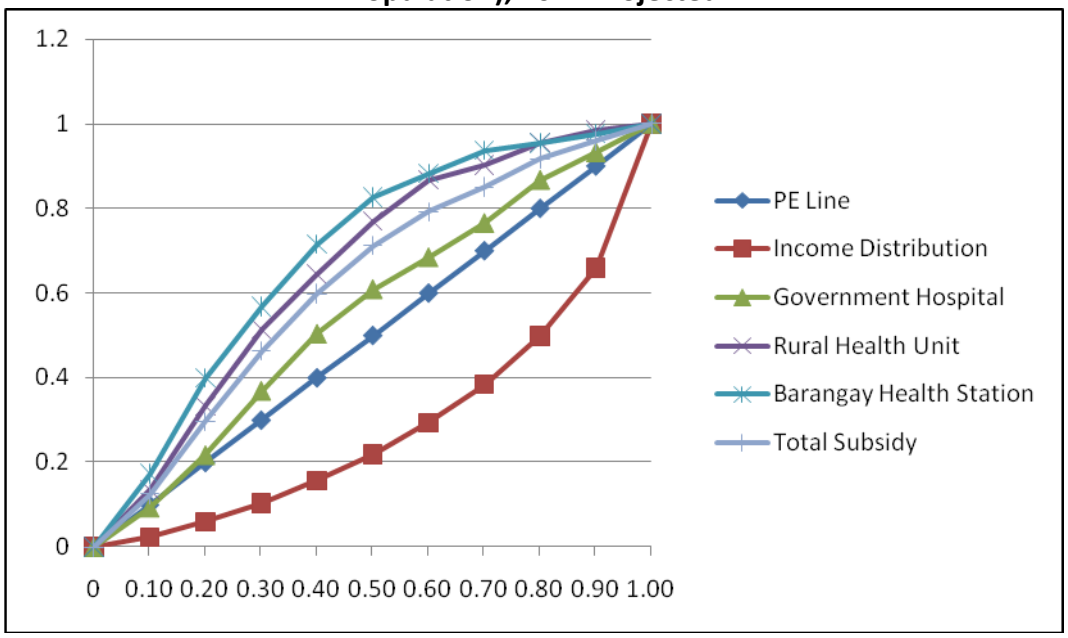
On the other hand, the concentration curve of public hospitals intersects the perfect equality line, but is above the Lorenz curve. This means that government spending on public hospitals is progressive in relative terms, implying that the poor have higher percentage shares in total subsidy for public hospitals compared to their total income. There is a need, however, to determine the signs of the suits indices of public hospitals, since this cannot be

[77]Refer to Annex for the computations on the estimated number of users of health facilities, unit subsidy and total subsidy on health per sector, and for the estimated total family income in Western Visayas in 2012.

determined in the benefit incidence graph, if government spending on public hospitals is either progressive or regressive in absolute terms. Public hospitals have a suits index of -0.10868685(Table 7), which is negative, indicating that the spending on these hospitals in Western Visayas in 2012 is progressive in absolute terms, and thus, is pro-poor.

Figure 3 shows the projected benefit incidence of public spending on health (deciles on population) while Table 7 presents the summary of concentration or suits index of government spending on health in Western Visayas in 2012.

Figure3. Benefit Incidence of Public Spending on Health in the region (Deciles on Population), 2012 Projected



Source: FIES 2009, APIS 2007, and authors' computations

Table 7. Summary of Concentration or Suits Index of government spending on health in Western Visayas, 2012[78]

Type of Health Facility	Suits Index (deciles)	Distribution of Benefit (Absolute Terms)	Distribution Relative to Income
Government Hospital	-0.10868685	Pro-poor	Progressive
Rural Health Unit	-0.321381225	Pro-poor	Progressive
Barangay Health Station	-0.386845238	Pro-poor	Progressive
Total Health	-0.243320738	Pro-poor	Progressive
Income (Gini coefficient)	0.419734051		

Source: FIES 2009, APIS 2007, and authors' computations

[78] Refer to Annex for the computation of the gini coefficient and the suits indices of government spending on health in Western Visayas in 2012.

In summary, government spending on government hospitals, rural health units, barangay health stations and total health in Western Visayas in 2012 is progressive in absolute terms, which means that it is pro-poor. In addition, the spending on all public health facilities is progressive in relative terms, meaning that the poor in this region have higher percentage shares in government spending on all these facilitiescompared to their total income.

A.1.D. SUBSIDY RATE OF GOVERNMENT SPENDING ON HEALTH

In terms of government hospital subsidy, the first income decile has the highest rate, 0.4973 percent(Table 8), while the tenth income decile has the lowest subsidy rate of 0.0337 percent. This indicates that government spending on government hospitals is able to cover 0.4973 percent of the total expenses of the first income decile, and only 0.0337 percent of the total expenses of the tenth income decile.

With regard to the rural health unit subsidy rates, the first income decile has the highest,at 0.6144 percent (see table). This implies that 0.6144 percent of the total expenses of the poor are covered by the government spending on rural health units. Conversely, the tenth income decile has the lowest subsidy rate of 0.0065 percent.

In terms of the barangay health station subsidy rates, the first income decile has the highest,while the tenth income decile has the lowest percentage. This means that the government spending on these health stations in Western Visayas, in 2012, has covered more expenses of the poor than of the rich. The first income decile has a subsidy rate of 0.4385 percent, while the tenth has a subsidy rate of 0.0056 percent.

Based on the results on subsidy rates, government spending on all health facilities in the region,in 2012,could cover more expenses of the poor than of the rich. This is appropriate, since the rich have higher expenses compared to the poor, triggered by their greater purchasing power. At the same time, the rich income deciles have low shares in the total subsidy on health, while the poor have high shares. Thus, the government spending on all health facilities is advantageous to the poor, especially the households from the first income decile. Table 8also shows that government spending on rural health units is most advantageous to the poor as compared to the spending on government hospitals andbarangay health stations, since it has the highest subsidy rate for the first income decile as compared to other health sectors.

Table 8: Subsidy rates of health per sector in Western Visayas (in deciles), 2012[79]

Decile	Government Hospital	Rural Health Unit	Barangay Health Stations
First Decile	0.4973%	0.6144%	0.4385%
Second Decile	0.4375%	0.5938%	0.3797%
Third Decile	0.4474%	0.4544%	0.2368%

[79] Refer to Annex for the estimated 2012 total family expenditure and for the computation of subsidy rates of health per sector in Western Visayas in 2012.

Fourth Decile	0.3379%	0.2759%	0.1752%
Fifth Decile	0.2275%	0.2305%	0.1131%
Sixth Decile	0.1387%	0.1523%	0.0499%
Seventh Decile	0.1246%	0.0457%	0.0400%
Eight Decile	0.1274%	0.0571%	0.0099%
Ninth Decile	0.0595%	0.0227%	0.0098%
Tenth Decile	0.0337%	0.0065%	0.0056%
Total	0.1478%	0.1257%	0.0703%

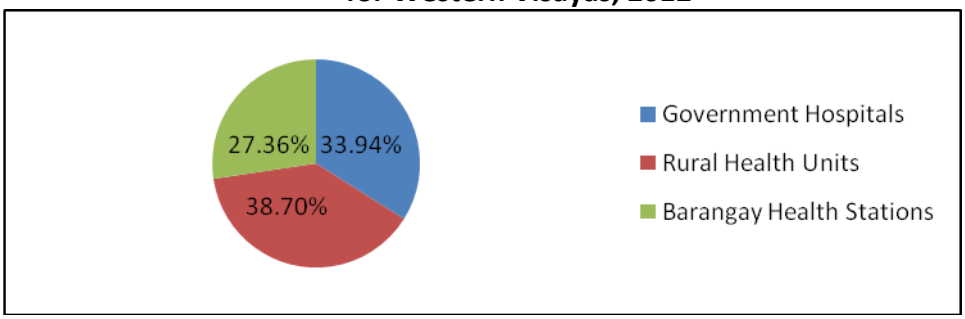
Source: FIES 2009, APIS 2007, and authors' computations

A.2. BIA WITH POLICY OPTION 1: UPGRADING THE HEALTH FACILITIES

The government spending on upgrading the health facilities under HFEP in Western Visayas in 2012 includes the 2011 and the 2012 HFEP budget. It also comprises only capital[80] spending. Thus, the total spending for HFEP in Western Visayas in 2012 is estimated to be 47.010 million pesos.[81] Also, as shown in Figure 4, 33.94 percent of the HFEP budget is allotted to government hospitals in the region, while 38.70 percent of this budget is allotted to rural health units. On the other hand, 27.36 percent of the HFEP budget is allotted to barangay health stations. This signifies that rural health units have the highest percentage share in total government spending on upgrading the health facilities in Western Visayas. Besides, this implies that the government aims to focus on improving the health facilities in the rural areas so that the people, especially the poor, need not visit the government hospitals if the illness is not grave. This can lessen the costs for the poor.

The estimated 2012 HFEP budget for Western Visayas is added to the estimated 2012 current government spending on health in the region to determine if there will be an improvement in the distribution of benefits among the income deciles, especially the poor.

Figure 4. Estimated Percentage Shares of Health Facilities on the Total HFEP Budget for Western Visayas, 2012[82]



Source: DOH and authors' estimations

[80] Refer to Annex for data estimations for the benefit incidence analysis.
[81] This is the depreciated value of total capital spending in real terms for Western Visayas.
[82] The percentage shares in the total HFEP are also the percentage shares of the health facilities in the total HFEP infrastructure and equipment costs in Western Visayas. Refer to Annex for the total estimated HFEP budget per sector in Western Visayas.

A.2.A. DISTRIBUTION OF HEALTH SUBSIDY PER SECTOR

In terms of total health subsidy in 2012, including the HFEP budget, the second decile has the highest share of 17.1430 percent, while the tenth decile has the lowest share of 3.9567 percent(Table 9). This signifies that people in the poorer income deciles use more of public health facilities than those in the richer income deciles.

In terms of subsidy for government hospitals in 2012, including the HFEP budget, the third income decile has the highest share of 15.1892 percent in Western Visayas (see table). Conversely, the ninth income decile has the lowest percentage share in the total subsidy for government hospitals, including the HFEP budget. It has a share of 6.4860 percent. This implies that people from the lower deciles utilize government hospitals more often than those from the ninth and tenth deciles.

With regard to subsidy for rural health units in 2012, including the HFEP budget, the second decile has the highest percentage share in Western Visayas, while the tenth decile has the lowest percentage share. The former has a share of 19.7286 percent, whereas the latter has a share of 1.5407 percent in the total subsidy for rural health units, including the HFEP budget. This means that the poorer income deciles visit rural health units more often compared to the richer income deciles.

Where subsidy for barangay health stations is concerned, including the HFEP budget, the second income decile has the highest share of 22.5710 percent.. The eighth income decile, on the other hand, has the lowest share of 1.6598 percent. This implies that people from the poor income deciles visit barangay health stations more often than those from the rich income deciles.

The upper income deciles in the Western Visayas can afford to avail healthcare services from private health facilities. The low income deciles have lower incomes. This means that they need to have greater access to public health facilities in order to avail free or low-cost healthcare services. This is the reason why people from the poor income classes in this region access public health facilities more often than the rich income classes.

Moreover, there is no difference between the percentage distribution of health subsidy with no policy intervention and the one with the first policy option, i.e. upgrading the health facilities through the HFEP. This is because even though there is an increase in government spending on all health facilities in Western Visayas in 2012 due to the addition of the HFEP budget for the region, there is no change in the shares of the income deciles, especially of the poor, in the total health subsidy. However, in the long run, if the first policy option is very well executed, then more poor people will have access to public health facilities and thus, the shares of the poor income deciles in the total subsidy on health in Western Visayas will increase.

Table 9: Projected percentage distribution of health subsidy per health sector in Western Visayas with the first policy option (in deciles), 2012[83]

Decile	Government Hospitals	Rural Health Units	Barangay Health Stations	Total Subsidy
First Decile	9.3709%	13.6126%	17.3821%	12.3365%
Second Decile	12.3631%	19.7286%	22.5710%	16.9134%
Third Decile	15.1892%	18.1380%	16.9128%	16.6205%
Fourth Decile	13.4749%	12.9351%	14.7001%	13.2859%
Fifth Decile	10.5367%	12.5518%	11.0142%	11.4114%
Sixth Decile	7.5309%	9.7251%	5.6948%	7.9828%
Seventh Decile	8.0904%	3.4921%	5.4693%	5.9412%
Eight Decile	10.1813%	5.3597%	1.6598%	6.9622%
Ninth Decile	6.4860%	2.9163%	2.2482%	4.5476%
Tenth Decile	6.7766%	1.5407%	2.3478%	3.9986%
Total	100.0000%	100.0000%	100.0000%	100.0000%

Source: APIS 2007, DBM and authors' estimations

A.2.B. Analysis of Benefit Incidence in Absolute and Relative Terms

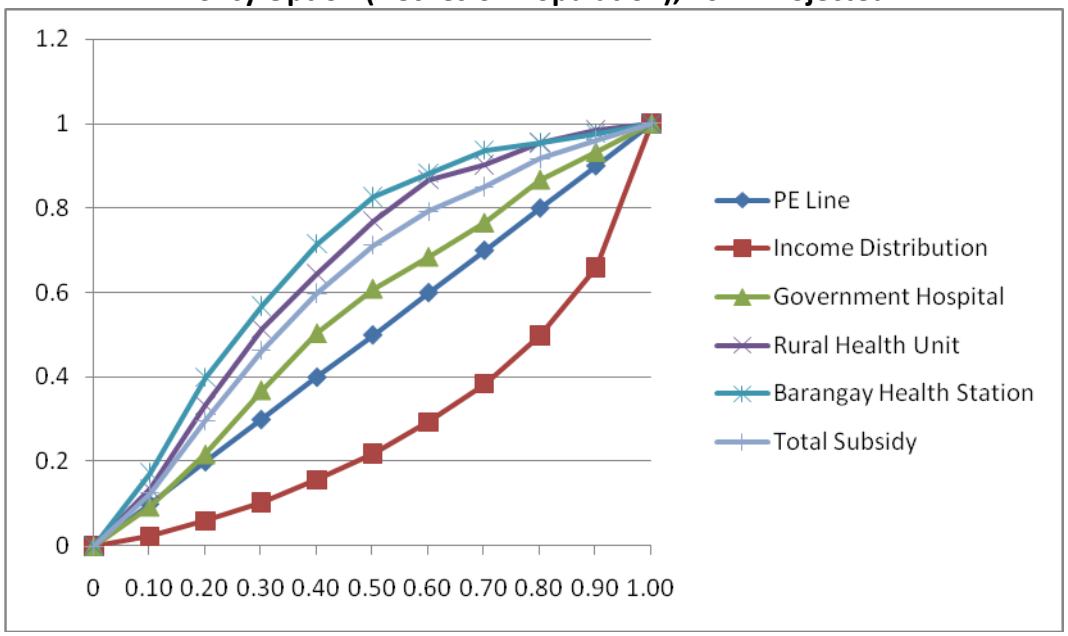
In the benefit incidence graph shown in Figure 5, the concentration curves of rural health units, barangay health stations and total subsidy are above the perfect equality line or the 45 degree line. In addition, these health facilities have suits indices of -0.321381225, -0.386845238 and -0.243320738 respectively (Table 10). This shows that the government spending on these facilities, including the HFEP budget is progressive both in absolute and relative terms. It also implies that this spending is pro-poor, and that the poor have higher percentage shares in the spending on rural health units, barangay health stations and total health in Western Visayas in 2012, including the HFEP budget, compared to the total income.

On the other hand, the concentration curve of government hospitals is intersecting the perfect equality line, but is above the Lorenz curve (Figure 5). This means that the government spending on government hospitals in Western Visayas in 2012, including the HFEP budget is progressive in relative terms, and that the poor have higher shares in the total subsidy on government hospitals in the said region, compared to the total income. There is a need, however, to determine the sign of the suits index of government hospitals, since it cannot be determined in the benefit incidence graph if government spending on government hospitals, including the HFEP budget is either progressive or regressive in

[83]Refer to Annex for the computations for the estimated number of users of health facilities, unit subsidy and total subsidy on health per sector in Western Visayas with the first policy option in 2012. Also, refer to Annex for the estimated 2012 total family income in Western Visayas.

absolute terms. Government hospitals have a suits index of -0.10868685 (see table). This suits index is negative, which signifies that the spending on government hospitals is progressive in absolute terms, and thus, is pro-poor.

Figure 5. Benefit Incidence of Public Spending on Health in Western Visayas with the First Policy Option (Deciles on Population), 2012 Projected



Source: FIES 2009, APIS 2007, and authors' computations

Table 10: Summary of concentration or suits index of government spending on health in Western Visayas with the first policy option, 2012[84]

Type of Health Facility	Suits Index (deciles)	Distribution of Benefit (Absolute Terms)	Distribution Relative to Income
Government Hospital	-0.10868685	Pro-poor	Progressive
Rural Health Unit	-0.321381225	Pro-poor	Progressive
Barangay Health Station	-0.386845238	Pro-poor	Progressive
Total Health	-0.243320738	Pro-poor	Progressive
Income (Gini coefficient)	0.419734051		

Source: FIES 2009, APIS 2007, and authors' computations

In summary, government spending on government hospitals, rural health units, barangay health stations and total health in Western Visayas in 2012, including the HFEP budget, is progressive in absolute terms. This implies that the spending on these health facilities is pro-poor and also progressive in relative terms. It means that poor households have higher shares in total public spending on all public health facilities compared to the total income.

[84] Refer to Annex for the computation of the gini coefficient and the suits indices of government spending on health in Western Visayas with the first policy option in 2012.

In addition, there is no difference between the benefit incidence results with no policy intervention and the results with the first policy option, i.e. the upgrading of the health facilities under the HFEP. The reason for this is that even if the spending on health increased due to the addition of the HFEP budget, there is no change in the shares of the income deciles in the total health subsidy. However, there is a possibility in the future that the number of users in the poor income deciles will increase, as there are plans to construct eight barangay health stations in areas where majority of the poor live (see Table 11). It is estimated that 24,478 people will benefit from the construction of these eight barangay health stations in terms of access to healthcare services. Also, there is to be one provincial health office in Guimaras, which will enable an estimated number of 162,943 people to utilize the said facility.[85]

Table 11: Total population in Western Visayas who may benefit from the construction of Barangay Health Stations under HFEP, 2012

Province, City, Municipality and Barangay	Population Count[a]
Bagonbon, San Carlos City (Negros Occidental)	5,474
Bunga, DSB (Negros Occidental)	6,677
Balabag, La Carlota City (Negros Occidental)	2,578
Makilignit, Isabela (Negros Occidental)	854
Camandag, La Castellana (Negros Occidental)	4,538
Damutan, Hinoba-an (Negros Occidental)	1,435
San Nicolas, Buenavista (Guimaras)	1,129
Guiwanon, Nva. Valencia (Guimaras)	1,793
Total	24,478

Source: NSO
Note: Population Count as of 1 May, 2010

A.2.C. SUBSIDY RATE OF GOVERNMENT SPENDING ON HEALTH

In terms of government hospital subsidy, including the HFEP budget, the first income decile has the highest rate of 0.5233 percent as shown in Table 12. The tenth income decile, on the other hand, has the lowest subsidy rate of 0.0355 percent. This signifies that the government spending on government hospitals is able to cover 0.5233 percent of the total expenses of the first income decile, and only 0.0355 percent of the total expenses of the tenth income decile.

In the case of the rural health unit subsidy rates, including the HFEP budget, the first income decile has the highest, at 0.6575 percent (shown in the table). This implies that 0.6575 percent of the total expenses of the poor are covered by the government spending on these health units. Conversely, the tenth income decile has the lowest subsidy rate,of 0.0070 percent.

In terms of the barangay health station subsidy rates, including the HFEP budget, the first income decile has the highest percentage, while the tenth income decile has the lowest. This means that the government spending on barangay health stations in Western Visayas in 2012 has covered more expenses of the poor than of the rich. The first income decile has a

[85]Department of Health, *List of Health Facilities (Region 6 – Western Visayas) for Upgrading/Establishment to provide BEmONC Services to be funded under the Department of Health (DOH) CY 2011 Health Facilities Enhancement Program (HFEP)*

subsidyrate of 0.4775 percent, while the tenth income decile has a rate of 0.0060 percent.Based on the results on the subsidy rates, the government spending on all health facilities in Western Visayas in 2012, including the HFEP budget, is able to cover more expenses of the poor than of the rich. This is appropriate, since the rich have higher expenses compared to the poor, triggered by their greater purchasing power. At the same time, the rich income deciles have low shares in the total subsidy on health, while the poor have high shares. Thus, the government spending on all health facilities, including the HFEP budget is advantageous to the poor, especially the households from the first income deciles. In addition, Table 12 shows that the government spending on rural health units is most advantageous to the poor compared to the spending on government hospitals and barangay health stations, since it has the highest subsidy rate for the first income decile as compared to that of the other health sectors.

In addition, there is a difference between the subsidy rates with no policy intervention and subsidy rates with the first policy option, i.e. upgrading of the health facilities under the HFEP. There is a slight increase in the subsidy rates in all income deciles when the budget for HFEP in Western Visayas is added to the total government spending on health in the said region. This signifies that more expenses are covered by government spending on health when the HFEP budget for Western Visayas is included.

Table 12: Subsidy rates of health per sector with the first policy option in Western Visayas (in deciles), 2012[86]

Decile	Government Hospital	Rural Health Unit	Barangay Health Stations
First Decile	0.5233%	0.6575%	0.4775%
Second Decile	0.4604%	0.6355%	0.4134%
Third Decile	0.4708%	0.4863%	0.2579%
Fourth Decile	0.3556%	0.2952%	0.1908%
Fifth Decile	0.2394%	0.2467%	0.1231%
Sixth Decile	0.1459%	0.1630%	0.0543%
Seventh Decile	0.1311%	0.0489%	0.0436%
Eight Decile	0.1341%	0.0611%	0.0108%
Ninth Decile	0.0626%	0.0243%	0.0107%
Tenth Decile	0.0355%	0.0070%	0.0060%
Total	0.1556%	0.1346%	0.0765%

Source: FIES 2009, APIS 2007, and authors' computations

[86] Refer to Annex for the estimated 2012 total family expenditure and the computation of subsidy rates of health per sector with the first policy option in Western Visayas in 2012.

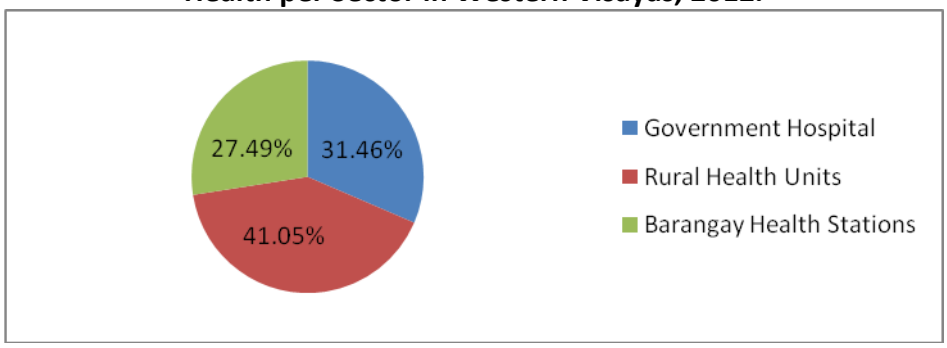
A.3. BIA WITH POLICY OPTION 2: EXPANDING THE HEALTH INSURANCE COVERAGE

The 2012 budget for NHIP in Western Visayas is 1.064 billion pesos in nominal terms, based on the authors' estimations.[87] In real terms, this budget is estimated to be 812.865 million pesos. As shown in Figure 6, 31.46 percent of this budget is allocated to government hospitals, 41.05 percent to rural health units, and 27.49 percent to barangay health stations.[88]The rural health units have the largest percentage share as most poor people in the region visit these units more frequently compared to other public health facilities.

The estimated 2012 NHIP budget was added to the estimated 2012 current government spending on health in Western Visayas to determine if there will be an improvement in the distribution of benefits among income deciles, especially to the poor.

The percentage distribution of the NHIP budget for Western Visayas for 2012 is shown in Figure 6.

Figure 6. Percentage Distribution of the NHIP budget for Western Visayas on Health per Sector in Western Visayas, 2012.



Source: 2012 DOH budget and authors' estimations proxy

A.3.A. DISTRIBUTION OF HEALTH SUBSIDY PER SECTOR

In the case of total health subsidy in 2012, including the NHIP budget, the second decile has the highest share of 38.8134 percent, while the tenth decile has the lowest share of 1.8434 percent(Table 13). This indicates that people in the lower income deciles use more of public health facilities than those in the higher income deciles.

In terms of subsidy for government hospitals, including the NHIP budget, the second income decile has the highest share of 32.6729 percent (see table). Conversely, the ninth income decile has the lowest share in total subsidy for government hospitals: 3.5272 percent. This implies that people from the lower income deciles utilize government hospitals more than the people from the ninth and tenth deciles.

With regard to subsidy for rural health units, the second income decile has the highest share (41.9242 percent), while the tenth decile has the lowest share (0.6737 percent) in the total

[87] The NHIP budget for Western Visayas is estimated to be 8.85 percent of the 2012 NHIP budget for the whole of Philippines, which is equivalent to 12.028 billion pesos; 8.85 percent is the share of Western Visayas in the total number of NHTS-PR families in the country.

[88]Proxies used for the percentage shares of the health facilities in the NHIP budget are the percentage shares of the health facilities in the total number of users from the first and second income deciles. Refer to Annex for the NHIP budget in Western Visayas per health facility.

subsidy for rural healthunits in Western Visayas in 2012, including the NHIP budget. This means that people from lower income deciles go to rural health units more often compared to those from the higher income deciles.

In terms of subsidy for barangay health stations, including the NHIP budget, the second income decile has the highest share of 43.1493 percent as shown in Table 13. On the other hand, the eighth income decile has the lowest share of 0.6529 percent in the said region in 2012. This implies that people from the low income deciles visit barangay health stations more often than people from the high income deciles.

The higher income deciles in the Western Visayas can afford to avail healthcare services from private health facilities, whereas the poor income deciles cannot. Hence, the latterneed to have greater access to public health facilities in order to avail free or low-cost healthcare services. Therefore, more people from the poor income deciles access public healthcompared to the rich income deciles.

The second income decile consistently has the highest percentage share in the health subsidy for all the health facilities, which indicates that if the NHIP budget is included in the government spending on all these facilities in Western Visayas, then the poor will consistently have the highest share in government spending on health.

In addition, there is a great difference between the results when there is no policy intervention and when the second policy option is used, in terms of percentage distribution of health subsidy. The shares of the first and the second deciles in the total health subsidy have increased significantly when the NHIP budget is added to the government spending on health, compared to no policy intervention. Also, the shares of the other income deciles in health subsidy have decreased with the inclusion of this budget in government spending, in contrast to no policy intervention. This is due to the fact that only the poor benefit from the NHIP.

Table 13: Projected percentage distribution of health subsidy per health sector in Western Visayas with the second policy option (in deciles), 2012[89]

Decile	Government Hospital	Rural Health Unit	Barangay Health Stations	Total Subsidy
First Decile	24.7653%	28.9275%	33.2296%	28.4360%
Second Decile	32.6729%	41.9242%	43.1493%	38.8134%
Third Decile	8.2600%	7.9313%	6.6531%	7.7430%
Fourth Decile	7.3278%	5.6562%	5.7827%	6.3025%
Fifth Decile	5.7299%	5.4886%	4.3327%	5.2977%

[89]Refer to Annex for the computations for the estimated number of users of health facilities, unit subsidy and total subsidy on health per sector in Western Visayas with the second policy option in 2012. Also, refer to Annex for the estimated 2012 total family income in Western Visayas.

Sixth Decile	4.0954%	4.2526%	2.2402%	3.7075%
Seventh Decile	4.3996%	1.5270%	2.1515%	2.7362%
Eight Decile	5.5367%	2.3437%	0.6529%	3.1104%
Ninth Decile	3.5272%	1.2752%	0.8844%	2.0100%
Tenth Decile	3.6852%	0.6737%	0.9236%	1.8434%
Total	100.0000%	100.0000%	100.0000%	100.0000%

Source: APIS 2007, DBM and authors' estimations

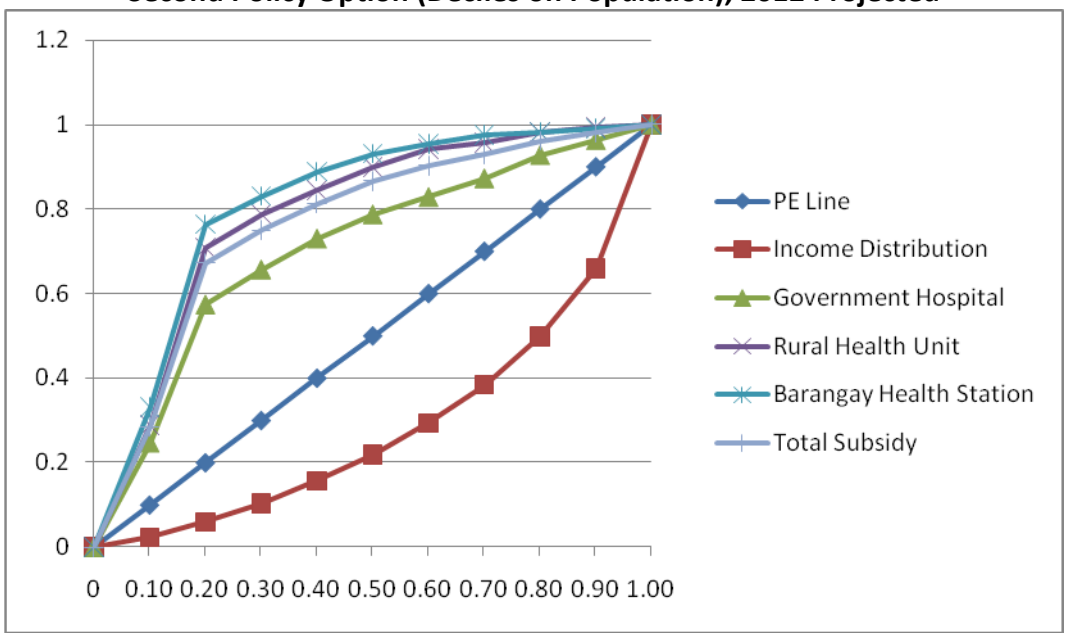
A.3.B. ANALYSIS OF BENEFIT INCIDENCE IN ABSOLUTE AND RELATIVE TERMS

In the benefit incidence graph (Figure 7), the concentration curves of government hospitals, rural health units, barangay health stations and total subsidy are above the perfect equality line or the 45 degree line. In addition, these health facilities have suits indices of -0.417776945, -0.580389564, -0.629595965 and -0.532408448 respectively(Table 14).This signifies that government spending on government hospitals, rural health units, barangay health stations and total health in Western Visayas in 2012, including the NHIP budget, is progressive both in absolute and relative terms. Also, that government spending on these facilities is pro-poor and that the poor have higher shares in government spending on the said facilities, compared to the total income.

In summary, government spending on government hospitals, rural health units, barangay health stations and total health in Western Visayas in 2012, including the NHIP budget is progressive in absolute terms. This implies that government spending on all these facilities in the regionis pro-poor. In addition, this spending is progressive in relative terms. This means that poor households in the region have higher shares in government spending on public health facilities compared to total income.

Moreover, there is a significant difference between the benefit incidence results with no policy intervention and the results with the second policy option, the reason being that if the government spending on health in Western Visayas increases due to the inclusion of the NHIP budget, then the shares of the poor income deciles increase. This is because the NHIP is implemented for the poor. This increase in the shares of the first and second income deciles leads to the improvement of the suits indices and of the benefit incidence graphs, as compared to the benefit incidence results of the analysis with no policy intervention. Thus, with the inclusion of the NHIP budget, the government spending on all public health facilities in Western Visayas in 2012 becomes more pro-poor.

Figure 7. Benefit Incidence of Public Spending on Health in Western Visayas with the Second Policy Option (Deciles on Population), 2012 Projected



Source: FIES 2009, APIS 2007, and authors' computations

Table 14: Summary of concentration or suits index of government spending on health in Western Visayas with the second policy option, 2012[90]

Type of Health Facility	Suits Index (deciles)	Distribution of Benefit (Absolute Terms)	Distribution Relative to Income
Government Hospital	-0.417776945	Pro-poor	Progressive
Rural Health Unit	-0.580389564	Pro-poor	Progressive
Barangay Health Station	-0.629595965	Pro-poor	Progressive
Total Health	-0.532408448	Pro-poor	Progressive
Income(Gini coefficient)	0.419734051		

Source: FIES 2009, APIS 2007, and authors' computations

A.3.C. SUBSIDY RATE OF GOVERNMENT SPENDING ON HEALTH

In terms of government hospital subsidy rates, including the NHIP budget, that of the first income decile is the highest: 2.4166 percent(Table 15). The tenth income decile, on the other hand, has the lowest subsidy rate of 0.0337 percent. This signifies that the government spending on government hospitals is able to cover 2.4166 percent of the total expenses of the first income decile, and only 0.0337 percent of the expenses of the tenth income decile.

In terms of rural health unit subsidy rates, including the NHIP budget, the first income decile has the highest rate of 2.9860 percent (see table). This implies that 2.9860 percent of the total expenses of the poor are covered by the government spending on rural health units. Conversely, the tenth income decile has the lowest subsidy rate of 0.0065 percent.

[90] Refer to Annex for the computation of the Gini coefficient and the suits indices of government spending on health in Western Visayas with the second policy option in 2012.

In terms of barangay health station subsidy rates, including the NHIP budget, the first income decile has the highest percentage, while the tenth income decile has the lowest (Table 15). This means that the government spending on barangay health stations in Western Visayas in 2012 has covered more expenses of the poor than of the rich. The first income decile has a subsidy rate of 2.1312 percent, while the tenth income decile has a rate of 0.0056 percent.

Based on the subsidy rates results, the government spending on all the health facilities in Western Visayas in 2012, including the NHIP budget, is able to cover more expenses of the poor than of the rich. This is appropriate, since the rich have relatively higher expenses, triggered by their greater purchasing power. At the same time, the rich income deciles have low shares in the total subsidy on health, while the poor have high shares. Thus, the government spending on all health facilities is advantageous to the poor, especially the households from the first income deciles. In addition, Table 15 shows that the government spending on rural health units, including the NHIP budget, is most advantageous to the poor compared to the spending on government hospitals and barangay health stations, since it has the highest subsidy rate for the first income decile compared to the other health sectors.

Moreover, there is a difference between the subsidy rates with no policy intervention and subsidy rates with the second policy option, which is the expansion of the health insurance coverage under the NHIP. There is a significant increase in the subsidy rates of the first and the second income deciles when the budget for NHIP is added to the total government spending on health. Also, there are no changes in the subsidy rates of other income deciles. This is because the NHIP is only provided to the poor, and the other income deciles do not benefit from it. Thus, the results indicate that more expenses of the poor are covered by the government spending on health in Western Visayas in 2012, when the NHIP budget for this region is included.

Table 15: Subsidy rates of health per sector with the second policy option in Western Visayas (in deciles), 2012[91]

Decile	Government Hospitals	Rural Health Units	Barangay Health Stations
First Decile	2.4166%	2.9860%	2.1312%
Second Decile	2.1261%	2.8859%	1.8454%
Third Decile	0.4474%	0.4544%	0.2368%
Fourth Decile	0.3379%	0.2759%	0.1752%
Fifth Decile	0.2275%	0.2305%	0.1131%
Sixth Decile	0.1387%	0.1523%	0.0499%
Seventh Decile	0.1246%	0.0457%	0.0400%
Eight Decile	0.1274%	0.0571%	0.0099%
Ninth Decile	0.0595%	0.0227%	0.0098%
Tenth Decile	0.0337%	0.0065%	0.0056%
Total	0.2718%	0.2876%	0.1787%

Source: FIES 2009, APIS 2007, and authors' computations

[91] Refer to Annex for the estimated 2012 total family expenditure and the computation of subsidy rates of health per sector with the second policy option in Western Visayas in 2012.

A.4. COMPARISON OF BIA RESULTS FOR POLICY OPTIONS 1 AND 2

Two policies of the Aquino Health Agenda were simulated in this study using the benefit incidence analysis. The first policy option, *upgrading the health facilities* is meant to improve the condition of the public health facilities, especially with regard to their construction, renovation, infrastructure and equipment. The second policy option, *expanding the health insurance coverage* is aimed at providing health insurance to the poor, since the poor do not have the required resources to access healthcare services. Going by the policydescriptions, the second policy option is seen to be relatively more targeted towards the poor — a fact that is further strengthened by the results of the benefit incidence analysis for Western Visayas.

The BIA results show the second policy option, i.e. expanding the health insurance coverage, to be more pro-poor. In terms of budget, that of the National Health Insurance Program (NHIP) is higher compared to Health Facilities Enhancement Program (HFEP). In real terms, NHIP has a budget equivalent to 812.865 million pesos for Western Visayas, whilethe HFEP budget is only 47.010 million pesos.

As seen in the case of percentage distribution of health subsidy, the shares of the first and second income deciles have increased when the NHIP budget is added to the government spending on health in Western Visayas in 2012, while they have remained the same when the HFEP budget is added.

In terms of the benefit incidence in absolute and relative terms, government spending on all health facilities in Western Visayas in 2012 is progressive in both these respects when both the HFEP and the NHIP budgets are added. However, the suits indices of all public health facilities when the NHIP budget is added are more negative than when the HFEP budget is added, implying that the poor have higher shares in government spending with the addition of the former compared to the addition of the HFEP budget.

With regard to subsidy rates, the inclusion of both HFEP and NHIP in the government spending on health has led to an increase in the percentage share of health subsidy in covering the expenses of the poor, who are from the first and second income deciles. However, the contribution of NHIP is higher compared to HFEP in increasing this percentage share of health subsidy for the poor (as shown in Tables 12 and 15).

In addition, NHIP is meant to benefit only the poor income deciles, while HFEP benefits all income deciles. Hence, the effect of NHIP on benefiting the poor is greater. Thus, government spending on expanding the health insurance coverage is more beneficial to the poor than the spending on upgrading the health facilities.

B. COST EFFECTIVENESS ANALYSIS (CEA)

The Cost Effectiveness Analysis (CEA) comprises of three parts: (1) cost breakdown, (2) effectiveness data and (3) cost effectiveness ratios.

B.1. COST BREAKDOWN

B.1.A. POLICY OPTION 1: UPGRADING THE HEALTH FACILITIES

Upgrading the health facilities under the HFEP involves only the construction or expansion, renovation and repair, and equipping of the health facilities. It does not cover the training of personnel or other ways of improving the quality of healthcare at the health facilities.

Based on the list of health facilities to be established or upgraded to provide Basic Emergency Obstetric and Newborn Care (BEmONC) services — to be funded by the Department of Health CY 2011 Health Facilities Enhancement Program (HFEP)— HFEP costs are divided by infrastructure and equipment[92] costs for all types of health facilities. As shown in Table 16, barangay health stations have the highest share of 41.91 percent in the total infrastructure cost in Western Visayas, while government hospitals have the highest share of 56.71 percent in total equipment cost, which signifies that the government concentrates on building or improving more barangay health stations in Western Visayas so that more poor people have access to basic healthcare services. At the same time, the government also focuseson upgrading the equipment at the government hospitals in this region, so that more advanced services can be provided to patients with grave illnesses.

Table 16: Infrastructure and equipment costs of upgrading the health facilities in Western Visayas (in million pesos) by health facility, 2012–2016[93]

	Infrastructure Cost	Percentage Share (%)	Equipment Cost	Percentage Share (%)
Government Hospitals	23.800	16.35	63.785	56.71
Rural Health Units	60.750	41.74	39.100	34.76
Barangay Health Stations	61.000	41.91	9.600	8.53
Total Health	145.550	100	112.485	100

Source: DOH[94] and authors' computations

In addition, the current spending or operational costs have the highest percentage share in the total cost of all public health facilities, as shown in Table 17; the details therein clearly indicate that most of the costs in upgrading the health facilities will be concentrated on sustained provision of quality healthcare services.

Operating costs are further divided into specific items. In rural health units and barangay health stations, they are segregated into four items: personnel, medicines, tests and other operating costs. Personnel costs have the highest percentage share in the total operating costs of rural health units and barangay health stations. The detailed breakdown is given in Table 18.

In government hospitals, the operating costs are also separated into four categories: personnel services cost, drugs and medical supplies costs, other maintenance and operating

[92]Refer to Annex for the standard costing packages presented by DOH and BEmONC services for equipment.
[93]Infrastructure and equipment costs are not depreciated.
[94]Department of Health, *List of Health Facilities (Region 6 – Western Visayas) for Upgrading/Establishment to provide BEmONC Services to be funded under the Department of Health (DOH) CY 2011 Health Facilities Enhancement Program (HFEP)*

costs, and capital costs. Personnel services costs still have the highest share of 69 percent in the total operating cost of government hospitals. For details, see Table 19.

Table 17: Cost breakdown of upgrading the health facilities in Western Visayas by health facility and by item (in million pesos), 2012–2016

	Annual Cost	Total Cost from 2012 to 2016[a]	Percentage Share (%)
Total Government Hospitals	**210.188**	**1,050.94**	**100**
Infrastructure	0.793	3.965	0.38
Equipment	9.112	45.56	4.34
Current	200.282	1,001.41	95.29
Total Rural Health Units	**343.455**	**1,717.275**	**100**
Infrastructure	2.025	10.125	0.59
Equipment	5.586	27.93	1.63
Current	335.845	1,679.225	97.78
Total Barangay Health Stations	**541.914**	**2,709.57**	**100**
Infrastructure	2.033	10.165	0.38
Equipment	1.371	6.855	0.25
Current	538.509	2,692.545	99.37
Total Health	**1,096**	**5,480**	**100**
Infrastructure[b]	4.852	24.26	0.44
Equipment[c]	16.07	80.35	1.47
Current[d]	1,075	5,373	98.05

Source: DOH[95] and authors' computations

Note:

a. Total cost from 2012 to 2016 was obtained by multiplying the annual cost by 5.
b. Straight-line depreciation method was used to determine the actual annual infrastructure cost. Total infrastructure cost was divided by 30 years, which is the estimated life of the hospital buildings in the Philippines.
c. Straight-line depreciation method was used to determine the actual annual equipment cost. Total equipment cost was divided by 7 years, which is the estimated life of hospital equipment in the Philippines.
d. Current expenses involve spending on the salaries of the health workers, medicine costs, test costs and others.

[95] Ibid.

Table 18: Breakdown of the estimated annual operating costs of all rural health units and barangay health stations in Western Visayas, 2012–2016

Material	Annual Operating Cost per Rural Health Unit or Barangay Health Station (in pesos)	Total Annual Operating Costs for All Rural Health Units and Barangay Health Stations (in pesos)[a]	Total Annual Operating Costs for All Rural Health Units and Barangay Health Stations (in pesos)[b]	Percentage Share in Total Costs (%)
Personnel	3,390,422.5	511,953,797.5	2,559,768,988	58.55
Medicine[c]	1,700,000	256,700,000	1,283,500,000	29.36
Tests[d]	200,000	30,200,000	151,000,000	3.45
Other	500,000	75,500,000	377,500,000	8.63
Total	5,790,422.5	874,353,797.5	4,371,768,988	100

Source: DOH[96] and authors' computations

Notes:

a. Total costs for all rural health units and barangay health stations in Western Visayas were computed by multiplying the annual cost per rural health unit or barangay health station by151, which is the sum of the total number of rural health units and barangay health stations under the HFEP.
b. Total costs for all rural health units and barangay health stations in Western Visayas were multiplied by 5, which represents the number of years of implementation of the HFEP, to derive the total costs for all rural health units and barangay health stations in the region from 2012 to 2016.
c. Medicine costs include Paracetamol 100, 500 MG, Amoxicillin 100, 250 MG, Amoxicillin 100, 500 MG, Metoprolol 100, 50 MG, and FeSO4 (60ML).
d. Test costs include Blood Count (Plate, Typing, CBC), Fasting Blood Sugar (FBS, RBS, Blood Chemistry), Sputum and Other (Uric Acid, Cholesterol, Creatinine, Pregnancy Test, Stool, Hepa, HIV, Hematocrit, Fecalysis, Urinalysis, X-ray).

Table 19: Breakdown of the estimated annual operating costs of all government hospitals in Western Visayas, 2012–2016[97]

Material	Annual Operating Cost per Government Hospital (in pesos)	Total Annual Operating Costs for All Government Hospitals (in pesos)[a]	Total Annual Operating Costs for All Government Hospitals (in pesos)[b]	Percentage Share in Total Costs (%)
Personnel Services Cost	15,354,987.45	138,194,887.1	690,974,435.3	69
Drugs and Medical Supplies Cost	2,447,897	22,031,068.95	110,155,344.8	11
Other Maintenance and Other Operating Costs	2,892,969	26,036,717.85	130,183,589.3	13

[96] Ross McCleod, "Costing of Philhealth's Outpatient Benefit Package," Department of Health (DOH), http://www.doh.gov.ph/sites/default/files/Costing%20of%20PhilHealth%20Outpatient%20Benefit%20Package.pdf (accessed 1 September, 2012).

[97] The total annual operating cost is estimated to be the average annual operating cost of the Bunawan District Hospital of Agusan del Sur and Kapalong District Hospital of Davao del Norte, which are secondary hospitals.

Capital Costs	1,557,752	14,019,771.15	70,098,855.75	7
Total	22,253,605.00	200,282,445	1,001,412,225	100

Source: DOH[98] and authors' computations

Notes:

a. Total costs for all government hospitals in Western Visayas were computed by multiplying the annual cost per government hospital by 9, which is the total number of government hospitals in Western Visayas under the HFEP.
b. Total costs for all government hospitals was multiplied by 5, which represents the number of years of implementation of the HFEP, to derive the total costs for all government hospitals in Western Visayas from 2012 to 2016.

The total cost of upgrading the health facilities in Western Visayas was further broken down into provinces. Iloilo has the highest infrastructure and operating cost of 8.400 million pesos and 1,443.065 million pesos respectively (Table 20). It also has the highest share of 26.71 percent in the total cost of upgrading the health facilities. On the other hand, Negros Occidental has the highest equipment cost of 52.429 million pesos. This implies that the government has its focus on building more health facilities or repairing the infrastructure in Iloilo, while it concentrates on equipping the health facilities in Negros Occidental.

Table 20: Cost breakdown of upgrading the health facilities in Western Visayas by province and by item (in million pesos), 2012–2016[99]

	Total Infrastructure Costs	**Total Equipment Costs**	**Total Operating Costs**	**Total Costs**	**% Share (%)**
Iloilo	8.400	11.786	1,443.065	1,463.251	26.71
Iloilo City	2.517	3.500	868.563	874.580	15.97
Negros Occidental	1.233	52.429	1,309.095	1,362.757	24.88
Bacolod City	0.000	2.786	86.856	89.642	1.64
Aklan	2.758	5.143	376.377	384.279	7.02
Antique	4.383	4.704	921.927	931.014	17.00
Guimaras	4.967	0.000	367.297	372.263	6.80
Total Western Visayas	24.258	80.348	5,373.18	5,477.787	100.00

Source: DOH and authors' computations

[98] Tsolmongerel Tsilaajav, "Costing Study for Selected Hospitals in the Philippines," Department of Health (DOH), http://www.doh.gov.ph/sites/default/files/Costing%20Study%20for%20Selected%20Hospitals%20in%20the%20Philippines.pdf (accessed 26 January, 2013).

[99] Refer to Annex for the cost breakdown of upgrading the facilities in each of the provinces in Western Visayas by health facility and by item.

B.1.B. POLICY OPTION 2: EXPANDING THE HEALTH INSURANCE COVERAGE

Expanding the health insurance coverage through the NHIP means that the national government plans to enroll all the indigents under the NHTS-PR in PhilHealth. In addition, it intends to subsidize the annual insurance premium of 2,400 pesos of 10.8 million NHTS-PR families nationwide. Thus, one cost to be borne by the national government through this policy option is the insurance premium cost of 2,400 pesos per NHTS-PR family. Other costs of the said program might include administrative and legal expenditures. However, due to data constraints, this study only takes into account the 2,400 peso insurance premium for all NHTS-PR families in Western Visayas as the cost of this policy option.[100]

Negros Occidental has the highest total cost of 3,254.294 million pesos in expanding the health insurance coverage (Table 21), signifying that it has the highest number of NHTS-PR families that will be covered by health insurance in Western Visayas.

Table 21: Total cost of expanding the health insurance coverage in Western Visayas (in million pesos) by province, 2012–2016[101]

	Annual Insurance Cost (2012–2013)	Total Insurance Cost (2012–2013)[a]	Annual Insurance Cost (2014–2016)	Total Insurance Cost (2014–2016)[b]	Total Cost (2012–2016)[c]
Aklan	106.114	212.227	212.227	636.682	848.909
Antique	103.798	207.595	207.595	622.786	830.381
Capiz	130.235	260.470	260.470	781.409	1,041.878
Guimaras	27.653	55.306	55.306	165.917	221.222
Iloilo	325.889	651.778	651.778	1,955.333	2,607.110
Iloilo City	37.030	74.059	74.059	222.178	296.237
Negros Occidental	406.787	813.574	813.574	2,440.721	3,254.294
Bacolod City	15.673	31.246	31.346	94.039	125.386
Total Western Visayas	1,153.178	2,306.354	2,306.354	6,919.063	9,225.420

Source: DOH and authors' computations.

Note:

a. From 2012 to 2013, only half of the NHTS-PR families will benefit from the NHIP.
b. From 2014 to 2016, all of the NHTS-PR families will benefit from the NHIP.
c. Total cost from 2012 to 2016 is the sum of the total insurance cost from 2012 to 2013 and from 2014 to 2016.

[100]Refer to Annex for the complete benefit packages for indigents under the NHIP. These packages comprise the costs for different health services that indigents under the NHIP can avail of.

[101]Refer to Annex for the specific computations of the total cost of expansion of health insurance coverage in Western Visayas by province. Also, on how insurance costs were estimated by the author.

B.2. EFFECTIVENESS DATA

The effectiveness data used in this study are the number of live births attended by skilled health personnel in Western Visayas. The reason for selecting this as a specific policy goal in this study was that most of the equipment under the upgrading of the health facilities programis used to improve maternal health and reduce infant mortality.[102] In addition, the Philippines has a low probability of achieving the fifth MDG of improving maternal health by 2015, according to UNDP.[103]

Iloilo is projected as the province with the highest percentage share in the total number of live births attended by skilled health personnel on account of both HFEP and NHIP (Tables 22 and 23). It has a share of 30.69 percent as a result of HFEP, and a share of 27.52 percentas a result of NHIP in the total forecasted number of live births attended by skilled health personnel in Western Visayas.

Table 22: Forecasted number of live births attended by skilled health personnel as a result of HFEP in Western Visayas, by year and by province, 2012–2016[104]

	2012	2013	2014	2015	2016	Total	Share in Total Live Births (%)
Iloilo	20,226	20,631	21,045	21,467	21,898	105,267	30.69
Iloilo City	9,555	9,800	10,050	10,307	10,570	50,281	14.66
Negros Occidental	11,493	11,640	11,790	11,941	12,094	58,958	17.19
Bacolod City	8,096	8,472	8,866	9,277	9,708	44,419	12.95
Aklan	7,508	7,777	8,056	8,345	8,644	40,330	11.76
Antique	6,098	6,268	6,443	6,623	6,808	32,241	9.40
Guimaras	1,992	2,135	2,289	2,455	2,632	11,502	3.35
Total Western Visayas[a]	64,968	66,725	68,539	70,414	72,353	343,000	100.00

Source: Philippine Health Statistics (PHS) and authors' computations.

Note: Total live births in Western Visayas as a result HFEP include only the forecasted live births attended by skilled health personnel of those provinces which are supported by the first policy option of upgrading the health facilities.

[102] Villaverde, Mario. Interview by Rachel Lynn Belandres. Personal Communication. Ateneo de Manila University, 28 January, 2013.

[103] United Nations Development Program (UNDP), "The Millenium Development Goals," UNDP in the Philippines, http://www.undp.org.ph/?link=goal_5 (accessed 1 February, 2013).

[104] Refer to Annex for the computations of the forecasted number of live births attended by skilled health personnel as a result of HFEP in Western Visayas by year and by province, from 2012 to 2016.

Table 23: Forecasted number of live births attended by skilled health personnel as a result of NHIP in Western Visayas, by year and by province, 2012–2016[105]

	2012	2013	2014	2015	2016	Total	Share in Total Live Births (%)
Iloilo	20,226	20,631	21,045	21,467	21,898	105,267	27.52
Iloilo City	9,555	9,800	10,050	10,307	10,570	50,281	13.14
Negros Occidental	11,493	11,640	11,790	11,941	12,094	58,958	15.41
Bacolod City	8,096	8,472	8,866	9,277	9,708	44,419	11.61
Aklan	7,508	7,777	8,056	8,345	8,644	40,330	10.54
Antique	6,098	6,268	6,443	6,623	6,808	32,241	8.43
Guimaras	1,992	2,135	2,289	2,455	2,632	11,502	3.01
Capiz	7,134	7,504	7,892	8,301	8,730	39,561	10.34
Total Western Visayas[a]	72,103	74,228	76,431	78,715	81,084	382,561	100.00

Source: Philippine Health Statistics (PHS) and authors' computations

Note: Total live births in Western Visayas as a result of the NHIP include only the forecasted live births attended by skilled health personnel of those provinces which are supported by the second policy option, i.e. expanding the health insurance coverage.

B.3. COST EFFECTIVENESS RATIO

To determine the cost effectiveness of a program, its cost effectiveness ratiohas to be determined. In this study, the cost effectiveness ratio is computed by dividing the total cost of a program, i.e. HFEP or NHIP, by the number of live births attended by skilled health personnel, which is the effectiveness data. The higher the cost effectiveness ratio, the lower is the cost effectiveness of the program, which means that implementing the particular program to achieve the expected outcome will entail high costs. For this study, this means that executing either the HFEP or NHIP will result in one beneficiary gaining access to healthcare services at a high cost, specifically with regard to live births attended by skilled health personnel at the health facilities. On the other hand, the lower the cost effectiveness ratio, the higher is the cost effectiveness of the program. This signifies that executing either the HFEP or NHIP will lead to one beneficiary gaining access to healthcare services at a low cost, specifically with regard to live births attended by skilled health personnel at the health facilities.

In the whole of Western Visayas, HFEP or the first policy option,i.e. upgrading the health facilities is the most cost effectiveoption as it has a cost effectiveness ratio of 15,970.23 pesos per live birth attended by skilled health personnel, while NHIP has a cost effectiveness

[105]Refer to Annex for the computations of the forecasted number of live births attended by skilled health personnel as a result of NHIP in Western Visayas by year and by province, from 2012 to 2016.

ratio of 24,114.88 pesos per live birth attended by skilled health personnel (Table 24). This is due to the fact that Western Visayas has the highest share in the total number of NHTS-PR families in the Philippines, and thus, it has the highest cost in extending health insurance coverage. Hence, the HFEP costs in the region will be lower compared to the NHIP costs, which also make the HFEP less costly in increasing the number of live births attended by skilled health personnel in Western Visayas.

In Iloilo, Negros Occidental, Bacolod City and Aklan, HFEP is most cost effective, as illustrated in Table 24. This is because of the higher costs involved in the NHIP compared to HFEP in the said provinces. Also, even though Iloilo and Negros Occidental have the highest shares in both HFEP and NHIP costs in the region, they still have a higher number of live births attended by skilled health personnel compared to other provinces, indicating that it is cheaper to increase the number of live births in Iloilo, Negros Occidental, Bacolod City and Aklan with HFEP as compared to NHIP.

On the other hand, in Iloilo City, Antique and Guimaras NHIP is more cost effective. This is because these provinces have small numbers of NHTS-PR families who are the beneficiaries of the health insurance under the Aquino Health Agenda, which results in lower NHIP costs compared to HFEP in these provinces. This also means that NHIP is of greater help in lowering the cost of increasing the number of live births attended by skilled health personnel in the said provinces, as compared to HFEP.

Table 24: Cost effectiveness ratios of upgrading the health facilities and of expanding the health insurance coverage in Western Visayas by province, 2012–2016[106]

Province	Cost Effectiveness Ratio of HFEP[a]	Cost Effectiveness Ratio of NHIP[b]
Iloilo	13,900.35	24,766.59
Iloilo City	17,393.69	5,891.57
Negros Occidental	23,114.13	55,197.07
Bacolod City	2,018.091	2,822.778
Aklan	9,528.266	21,048.86
Antique	28,876.49	25,755.23
Guimaras	32,363.7	19,232.56
Capiz	N/A	26,335.75
Total Western Visayas	15,970.23	24,114.88

Source: DOH and the authors' computations.

Note:

a. The cost effectiveness ratio of HFEP refers to the cost of upgrading the health facilities per live birth attended by skilled health personnel.
b. The cost effectiveness ratio of NHIP refers to the cost of expanding the health insurance coverage per live birth attended by skilled health personnel.

[106]Refer to Annex for the computations of the cost effectiveness ratios of upgrading the health facilities and of expanding the health insurance coverage in Western Visayas by province, from 2012 to 2016.

CONCLUSION

The two policy options — upgrading the health facilities and expanding the health insurance coverage — are both complementary policies that may help in the expansion of access to healthcare services in the Philippines, specifically in terms of increasing the number of live births attended by skilled health personnel. However, it is important to determine which of these two policy options is pro-poor and cost effective. Also, determining the benefit incidence and cost effectiveness of the policies is of great help to policymakers in their decision-making process. Thus, the above two policies of the Aquino Health Agenda were simulated in this study using the benefit incidence analysis and the cost effectiveness analysis.

The first policy option is meant to improve the state of the public health facilities, especially with regard to their construction, renovation of their infrastructure and integrating of more equipment. The second policy option, on the other hand,aims to provide health insurance to the poor, since the poor do not have the resources to access healthcare services. Going by the description of the two policies, the second policy option is seen to be more targeted towards the poor, compared to the first — a fact thatis further strengthened by the results of the benefit incidence analysis.

Based on the benefit incidence results, the second policy option, which is expanding the health insurance coverage, is more pro-poor compared to the first policy option. In terms of the budget, that of the NHIP is higher compared to the HFEP. In real terms, NHIP has a budget of 812.865 million pesos for Western Visayas, while HFEP has a budget 47.010 million pesos for the said region. Thus, the NHIP budget is 765.855 million pesos higher than the HFEP budget.

With regard to the percentage distribution of the health subsidy, the shares of the first and the second income deciles have increased when the NHIP budget is added to the government spending on government hospitals, rural health units, barangay health stations and all public health facilities in Western Visayas in 2012, while they have remained the same when the HFEP budget is added.

In terms of benefit incidence in absolute and relative terms, government spending on all health facilities in Western Visayas in 2012 is progressive both in absolute and relative terms when both the HFEP and the NHIP budgets are added. However, the suits indices of all the public health facilities, when the NHIP budget is included are more negative compared to the suits indices of all these facilities when the HFEP budget is added. This implies that the poor have higher shares in government spending on all health facilities when the NHIP budget is included than when the HFEP budget is included.

In terms of subsidy rates, both the inclusion of HFEP and NHIP in the government spending on health has contributed to the increase in the percentage share of health subsidy in covering the expenses of the poor, who are from the first and second income deciles. However, NHIP has a higher contribution compared to HFEP in this increase in the percentage share of health subsidy for the poor.

In addition, NHIP is meant to benefit only the poor income deciles, while HFEP benefits all income deciles. Because of this, the effect of NHIP on benefiting the poor is greater compared to HFEP. Thus, the government spending on expanding the health insurance coverage is more beneficial to the poor, and hence it is more pro-poor than the spending on upgrading the health facilities in Western Visayas.

On the other hand, in simulating the two policies usingthe cost effectiveness, the first policy option of upgrading the health facilities is the most cost effective in Western Visayas, because as shown in Table 24, HFEP has a cost effectiveness ratio of 15,970.23 pesos per live birth attended by skilled health personnel, while the CE ratio of NHIP is 24,114.88 pesos per attended live birth. This is due to the fact that Western Visayas has the highest share in the total number of NHTS-PR families in the Philippines, and thus, it has the highest cost in extending the health insurance coverage. As a result, the HFEP costs in Western Visayas will be lower compared to the NHIP costs with regard to increasing the number of live births attended by skilled health personnel.

In Iloilo, Negros Occidental, Bacolod City and Aklan, HFEP is most cost effective, as illustrated in Table 24. This is because of the higher costs involved in NHIP than in HFEP in the said provinces. In addition, even though Iloilo and Negros Occidental have the highest shares in both HFEP and NHIP costs in the region, they still have a higher number of live births attended by skilled health personnel compared to other provinces, indicating that it is cheaper to increase the number of such live births in Iloilo, Negros Occidental, Bacolod City and Aklan with HFEP as compared to NHIP.

On the other hand, in Iloilo City, Antique and Guimaras NHIP is more cost effective compared to HFEP. This is due to the fact that these provinces have small numbers of NHTS-PR families who are the beneficiaries of the health insurance under the Aquino Health Agenda; this leads to lower NHIP costs compared to HFEP in these provinces. It also means that NHIP is of greater help in loweringthe cost of increasing the number of such live births in the said provinces as compared to HFEP.

However, despite the fact that expanding the health insurance coverage is more pro-poor than upgrading the health facilities and that the latter is more cost effective than the former, both these policy options should still be implemented by the Aquino administration in the Western Visayas, since they are both complementary to each other. Also, they address different problems in terms of access tohealthcare services. Upgrading the health facilities addresses the problem of low accessibility to health facilities by the poor,as well as the lack of quality infrastructure and equipment in health facilities. On the other hand, expanding the health insurance coverage is essential in addressing the financial problems of the poor in accessing the healthcare services. There is not much impact on the achievement of the policy goal if only one of the two policy options is adopted. If upgrading the health facilities is the only policy option to be used, then the poor still have to face monetary constraints such as inability to pay for the fare to and from the health facility and the expenses for health consultations, medicines and other medical necessities. On the other hand, if the expansion of the health insurance coverage is the only policy option implemented, the poor — though they will be able to receive treatment, as the health insurancewill cover their medical expenses —will still not be able to access healthcare

services due to the lack of infrastructure, equipment, medicine stocks and skilled staff within the health facilities. Thus, if both the policy options are implemented, then significant expansion of access to healthcare services, specifically an increased number of live births attended by skilled health personnelcould be achieved in Western Visayas.

NEXT STEPS

To further enhance the policy simulation, the authors plan to take the following actions:

- Implement the policy simulation on expanding access to healthcare services to other regions in the Philippines
- Get information on the number of PhilHealth members who use the different health facilities
- Enhance the discussion on the BIA and CEA results
- Implement the Sensitivity Analysis
- Translate the benefit incidence to actual health services by looking into the health services/benefits it can possibly afford
- Relate the benefits imputed to specific health outcomes like maternal and child health
- Focus on the design of the policy to make it acceptable for implementation by policymakers in the sector
- Engage with the DILG to explore the possibility of a convergence program to be assisted by the CRC.

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ANNEXES

ANNEX A: ABOUT REGION VI: WESTERN VISAYAS

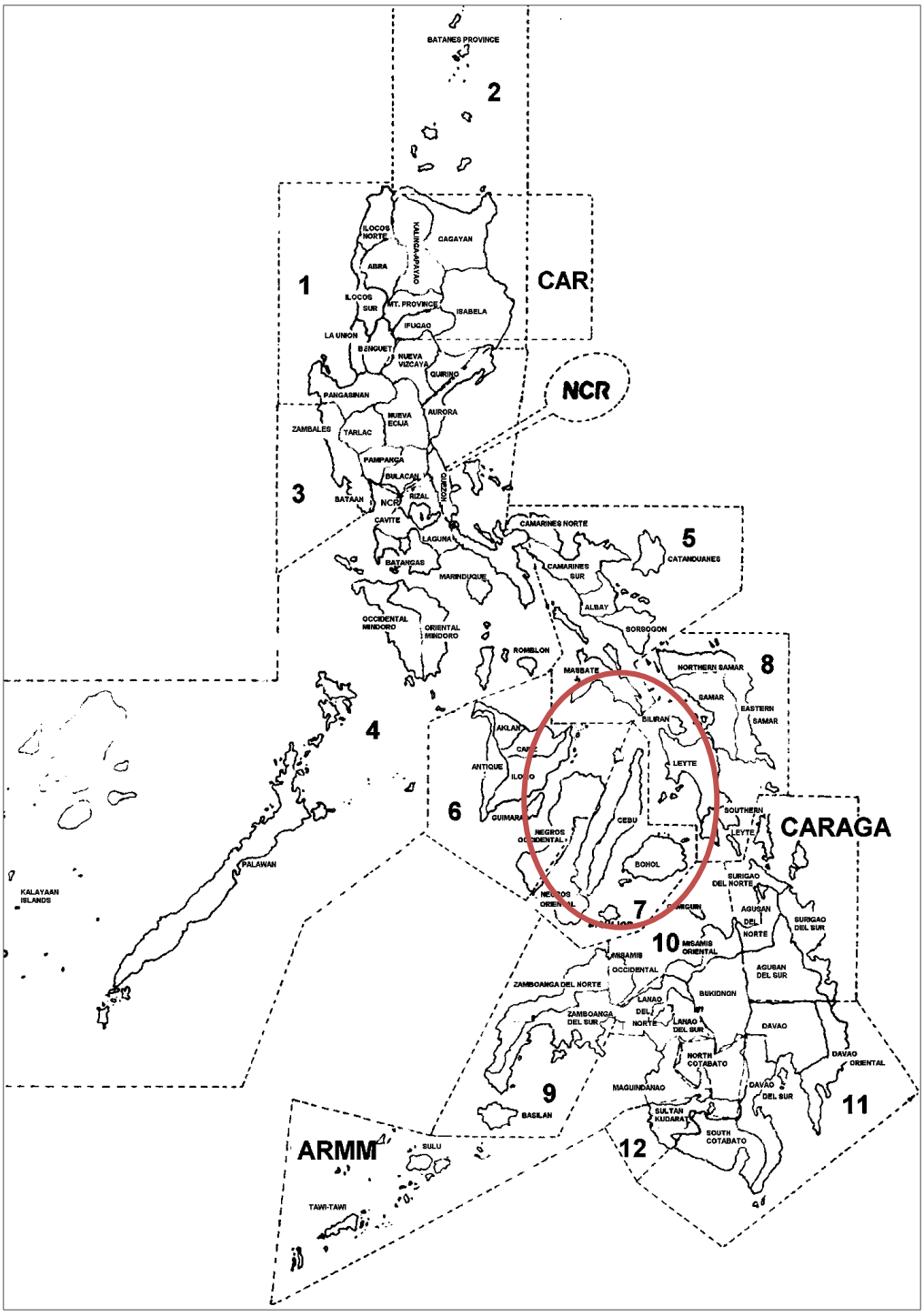
Region VI or Western Visayas is located in the central part of the Philippines (Figure 1). It covers 6.74 percent of the total land area in the Philippines, and comprises six provinces: Aklan, Antique, Capiz, Guimaras, Iloilo, and Negros Occidental (Figure 2). Forty-three percent of the land area of Western Visayas is used for agriculture, especially for sugar cane and palay or rice.

Aside from agriculture, the region is also known for its fisheries; it is one of the main exporters of prawn, tuna and other fish products in the country. It is also known for its rich mineral and non-mineral resources like primary copper, iron and pyrite. Moreover, its economy is supported by tourism through Boracay and Guimaras Islands which are well known tourist spots.[107] Because of these growth drivers, the region's economy or Gross Regional Domestic Product (GRDP) grew by 3.7 percent in the year 2010 and 5.5 percent in 2011.[108]

[107] National Statistical Coordination Board (NSCB) Region 6, "Western Visayas," National Statistical Coordination Board Regional Division VI (Western Visayas), http://www.nscb.gov.ph/ru6/western.htm (Accessed September 19, 2012).

[108] National Statistical Coordination Board (NSCB), "2011 Gross Regional Domestic Product (GRDP)," Regional Accounts, http://www.nscb.gov.ph/grdp/2011/default.asp (Accessed September 19, 2012).

Figure 1. Map of the Philippines



Source: Food and Agriculture Organization (FAO)

Figure 2. Map of Western Visayas

Source: Bahay.ph

Despite its economic growth, Western Visayas still faces problems in terms of access to healthcare, especially for the poor. Based on its MDGs, it has a medium probability of achieving100 percent immunization cover for one year old children against measles; of decreasing maternal mortality ratio; achieving zero prevalence rate and zero death rate associated with malaria. On the other hand, it has a low probability of hitting the targets on tuberculosis prevalence rate and death rate associated with the disease.[109] Medium and low probabilities on health-related MDGs may signify that people, especially the poor do not have proper access to healthcare services.

These health-related services can be improved significantly. Western Visayas is one of the regions in the Philippines which will benefit most from the programs of the Aquino Health Agenda, the reason being that it has the highest percentage share (8.8489 percent) of poor families that are part of the NHTS-PR of the DSWD.[110] Members of the NHTS-PR are the target beneficiaries of the programs under the Aquino Health Agenda. Another reason is that the region has the fourth largest percentage share (7.8011 percent)in the total number of health facilities to be upgraded under the Aquino Health Agenda.[111] Thus, Western Visayas has the potential to provide improved access to healthcare services to its people and eventually to achieve its MDGs by 2015.

[109]Refer to Annex C.
[110]Refer to Annex B.
[111]Refer to Annex D.

Annex B: Distribution of NHTS-PR families by Region

Region	**Number of Families Under NHTS-PR of DSWD**	**Share in Total Number of Families Under NHTS-PR of DSWD**
I – Ilocos Region	545,908	5.0268%
II – Cagayan Valley	411,600	3.7901%
III – Central Luzon	719,148	6.6221%
IVA – CALABARZON	901,768	8.3037%
IVB – MIMAROPA	508,266	4.6802%
V – Bicol Region	745,413	6.8639%
VI – Western Visayas	**960,981**	**8.8489%**
VII – Central Visayas	786,959	7.2465%
VIII – Eastern Visayas	718,653	6.6175%
IX – Zamboanga Peninsula	591,549	5.4471%
X – Northern Mindanao	695,749	6.4066%
XI – Davao Region	550,493	5.0691%
XII – SOCCKSARGEN	583,463	5.3727%
CARAGA Region	405,304	3.7321%
Autonomous Region in Muslim Mindanao (ARMM)	849,259	7.8202%
National Capital Region (NCR)	651,469	5.9989%
Cordillera Administrative Region (CAR)	233,863	2.1535%
TOTAL	10,859,845	100%
AVERAGE	638,814	5.89%

Source: DOH and author's computations

Annex C: Health-Related Millennium Development Goals in Western Visayas as of October 15, 2009

Goal 4	Reduce Child Mortality				
Target 5	**Reduce by two-thirds,between 1990 and 2015, the under-five mortality rate**	Baseline	Target (2015)	Latest	Probability
Indicator 13	Under-five mortality rate	66.0 (1993)	22.0	25.0 (2006)	High
Indicator 14	Infant mortality rate	46.0 (1993)	15.3	18.0 (2006)	High
Indicator 15	Proportion of one-year-olds immunized against measles	77.9 (1993)	100.0	71.4 (2006)	Medium
Goal 5	Improve Maternal Health				
Target 6	**Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio**				
Indicator 16	Maternal Mortality Ratio	54.43 (1993)	43.6	79.6 (2005)	Medium
Indicator 17	Proportion of births attended by skilled health personnel	58.80 (1990)	100	65.6 (2006)	High
Goal 6	Combat HIV/AIDS, Malaria and Other Diseases				
Target 7	**Halted by 2015 and reversal of the spread of HIV/AIDS has begun**				

Indicator 19	Condom use rate or the contraceptive prevalence rate	1.0 (1993)	Increasing	1.3 (2006)	High
Target 8	**Have halted by 2015 and started reversal of the incidence of malaria and other major diseases**				
Indicator 21a	Prevalence rate associated with malaria	118.7 (1990)	0	0.2 (2006)	Medium
Indicator 21b	Death rate associated with malaria	1.5 (1990)	0	0.1 (2003)	Medium
Indicator 23a	Prevalence rate associated with tuberculosis	246.0 (1990)	0	172.4 (2006)	Low
Indicator 23b	Death rate associated with tuberculosis	39.1 (1990)	0	23.79 (2004)	Low

Source: National Statistical Coordination Board (NSCB)

Annex D: Total Number of Health Facilities under HFEP by Region[112]

Region	**Number of Health Facilities under HFEP**	**Share in Total Number of Health Facilities under HFEP**
I – Ilocos Region	13	0.6338%
II – Cagayan Valley	104	5.0707%
III – Central Luzon	170	8.2886%
IVA – CALABARZON	16	0.7801%
IVB – MIMAROPA	95	4.6319%
V – Bicol Region	121	5.8996%
VI – Western Visayas	**160**	**7.8011%**
VII – Central Visayas	113	5.5095%
VIII – Eastern Visayas	325	15.8459%
IX – Zamboanga Peninsula	92	4.4856%
X – Northern Mindanao	101	4.9244%
XI – Davao Region	91	4.4369%
XII – SOCCKSARGEN	140	6.8259%
National Capital Region (NCR)	107	5.2170%
CARAGA Region	116	5.6558%
CAR	39	1.9015%
Autonomous Region in Muslim Mindanao (ARMM)	248	12.0917%
TOTAL	2051	100.0000%
AVERAGE	121	5.89%

Source: DOH and authors' estimations

Annex E: Sectoral Distribution of Public Expenditures by the national government in the Philippines, 2012

Particulars	**Total Expenditure (in thousand pesos)**	**Percentage Share in Total Expenditure (%)**
ECONOMIC SERVICES	313,882,626	21.1688%
Agriculture, Agrarian Reform and Natural Resources	111,557,095	7.5236%
Agriculture	76,113,582	5.1332%
Agrarian Reform	15,783,501	1.0645%

[112]This data is based on the list of Health Facilities for Upgrading to provide Basic Emergency Obstetric and Newborn Care (BEmONC) Services to be funded under the DOH CY 2011 funds for HFEP. The number of health facilities to be upgraded under HFEP may still increase or change, depending on the goals of the DOH.

Natural Resources	19,660,012	1.3259%
Trade and Industry	5,040,640	0.3399%
Tourism	1,755,688	0.1184%
Power and Energy	9,270,395	0.6252%
Water Resources Development and Flood Control	16,704,626	1.1266%
Communication, Roads and Other Transport	167,186,894	11.2754%
Other Economic Services	2,367,299	0.1597%
Subsidy to LGUs		0.0000%
SOCIAL SERVICES	467,120,489	31.5034%
Education, Culture and Manpower Development	308,950,395	20.8362%
Health	49,008,910	3.3052%
Social Security, Welfare and Employment	104,452,483	7.0445%
Housing and Community Development	447,459	0.0302%
Land Distribution	2,500,000	0.1686%
Other Social Services	1,761,242	0.1188%
Subsidy to LGUs		0.0000%
DEFENSE	113,116,838	7.6288%
Domestic Security	113,116,838	7.6288%
GENERAL PUBLIC SERVICES	255,533,223	17.2336%
General Administration	109,371,708	7.3762%
Public Order and Safety	130,079,512	8.7728%
Other General Public Services	16,082,003	1.0846%
Subsidy to LGUs		0.0000%
TOTAL PRODUCTIVE EXPENDITURES	1,149,653,176	77.5347%
INTEREST PAYMENTS	333,107,000	22.4653%
FINANCIAL SERVICES		0.0000%
TOTAL	1,482,760,176	100.0000%

Source: DBM

Annex F: Complete Benefit Package for Indigents Under NHIP

Inpatient Coverage[113]

"PhilHealth provides subsidy for room and board, drugs and medicines, laboratories, operating room and professional fees for confinement of not less than 24 hours."

Revised Inpatient Care Benefits		
Maximum Allowances or Ceilings to be Applied per Single Period of Confinement		
Level 1 (Primary)		
Benefit Item	Case Type	
	A	B
Room and Board (maximum of 45 days per year)	300	300
Drugs and Medicine (per single period of confinement	2700	9000
X-ray, Laboratory and Others (per single period of confinement)	1600	5000

[113] Philippine Health Insurance Corporation (PhilHealth), "Sponsored: Benefit Coverage," PhilHealth: Your Partner in Health, http://www.philhealth.gov.ph/members/sponsored/coverage.html (Accessed August 20, 2012).

Operating Room	500	500
Professional Fees		
a. Daily Visits		
General Practitioner (Groups 1, 5 and 6)		
Per Day	300	400
Maximum per confinement	1200	2400
Specialist (Groups 1,5 and 6)		
Per Day	500	600
Maximum per confinement	2000	3600
b. Surgery (for Case Type A and B)		
	Surgeon	Anaesthesiologist
General Practitioner (First Tier) (Group 1)	RVU x PCF 40 = PF1	40% Surgeon's Fee (PF1)
With Training 2nd Tier (Group 5 and 6)	RVU x PCF 48 = PF2	48% Surgeon's Fee (PF1)
Diplomate/Fellow 3rd Tier (Group 2, 3 and 4)	RVU x PCF 56 = PF3	56% Surgeon's Fee (PF1)
	Maximum of 2000 per confinement	Maximum fee computed as percentage 2000

Note: Not to exceed 45 days for each calendar year.

Note: Refers to confinement or a series of confinements for the same illness not separated from each other by 90 days within a calendar year. In this case, a member or beneficiary is not entitled to another set of benefits until after 90 days. They can only avail the unused portion of the benefits and the room and board fees till the 45 days allowance is exhausted.
However, a member can avail of a new set of benefits if the succeeding confinements are for a different illness or condition.

Note: Primary or Level 1 hospital refers to emergency hospitals. They provide initial treatment for cases that require immediate treatment and primary care for prevalent diseases.

Level 2 (Secondary)			
Benefit Item	Case Type		
	A	B	C
Room and Board (maximum of 45 days per year)	400	400	600
Drugs and Medicine (per single period of confinement	3360	11200	22400
X-ray, Laboratory and Others (per single period of confinement)	2240	7350	14700
Operating Room	For procedures with RVU 30 and below = 750		
	For procedures with RVU 31 to 80 = 1,200		
	For procedures with RVU 81 to 600: RVU x PCF 15		
	(minimum = 2,200 and maximum = 7,500)		
Professional Fees			
a. Daily Visits			
General Practitioner (Groups 1, 5 and 6)			
Per Day	300	400	500
Maximum per confinement	1200	2400	4000
Specialist (Groups 1,5 and 6)			
Per Day	500	600	700
Maximum per confinement	2000	3600	5600
b. Surgery (for Case Type A, B and C)			

	Surgeon	Anaesthesiologist	
General Practitioner (First Tier) (Group 1)	RVU x PCF 40 = PF1 (maximum of 3,200)	40% Surgeon's Fee (PF1) (maximum of 1,280)	
With Training 2nd Tier (Group 5 and 6)	RVU x PCF 48 = PF2	48% Surgeon's Fee (PF1)	
Diplomate/Fellow 3rd Tier (Group 2, 3 and 4)	RVU x PCF 56 = PF3	56% Surgeon's Fee (PF1)	

Note: Not to exceed 45 days for each calendar year.

Note: Refers to confinement or a series of confinements for the same illness not separated from each other by 90 days within a calendar year. In this case, a member or beneficiary is not entitled to another set of benefits until after 90 days. They can only avail the unused portion of the benefits and the room and board fees till such time that the 45 days allowance is exhausted. However, a member can avail of a new set of benefits if the succeeding confinements are for a different illness or condition.

Note: Secondary or Level 2 Hospital refers to non-departmentalized hospital. It is bigger than a primary level hospital and provides nursing care for patients needing intermediate supervised care.

Level 3 (Tertiary)				
Benefit Item	Case Type			
	A	B	C	D
Room and Board (maximum of 45 days per year)	500	500	800	1100
Drugs and Medicine (per single period of confinement)	4200	14000	28000	40000
X-ray, Laboratory and Others (per single period of confinement)	3200	10500	21000	30000
Operating Room	For procedures with RVU 30 and below = 1,200 For procedures with RVU 31 to 80 = 1,500 For procedures with RVU 81 to 600: RVU x PCF 20 (minimum = 3,500)			
Professional Fees				
a. Daily Visits				
General Practitioner (Groups 1, 5 and 6)				
Per Day	300	400	500	600
Maximum per confinement	1200	2400	4000	6000
Specialist (Groups 1,5 and 6)				
Per Day	500	600	700	800
Maximum per confinement	2000	3600	5600	8000
b. Surgery (for Case Type A, B and C)				
	For RVU 500 and below		For RVU 501 and above	
	Surgeon	Anaesthesiologist	Surgeon	Anaesthesiologist
General Practitioner (First Tier) (Group 1)	RVU x PCF 40 = PF1 (maximum	40% Surgeon's Fee (PF1) (maximum of 1,280)	RVU x PCF 40 = PF1 (maximum of 3,200)	40% Surgeon's Fee (PF1) (maximum of 1,280)

	of 3,200)			
With Training 2nd Tier (Group 5 and 6)	RVU x PCF 48 = PF2	48% Surgeon's Fee (PF1)	RVU x PCF 48 = PF2	48% Surgeon's Fee (PF1)
Diplomate/Fellow 3rd Tier (Group 2, 3 and 4)	RVU x PCF 56 = PF3	56% Surgeon's Fee (PF1)	RVU x PCF 80 = PF4	40% Surgeon's Fee (PF4)

Note: Not to exceed 45 days for each calendar year.

Note: Refers to confinement or a series of confinements of the same illness not separated from each other by 90 days within a calendar year. In this case, a member or beneficiary is not entitled to another set of benefits until after 90 days. They can only avail the unused portion of the benefits and the room and board fees till such time that the 45 days allowance is exhausted. However, a member can avail of a new set of benefits if the succeeding confinements are for a different illness or condition.

Note: Tertiary or Level 3 hospital refers to a departmentalized hospital. It is bigger than primary and secondary hospitals, and provides clinical services that Level 2 hospitals offer. It also gives nursing care for patients needing total and intensive care.

Outpatient Coverage[114]

Outpatient coverage includes "day surgeries, dialysis and cancer treatment procedures such as chemotherapy and radiotherapy in accredited hospitals and free-standing clinics."

Special Benefit Packages[115]

Case Rates

Medical Cases (in pesos)	
Dengue I (Dengue Fever, DHF grades I and II)	8,000
Dengue II (DHF grades III and IV)	16,000
Pneumonia I (moderate risk)	15,000
Pneumonia II (high risk)	32,000
Essential Hypertension	9,000
Cerebral Infarction (CVA-I)	28,000
Cerebral Haemorrhage (CVA-II)	38,000
Acute Gastroenteritis (AGE)	6,000
Asthma	9,000
Typhoid Fever	14,000
New born Care Package in Hospitals and Lying-in Clinics	1,750
Surgical Cases (in pesos)	
Radiotherapy	3,000
Haemodialysis	4,000
Maternity Care Package (MCP)	8,000
NSD Package in Level 1 Hospitals	8,000
NSD Package in Level 2 to 4 Hospitals	6,500

[114]Ibid.
[115]Ibid.

Caesarean Section	19,000
Appendectomy	24,000
Cholecystectomy	31,000
Dilation and Curettage	11,000
Thyroidectomy	31,000
Hernoirrhaphy	21,000
Mastectomy	22,000
Hysterectomy	30,000
Cataract Surgery	16,000

TB Treatment through DOTS

"Treatment of new cases of pulmonary and extra-pulmonary tuberculosis in children and adults is covered through the Directly Observed Treatment Shortcourse or DOTS, the shortest and the most effective internationally accepted treatment protocol for Tuberculosis (TB)."

Inclusions
Amount of Coverage: 4000 pesos
Services: Diagnostic workup, consultation services and anti-TB drugs required in an outpatient set-up.

Providers: Duly accredited TB-DOTS Centers (available in the Philippines only).
Eligibility: (1) New cases only - patient has never had treatment for TB or has taken anti-TB drugs for less than a month, and (2) enrolment with TB-DOTS center falls within the validity period as stated in the Member Data Record.

Exclusions
Failure Cases - a patient, who has been on previous treatment, is sputum smear positive at five months or later during the course of treatment.

Relapse Cases - a patient previously treated for TB who has been declared cured or treatment completed, is diagnosed with bacteriologically positive (smear of culture) TB.

Return-After-Default (RAD) Cases - a patient who returns to treatment with positive bacteriology (smear of culture) following interruption of treatment for two months or more.

Other Conditions
Additional services rendered or extension of treatment shall not be covered.

SARS and Avian Influenza Package
Inclusions
Amount of Coverage: For members and their qualified dependents - 50,000 pesos per case; for healthcare workers (forefront and high risk) - 100,000 pesos per case.

Services: Professional fees (2,500 pesos - pay to doctor), hospital charges (42,500 pesos - pay to hospital), and official receipts amounting to 12,000 pesos (5,000 pesos - pay to member).

Providers: Patients must be admitted only in accredited DOH-designated SARS or AI/IP hospitals. Confinements abroad shall be compensated provided a certification from the attending physician is submitted.

Eligibility: Must be certified by the DOH as SARS or avian influenza/influenza pandemic patient, and confinement within the validity period as stated in the Member Data Record.

Exclusions
SARS suspect cases.

Cases of acute respiratory illness where an alternative diagnosis can fully explain such illness.

Other Conditions
Rule on single period of confinement and 45-days' allowance for room and board per year applies.

For afflicted healthcare workers:
Must also be active PhilHealth members.
Contracted the disease while caring for a SARS or AI/IP patient (person to person transmission).
Renders service in DOH-designated hospital.

DOH attests that HCW contracted the disease while on official duty.

Novel Influenza A (H1N1) Package

"To mitigate the direct medical cost for the treatment of complicated human cases of novel Influenza A (H1N1) with complication or co-morbidities requiring hospitalization. The following shall be effective in all local and overseas confinements with admission dates starting May 1, 2009."

Inclusions
Amount of Coverage: Maximum of 75,000 pesos for non-health worker-members, and maximum of 150,000 pesos for health worker-members.
Services:

For Members/Dependents:
-Room and board allowance of 1,500 pesos/day but up to 10,000 pesos only.
-Drugs and medicines; X-ray, lab and others *(including supplies and personal protective equipment and transfer services)* and operating room fees – 50,000 pesos.
- Professional fees of 1,000 pesos/day but up to 15,000 pesos only.

For Healthcare Workers:
- Room and board allowance of 1,500 pesos/day but up to 20,000 pesos only.
- Drugs and medicines; X-ray, lab and others *(including supplies and personal protective equipment and transfer services)*; operating room and other medically necessary care – 100,000 pesos.
- Professional fees of 1,000 pesos/day but up to 30,000 pesos only.

Providers:
Hospitals designated by DOH as referral centers (national, sub-national and satellite) for Influenza A (H1N1) and other emerging and re-emerging diseases with the exception of confinements abroad.

Admissions in private hospitals may be covered if confirmatory tests were coordinated with or confirmed by the RITM, DOH-CHD or other DOH certified laboratories.

Eligibility:
Limited to members and health qualified workers with novel swine-origin influenza A (H1N1) virus infection confirmed by the Department of Health (DOH).
Confinement within the validity period as stated in the Member Data Record.

For qualified Healthcare Workers (HCWs):
- Rendered service in a DOH-designated hospital for Influenza A (H1N1) and contracted the disease while performing their duties and/or caring for an influenza A (H1N1) patient as certified or attested by DOH.
- Qualified dependents of HCWs who also contracted the disease shall be provided a maximum coverage of 75,000 pesos.

Exclusions
Probable and case under observation*
Admissions in non-DOH designated hospitals*
Influenza-like illnesses (ILI*).
Other seasonal outbreaks of influenza by established flu virus *(e.g., H1N2, H5N1*, SARS**, Avian flu***).*

Other Conditions
Reimbursement (to members) for drugs, medicines and supplies or laboratory procedures bought or performed in other facilities shall be based on the following:

Facility cannot provide necessary items and services covered by the benefit.
These items and services are used during confinement.
Official receipts and/or other purchase documents are submitted.
Reimbursement depends on the actual cost of receipts submitted but not more than the difference between the maximum benefit and reimbursement to facility.
Facility acknowledges that the cost of benefits and services provided is less than the maximum benefit.

Confinements abroad shall also be covered provided that a certification from the Ministry of Health (or its equivalent) confirming that the case is due to A (H1N1) is submitted.

Availment of the package shall be charged against the 45-days annual limit and is covered by the *rule on single period of confinement* (only one Influenza A (H1N1) Package shall be paid within 90 days).

Primary Care Package
Primary Preventive Services

1.) Consultation
2.) Visual Inspection with Acetic Acid (VIA)
3.) Regular BP Measurements
4.) Breastfeeding Program Education
5.) Periodic Clinical Breast Examinations
6.) Counseling for Lifestyle Modification
7.) Counseling for Smoking Cessation
8.) Body Measurements
9.) Digital Rectal Examination

Diagnostic Examinations

1.) Complete Blood Count (CBC)
2.) Urinalysis
3.) Fecalysis
4.) Sputum Microscopy
5.) Fasting Blood Sugar
6.) Lipid Profile
7.) Chest X-ray

Drugs and Medicines
Drugs and medicines recommended in the Clinical Practice Guidelines for the following conditions should be available at the facility:

1. Asthma including nebulization services
   inhaled short-acting beta 2 agonist
   inhaled corticosteroids
   oral corticosteroids

2. Acute Gastroenteritis (AGE) with no or mild dehydration
   oral rehydration salts (ORS)

3. Upper Respiratory Tract Infection (URTI)/Pneumonia (minimal and low risk)
   amoxicilln (adult and pedia preparation)
   erythromycin (adult and pedia preparation)

4. Urinary Tract Infection (UTI)
   flouroquinolones

Exclusions or Non-compensable[116]
The following shall not be covered except when, after actuarial studies, PhilHealth recommends their inclusion subject to the approval of its Board of Directors:
Fifth and subsequent normal obstetrical deliveries
Non-prescription drugs and devices
Alcohol abuse or dependency treatment
Cosmetic surgery
Optometric services
Other cost-ineffective procedures as defined by PhilHealth

Annex G: Data Estimations for Benefit Incidence Analysis
The following data estimations were made so that the benefit incidence analysis could be implemented in this study:

1) All data in pesos, 2012 national government spending on health in Western Visayas; total budget allotted for HFEP; total budget allotted for NHIP; total family income; and total family expenditure, were converted from nominal terms to real terms by using Equation 1.

$$\text{Real} = \frac{\text{Nominal}}{(\text{CPI}/100)} \quad (1)$$

Real = Monetary Data in Real Terms;
Nominal = Monetary Data in Nominal Terms;
CPI = 2012 Consumer Price Index.[117]

2) The 2012 government spending on health in Western Visayas only included the current spending, which comprised of personal services and maintenance and other operating expenses. Thus, it excluded capital outlays. In this study, the 2012 current government spending on health in Western Visayas is equal to the percentage share of personal services and maintenance and other operating expenses in the total 2012 DOH budget times the total 2012 government spending on health in Western Visayas.

3) The total budget for HFEP in Western Visayas was derived from the 2011 and 2012 DOH budgets. This included only capital spending, since current spending for HFEP was only present in the 2011 DOH budget. Capital spending was further computed through the straight-line depreciation method shown in Equation 2 to truly determine the value of equipment and infrastructure utilized in 2012. To determine the total HFEP budget for Western Visayas, the author added the 2012 HFEP budget specifically allotted to the said region to the 2011 estimated HFEP budget. The 2011 estimated HFEP budget of Western Visayas is equal to the share of the said region in

[116]Ibid.
[117]2012 CPI is the average CPI from January to August 2012.

the total HFEP infrastructure and equipment costs times the total 2011 HFEP budget.[118]

$$\text{2012 ValueIE} = \frac{\text{HFEPInfra}}{\text{InfraLife}} + \frac{\text{HFEPEquip}}{\text{EquipLife}} \quad (2)$$

ValueIE = Depreciated Value of Capital Spending for HFEP in Western Visayas;
HFEPInfra = Total HFEP Spending on Infrastructure in Western Visayas;
HFEPEquip = Total HFEP Spending on Equipment in Western Visayas;
InfraLife = Usage Life of Hospital Infrastructure;
EquipLife = Usage Life of Medical Equipment.

4) To estimate the total HFEP spending on infrastructure in each of the Western Visayas, Equation 3 was used.

$$\text{HFEPInfra} = \%\ \text{Share}_{INFRA} \times \text{Total HFEP Budget} \quad (3)$$

HFEPInfra = Total HFEP Spending on Infrastructure in Western Visayas;
% Share_{INFRA} = Percentage share of Infrastructure Costs in the total cost of upgrading the health facilities in Western Visayas;
Total HFEP Budget = Total HFEP budget allotted to Western Visayas.

5) To estimate the total HFEP spending on equipment in each of the Western Visayas, Equation 4 was used.

$$\text{HFEPEquip} = \%\ \text{Share}_{EQUIP} \times \text{Total HFEP Budget} \quad (4)$$

HFEPEquip = Total HFEP Spending on Equipment in Western Visayas;
% Share_{EQUIP} = Percentage share of Equipment Costs in the total cost of upgrading the health facilities in Western Visayas;
Total HFEP Budget = Total HFEP budget allotted to Western Visayas.

6) The total budget for NHIP in Western Visayas in 2012 was estimated to be the share of the said region in the total number of NHTS-PR families[119] times the total budget for NHIP for the whole Philippines for 2012.

7) Government spending on health by health facility, which is either government hospitals, rural health units, or barangay health stations, in Western Visayas was estimated using Equation 5.

$$GS_{HF} = \%\text{ShareUsers}_{HF} \times GS \quad (5)$$

[118] Western Visayas has a share in the total HFEP infrastructure and equipment costs equal to 4.51%.
[119] Western Visayas has a share in the total number of NHTS-PR families equal to 8.85%.

GS_{HF} = Government Spending on health allotted to a specific health facility in Western Visayas;
HF = Health Facilities, specifically government hospitals, rural health units and barangay health stations;
$\%ShareUsers_{HF}$ = Percentage share of a health facility in the total number of users of public health facilities;
GS= Total Government Spending on Health in Western Visayas;

8) Total HFEP budget per health facility on Western Visayas was computed using Equation 6.

$$HFEP_{HF} = \%ShareHFEP_{HF} \times HFEP \quad (6)$$

$HFEP_{HF}$ = Total HFEP budget allotted to a specific health facility in Western Visayas;
HF = Health Facilities, specifically government hospitals, rural health units and barangay health stations;
$\%ShareHFEP_{HF}$ = Percentage share of a specific health facility in the total HFEP infrastructure and equipment costs;
HFEP = Total HFEP budget of Western Visayas.

9) Total NHIP budget per health facility on Western Visayas was estimated using Equation 7.

$$NHIP_{HF} = \%ShareNHIP_{HF} \times NHIP \quad (7)$$

$NHIP_{HF}$ = Total NHIP budget allocated to a specific health facility in Western Visayas;
HF = Health Facilities, specifically government hospitals, rural health units and barangay health stations;
$\%ShareNHIP_{HF}$ = Percentage share of a specific health facility in the total number of users from the first and second income deciles;
NHIP = Total NHIP budget of Western Visayas.

10) Number of users of health facilities in Western Visayas classified by income deciles in 2012 was derived from APIS 2007. It was estimated using Equation 8.

$$2012\ N = 2007\ N + (Pop\ g.r.\ from\ 2007\ to\ 2012 \times 2007\ N_R) \quad (8)$$

N = Number of users of health facilities in Western Visayas;
Pop g.r. from 2007 to 2012 = Population Growth Rate in Western Visayas from 2007 to 2012.

11) The 2012 total population in Western Visayas[120] was forecasted using the compounding growth rates. Equation 9 shows the compounding growth rate formula.

[120] From 1950 to 1971, Western Visayas was considered to be Region 5. In addition, from 1950 to 1959, Romblon was part of Region 5. Western Visayas became Region 6 starting 1972 up to the present. Thus, the author will make sure that the following provinces and cities are included in the population data from 1950 to

$$Pop_{2012} = Pop_{2009} (1 + R)^t \quad (9)$$

Pop_{2012} = 2012 Total Population in Western Visayas;
Pop_{2009} = 2009 Total Population in Western Visayas;
R = Average annual population growth rate from 1950 to 2009;
t = 3, since there is a three year gap between 2009 and 2012.

12) To determine the growth rate of total population in Western Visayas from 2007 to 2012, Equation 10 was used.

$$\text{Pop g.r. from 2007 to 2012} = \frac{Pop_{2012} - Pop_{2007}}{Pop_{2007}} \times 100 \quad (10)$$

Pop g.r. from 2007 to 2012 = Population Growth Rate in Western Visayas from 2007 to 2012;
Pop_{2012} = Total Population in Western Visayas in 2012;
Pop_{2007} = Total Population in Western Visayas in 2007.

13) To determine the total income in 2012 in Western Visayas, Equation 11 was used.

$Y_{2012} = Y_{2009}$ x (1+ GNI g.r. from 2009 to 2012) (11)
Y_{2012} = 2012 Total Income in Western Visayas;
Y_{2009} = 2009 Total Income in Western Visayas;
GNI g.r. from 2009 to 2012 = Gross National Income Growth Rate from 2009 to 2012

14) To determine the total expenditure in 2012 in Western Visayas, Equation 12 was used.

$$E_{2012} = E_{2009} \text{ x (1+ HFCE g.r. from 2009 to 2012)} \quad (12)$$

E_{2012} = 2012 Total Expenditure in Western Visayas;
E_{2009} = 2009 Total Expenditure in Western Visayas;
HFCE g.r. from 2009 to 2012 = Household Final Consumption Expenditure Growth Rate from 2009 to 2012.

Annex H: Data Estimations for Cost Effectiveness Analysis

The following data estimations were done so that the cost effectiveness analysis could be implemented in this study:

Infrastructure and Equipment Costs in Western Visayas from 2012 to 2016 were computed using the straight-line depreciation method as shown in Equation 1.

2011: Aklan, Antique, Capiz, Guimaras, Iloilo, Negros Occidental, Roxas City, Iloilo City, City of Passi, Bacolod City, Bago City, Cadiz City, City of Escalante, City of Himamaylan, City of Kabankalan, La Carlota City, Sagay City, San Carlos City, Silay City, City of Sipalay, City of Talisay and City of Victorias.

$$ValueIE_T = \frac{HFEPInfra}{InfraLife} + \frac{HFEPEquip}{EquipLife} \quad (1)$$

$ValueIE_T$ = Depreciated Value of Infrastructure and Equipment Costs for HFEP in Year T in Western Visayas;
T = Year, specifically 2012, 2013, 2014, 2015 and 2016;
HFEPInfra = Total HFEP Costs on Infrastructure in Western Visayas;
HFEPEquip = Total HFEP Costs on Equipment in Western Visayas;
InfraLife = Usage Life of Hospital Infrastructure;
EquipLife = Usage Life of Medical Equipment.

15) To compute the total annual operating costs from 2012 to 2016 in Western Visayas, Equation 2 was used.

$$TAOC_T = (AOC_{RHU} \times HF) + (AOC_H \times H) \quad (2)$$

$TAOC_T$ = Total Annual Operating Costs or the Sum of the Annual Operating Costs of all health facilities under HFEP in Year T in Western Visayas;
T = Year , specifically 2012, 2013, 2014, 2015 and 2016;
AOC_{RHU} = Estimated Annual Operating Cost of a Rural Health Unit;
HF = Total number of Health Facilities[121] under HFEP in Western Visayas;
AOC_H = Estimated Annual Operating Cost of a Government Hospital;
H = Total number of Government Hospitals under HFEP in Western Visayas.

16) To estimate the PhilHealth insurance premium costs for NHTS-PR families from 2012 to 2016 in Western Visayas, Equation 3 was used.

$$APhilHealth_T = (NB_T \times Premium_T) \quad (3)$$

$APhilHealth_T$ = Annual PhilHealth Insurance Premium Costs for NHTS-PR Families in Year T in Western Visayas;
T = Year, specifically 2012, 2013, 2014, 2015, and 2016.
NB_T = Target Number of NHTS-PR Families to be Covered by PhilHealth in Year T in Western Visayas;
$Premium_T$ = Insurance Premium Cost in Year T.

17) The effectiveness data, which is the total number of live births in Western Visayas attended by skilled health personnel, from 2012 to 2016 were forecasted using the compounded growth rate formula shown in Equation 4.

$$LiveBirths_F = LiveBirths_{2009} \times (1 + g.r.\ of\ LiveBirths)^t \quad (4)$$

$LiveBirths_F$ = Number of live births attended by skilled health personnel in Western Visayas and its provinces in the future, specifically from 2012 to 2016;

[121] Health facilities include only rural health units and barangay health stations.

$LiveBirths_{2009}$ = Number of live births attended by skilled health personnel in Western Visayas and its provinces in 2009;

g.r. of LiveBirths = Average Annual Growth Rate of the number of live births attended by skilled health personnel in the Western Visayas and its provinces from 1960 to 2009;[122]

t = 3 for 2012, 4 for 2013, 5 for 2014, 6 for 2015, 7 for 2016.

Annex I: 2011 and 2012 Regional Allocation of the Expenditure Program for the Department of Health (In Nominal Terms)[123]

Region	2011	% share in 2011	2012	% share in 2012	% change from 2011 to 2012
I – Ilocos Region	503961000	1.51%	863085000	1.99%	71.26%
II – Cagayan Valley	448543000	1.35%	672425000	1.55%	49.91%
III – Central Luzon	620291000	1.86%	1049206000	2.42%	69.15%
IV – Southern Tagalog	0	0.00%	40282000	0.09%	
IVA – CALABARZON	334268000	1.00%	1195237000	2.75%	257.57%
IVB – MIMAROPA	214227000	0.64%	480897000	1.11%	124.48%
V – Bicol Region	583404000	1.75%	1355988000	3.12%	132.43%
VI – Western Visayas	556113000	1.67%	1164177000	2.68%	109.34%
VII – Central Visayas	754573000	2.26%	1255292000	2.89%	66.36%
VIII – Eastern Visayas	350010000	1.05%	850620000	1.96%	143.03%
IX – Zamboanga Peninsula	488755000	1.47%	779421000	1.80%	59.47%
X – Northern Mindanao	516694000	1.55%	869827000	2.00%	68.34%
XI – Davao Region	543788000	1.63%	829486000	1.91%	52.54%
XII – SOCCKSARGEN	271618000	0.81%	383961000	0.88%	41.36%
National Capital Region (NCR)	447847000	1.34%	480953000	1.11%	7.39%
CARAGA Region	254724000	0.76%	867754000	2.00%	240.66%
CAR	465974000	1.40%	1055842000	2.43%	126.59%
Autonomous Region in Muslim Mindanao (ARMM)	0	0.00%	263253000	0.61%	
Nationwide	21933166000	65.80%	24417486000	56.27%	11.33%
Central Office	4043735000	12.13%	4520712000	10.42%	11.80%
TOTAL DOH	33331691000	100.00%	43395904000	100.00%	30.19%

Source: Department of Budget and Management (DBM) and author's computations

Annex J: Government Spending on Health per Sector and Percentage Distribution of Government Spending on Health per Sector in Western Visayas, 2012 (in Real Terms)

Type of Health Facility	Total Government Spending	% share in Total Government Spending
Government Hospitals	304,825,362	42.99%
Rural Health Units	259,282,961	36.57%
Barangay Health Stations	144,923,475	20.44%
Total Health	709,031,797	100.00%

Source: DBM and Author's computations

[122]The number of live births attended by skilled health personnel data in Guimaras does not start from 1960. The said data for Guimaras started in 1993.

[123]Total DOH may not be the same as actual due to the rounding off.

Annex K: Projected Population in Western Visayas

Year	Projected Population in Western Visayas	Year	Projected Population in Western Visayas
1950	2617970	1967	3932000
1951	2667990	1968	4068000
1952	2717920	1969	4209000
1953	2767700	1970	3635000
1954	2817230	1971	3744000
1955	2866470	1972	3747100
1956	1915270	1973	3810900
1957	2963640	1974	3877300
1958	3011410	1975	3896200
1959	3058110	1976	3946600
1960	3116400	1977	3912200
1961	3221100	1978	4473100
1962	3329500	1979	4575200
1963	3442100	1980	4537778
1964	3552000	1981	4636623
1965	3671000	1982	4735169
1966	3799000	1983	4833916

Year	Projected Population in Western Visayas	Year	Projected Population in Western Visayas
1984	4932603	2001	6440957
1985	5092409	2002	6553250
1986	5207175	2003	6669562
1987	5322784	2004	6743400
1988	5517514	2005	6876100
1989	5555580	2006	7012300
1990	5517753	2007	6843643
1991	5617965	2008	7289900
1992	5772826	2009	7432400
1993	5900245		
1994	6027669	2010[a]	7591317
1995	5776938	2011[a]	7753633
1996	5871222	**2012**[a]	**7919419**
1997	5989495		
1998	6099787		
1999	6214068		
2000	6328666		

Source: Philippine Health Statistics (PHS) of the DOH

Note: Population in Western Visayas from 2010 to 2012 was projected using the compounded growth rate formula with population growth rate equal to 2.14%, which is the average annual population growth rate of Western Visayas from 1950 to 2009.

Annex L: Estimated Number of Users of Health Facilities, Unit Subsidy and Total Subsidy on Health per Sector in Western Visayas, 2012

Income Decile	Government Hospitals (number of users) 2007	Government Hospitals (number of users) 2012[a]	Unit Subsidy	Total Subsidy
1st Decile	17219	19926	0.093709354	28564987.58
2nd Decile	22717	26288	0.123630605	37685743.82
3rd Decile	27910	32297	0.151891983	46300528.68
4th Decile	24760	28652	0.134749033	41074922.61
5th Decile	19361	22404	0.10536656	32118399.71
6th Decile	13838	16013	0.075309253	22956170.4
7th Decile	14866	17203	0.080903842	24661542.79
8th Decile	18708	21649	0.101812799	31035123.27
9th Decile	11918	13791	0.064860217	19771039.08
10th Decile	12452	14409	0.067766355	20656903.73
Total	183749	212633	1	304825361.7

2012 Government spending on government hospitals in Western Visayas: 304,825,362 pesos
Source: APIS 2007, 2012 DOH budget and authors' estimations.
Note: Number of users of government hospitals in 2012 is equal to that of the number of users in 2007 plus 15.72% of the number of users in 2007.

Income Decile	Rural Health Units (number of users) 2007	Rural Health Units (number of users) 2012[a]	Unit Subsidy	Total Subsidy
1st Decile	21276	24620	0.136126324	35295236.41
2nd Decile	30835	35682	0.197285919	51152877.17
3rd Decile	28349	32805	0.181380202	47028795.69
4th Decile	20217	23395	0.129350719	33538437.42
5th Decile	19618	22702	0.125518247	32544742.8
6th Decile	15200	17589	0.097251369	25215622.93
7th Decile	5458	6316	0.034920919	9054399.339
8th Decile	8377	9694	0.053597021	13896794.29
9th Decile	4558	5274	0.029162615	7561369.034
10th Decile	2408	2787	0.015406664	3994685.527
Total	156296	180865	1	259282960.6

2012 Government spending on rural health units in Western Visayas: 259,282,960.6 pesos
Source: APIS 2007, 2012 DOH budget and authors' estimations.
Note: Number of users of rural health units in 2012 is equal to that of the number of users in 2007 plus 15.72% of the number of users in 2007.

Income Decile	Barangay Health Stations (number of users) 2007	Barangay Health Stations (number of users) 2012[a]	Unit Subsidy	Total Subsidy
1st Decile	15185	17572	0.173820971	25190739.09
2nd Decile	19718	22818	0.225709707	32710635.06
3rd Decile	14775	17098	0.169127747	24510580.84
4th Decile	12842	14861	0.147000916	21303883.53
5th Decile	9622	11135	0.110141941	15962152.88
6th Decile	4975	5757	0.05694826	8253139.742
7th Decile	4778	5529	0.054693223	7926331.997
8th Decile	1450	1678	0.016597985	2405437.714
9th Decile	1964	2273	0.022481685	3258123.91
10th Decile	2051	2373	0.023477564	3402450.173
Total	87360	101092	1	144923474.9

2012 Government spending on barangay health stations in Western Visayas: 144,923,474.9 pesos

Source: APIS 2007, 2012 DOH budget and authors' estimations
Note: Number of users of barangay health stations in 2012 is equal to that of the number of users in 2007 plus 15.72% of the number of users in 2007.

Income Decile	Total Health (number of users) 2007	Total Health (number of users) 2012[a]	Unit Subsidy	Total Subsidy
1st Decile	54155	62118	0.125595161	89050963.08
2nd Decile	74247	84788	0.171429908	121549256.1
3rd Decile	72961	82200	0.166198336	117839905.2
4th Decile	58323	66908	0.135279185	95917243.56
5th Decile	50094	56241	0.113711819	80625295.39
6th Decile	35043	39360	0.079580258	56424933.07
7th Decile	26081	29048	0.05873118	41642274.13
8th Decile	30563	33021	0.066763374	47337355.28
9th Decile	19963	21339	0.04314409	30590532.03
10th Decile	17553	19569	0.039566687	28054039.43
Total	438983	494590	1	709031797.2

2012 Government spending on total health in Western Visayas: 709,031,797.2 pesos
Source: APIS 2007, 2012 DOH budget and authors' estimations.
Note: Number of users of all health facilities in 2012 is equal to that of the number of users in 2007 plus 15.72% of the number of users in 2007.

Annex M: Estimated Total Family Income in Western Visayas (In Real Terms), 2012

Income Decile	Total Family Income (2009) (in millions)	Income Growth Rate from 2006 to 2009	Total Family Income (2012)[a] (in millions)
1st Decile	4621.805792	18.12%	5459.36
2nd Decile	7126.916525	18.12%	8418.441
3rd Decile	8787.9046	18.12%	10380.43
4th Decile	10387.56388	18.12%	12269.98
5th Decile	12392.67462	18.12%	14638.45
6th Decile	14636.2862	18.12%	17288.64
7th Decile	17795.5707	18.12%	21020.45
8th Decile	22703.57751	18.12%	26817.87
9th Decile	31706.13288	18.12%	37451.85
10th Decile	67007.6661	18.12%	79150.65
Total	197166.0988	18.12%	232896.1

Source: FIES 2009, National Statistical Coordination Board (NSCB) and authors' estimations.
Note: Total family income for all deciles in Western Visayas is assumed to have grown by 18.12% from 2009 to 2012. 18.12% is the growth rate of the Gross National Income (GNI) of the Philippines from 2009 to 2012, since in 2009, the Philippines has a GNI of 6.989 trillion pesos, while in 2012, the Philippines has a GNI of 8.255 trillion pesos.

Annex N: Computation of the Gini Coefficient and the Suits Indices of Government Spending on Health in Western Visayas, 2012Gini Coefficient

National Per Capita Income Decile	Total Family Income	% share in Total Family Income	Cumulative Distribution of Income (Yk)
1st Decile	5459359736	0.023441179	0
2nd Decile	8418441376	0.036146764	0.023441179
3rd Decile	10380430223	0.044571073	0.059587943
4th Decile	12269976405	0.05268433	0.104159016

5th Decile	14638449096	0.062853983	0.156843347
6th Decile	17288643262	0.07423328	0.21969733
7th Decile	21020446664	0.090256747	0.29393061
8th Decile	26817872170	0.115149499	0.384187357
9th Decile	37451851721	0.160809252	0.499336856
10th Decile	79150654685	0.339853892	0.660146108
	232896125338	1	1

Yk + (Yk+1) or A	**1/N or B**	**Cumulative Distribution of 1/N**	**A x B**
0.023441179	0.1	0	0.002344118
0.083029122	0.1	0.10	0.008302912
0.16374696	0.1	0.20	0.016374696
0.261002363	0.1	0.30	0.026100236
0.376540676	0.1	0.40	0.037654068
0.513627939	0.1	0.50	0.051362794
0.678117966	0.1	0.60	0.067811797
0.883524212	0.1	0.70	0.088352421
1.159482963	0.1	0.80	0.115948296
1.660146108	0.1	0.90	0.166014611
		1.00	0.580265949
		Gini Coefficient =	**0.419734051**

Suits Index (Government Hospital)

National Per Capita Income Decile	**Total Subsidy for Government Hospital**	**% share in Total Subsidy for Government Hospital**	**Cumulative Distribution of Government Hospital Subsidy (Yk)**
1st Decile	28564988	0.093709354	0
2nd Decile	37685744	0.123630605	0.093709354
3rd Decile	46300529	0.151891983	0.217339958
4th Decile	41074923	0.134749033	0.369231941
5th Decile	32118400	0.10536656	0.503980974
6th Decile	22956170	0.075309253	0.609347534
7th Decile	24661543	0.080903842	0.684656787
8th Decile	31035123	0.101812799	0.765560629
9th Decile	19771039	0.064860217	0.867373428
10th Decile	20656904	0.067766355	0.932233645
	304825362	1	1.000000000

Yk + (Yk+1) or A	**1/N or B**	**Cumulative Distribution of 1/N**	**A x B**
0.093709354	0.1	0	0.009370935
0.311049312	0.1	0.10	0.031104931
0.5865719	0.1	0.20	0.05865719
0.873212915	0.1	0.30	0.087321292
1.113328508	0.1	0.40	0.111332851
1.294004321	0.1	0.50	0.129400432
1.450217416	0.1	0.60	0.145021742
1.632934057	0.1	0.70	0.163293406
1.799607073	0.1	0.80	0.179960707
1.932233645	0.1	0.90	0.193223364
		1.00	1.10868685
		Suits Index =	**-0.10868685**

Suits Index (Rural Health Units)

National Per Capita Income Decile	Total Subsidy for Rural Health Unit	% share in Total Subsidy for Rural Health Unit	Cumulative Distribution of Rural Health Unit Subsidy (Yk)
1st Decile	35295236	0.136126324	0
2nd Decile	51152877	0.197285919	0.136126324
3rd Decile	47028796	0.181380202	0.333412243
4th Decile	33538437	0.129350719	0.514792445
5th Decile	32544743	0.125518247	0.644143164
6th Decile	25215623	0.097251369	0.769661412
7th Decile	9054399	0.034920919	0.866912781
8th Decile	13896794	0.053597021	0.901833700
9th Decile	7561369	0.029162615	0.955430721
10th Decile	3994686	0.015406664	0.984593336
	259282961	1	1.000000000

Yk + (Yk+1) or A	1/N or B	Cumulative Distribution of 1/N	A x B
0.136126324	0.1	0	0.013612632
0.469538568	0.1	0.10	0.046953857
0.848204689	0.1	0.20	0.084820469
1.158935609	0.1	0.30	0.115893561
1.413804576	0.1	0.40	0.141380458
1.636574193	0.1	0.50	0.163657419
1.768746481	0.1	0.60	0.176874648
1.857264421	0.1	0.70	0.185726442
1.940024057	0.1	0.80	0.194002406
1.984593336	0.1	0.90	0.198459334
		1.00	1.321381225
		Suits Index =	**-0.321381225**

Suits Index (Barangay Health Stations)

National Per Capita Income Decile	Total Subsidy for Barangay Health Station	% share in Total Subsidy for Barangay Health Station	Cumulative Distribution of Barangay Health Station Subsidy (Yk)
1st Decile	25190739	0.173820971	0
2nd Decile	32710635	0.225709707	0.173820971
3rd Decile	24510581	0.169127747	0.399530678
4th Decile	21303884	0.147000916	0.568658425
5th Decile	15962153	0.110141941	0.715659341
6th Decile	8253140	0.05694826	0.825801282
7th Decile	7926332	0.054693223	0.882749542
8th Decile	2405438	0.016597985	0.937442766
9th Decile	3258124	0.022481685	0.954040751
10th Decile	3402450	0.023477564	0.976522436
	144923475	1	1.000000000

Yk + (Yk+1) or A	1/N or B	Cumulative Distribution of 1/N	A x B
0.173820971	0.1	0	0.017382097
0.573351648	0.1	0.10	0.057335165
0.968189103	0.1	0.20	0.09681891
1.284317766	0.1	0.30	0.128431777
1.541460623	0.1	0.40	0.154146062

1.708550824	0.1	0.50	0.170855082
1.820192308	0.1	0.60	0.182019231
1.891483516	0.1	0.70	0.189148352
1.930563187	0.1	0.80	0.193056319
1.976522436	0.1	0.90	0.197652244
		1.00	1.386845238
		Suits Index =	**-0.386845238**

Suits Index (Total Health)

National Per Capita Income Decile	**Total Subsidy for Total Health**	**% share in Total Subsidy for Total Health**	**Cumulative Distribution of Total Health Subsidy (Yk)**
1st Decile	89050963	0.125595161	0
2nd Decile	121549256	0.171429908	0.125595161
3rd Decile	117839905	0.166198336	0.297025070
4th Decile	95917244	0.135279185	0.463223406
5th Decile	80625295	0.113711819	0.598502591
6th Decile	56424933	0.079580258	0.712214410
7th Decile	41642274	0.05873118	0.791794668
8th Decile	47337355	0.066763374	0.850525848
9th Decile	30590532	0.04314409	0.917289222
10th Decile	28054039	0.039566687	0.960433313
	709031797	1	1.000000000

Yk + (Yk+1) or A	**1/N or B**	**Cumulative Distribution of 1/N**	**A x B**
0.125595161	0.1	0	0.012559516
0.422620231	0.1	0.10	0.042262023
0.760248476	0.1	0.20	0.076024848
1.061725998	0.1	0.30	0.1061726
1.310717001	0.1	0.40	0.1310717
1.504009078	0.1	0.50	0.150400908
1.642320516	0.1	0.60	0.164232052
1.76781507	0.1	0.70	0.176781507
1.877722535	0.1	0.80	0.187772253
1.960433313	0.1	0.90	0.196043331
		1.00	1.243320738
		Suits Index =	**-0.243320738**

Annex O: Estimated Total Family Expenditure in Western Visayas (in Real Terms), 2012

Income Decile	**Total Family Expenditure (2009) (in millions)**	**Expenditure Growth Rate from 2006 to 2009**	**Total Family Expenditure (2012)[a] (in millions)**
1st Decile	4927.597956	16.57%	5744.329
2nd Decile	7389.267462	16.57%	8614.011
3rd Decile	8877.342419	16.57%	10348.73
4th Decile	10428.44974	16.57%	12156.93
5th Decile	12110.73254	16.57%	14118.04
6th Decile	14200.17036	16.57%	16553.8
7th Decile	16982.96422	16.57%	19797.83
8th Decile	20890.11925	16.57%	24352.58
9th Decile	28525.55366	16.57%	33253.56

10th Decile	52557.06985	16.57%	61268.21
Total	176889.2675	16.57%	206208

Source: FIES 2009, National Statistical Coordination Board (NSCB) and authors' estimations.

Note:Total family expenditure for all deciles in Western Visayas is assumed to have grown by 16.57% from 2009 to 2012. 16.57% is the growth rate of the Household Final Consumption Expenditure (HFCE) of the Philippines from 2009 to 2012, since in 2009, the Philippines has a HFCE of 3.818 trillion pesos, while in 2012, the Philippines has a HFCE of 4,451 trillion pesos.

Annex P: Computation of Subsidy Rates on Health per Sector in Western Visayas, 2012

Subsidy Rate (Government Hospital)

Income Decile	Total Family Expenditure	Total Subsidy	Subsidy Rate
1st Decile	5744328960	28564987.58	0.4973%
2nd Decile	8614011017	37685743.82	0.4375%
3rd Decile	10348728855	46300528.68	0.4474%
4th Decile	12156926441	41074922.61	0.3379%
5th Decile	14118041341	32118399.71	0.2275%
6th Decile	16553795695	22956170.4	0.1387%
7th Decile	19797827279	24661542.79	0.1246%
8th Decile	24352578695	31035123.27	0.1274%
9th Decile	33253557917	19771039.08	0.0595%
10th Decile	61268208385	20656903.73	0.0337%
Total	206208004585	304825361.7	0.1478%

Subsidy Rate (Rural Health Units)

Income Decile	Total Family Expenditure	Total Subsidy	Subsidy Rate
1st Decile	5744328960	35295236.41	0.6144%
2nd Decile	8614011017	51152877.17	0.5938%
3rd Decile	10348728855	47028795.69	0.4544%
4th Decile	12156926441	33538437.42	0.2759%
5th Decile	14118041341	32544742.8	0.2305%
6th Decile	16553795695	25215622.93	0.1523%
7th Decile	19797827279	9054399.339	0.0457%
8th Decile	24352578695	13896794.29	0.0571%
9th Decile	33253557917	7561369.034	0.0227%
10th Decile	61268208385	3994685.527	0.0065%
Total	206208004585	259282960.6	0.1257%

Subsidy Rate (Barangay Health Stations)

Income Decile	Total Family Expenditure	Total Subsidy	Subsidy Rate
1st Decile	5744328960	25190739.09	0.4385%
2nd Decile	8614011017	32710635.06	0.3797%
3rd Decile	10348728855	24510580.84	0.2368%
4th Decile	12156926441	21303883.53	0.1752%
5th Decile	14118041341	15962152.88	0.1131%
6th Decile	16553795695	8253139.742	0.0499%
7th Decile	19797827279	7926331.997	0.0400%
8th Decile	24352578695	2405437.714	0.0099%
9th Decile	33253557917	3258123.91	0.0098%
10th Decile	61268208385	3402450.173	0.0056%
Total	206208004585	144923474.9	0.0703%

Annex Q: Total Estimated HFEP Budget per Sector in Western Visayas, 2012[124]

% Share of Western Visayas in the Total Infrastructure and Equipment Costs of HFEP	4.51%
2011 National HFEP Capital Spending	7,116,387,000
Estimated 2011 HFEP Capital Spending in Western Visayas	320,888,419.24
2012 HFEP Capital Spending in Western Visayas	438,311,000
Total HFEP Capital Spending in Western Visayas (in nominal terms)	759,199,419.24
Total HFEP Capital Spending in Western Visayas (in real terms)	579,818,172.21
% Share of Infrastructure Costs in Total HFEP Capital Spending in Western Visayas	56.41%
% Share of Equipment Costs in Total HFEP Capital Spending in Western Visayas	43.59%
Estimated Total Infrastructure Costs in Western Visayas	327,058,480.30
Estimated Total Equipment Costs in Western Visayas	252,759,691.91
Depreciated Value of Total Infrastructure Costs in Western Visayas	10,901,949.34
Depreciated Value of Total Equipment Costs in Western Visayas	36,108,527.42
Real Capital Spending for 2012 in Western Visayas	47,010,476.76

Type of Health Facility	**% Share in Total HFEP Costs**	**Total HFEP Budget**
Government Hospitals	33.94%	15,956,798.91
Rural Health Units	38.70%	18,191,315.54
Barangay Health Stations	27.36%	12,862,362.31
Total Health	100.00%	47,010,476.76

Annex R: Estimated Number of Users of Health Facilities, Unit Subsidy and Total Subsidy on Health per Sector in Western Visayas with the First Policy Option, 2012

Income Decile	**Government Hospital (number of users) 2007**	**Government Hospital (number of users) 2012[a]**	**Unit Subsidy**	**Total Subsidy**
1st Decile	17219	19926	0.093709354	30060288.89
2nd Decile	22717	26288	0.123630605	39658492.52
3rd Decile	27910	32297	0.151891983	48724238.51
4th Decile	24760	28652	0.134749033	43225085.83
5th Decile	19361	22404	0.10536656	33799712.71
6th Decile	13838	16013	0.075309253	24157865.01
7th Decile	14866	17203	0.080903842	25952509.13
8th Decile	18708	21649	0.101812799	32659729.63
9th Decile	11918	13791	0.064860217	20806000.52
10th Decile	12452	14409	0.067766355	21738237.83
Total	183749	212633	1	320782160.6

2012 Government spending on government hospitals in Western Visayas: 320,782,160.6 pesos[b]
Estimated HFEP budget for government hospitals for 2012 in Western Visayas: 15,956,798.91 pesos
Source: APIS 2007, 2012 DOH budget and authors' estimations.

Note:

a. Number of users of government hospital in 2012 is equal to that of the number of users in 2007 plus 15.72% of the number of users in 2007.
b. This includes the HFEP budget for government hospitals for 2012 in Western Visayas.

[124]Refer to Annex F for data estimations for benefit incidence analysis.

Income Decile	Rural Health Units (number of users) 2007	Rural Health Units (number of users) 2012[a]	Unit Subsidy	Total Subsidy
1st Decile	21276	24620	0.136126324	37771553.33
2nd Decile	30835	35682	0.197285919	54741767.58
3rd Decile	28349	32805	0.181380202	50328340.17
4th Decile	20217	23395	0.129350719	35891497.17
5th Decile	19618	22702	0.125518247	34828084.85
6th Decile	15200	17589	0.097251369	26984753.27
7th Decile	5458	6316	0.034920919	9689656.8
8th Decile	8377	9694	0.053597021	14871794.62
9th Decile	4558	5274	0.029162615	8091875.356
10th Decile	2408	2787	0.015406664	4274953.018
Total	156296	180865	1	277474276.2

2012 Government spending on rural health units in Western Visayas: 277,474,276.2 pesos[b]
Estimated HFEP budget for rural health units for 2012 in Western Visayas: 18,191,315.54 pesos
Source: APIS 2007, 2012 DOH budget and authors' estimations.

Note:

a. Number of users of rural health units in 2012 is equal to that of the number of users in 2007 plus 15.72% of the number of users in 2007.
b. This includes the HFEP budget for rural health units for 2012 in Western Visayas.

Income Decile	Barangay Health Stations (number of users) 2007	Barangay Health Stations (number of users) 2012[a]	Unit Subsidy	Total Subsidy
1st Decile	15185	17572	0.173820971	27426487.39
2nd Decile	19718	22818	0.225709707	35613795.09
3rd Decile	14775	17098	0.169127747	26685963.2
4th Decile	12842	14861	0.147000916	23194662.57
5th Decile	9622	11135	0.110141941	17378838.44
6th Decile	4975	5757	0.05694826	8985628.896
7th Decile	4778	5529	0.054693223	8629816.053
8th Decile	1450	1678	0.016597985	2618927.015
9th Decile	1964	2273	0.022481685	3547291.488
10th Decile	2051	2373	0.023477564	3704427.109
Total	87360	101092	1	157785837.3

2012 Government spending on barangay health stations in Western Visayas: 157,785,837.3 pesos[b]
Estimated HFEP budget for barangay health stations for 2012 in Western Visayas: 12,862,362.31 pesos.
Source: APIS 2007, 2012 DOH budget and authors' estimations.

Note:

a. Number of users of barangay health stations in 2012 is equal to that of the number of users in 2007 plus 15.72% of the number of users in 2007.
b. This includes the HFEP budget for barangay health stations for 2012 in Western Visayas.

Income Decile	Total Health (number of users) 2007	Total Health (number of users) 2012[a]	Unit Subsidy	Total Subsidy
1st Decile	54155	62118	0.125595161	94955251.5
2nd Decile	74247	84788	0.171429908	129608257.8
3rd Decile	72961	82200	0.166198336	125652968.2
4th Decile	58323	66908	0.135279185	102276782.5
5th Decile	50094	56241	0.113711819	85970942.22
6th Decile	35043	39360	0.079580258	60166038.92
7th Decile	26081	29048	0.05873118	44403254.9

8th Decile	30563	33021	0.066763374	50475933.34
9th Decile	19963	21339	0.04314409	32618756.29
10th Decile	17553	19569	0.039566687	29914088.27
Total	438983	494590	1	756042274

2012 Government spending on total health in Western Visayas: 756,042,274 pesos[b]
Estimated HFEP budget for total health for 2012 in Western Visayas: 47,010,476.76 pesos
Source: APIS 2007, 2012 DOH budget and authors' estimations.

Note: a.) Number of users of all health facilities in 2012 is equal to that of the number of users in 2007 plus 15.72% of the number of users in 2007.
b.) This includes the HFEP budget for total health for 2012 in Western Visayas.

Annex S: Computation of the Gini Coefficient and the Suits Indices of Government Spending on Health in Western Visayas with the first policy option, 2012Gini Coefficient

National Per Capita Income Decile	Total Family Income	% share in Total Family Income	Cumulative Distribution of Income (Yk)
1st Decile	5459359736	0.023441179	0
2nd Decile	8418441376	0.036146764	0.023441179
3rd Decile	10380430223	0.044571073	0.059587943
4th Decile	12269976405	0.05268433	0.104159016
5th Decile	14638449096	0.062853983	0.156843347
6th Decile	17288643262	0.07423328	0.21969733
7th Decile	21020446664	0.090256747	0.29393061
8th Decile	26817872170	0.115149499	0.384187357
9th Decile	37451851721	0.160809252	0.499336856
10th Decile	79150654685	0.339853892	0.660146108
	232896125338	1	1

Yk + (Yk+1) or A	1/N or B	Cumulative Distribution of 1/N	A x B
0.023441179	0.1	0	0.002344118
0.083029122	0.1	0.10	0.008302912
0.16374696	0.1	0.20	0.016374696
0.261002363	0.1	0.30	0.026100236
0.376540676	0.1	0.40	0.037654068
0.513627939	0.1	0.50	0.051362794
0.678117966	0.1	0.60	0.067811797
0.883524212	0.1	0.70	0.088352421
1.159482963	0.1	0.80	0.115948296
1.660146108	0.1	0.90	0.166014611
		1.00	0.580265949
		Gini Coefficient =	**0.419734051**

Suits Index (Government Hospitals)

National Per Capita Income Decile	Total Subsidy for Government Hospital	% share in Total Subsidy for Government Hospital	Cumulative Distribution of Government Hospital Subsidy (Yk)
1st Decile	30060289	0.093709354	0
2nd Decile	39658493	0.123630605	0.093709354
3rd Decile	48724239	0.151891983	0.217339958
4th Decile	43225086	0.134749033	0.369231941
5th Decile	33799713	0.10536656	0.503980974
6th Decile	24157865	0.075309253	0.609347534
7th Decile	25952509	0.080903842	0.684656787

8th Decile	32659730	0.101812799	0.765560629
9th Decile	20806001	0.064860217	0.867373428
10th Decile	21738238	0.067766355	0.932233645
	320782161	1	1.000000000

Yk + (Yk+1) or A	**1/N or B**	**Cumulative Distribution of 1/N**	**A x B**
0.093709354	0.1	0	0.009370935
0.311049312	0.1	0.10	0.031104931
0.5865719	0.1	0.20	0.05865719
0.873212915	0.1	0.30	0.087321292
1.113328508	0.1	0.40	0.111332851
1.294004321	0.1	0.50	0.129400432
1.450217416	0.1	0.60	0.145021742
1.632934057	0.1	0.70	0.163293406
1.799607073	0.1	0.80	0.179960707
1.932233645	0.1	0.90	0.193223364
		1.00	1.10868685
		Suits Index =	**-0.10868685**

Suits Index (Rural Health Units)

National Per Capita Income Decile	**Total Subsidy for Rural Health Unit**	**% share in Total Subsidy for Rural Health Unit**	**Cumulative Distribution of Rural Health Unit Subsidy (Yk)**
1st Decile	37771553	0.136126324	0
2nd Decile	54741768	0.197285919	0.136126324
3rd Decile	50328340	0.181380202	0.333412243
4th Decile	35891497	0.129350719	0.514792445
5th Decile	34828085	0.125518247	0.644143164
6th Decile	26984753	0.097251369	0.769661412
7th Decile	9689657	0.034920919	0.866912781
8th Decile	14871795	0.053597021	0.901833700
9th Decile	8091875	0.029162615	0.955430721
10th Decile	4274953	0.015406664	0.984593336
	277474276	1	1.000000000

Yk + (Yk+1) or A	**1/N or B**	**Cumulative Distribution of 1/N**	**A x B**
0.136126324	0.1	0	0.013612632
0.469538568	0.1	0.10	0.046953857
0.848204689	0.1	0.20	0.084820469
1.158935609	0.1	0.30	0.115893561
1.413804576	0.1	0.40	0.141380458
1.636574193	0.1	0.50	0.163657419
1.768746481	0.1	0.60	0.176874648
1.857264421	0.1	0.70	0.185726442
1.940024057	0.1	0.80	0.194002406
1.984593336	0.1	0.90	0.198459334
		1.00	1.321381225
		Suits Index =	**-0.321381225**

Suits Index (Barangay Health Stations)

National Per Capita Income Decile	**Total Subsidy for Barangay Health Station**	**% share in Total Subsidy for Barangay Health**	**Cumulative Distribution of Barangay Health**

		Station	Station Subsidy (Yk)
1st Decile	27426487	0.173820971	0
2nd Decile	35613795	0.225709707	0.173820971
3rd Decile	26685963	0.169127747	0.399530678
4th Decile	23194663	0.147000916	0.568658425
5th Decile	17378838	0.110141941	0.715659341
6th Decile	8985629	0.05694826	0.825801282
7th Decile	8629816	0.054693223	0.882749542
8th Decile	2618927	0.016597985	0.937442766
9th Decile	3547291	0.022481685	0.954040751
10th Decile	3704427	0.023477564	0.976522436
	157785837	1	1.000000000

Yk + (Yk+1) or A	1/N or B	Cumulative Distribution of 1/N	A x B
0.173820971	0.1	0	0.017382097
0.573351648	0.1	0.10	0.057335165
0.968189103	0.1	0.20	0.09681891
1.284317766	0.1	0.30	0.128431777
1.541460623	0.1	0.40	0.154146062
1.708550824	0.1	0.50	0.170855082
1.820192308	0.1	0.60	0.182019231
1.891483516	0.1	0.70	0.189148352
1.930563187	0.1	0.80	0.193056319
1.976522436	0.1	0.90	0.197652244
		1.00	1.386845238
		Suits Index =	**-0.386845238**

Suits Index (Total Health)

National Per Capita Income Decile	Total Subsidy for Total Health	% share in Total Subsidy for Total Health	Cumulative Distribution of Total Health Subsidy (Yk)
1st Decile	94955252	0.125595161	0
2nd Decile	129608258	0.171429908	0.125595161
3rd Decile	125652968	0.166198336	0.297025070
4th Decile	102276783	0.135279185	0.463223406
5th Decile	85970942	0.113711819	0.598502591
6th Decile	60166039	0.079580258	0.712214410
7th Decile	44403255	0.05873118	0.791794668
8th Decile	50475933	0.066763374	0.850525848
9th Decile	32618756	0.04314409	0.917289222
10th Decile	29914088	0.039566687	0.960433313
	756042274	1	1.000000000
Yk + (Yk+1) or A	**1/N or B**	**Cumulative Distribution of 1/N**	**A x B**
0.125595161	0.1	0	0.012559516
0.422620231	0.1	0.10	0.042262023
0.760248476	0.1	0.20	0.076024848
1.061725998	0.1	0.30	0.1061726
1.310717001	0.1	0.40	0.1310717
1.504009078	0.1	0.50	0.150400908
1.642320516	0.1	0.60	0.164232052
1.76781507	0.1	0.70	0.176781507
1.877722535	0.1	0.80	0.187772253

1.960433313	0.1	0.90	0.196043331
		1.00	1.243320738
		Suits Index =	**-0.243320738**

Annex T: Computation of Subsidy Rates on Health per Sector in Western Visayas With The First Policy Option, 2012 Subsidy Rate (Government Hospitals)

Income Decile	Total Family Expenditure	Total Subsidy	Subsidy Rate
1st Decile	5744328960	30060288.89	0.5233%
2nd Decile	8614011017	39658492.52	0.4604%
3rd Decile	10348728855	48724238.51	0.4708%
4th Decile	12156926441	43225085.83	0.3556%
5th Decile	14118041341	33799712.71	0.2394%
6th Decile	16553795695	24157865.01	0.1459%
7th Decile	19797827279	25952509.13	0.1311%
8th Decile	24352578695	32659729.63	0.1341%
9th Decile	33253557917	20806000.52	0.0626%
10th Decile	61268208385	21738237.83	0.0355%
Total	206208004585	320782160.6	0.1556%

Subsidy Rate (Rural Health Units)

Income Decile	Total Family Expenditure	Total Subsidy	Subsidy Rate
1st Decile	5744328960	37771553.33	0.6575%
2nd Decile	8614011017	54741767.58	0.6355%
3rd Decile	10348728855	50328340.17	0.4863%
4th Decile	12156926441	35891497.17	0.2952%
5th Decile	14118041341	34828084.85	0.2467%
6th Decile	16553795695	26984753.27	0.1630%
7th Decile	19797827279	9689656.8	0.0489%
8th Decile	24352578695	14871794.62	0.0611%
9th Decile	33253557917	8091875.356	0.0243%
10th Decile	61268208385	4274953.018	0.0070%
Total	206208004585	277474276.2	0.1346%

Subsidy Rate (Barangay Health Stations)

Income Decile	Total Family Expenditure	Total Subsidy	Subsidy Rate
1st Decile	5744328960	27426487.39	0.4775%
2nd Decile	8614011017	35613795.09	0.4134%
3rd Decile	10348728855	26685963.2	0.2579%
4th Decile	12156926441	23194662.57	0.1908%
5th Decile	14118041341	17378838.44	0.1231%
6th Decile	16553795695	8985628.896	0.0543%
7th Decile	19797827279	8629816.053	0.0436%
8th Decile	24352578695	2618927.015	0.0108%
9th Decile	33253557917	3547291.488	0.0107%
10th Decile	61268208385	3704427.109	0.0060%
Total	206208004585	157785837.3	0.0765%

Annex U: NHIP Budget in Western Visayas per Health Sector, 2012

Health Facility	% Share in the Total Number of First and Second Income Decile	Total NHIP Budget
Government Hospitals	31.46%	255,711,653
Rural Health Units	41.05%	333,668,619
Barangay Health Stations	27.49%	223,485,172
Total Health	100.00%	812,865,445

Annex V: Estimated Number of Users of Health Facilities, Unit Subsidy and Total Subsidy on Health per Sector in Western Visayas with the Second Policy Option, 2012

Income Decile	Government Hospital (number of users) 2007	Government Hospital (number of users) 2012[a]	Unit Subsidy	Total Subsidy
1st Decile	17219	19926	0.24765335	138818868
2nd Decile	22717	26288	0.32672868	183143517
3rd Decile	27910	32297	0.08260031	46300529
4th Decile	24760	28652	0.07327781	41074923
5th Decile	19361	22404	0.05729934	32118400
6th Decile	13838	16013	0.04095389	22956170
7th Decile	14866	17203	0.04399628	24661543
8th Decile	18708	21649	0.05536677	31035123
9th Decile	11918	13791	0.03527160	19771039
10th Decile	12452	14409	0.03685199	20656904
Total	183749	212633	1.00000000	560537015

2012 Government spending on government hospitals in Western Visayas: 560,537,015 pesos[b]
Estimated NHIP budget for government hospitals for 2012 in Western Visayas: 255,711,653.49 pesos[c]
Source: APIS 2007, 2012 DOH budget and authors' estimations.

Note: a.) The number of users of government hospitals in 2012 is equal to that of the number of users in 2007 plus 15.72% of the number of users in 2007.
b.) This includes the NHIP budget for government hospitals for 2012 in Western Visayas.
c.) This is distributed to the first and the second income deciles only, since only the poor will benefit from NHIP. 43.12% of the NHIP budget for government hospitals will be assigned to the first income decile, since it is the share of the first income decile in the total number of government hospital users from the first and second income deciles. On the other hand, 56.88% will be given to the second income deciles, since it is the share of the second income decile in the total number of government hospital users from the first and second income deciles.

Income Decile	Rural Health Units (number of users) 2007	Rural Health Units (number of users) 2012[a]	Unit Subsidy	Total Subsidy
1st Decile	21276	24620	0.289275280	171526234
2nd Decile	30835	35682	0.419242493	248590498
3rd Decile	28349	32805	0.079313046	47028796
4th Decile	20217	23395	0.056561848	33538437
5th Decile	19618	22702	0.054886004	32544743
6th Decile	15200	17589	0.042525602	25215623
7th Decile	5458	6316	0.015270048	9054399
8th Decile	8377	9694	0.023436643	13896794
9th Decile	4558	5274	0.012752085	7561369
10th Decile	2408	2787	0.006736951	3994686
Total	156296	180865	1.000000000	592951580

2012 Government spending on rural health units in Western Visayas: 592,951,580 pesos[b]
Estimated NHIP budget for rural health units for 2012 in Western Visayas: 333,668,619.16 pesos
Source: APIS 2007, 2012 DOH budget and authors' estimations.

Note: a.) The number of users of rural health units in 2012 is equal to the number of users in 2007 plus 15.72% of the number of users in 2007.
b.) This includes the NHIP budget for rural health units for 2012 in Western Visayas.
c.) This is distributed to the first and the second income deciles only, since only the poor will benefit from NHIP. 40.83% of the NHIP budget for rural health units will be assigned to the first income decile, since it is the share of the first income decile in the total number of rural health unit users

from the first and second income deciles. On the other hand, 59.17% will be given to the second income deciles, since it is the share of the second income decile in the total number of rural health unit users from the first and second income deciles.

Income Decile	Barangay Health Stations (number of users) 2007	Barangay Health Stations (number of users) 2012[a]	Unit Subsidy	Total Subsidy
1st Decile	15185	17572	0.332296336	122420844
2nd Decile	19718	22818	0.431492865	158965703
3rd Decile	14775	17098	0.066530960	24510581
4th Decile	12842	14861	0.057826774	21303884
5th Decile	9622	11135	0.043327302	15962153
6th Decile	4975	5757	0.022402134	8253140
7th Decile	4778	5529	0.021515054	7926332
8th Decile	1450	1678	0.006529265	2405438
9th Decile	1964	2273	0.008843777	3258124
10th Decile	2051	2373	0.009235533	3402450
Total	87360	101092	1.000000000	368408647

2012 Government spending on barangay health stations in Western Visayas: 368,408,647 pesos[b]
Estimated NHIP budget for barangay health stations for 2012 in Western Visayas: 223,485,172.32 pesos
Source: APIS 2007, 2012 DOH budget and authors' estimations.

Note: a.) The number of users of barangay health stations in 2012 is equal to that of the number of users in 2007 plus 15.72% of the number of users in 2007.
b.) This includes the NHIP budget for barangay health stations for 2012 in Western Visayas.
c.) This is distributed to the first and the second income deciles only, since only the poor will benefit from NHIP. 43.51% of the NHIP budget for barangay health stations will be assigned to the first income decile, since it is the share of the first income decile in the total number of users of barangay health stations from the first and second income deciles. On the other hand, 56.49% will be given to the second income deciles, since it is the share of the second income decile in the total number of users of barangay health stations from the first and second income deciles.

Income Decile	Total Health (number of users) 2007	Total Health (number of users) 2012[a]	Unit Subsidy	Total Subsidy
1st Decile	54155	62118	0.284359505	432765946
2nd Decile	74247	84788	0.388133773	590699718
3rd Decile	72961	82200	0.077429607	117839905
4th Decile	58323	66908	0.063024783	95917244
5th Decile	50094	56241	0.052976833	80625295
6th Decile	35043	39360	0.037075390	56424933
7th Decile	26081	29048	0.027362080	41642274
8th Decile	30563	33021	0.031104173	47337355
9th Decile	19963	21339	0.020100261	30590532
10th Decile	17553	19569	0.018433596	28054039
Total	438983	494590	1.000000000	1521897242

2012 Government spending on total health in Western Visayas: 1,521,897,242 pesos[b]
Estimated NHIP budget for total health for 2012 in Western Visayas: 812,865,444.96 pesos
Source: APIS 2007, 2012 DOH budget and authors' estimations.

Note: a.) The number of users of all health facilities in 2012 is equal to that of the number of users in 2007 plus 15.72% of the number of users of in 2007.
b.) This includes the NHIP budget for total health for 2012 in Western Visayas.
c.) This is distributed to the first and the second income deciles only, since only the poor will benefit from NHIP. 42.28% of the NHIP budget for total health will be assigned to the first income decile, since it is the share of the first income decile in the total number of users of all public health facilities

from the first and second income deciles. On the other hand, 57.72% will be given to the second income deciles, since it is the share of the second income decile in the total number of users from the first and second income deciles.

Annex W: Computation of the Gini Coefficient and the Suits Indices of Government Spending on Health in Western Visayas with the Second policy option, 2012Gini Coefficient

National Per Capita Income Decile	**Total Family Income**	**% share in Total Family Income**	**Cumulative Distribution of Income (Yk)**
1st Decile	5459359736	0.023441179	0
2nd Decile	8418441376	0.036146764	0.023441179
3rd Decile	10380430223	0.044571073	0.059587943
4th Decile	12269976405	0.05268433	0.104159016
5th Decile	14638449096	0.062853983	0.156843347
6th Decile	17288643262	0.07423328	0.21969733
7th Decile	21020446664	0.090256747	0.29393061
8th Decile	26817872170	0.115149499	0.384187357
9th Decile	37451851721	0.160809252	0.499336856
10th Decile	79150654685	0.339853892	0.660146108
	232896125338	1	1
Yk + (Yk+1) or A	**1/N or B**	**Cumulative Distribution of 1/N**	**A x B**
0.023441179	0.1	0	0.002344118
0.083029122	0.1	0.10	0.008302912
0.16374696	0.1	0.20	0.016374696
0.261002363	0.1	0.30	0.026100236
0.376540676	0.1	0.40	0.037654068
0.513627939	0.1	0.50	0.051362794
0.678117966	0.1	0.60	0.067811797
0.883524212	0.1	0.70	0.088352421
1.159482963	0.1	0.80	0.115948296
1.660146108	0.1	0.90	0.166014611
		1.00	0.580265949
		Gini Coefficient =	**0.419734051**

Suits Index (Government Hospitals)

National Per Capita Income Decile	**Total Subsidy for Government Hospital**	**% share in Total Subsidy for Government Hospital**	**Cumulative Distribution of Government Hospital Subsidy (Yk)**
1st Decile	138818868	0.247653347	0
2nd Decile	183143517	0.326728676	0.247653347
3rd Decile	46300529	0.082600305	0.574382023
4th Decile	41074923	0.073277806	0.656982329
5th Decile	32118400	0.057299338	0.730260135
6th Decile	22956170	0.040953888	0.787559472
7th Decile	24661543	0.043996279	0.828513361
8th Decile	31035123	0.055366769	0.872509640
9th Decile	19771039	0.035271603	0.927876408
10th Decile	20656904	0.036851989	0.963148011
	560537015	1.000000000	1.000000000

Yk + (Yk+1) or A	1/N or B	Cumulative Distribution of 1/N	A x B
0.247653347	0.1	0	0.024765335
0.82203537	0.1	0.10	0.082203537
1.231364352	0.1	0.20	0.123136435
1.387242463	0.1	0.30	0.138724246
1.517819607	0.1	0.40	0.151781961
1.616072833	0.1	0.50	0.161607283
1.701023	0.1	0.60	0.1701023
1.800386048	0.1	0.70	0.180038605
1.89102442	0.1	0.80	0.189102442
1.963148011	0.1	0.90	0.196314801
		1.00	1.417776945
		Suits Index =	**-0.417777**

Suits Index (Rural Health Units)

National Per Capita Income Decile	Total Subsidy for Rural Health Unit	% share in Total Subsidy for Rural Health Unit	Cumulative Distribution of Rural Health Unit Subsidy (Yk)
1st Decile	171526234	0.289275280	0
2nd Decile	248590498	0.419242493	0.289275280
3rd Decile	47028796	0.079313046	0.708517773
4th Decile	33538437	0.056561848	0.787830819
5th Decile	32544743	0.054886004	0.844392667
6th Decile	25215623	0.042525602	0.899278671
7th Decile	9054399	0.015270048	0.941804273
8th Decile	13896794	0.023436643	0.957074322
9th Decile	7561369	0.012752085	0.980510964
10th Decile	3994686	0.006736951	0.993263049
	592951580	1.000000000	1.000000000

Yk + (Yk+1) or A	1/N or B	Cumulative Distribution of 1/N	A x B
0.28927528	0.1	0	0.028927528
0.997793053	0.1	0.10	0.099779305
1.496348591	0.1	0.20	0.149634859
1.632223486	0.1	0.30	0.163222349
1.743671338	0.1	0.40	0.174367134
1.841082944	0.1	0.50	0.184108294
1.898878595	0.1	0.60	0.189887859
1.937585286	0.1	0.70	0.193758529
1.973774014	0.1	0.80	0.197377401
1.993263049	0.1	0.90	0.199326305
		1.00	1.580389564
		Suits Index =	**-0.580390**

Suits Index (Barangay Health Stations)

National Per Capita Income Decile	Total Subsidy for Barangay Health Station	% share in Total Subsidy for Barangay Health Station	Cumulative Distribution of Barangay Health Station Subsidy (Yk)
1st Decile	122420844	0.332296336	0
2nd Decile	158965703	0.431492865	0.332296336
3rd Decile	24510581	0.066530960	0.763789201

4th Decile	21303884	0.057826774	0.830320161
5th Decile	15962153	0.043327302	0.888146935
6th Decile	8253140	0.022402134	0.931474237
7th Decile	7926332	0.021515054	0.953876371
8th Decile	2405438	0.006529265	0.975391425
9th Decile	3258124	0.008843777	0.981920690
10th Decile	3402450	0.009235533	0.990764467
	368408647	1.000000000	1.000000000

Yk + (Yk+1) or A	**1/N or B**	**Cumulative Distribution of 1/N**	**A x B**
0.332296336	0.1	0	0.033229634
1.096085538	0.1	0.10	0.109608554
1.594109362	0.1	0.20	0.159410936
1.718467096	0.1	0.30	0.17184671
1.819621172	0.1	0.40	0.181962117
1.885350608	0.1	0.50	0.188535061
1.929267796	0.1	0.60	0.19292678
1.957312115	0.1	0.70	0.195731212
1.972685157	0.1	0.80	0.197268516
1.990764467	0.1	0.90	0.199076447
		1.00	1.629595965
		Suits Index =	**-0.629596**

Suits Index (Total Health)

National Per Capita Income Decile	**Total Subsidy for Total Health**	**% share in Total Subsidy for Total Health**	**Cumulative Distribution of Total Health Subsidy (Yk)**
1st Decile	432765946	0.284359505	0
2nd Decile	590699718	0.388133773	0.284359505
3rd Decile	117839905	0.077429607	0.672493277
4th Decile	95917244	0.063024783	0.749922884
5th Decile	80625295	0.052976833	0.812947667
6th Decile	56424933	0.037075390	0.865924500
7th Decile	41642274	0.027362080	0.902999889
8th Decile	47337355	0.031104173	0.930361969
9th Decile	30590532	0.020100261	0.961466143
10th Decile	28054039	0.018433596	0.981566404
	1521897242	1.000000000	1.000000000

Yk + (Yk+1) or A	**1/N or B**	**Cumulative Distribution of 1/N**	**A x B**
0.284359505	0.1	0	0.02843595
0.956852782	0.1	0.10	0.095685278
1.422416161	0.1	0.20	0.142241616
1.562870551	0.1	0.30	0.156287055
1.678872167	0.1	0.40	0.167887217
1.768924389	0.1	0.50	0.176892439
1.833361859	0.1	0.60	0.183336186
1.891828112	0.1	0.70	0.189182811
1.943032546	0.1	0.80	0.194303255
1.981566404	0.1	0.90	0.19815664
		1.00	1.532408448
		Suits Index =	**-0.532408**

Annex x: Computation of Subsidy Rates on Health per Sector in Western Visayas With The Second Policy Option, 2012 Subsidy Rate (Government Hospitals)

Income Decile	Total Family Expenditure	Total Subsidy	Subsidy Rate
1st Decile	5744328960	138818867.8	2.4166%
2nd Decile	8614011017	183143517.1	2.1261%
3rd Decile	10348728855	46300528.68	0.4474%
4th Decile	12156926441	41074922.61	0.3379%
5th Decile	14118041341	32118399.71	0.2275%
6th Decile	16553795695	22956170.4	0.1387%
7th Decile	19797827279	24661542.79	0.1246%
8th Decile	24352578695	31035123.27	0.1274%
9th Decile	33253557917	19771039.08	0.0595%
10th Decile	61268208385	20656903.73	0.0337%
Total	206208004585	560537015.2	0.2718%

Subsidy Rate (Rural Health Units)

Income Decile	Total Family Expenditure	Total Subsidy	Subsidy Rate
1st Decile	5744328960	171526234.5	2.9860%
2nd Decile	8614011017	248590498.2	2.8859%
3rd Decile	10348728855	47028795.69	0.4544%
4th Decile	12156926441	33538437.42	0.2759%
5th Decile	14118041341	32544742.8	0.2305%
6th Decile	16553795695	25215622.93	0.1523%
7th Decile	19797827279	9054399.339	0.0457%
8th Decile	24352578695	13896794.29	0.0571%
9th Decile	33253557917	7561369.034	0.0227%
10th Decile	61268208385	3994685.527	0.0065%
Total	206208004585	592951579.8	0.2876%

Subsidy Rate (Barangay Health Stations)

Income Decile	Total Family Expenditure	Total Subsidy	Subsidy Rate
1st Decile	5744328960	122420843.7	2.1312%
2nd Decile	8614011017	158965702.8	1.8454%
3rd Decile	10348728855	24510580.84	0.2368%
4th Decile	12156926441	21303883.53	0.1752%
5th Decile	14118041341	15962152.88	0.1131%
6th Decile	16553795695	8253139.742	0.0499%
7th Decile	19797827279	7926331.997	0.0400%
8th Decile	24352578695	2405437.714	0.0099%
9th Decile	33253557917	3258123.91	0.0098%
10th Decile	61268208385	3402450.173	0.0056%
Total	206208004585	368408647.3	0.1787%

Annex Y: Standard Costing Packages Presented by DOH and BEmONC Services for EquipmentEquipment Covered within P40,000.00

Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Drop Light (Examining Light)	1	3000	3000
Examining Table	1	15000	15000
Kelly Pad	2	1000	2000
Mucus Extractor (Manual Suction Bulb)	2	2000	2000

Nebulizer	1	3000	3000
Salter Scale and Harness	1	2000	2000
Sphygmomanometer - with stand Mercury free adult	1	5000	5000
Stethoscope	1	4000	4000
Thermometer - Mercury free	2	1000	2000
Weighing Scale (Bathroom Scale) Adult	1	2000	2000
			40000

Source: DOH[125]

Equipment Covered within P50,000.00

Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Drop Light (Examining Light)	1	3000	3000
Examining Table	1	15000	15000
IUD Kit	1	10000	10000
Kelly Pad	2	1000	2000
Mucus Extractor (Manual Suction Bulb)	2	1000	2000
Nebulizer	1	3000	3000
Salter Scale and Harness	1	2000	2000
Sphygmomanometer - with stand Mercury free adult	1	5000	5000
Stethoscope	1	4000	4000
Thermometer - Mercury free	2	1000	2000
Weighing Scale (Bathroom Scale) Adult	1	2000	2000
			50000

Source: DOH[126]

Equipment Covered within P70,000.00

Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Drop Light (Examining Light)	1	3000	3000
Examining Table	1	15000	15000
IUD Kit	1	10000	10000
Kelly Pad	2	1000	2000
Mucus Extractor (Manual Suction Bulb)	2	2000	2000
Nebulizer	1	3000	3000
Oxygen Tank with Oxygen Therapy Set	1	18000	18000
Salter Scale and Harness	1	2000	2000

[125]Department of Health, List of Health Facilities (Region 6 – Western Visayas) for Upgrading/Establishment to provide BEmONC Services to be funded under the Department of Health (DOH) CY 2011 Health Facilities Enhancement Program (HFEP).
[126]Ibid.

Sphygmomanometer - with stand Mercury free adult	1	5000	5000
Stethoscope	1	4000	4000
Revolving Stool	1	2000	2000
Thermometer - Mercury free	2	1000	2000
Weighing Scale (Bathroom Scale) Adult	1	2000	2000
			70000

Source: DOH[127]

Equipment Covered within P200,000.00

Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Bassinet	1	5000	5000
Cut Down or Minor Surgical Set	1	10000	10000
Drop Light (Examining Light)	1	3000	3000
Examining Table with stirrups	1	40000	40000
Fetal Doppler	1	35000	35000
IUD Kit	1	10000	10000
Kelly Pad	3	1000	3000
Mechanical Bed with Mattress	1	20000	20000
Mucus Extractor (Manual Suction Bulb)	2	1000	2000
Nebulizer	1	3000	3000
NSD (Normal Spontaneous Delivery) Set[a]	2	10000	20000
Oxygen Tank (20L) with Oxygen Therapy Set	1	18000	18000
Revolving Stool	1	2000	2000
Salter Scale and Harness	1	2000	2000
Sphygmomanometer - with stand Mercury free adult	1	5000	5000
Stethoscope	1	4000	4000
Suction Machine 2L Capacity Portable	1	10000	10000
Thermometer - Mercury Free	6	1000	6000
Weighing Scale (Bathroom Scale) Adult	1	2000	2000
			200000

Source: DOH[128]

Note: NSD Set includes artery forceps or clamp, dissecting forceps needle holder, scissors, sponge forceps absorbable sutures, vaginal speculum, disposable sterile cord clamp, plastic disposable sheet, sterile disposable gloves, and urinary catheter.

[127]Ibid.
[128]Ibid.

Equipment Covered within P250,000.00

Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Bassinet	1	5000	5000
Cut Down or Minor Surgical Set	1	10000	10000
Drop Light (Examining Light)	2	3000	6000
Examining Table with stirrups	1	40000	40000
Fetal Doppler	1	35000	35000
IUD Kit	1	10000	10000
Kelly Pad	2	1000	2000
Manual Resuscitator Adult with Mask	1	5000	5000
Mechanical Bed with Mattress	1	20000	20000
Mucus Extractor (Manual Suction Bulb)	2	1000	2000
Nebulizer	1	5000	5000
NSD (Normal Spontaneous Delivery) Set[a]	2	10000	20000
NSV (No Scalpel Vasectomy) Set	1	8000	8000
Oxygen Tank (20L) with Oxygen Therapy Set	1	21000	21000
Revolving Stool	1	2000	2000
Salter Scale and Harness	1	2000	2000
Sphygmomanometer - with stand Mercury free adult	2	5000	10000
Stethoscope	2	4000	8000
Suction Machine 2L Capacity Portable	1	10000	10000
Thermometer - Mercury Free	4	1000	4000
Weighing Scale with measuring stick (Adult)	1	15000	15000
Weighing Scale (Infant)	1	10000	10000
			250000

Source: DOH[129]

Note: NSD Set includes artery forceps or clamp, dissecting forceps needle holder, scissors, sponge forceps absorbable sutures, vaginal speculum, disposable sterile cord clamp, plastic disposable sheet, sterile disposable gloves, and urinary catheter.

Equipment Covered within P300,000.00

Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Bassinet	1	5000	5000
Cut Down or Minor Surgical Set	1	10000	10000
Drop Light (Examining Light)	1	3000	3000
Examining Table with stirrups	1	40000	40000
Fetal Doppler	1	35000	35000
IUD Kit	1	10000	10000

[129]Ibid.

Kelly Pad	2	1000	2000
Manual Resuscitator Adult with Mask	1	5000	5000
Mechanical Bed with Mattress	1	20000	20000
Mucus Extractor (Manual Suction Bulb)	2	1000	2000
Nebulizer	1	3000	3000
NSD (Normal Spontaneous Delivery) Set[a]	2	10000	20000
NSV (No Scalpel Vasectomy) Set	1	8000	8000
Oxygen Tank (20L) with Oxygen Therapy Set	1	18000	18000
Revolving Stool	1	2000	2000
Salter Scale and Harness	1	2000	2000
Sphygmomanometer - with stand Mercury free adult	1	5000	5000
Stethoscope	2	4000	8000
Suction Machine 2L Capacity Portable	1	10000	10000
Thermometer - Mercury Free	2	1000	2000
Weighing Scale with measuring stick (Adult)	1	15000	15000
Weighing Scale (Infant)	1	10000	10000
CLINICAL LABORATORY			
Microscope	1	65000	65000
			300000

Source: DOH[130]

Note: NSD Set includes artery forceps or clamp, dissecting forceps needle holder, scissors, sponge forceps absorbable sutures, vaginal speculum, disposable sterile cord clamp, plastic disposable sheet, sterile disposable gloves, and urinary catheter.

Equipment Covered within P350,000.00

Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Bassinet	2	5000	10000
Cut Down or Minor Surgical Set	1	10000	10000
Delivery Table/OB Chair Stainless	1	175000	175000
Drop Light (Examining Light)	2	3000	6000
Emergency Light	1	5000	5000
Fetal Doppler	1	35000	35000
IV Stand	1	2000	2000
Kelly Pad	2	1000	2000
Manual Resuscitator Adult with Mask	1	5000	5000
Manual Resuscitator Neonatal with Mask	1	5000	5000
Mucus Extractor (Manual Suction Bulb)	2	1000	2000
Nebulizer	1	5000	5000
NSD (Normal Spontaneous Delivery) Set[a]	1	8000	8000
NSV (No Scalpel Vasectomy) Set	1	8000	8000

[130] Ibid.

Oxygen Tank (50L) with Oxygen Therapy Set	1	21000	21000
Pediatric Stethoscope	1	6000	6000
Revolving Stool	1	2000	2000
Spare Oxygen Therapy Set	1	6000	6000
Sphygmomanometer - with stand Mercury free adult	2	5000	10000
Stethoscope	1	4000	4000
Suction Machine 2L Capacity Portable	1	10000	10000
Thermometer - Mercury Free	3	1000	3000
Weighing Scale (Infant)	1	10000	10000
			350000

Source: DOH[131]

Note: NSD Set includes artery forceps or clamp, dissecting forceps needle holder, scissors, sponge forceps absorbable sutures, vaginal speculum, disposable sterile cord clamp, plastic disposable sheet, sterile disposable gloves, and urinary catheter.

Equipment Covered within P390,000.00

Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Bassinet	2	5000	10000
Cut Down or Minor Surgical Set	1	10000	10000
Delivery Table/OB Chair Stainless	1	175000	175000
Drop Light (Examining Light)	2	3000	6000
Emergency Light	1	5000	5000
Fetal Doppler	1	35000	35000
IV Stand	1	2000	2000
Kelly Pad	4	1000	4000
Manual Resuscitator Adult with Mask	1	5000	5000
Manual Resuscitator Neonatal with Mask	1	5000	5000
Mucus Extractor (Manual Suction Bulb)	2	1000	2000
Nebulizer	1	5000	5000
NSD (Normal Spontaneous Delivery) Set[a]	1	8000	8000
NSV (No Scalpel Vasectomy) Set	1	8000	8000
Oxygen Tank (50L) with Oxygen Therapy Set	1	21000	21000
Paediatric Stethoscope	1	6000	6000
Revolving Stool	1	2000	2000
Spare Oxygen Therapy Set	1	6000	6000
Sphygmomanometer - with stand Mercury free adult	2	10000	20000
Stethoscope	5	5000	25000
Suction Machine 2L Capacity Portable	1	10000	10000
Thermometer - Mercury Free	10	1000	10000

[131] Ibid.

Weighing Scale (Infant)	1	10000	10000
			390000

Source: DOH[132]

Note: NSD Set includes artery forceps or clamp, dissecting forceps needle holder, scissors, sponge forceps absorbable sutures, vaginal speculum, disposable sterile cord clamp, plastic disposable sheet, sterile disposable gloves, and urinary catheter.

Equipment Covered within P500,000.00

Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Bassinet	2	5000	10000
Cervical Inspection Set	1	12000	12000
Cut Down or Minor Surgical Set	1	10000	10000
Delivery Table/OB Chair Stainless	1	175000	175000
Drop Light (Examining Light)	2	3000	6000
Emergency Light	1	5000	5000
Fetal Doppler	1	35000	35000
IV Stand	2	2000	4000
Kelly Pad	2	1000	2000
Manual Resuscitator Adult with Mask	1	5000	5000
Manual Resuscitator Neonatal with Mask	1	5000	5000
Mechanical Bed with Mattress	2	20000	40000
Mucus Extractor (Manual Suction Bulb)	2	1000	2000
Nebulizer	1	5000	5000
NSD (Normal Spontaneous Delivery) Set[a]	2	8000	16000
NSV (No Scalpel Vasectomy) Set	1	8000	8000
Oxygen Tank (50L) with Oxygen Therapy Set	2	21000	42000
Paediatric Stethoscope	1	6000	6000
Revolving Stool	1	2000	2000
Spare Oxygen Therapy Set	1	6000	6000
Sphygmomanometer - with stand Mercury free adult	2	5000	10000
Stethoscope	1	4000	4000
Suction Machine 2L Capacity Portable	1	10000	10000
Thermometer - Mercury Free	5	1000	5000
Weighing Scale (Infant)	1	10000	10000
CLINICAL LABORATORY			
Microscope	1	65000	65000
			500000

Source: DOH[133]

[132] Ibid.

[133] Ibid.

Note: NSD Set includes artery forceps or clamp, dissecting forceps needle holder, scissors, sponge forceps absorbable sutures, vaginal speculum, disposable sterile cord clamp, plastic disposable sheet, sterile disposable gloves, and urinary catheter.

Equipment Covered within P800,000.00

Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Bassinet	2	5000	10000
Cervical Inspection Set	1	12000	12000
Cut Down or Minor Surgical Set	1	10000	10000
Delivery Table/OB Chair Stainless	1	175000	175000
Drop Light (Examining Light)	1	3000	3000
Emergency Light	1	5000	5000
Fetal Doppler	1	35000	35000
IV Stand	1	2000	2000
Kelly Pad	1	1000	1000
Manual Resuscitator Adult with Mask	1	5000	5000
Manual Resuscitator Neonatal with Mask	1	5000	5000
Mechanical Bed with Mattress	2	20000	40000
Mucus Extractor (Manual Suction Bulb)	1	1000	1000
Nebulizer	1	5000	5000
NSD (Normal Spontaneous Delivery) Set[a]	2	10000	20000
NSV (No Scalpel Vasectomy) Set	1	8000	8000
Oxygen Tank (50L) with Oxygen Therapy Set	2	21000	42000
Paediatric Stethoscope	1	6000	6000
Revolving Stool	1	2000	2000
Spare Oxygen Therapy Set	1	6000	6000
Sphygmomanometer - with stand Mercury free adult	1	5000	5000
Stethoscope	1	4000	4000
Suction Machine 2L Capacity Portable	1	10000	10000
Thermometer - Mercury Free	4	1000	4000
Weighing Scale (Infant)	1	10000	10000
Weighing Scale with measuring stick (Adult)	1	15000	15000
CLINICAL LABORATORY			
Microscope	1	65000	65000
Clinical Centrifuge	1	25000	25000
Autoclave (Tabletop)	1	25000	25000
Dry Oven (Table Top)	1	20000	20000
Micro-haematocrit centrifuge	1	30000	30000
Differential Counter	1	20000	20000
Haemoglobinometer	1	6000	6000
Haemacytomer	1	8000	8000
Agglutination Viewer	1	15000	15000
Blood Bank Refrigerator 20 bag	1	130000	130000
Refrigerator	1	15000	15000
			800000

Source: DOH[134]

[134] Ibid.

Note: NSD Set includes artery forceps or clamp, dissecting forceps needle holder, scissors, sponge forceps absorbable sutures, vaginal speculum, disposable sterile cord clamp, plastic disposable sheet, sterile disposable gloves, and urinary catheter.

Equipment Covered within P1,000,000.00 Set A

Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Bassinet	2	5000	10000
Cervical Inspection Set	1	12000	12000
Cut Down or Minor Surgical Set	1	10000	10000
Delivery Table/OB Chair Stainless	1	175000	175000
Drop Light (Examining Light)	2	3000	6000
Emergency Light	1	5000	5000
Fetal Doppler	1	35000	35000
IV Stand	3	2000	6000
Instrument Sterilizer (Autoclave Table Top)	1	30000	30000
Kelly Pad	3	1000	3000
Manual Resuscitator Adult with Mask	1	5000	5000
Manual Resuscitator Neonatal with Mask	1	5000	5000
Mechanical Bed with Mattress	5	20000	100000
Mucus Extractor (Manual Suction Bulb)	3	1000	3000
Nebulizer	1	5000	5000
NSD (Normal Spontaneous Delivery) Set[a]	2	10000	20000
NSV (No Scalpel Vasectomy) Set	1	8000	8000
Oxygen Tank (50L) with Oxygen Therapy Set	3	21000	63000
Paediatric Stethoscope	1	6000	6000
Revolving Stool	1	2000	2000
Spare Oxygen Therapy Set	1	6000	6000
Sphygmomanometer - with stand Mercury free adult	1	5000	5000
Stethoscope	1	4000	4000
Suction Machine 2L Capacity Portable	1	10000	10000
Thermometer - Mercury Free	5	1000	5000
Weighing Scale (Infant)	1	10000	10000
Weighing Scale with measuring stick (Adult)	1	15000	15000
CLINICAL LABORATORY			
Microscope	1	65000	65000
Clinical Centrifuge	1	20000	20000
Differential Counter	1	20000	20000
Haemoglobinometer	1	8000	8000
Haemacytomer	1	8000	8000
Chemistry Analyzer	1	300000	300000
Refrigerator	1	15000	15000
			1000000

Source: DOH[135]

Note: NSD Set includes artery forceps or clamp, dissecting forceps needle holder, scissors, sponge forceps absorbable sutures, vaginal speculum, disposable sterile cord clamp, plastic disposable sheet, sterile disposable gloves, and urinary catheter.

Equipment Covered within P1,000,000.00 Set B

[135] Ibid.

Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Bassinet	2	5000	10000
Cervical Inspection Set	1	12000	12000
Cut Down or Minor Surgical Set	1	10000	10000
Delivery Table/OB Chair Stainless	1	175000	175000
Drop Light (Examining Light)	3	3000	9000
Emergency Light	1	5000	5000
Fetal Doppler	1	35000	35000
IV Stand	5	2000	10000
Instrument Sterilizer (Autoclave Table Top)	1	30000	30000
Kelly Pad	3	1000	3000
Manual Resuscitator Adult with Mask	1	5000	5000
Manual Resuscitator Neonatal with Mask	1	5000	5000
Mechanical Bed with Mattress	5	20000	100000
Mucus Extractor (Manual Suction Bulb)	3	1000	3000
Nebulizer	1	5000	5000
NSD (Normal Spontaneous Delivery) Set[a]	2	10000	20000
NSV (No Scalpel Vasectomy) Set	1	8000	8000
Oxygen Tank (50L) with Oxygen Therapy Set	2	21000	42000
Paediatric Stethoscope	1	6000	6000
Revolving Stool	1	2000	2000
Spare Oxygen Therapy Set	1	6000	6000
Sphygmomanometer - with stand Mercury free adult	3	10000	30000
Stethoscope	1	4000	4000
Suction Machine 2L Capacity Portable	1	10000	10000
Thermometer - Mercury Free	9	1000	9000
Weighing Scale (Infant)	1	10000	10000
Weighing Scale with measuring stick (Adult)	1	15000	15000
CLINICAL LABORATORY			
Microscope	1	65000	65000
Clinical Centrifuge	1	20000	20000
Autoclave (Tabletop)	1	25000	25000
Oven (Dry)	1	20000	20000
Micro-haematocrit centrifuge	1	30000	30000
Differential Blood Counter	1	20000	20000
Haemoglobinometer	1	8000	8000
Haemacytomer	1	8000	8000
Refrigerator	1	15000	15000
DENTAL SERVICE			
Dental Unit Hydraulic Chair w/ Accessories	1	150000	150000
Dental Instrument Set	1	50000	50000
Instrument Sterilizer	1	10000	10000
			1000000

Source: DOH[136]

Note: NSD Set includes artery forceps or clamp, dissecting forceps needle holder, scissors, sponge forceps absorbable sutures, vaginal speculum, disposable sterile cord clamp, plastic disposable sheet, sterile disposable gloves, and urinary catheter.

[136] Ibid.

Equipment Covered within P1,500,000.00

Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Bassinet	5	5000	25000
Bedside Table	5	3000	15000
Cervical Inspection Set	1	12000	12000
Cut Down or Minor Surgical Set	2	10000	20000
Delivery Table/OB Chair Stainless	1	175000	175000
Drop Light (Examining Light)	4	3000	12000
Emergency Light	1	5000	5000
Examining Table	1	40000	40000
Fetal Doppler	1	35000	35000
Foot Stool	3	1000	3000
IV Stand	5	2000	10000
Instrument Sterilizer (Autoclave)	1	150000	150000
Instrument Cabinet	1	25000	25000
Instrument Table	1	20000	20000
Instrument Tray	1	5000	5000
Kelly Pad	2	1000	2000
Manual Resuscitator Adult with Mask	1	5000	5000
Manual Resuscitator Neonatal with Mask	1	5000	5000
Mechanical Bed with Mattress	5	20000	100000
Mucus Extractor (Manual Suction Bulb)	3	1000	3000
Nebulizer	2	5000	10000
NSD (Normal Spontaneous Delivery) Set[a]	2	10000	20000
NSV (No Scalpel Vasectomy) Set	2	8000	16000
Oxygen Tank (50L) with Oxygen Therapy Set	2	21000	42000
Paediatric Stethoscope	1	6000	6000
Revolving Stool	1	2000	2000
Spare Oxygen Therapy Set	1	6000	6000
Sphygmomanometer - with stand Mercury free adult	3	5000	15000
Stethoscope	2	4000	8000
Suction Machine 2L Capacity Portable	1	10000	10000
Thermometer - Mercury Free	9	1000	9000
Weighing Scale (Infant)	1	5000	5000
Weighing Scale with measuring stick (Adult)	1	15000	15000
Vaccine Refrigerator	1	20000	20000
CLINICAL LABORATORY			
Microscope	1	65000	65000
Clinical Centrifuge	1	25000	25000
Autoclave (Tabletop)	1	30000	30000
Oven (Dry)	1	20000	20000
Micro-haematocrit centrifuge	1	30000	30000
Differential Counter	1	20000	20000
Haemoglobinometer	1	6000	6000
Haemacytomer	1	8000	8000
Chemistry Analyzer	1	300000	300000
Agglutination Viewer	1	15000	15000
Blood Bank Refrigerator (15-20 bags capacity)	1	130000	130000
			1500000

Source: DOH[137]

Note: NSD Set includes artery forceps or clamp, dissecting forceps needle holder, scissors, sponge forceps absorbable sutures, vaginal speculum, disposable sterile cord clamp, plastic disposable sheet, sterile disposable gloves, and urinary catheter.

Equipment Covered within P2,000,000.00			
Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Bassinet	4	5000	20000
Bedside Table	5	3000	15000
Cut Down or Minor Surgical Set	1	10000	10000
Delivery Table/OB Chair Stainless	1	175000	175000
Drop Light (Examining Light)	4	3000	12000
ECG Machine	1	100000	100000
Emergency Light	1	5000	5000
Examining Table	1	40000	40000
Fetal Doppler	1	35000	35000
Foot Stool	5	1000	5000
IV Stand	5	2000	10000
Instrument Sterilizer (Autoclave)	1	150000	150000
Instrument Cabinet	1	25000	25000
Instrument Table	1	20000	20000
Instrument Tray	1	5000	5000
Kelly Pad	5	1000	5000
Manual Resuscitator Adult with Mask	1	10000	10000
Manual Resuscitator Neonatal with Mask	1	10000	10000
Mechanical Bed with Mattress	5	20000	100000
Mucus Extractor (Manual Suction Bulb)	5	1000	5000
Nebulizer	1	5000	5000
NSD (Normal Spontaneous Delivery) Set[a]	2	10000	20000
NSV (No Scalpel Vasectomy) Set	1	8000	8000
Oxygen Tank (50L) with Oxygen Therapy Set	2	21000	42000
OB Spot Light (Single Bulb)	1	85000	85000
Pulse Oximeter	1	80000	80000
Paediatric Stethoscope	1	6000	6000
Revolving Stool	1	2000	2000
Stethoscope	2	4000	8000
Spare Oxygen Therapy Set	1	6000	6000
Suction Machine 5L Capacity Portable	1	65000	65000
Sphygmomanometer - with stand Mercury free adult	5	10000	50000
Thermometer - Mercury Free	12	1000	12000
Weighing Scale (Infant)	1	5000	5000
Weighing Scale with measuring stick (Adult)	1	15000	15000
CLINICAL LABORATORY			
Microscope	1	65000	65000
Clinical Centrifuge	1	25000	25000
Oven (Dry) - Table Top	1	20000	20000

[137] Ibid.

Autoclave (Tabletop)	1	30000	30000
Differential Counter	1	20000	20000
Haemoglobinometer	1	6000	6000
Haemacytomer	1	8000	8000
Micro-haematocrit centrifuge	1	30000	30000
Chemistry Analyzer	1	300000	300000
Pipettor Set (5ul-10ul, 10ul-100ul, 100ul-1000ul)	1	40000	40000
Agglutination Viewer	1	15000	15000
Blood Bank Refrigerator (15-20 bags capacity)	1	130000	130000
Refrigerator	1	15000	15000
DENTAL SERVICE			
Dental Unit	1	130000	130000
			2000000

Source: DOH[138]

Note: NSD Set includes artery forceps or clamp, dissecting forceps needle holder, scissors, sponge forceps absorbable sutures, vaginal speculum, disposable sterile cord clamp, plastic disposable sheet, sterile disposable gloves, and urinary catheter.

Equipment Covered within P3,000,000.00			
Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Bassinet	2	5000	10000
Bedside Table	5	3000	15000
Cut Down or Minor Surgical Set	1	10000	10000
Delivery Table/OB Chair Stainless	1	175000	175000
Drop Light (Examining Light)	1	3000	3000
Mucus Extractor (Manual Suction Bulb)	3	1000	3000
ECG Machine	1	100000	100000
Emergency Light	2	5000	10000
Examining Table	1	40000	40000
Fetal Doppler	1	35000	35000
Foot Stool	3	1000	3000
IV Stand	5	2000	10000
Instrument Sterilizer (Autoclave)	1	150000	150000
Instrument Cabinet	1	25000	25000
Instrument Table	1	20000	20000
Instrument Tray	1	5000	5000
Kelly Pad	5	1000	5000
Manual Resuscitator Adult with Mask	1	10000	10000
Manual Resuscitator Neonatal with Mask	1	10000	10000
Mechanical Bed with Mattress	6	20000	120000
Nebulizer	2	5000	10000
NSD (Normal Spontaneous Delivery) Set[a]	2	8000	16000
NSV (No Scalpel Vasectomy) Set	2	8000	16000
Oxygen Tank (50L) with Oxygen Therapy Set	2	21000	42000
Paediatric Stethoscope	1	6000	6000
Revolving Stool	1	2000	2000
Stethoscope	1	4000	4000

[138]Ibid.

Spare Oxygen Therapy Set	1	6000	6000
Suction Machine 5L Capacity Portable	1	65000	65000
Sphygmomanometer - with stand Mercury free adult	5	10000	50000
Thermometer - Mercury Free	10	1000	10000
Ultrasound Machine w/ trans V probe	1	1200000	1200000
Weighing Scale (Infant)	1	5000	5000
Weighing Scale with measuring stick (Adult)	1	15000	15000
CLINICAL LABORATORY			
Microscope	1	65000	65000
Clinical Centrifuge	1	25000	25000
Oven (Dry) - Table Top	1	20000	20000
Autoclave (Tabletop)	1	30000	30000
Differential Counter	1	20000	20000
Haemoglobinometer	1	6000	6000
Haemacytomer	1	8000	8000
Micro-haematocrit centrifuge	1	30000	30000
Chemistry Analyzer	1	300000	300000
Agglutination Viewer	1	15000	15000
Blood Bank Refrigerator (15-20 bags capacity)	1	130000	130000
Refrigerator	1	15000	15000
DENTAL SERVICE			
Dental Unit	1	130000	130000
			3000000

Source: DOH[139]

Note: NSD Set includes artery forceps or clamp, dissecting forceps needle holder, scissors, sponge forceps absorbable sutures, vaginal speculum, disposable sterile cord clamp, plastic disposable sheet, sterile disposable gloves, and urinary catheter.

Equipment Covered within P4,000,000.00 Set A			
Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Bassinet	4	5000	20000
Bedside Table	5	3000	15000
Cut Down or Minor Surgical Set	1	10000	10000
Delivery Table/OB Chair Stainless	1	175000	175000
Drop Light (Examining Light)	2	3000	6000
ECG Machine	1	100000	100000
Emergency Light	3	5000	15000
Examining Table	1	40000	40000
Fetal Doppler	1	35000	35000
Foot Stool	3	1000	3000
Film Viewer two frames	1	10000	10000
IV Stand	5	2000	10000
Instrument Sterilizer (Autoclave)	1	150000	150000
Instrument Cabinet	1	25000	25000
Instrument Table	1	20000	20000
Instrument Tray	1	5000	5000
IUD Kit	1	20000	20000

[139]Ibid.

Kelly Pad	6	1000	6000
Manual Resuscitator Adult with Mask	1	10000	10000
Manual Resuscitator Neonatal with Mask	1	10000	10000
Mucus Extractor (Manual Suction Bulb)	4	1000	4000
Mechanical Bed with Mattress	5	20000	100000
NSV (No Scalpel Vasectomy) Set	1	8000	8000
Nebulizer	1	5000	5000
NSD (Normal Spontaneous Delivery) Set[a]	2	8000	16000
OB Instrument Set*	2	40000	80000
Oxygen Tank (50L) with Oxygen Therapy Set	2	21000	42000
OB Spot Light (Single Bulb)	1	85000	85000
Pulse Oximeter	1	80000	80000
Paediatric Stethoscope	1	6000	6000
Revolving Stool	1	2000	2000
Stethoscope	2	4000	8000
Spare Oxygen Therapy Set	2	6000	12000
Suction Machine 5L Capacity Portable	1	65000	65000
Sphygmomanometer - with stand Mercury free adult	5	10000	50000
Thermometer - Mercury Free	10	1000	10000
Ultrasound Machine w/ trans V probe	1	1200000	1200000
Weighing Scale (Infant)	1	5000	5000
Weighing Scale with measuring stick (Adult)	1	15000	15000
Wheeled Stretcher w/ Side Rail	1	65000	65000
Wheel Chair	1	5000	5000
RECOVERY ROOM			
Mechanical Bed with Mattress	1	20000	20000
IV stand	1	2000	2000
Oxygen Therapy Set (Oxygen Regulator/Humidifier/Oxygen Mask)	1	6000	6000
CLINICAL LABORATORY SERVICE			
Microscope	1	65000	65000
Clinical Centrifuge	1	25000	25000
Oven (Dry) - Table Top	1	20000	20000
Differential Counter	1	20000	20000
Haemoglobinometer	1	6000	6000
Haemacytomer	1	8000	8000
Haematology Analyzer	1	400000	400000
Micro-hematocrit centrifuge	1	30000	30000
Chemistry Analyzer (Semi-automated)	1	300000	300000
Pipettor Set (5ul-10ul, 10ul-100ul, 100ul-1000ul)	1	40000	40000
Agglutination Viewer	1	15000	15000
Blood Bank Refrigerator (15-20 bags capacity)	1	130000	130000
Refrigerator	1	15000	15000
Power Generator 20 KVA	1	350000	350000
			4000000

Source: DOH[140]

Note: NSD Set includes artery forceps or clamp, dissecting forceps needle holder, scissors, sponge forceps absorbable sutures, vaginal speculum, disposable sterile cord clamp, plastic disposable sheet, sterile disposable gloves, and urinary catheter.

[140] Ibid.

Equipment Covered within P4,000,000.00 Set B

Equipment	Quantity	Estimated Unit Cost	Total Estimated Cost
		PhP	PhP
OBSTETRICAL/NEONATAL SERVICE			
Bassinet	3	5000	15000
Defibrillator	1	350000	350000
Delivery Table/OB Chair Stainless	1	175000	175000
ECG Machine	1	100000	100000
Fetal Doppler	1	35000	35000
Laparotomy Set (Caesarean Instrument Set)	1	50000	50000
Mucus Extractor (Manual Suction Bulb)	3	1000	3000
NSV (No Scalpel Vasectomy) Set	2	8000	16000
Nebulizer	1	5000	5000
NSD (Normal Spontaneous Delivery) Set*	2	8000	16000
Paediatric Stethoscope	1	6000	6000
Pulse Oximeter	1	80000	80000
Stethoscope	1	4000	4000
Suction Machine 5L Capacity Portable	1	65000	65000
Sphygmomanometer - with stand Mercury free adult	3	10000	30000
Thermometer - Mercury Free	8	1000	8000
Weighing Scale (Infant)	1	5000	5000
Weighing Scale with measuring stick (Adult)	1	15000	15000
RECOVERY ROOM			
Mechanical Bed with Mattress	2	20000	40000
IV stand	1	2000	2000
Oxygen Therapy Set (Oxygen Regulator/Humidifier/Oxygen Mask)	1	6000	6000
CLINICAL LABORATORY SERVICE			
Oven (Dry) - Table Top	1	20000	20000
Microscope	1	65000	65000
Differential Counter	1	20000	20000
Haemoglobinometer	1	6000	6000
Haemacytomer	1	8000	8000
Micro-haematocrit centrifuge	1	30000	30000
Chemistry Analyzer (Semi-automated)	1	300000	300000
Pipettor Set (5ul-10ul, 10ul-100ul, 100ul-1000ul)	1	40000	40000
Agglutination Viewer	1	15000	15000
Blood Bank Refrigerator (15-20 bags capacity)	1	130000	130000
Computer set w/ printer	1	40000	40000
RADIOLOGY SERVICE			
X-ray Machine 200 mA w/ Dark Room and Accessories	1	2300000	2300000
			4000000

Source: DOH[141]

[141] Ibid.

Note: NSD Set includes artery forceps or clamp, dissecting forceps needle holder, scissors, sponge forceps absorbable sutures, vaginal speculum, disposable sterile cord clamp, plastic disposable sheet, sterile disposable gloves, and urinary catheter.

Annex Z: Cost Breakdown of Upgrading Health Facilities in Each of the Provinces in Western Visayas by Health Facility and by Item (Annual)

Western Visayas

Health Facility	Infra	Equip	Total	Annual Operating Costs	Total Costs
Government Hospitals	793333.33	9112142.857	9905476.19	200282445	210187921.2
RHUs	2025000	5585714.286	7610714.286	335844505	343455219.3
BHS	2033333.3	1371428.571	3404761.905	538509292.5	541914054.4
Total	4851666.7	16069285.71	20920952.38	1074636243	1095557195

Iloilo

Health Facility	Infra	Equip	Total	Annual Operating Costs	Total Costs
Government Hospitals	66666.66667	1142857.143	1209523.81	22253605	23463128.81
RHUs	1031666.667	728571.4286	1760238.095	110018027.5	111778265.6
BHS	581666.6667	485714.2857	1067380.952	156341407.5	157408788.5
Total	1680000	2357142.857	4037142.857	288613040	292650182.9

Total Infrastructure and Equipment Costs (without Depreciation)

Health Facility	Infra	Equip	Total
Government Hospitals	2000000	8000000	10000000
RHUs	30950000	5100000	36050000
BHS	17450000	3400000	20850000
Total	50400000	16500000	66900000

Iloilo City

Health Facility	Infra	Equip	Total	Annual Operating Costs	Total Costs
Government Hospitals	0	0	0	0	0
RHUs	86666.66667	514285.7143	600952.381	23161690	23762642.38
BHS	416666.6667	185714.2857	602380.9524	150550985	151153366
Total	503333.3333	700000	1203333.333	173712675	174916008.3

Total Infrastructure and Equipment Costs (w/o Depreciation)

Health Facility	Infra	Equip	Total
Government Hospitals	0	0	0
RHUs	2600000	3600000	6200000
BHS	12500000	1300000	13800000
Total	15100000	4900000	20000000

Negros Occidental

Health Facility	Infra	Equip	Total	Annual Operating Costs	Total Costs
Government Hospitals	0	7885714.286	7885714.286	111268025	119153739.3
RHUs	43333.33333	2600000	2643333.333	86856337.5	89499670.83
BHS	203333.3333	0	203333.3333	63694647.5	63897980.83
Total	246666.6667	10485714.29	10732380.95	261819010	272551391

Total Infrastructure and Equipment Costs (w/o Depreciation)

Health Facility	Infra	Equip	Total
Government Hospitals	0	55200000	55200000
RHUs	1300000	18200000	19500000
BHS	6100000	0	6100000
Total	7400000	73400000	80800000

Bacolod City

Health Facility	Infra	Equip	Total	Annual Operating Costs	Total Costs
Government Hospitals	0	0	0	0	0
RHUs	0	557142.8571	557142.8571	17371267.5	17928410.36
BHS	0	0	0	0	0
Total	0	557142.8571	557142.8571	17371267.5	17928410.36

Total Infrastructure and Equipment Costs (w/o Depreciation)

Health Facility	Infra	Equip	Total
Government Hospitals	0	0	0
RHUs	0	3900000	3900000
BHS	0	0	0
Total	0	3900000	3900000

Aklan

Health Facility	Infra	Equip	Total	Annual Operating Costs	Total Costs
Government Hospitals	0	0	0	0	0
RHUs	333333.3333	885714.2857	1219047.619	28952112.5	30171160.12
BHS	218333.3333	142857.1429	361190.4762	46323380	46684570.48
Total	551666.6667	1028571.429	1580238.095	75275492.5	76855730.6

Total Infrastructure and Equipment Costs (w/o Depreciation)

Health Facility	Infra	Equip	Total
Government Hospitals	0	0	0
RHUs	10000000	6200000	16200000
BHS	6550000	1000000	7550000
Total	16550000	7200000	23750000

Antique

Health Facility	Infra	Equip	Total	Annual Operating Costs	Total Costs
Government Hospitals	0	83571.42857	83571.42857	22253605	22337176.43
RHUs	446666.6667	300000	746666.6667	63694647.5	64441314.17
BHS	430000	557142.8571	987142.8571	98437182.5	99424325.36
Total	876666.6667	940714.2857	1817380.952	184385435	186202816

Total Infrastructure and Equipment Costs (w/o Depreciation)

Health Facility	Infra	Equip	Total
Government Hospitals	0	585000	585000
RHUs	13400000	2100000	15500000
BHS	12900000	3900000	16800000
Total	26300000	6585000	32885000

Guimaras

Health Facility	Infra	Equip	Total	Annual Operating Costs	Total Costs
Government Hospitals	726666.6667	0	726666.6667	44507210	45233876.67
RHUs	83333.33333	0	83333.33333	5790422.5	5873755.833
BHS	183333.3333	0	183333.3333	23161690	23345023.33
Total	993333.3333	0	993333.3333	73459322.5	74452655.83

Total Infrastructure and Equipment Costs (w/o Depreciation)

Health Facility	Infra	Equip	Total
Government Hospitals	21800000	0	21800000
RHUs	2500000	0	2500000
BHS	5500000	0	5500000
Total	29800000	0	29800000

Annex A1: SpeciFic Computations of Total Cost of Expanding Health Insurance Coverage in Western Visayas By ProvinceWestern Visayas

Year	Insurance Premium	NHTS-PR Families	Total NHIP Cost
2012	2400	480491	1153178400
2013	2400	480491	1153178400
2014	2400	960981	2306354400
2015	2400	960981	2306354400
2016	2400	960981	2306354400
Total			9225420000

Aklan

Year	Insurance Premium	NHTS-PR Families	Total NHIP Cost
2012	2400	44214	106113600
2013	2400	44214	106113600
2014	2400	88428	212227200
2015	2400	88428	212227200
2016	2400	88428	212227200
Total			848908800

Antique

Year	Insurance Premium	NHTS-PR Families	Total NHIP Cost
2012	2400	43249	103797600
2013	2400	43249	103797600
2014	2400	86498	207595200
2015	2400	86498	207595200
2016	2400	86498	207595200
Total			830380800

Capiz

Year	Insurance Premium	NHTS-PR Families	Total NHIP Cost
2012	2400	54265	130234800
2013	2400	54265	130234800
2014	2400	108529	260469600
2015	2400	108529	260469600
2016	2400	108529	260469600
Total			1041878400

Guimaras

Year	Insurance Premium	NHTS-PR Families	Total NHIP Cost
2012	2400	11522	27652800
2013	2400	11522	27652800
2014	2400	23044	55305600
2015	2400	23044	55305600
2016	2400	23044	55305600
Total			221222400

Iloilo

Year	Insurance Premium	NHTS-PR Families	Total NHIP Cost
2012	2400	135787	325888800
2013	2400	135787	325888800
2014	2400	271574	651777600
2015	2400	271574	651777600
2016	2400	271574	651777600
Total			2607110400

Iloilo City

Year	Insurance Premium	NHTS-PR Families	Total NHIP Cost
2012	2400	15429	37029600
2013	2400	15429	37029600
2014	2400	30858	74059200
2015	2400	30858	74059200
2016	2400	30858	74059200
Total			296236800

Negros Occidental

Year	Insurance Premium	NHTS-PR Families	Total NHIP Cost
2012	2400	169495	406786800
2013	2400	169495	406786800
2014	2400	338989	813573600
2015	2400	338989	813573600
2016	2400	338989	813573600
Total			3254294400

Bacolod City

Year	Insurance Premium	NHTS-PR Families	Total NHIP Cost
2012	2400	6531	15673200
2013	2400	6531	15673200
2014	2400	13061	31346400
2015	2400	13061	31346400
2016	2400	13061	31346400
Total			125385600

Annex B1: Computations of the Forecasted Number of Live Births Attended by Skilled Health Personnel as a Result of HFEP in Western Visayas by Year and by Province from 2012 to 2016

Year	Iloilo	Iloilo City	Negros Occidental	Bacolod City	Aklan	Antique	Guimaras	Total WV – HFEP
1960	8536	3223	9745	2393	2339	1785		28021
1961	6869	3230	8583	2394	1943	1714		24733
1962	6848	3523	9310	3800	2264	1919		27664
1963	6876	3149	9413	2735	1942	2468		26583
1964	6558	3344	9427	1871	2344	2299		25843
1965	6440	3759	11066	1808	2479	2003		27555
1966	6360	3941	10084	2978	2388	1895		27646
1967	6550	3583	8679	2429	2566	1979		25786
1968	6264	4278	9065	4510	2742	2004		28863
1969	6606	3291	9548	6252	2572	1836		30105
1970	6829	3556	8793	5499	2310	2028		29015
1971	5581	4548	7566	5857	2004	1766		27322
1972	5765	3917	7987	5693	2088	1684		27134
1973	5907	4521	7340	6470	1978	1816		28032
1974	5890	4609	8417	6206	2036	1668		28826
1975	7193	4850	8740	6912	2130	2058		31883
1976	7611	5504	9705	7299	2562	2242		34923
1977	8738	5522	9677	7901	2787	2695		37320
1978	10462	5593	6626	7474	3276	3093		36524
1979	10945	5794	10243	7721	3510	3789		42002
1980	11175	5695	9930	7364	3744	3860		41768
1981	11651	6153	10031	6672	3827	3680		42014
1982	11516	6773	9569	7952	3501	3402		42713
1983	11725	6971	9713	7736	3637	3549		43331
1984	9739	6692	8339	6445	3304	2992		37511
1985	9438	6395	7140	5073	3077	2972		34095
1986	10413	6503	7988	4617	3225	3106		35852
1987	11039	6929	8458	6184	3519	3305		39434
1988	11259	6782	8790	5408	3284	3069		38592
1989	11670	6894	8794	4686	3579	2988		38611
1990	12105	7244	9409	7217	4370	3195		43540
1991	12090	6822	9749	7192	4273	3370		43496
1992	15057	5983	12715	4557	4462	3627		46401
1993	13326	6575	12642	5131	4675	3746	600	46695
1994	13442	6390	11723	5527	9087	3523	842	50534
1995	14544	6550	12043	5883	4432	3576	972	48000
Year	**Iloilo**	**Iloilo City**	**Negros Occidental**	**Bacolod City**	**Aklan**	**Antique**	**Guimaras**	**Total WV – HFEP**
1996	13734	6348	11059	5780	4277	3395	911	45504
1997	14556	7047	11664	5440	4727	3636	1043	48113
1998	14526	6786	11473	6245	4592	3444	1028	48094
1999	14384	6677	9682	5943	4355	3846	908	45795
2000	15367	6546	11301	6928	4652	4045	1102	49941
2001	15240	7051	11007	6804	4648	3958	1098	49806
2002	15495	7003	10891	6080	4526	3897	1139	49031
2003	15026	7137	11491	6983	4474	4004	1048	50163
2004	15864	7505	7012	5430	4935	3940	1241	45927

2005	15917	6711	8665	7045	5164	4242	1237	48981
2006	15577	6289	9660	6524	5570	4739	1264	49623
2007	17199	7695	10468	6772	6523	5124	1555	55336
2008	19163	7107	11099	7098	6243	5292	1715	57717
2009	19056	8859	11062	7065	6756	5615	1616	60029
2010	19438	9085	11204	7393	6998	5772	1733	61623
2011	19828	9317	11348	7737	7249	5933	1858	63269
2012	**20226**	**9555**	**11493**	**8096**	**7508**	**6098**	**1992**	**64968**
2013	**20631**	**9800**	**11640**	**8472**	**7777**	**6268**	**2135**	**66725**
2014	**21045**	**10050**	**11790**	**8866**	**8056**	**6443**	**2289**	**68539**
2015	**21467**	**10307**	**11941**	**9277**	**8345**	**6623**	**2455**	**70414**
2016	**21898**	**10570**	**12094**	**9708**	**8644**	**6808**	**2632**	**72353**

Note: The cells highlighted in yellow were forecasted using the compounded growth rate formula. The growth rate used was the average annual growth rate of the number of live births attended by skilled health personnel from 1960 to 2009. Iloilo, Iloilo City, Negros Occidental, Bacolod City, Aklan, Antique and Guimaras have average annual growth rates in the number of live births attended by skilled health personnel equal to 2.01%, 2.55%, 1.28%, 4.65%,3.58%, 2.79% and 7.21% respectively.

Annex C1: Computations of the Forecasted Number of Live Births Attended by Skilled Health Personnel as a Result of NHIP in Western Visayas by Year and by Province from 2012 to 2016

Year	Iloilo	Iloilo City	Negros Occidental	Bacolod City	Aklan	Antique	Guimaras	Capiz	Total WV – HFEP
1960	8536	3223	9745	2393	2339	1785		2401	30422
1961	6869	3230	8583	2394	1943	1714		2116	26849
1962	6848	3523	9310	3800	2264	1919		1605	29269
1963	6876	3149	9413	2735	1942	2468		1772	28355
1964	6558	3344	9427	1871	2344	2299		1738	27581
1965	6440	3759	11066	1808	2479	2003		1286	28841
1966	6360	3941	10084	2978	2388	1895		1448	29094
1967	6550	3583	8679	2429	2566	1979		1189	26975
1968	6264	4278	9065	4510	2742	2004		3351	32214
1969	6606	3291	9548	6252	2572	1836		2957	33062
1970	6829	3556	8793	5499	2310	2028		2931	31946
1971	5581	4548	7566	5857	2004	1766		996	28318
1972	5765	3917	7987	5693	2088	1684		930	28064
1973	5907	4521	7340	6470	1978	1816		1028	29060
1974	5890	4609	8417	6206	2036	1668		1164	29990
1975	7193	4850	8740	6912	2130	2058		1400	33283
1976	7611	5504	9705	7299	2562	2242		1615	36538
1977	8738	5522	9677	7901	2787	2695		1898	39218
1978	10462	5593	6626	7474	3276	3093		1918	38442
1979	10945	5794	10243	7721	3510	3789		2388	44390
1980	11175	5695	9930	7364	3744	3860		2519	44287
1981	11651	6153	10031	6672	3827	3680		2297	44311
1982	11516	6773	9569	7952	3501	3402		2448	45161
1983	11725	6971	9713	7736	3637	3549		2335	45666
1984	9739	6692	8339	6445	3304	2992		2008	39519
1985	9438	6395	7140	5073	3077	2972		1728	35823
1986	10413	6503	7988	4617	3225	3106		1811	37663
1987	11039	6929	8458	6184	3519	3305		2166	41600

1988	11259	6782	8790	5408	3284	3069		2008	40600
1989	11670	6894	8794	4686	3579	2988		2037	40648
1990	12105	7244	9409	7217	4370	3195		2376	45916
1991	12090	6822	9749	7192	4273	3370		2424	45920
1992	15057	5983	12715	4557	4462	3627		3026	49427
1993	13326	6575	12642	5131	4675	3746	600	3037	49732
1994	13442	6390	11723	5527	9087	3523	842	2904	53438
1995	14544	6550	12043	5883	4432	3576	972	3403	51403
Year	**Iloilo**	**Iloilo City**	**Negros Occidental**	**Bacolod City**	**Aklan**	**Antique**	**Guimaras**	**Capiz**	**Total WV – HFEP**
1996	13734	6348	11059	5780	4277	3395	911	3184	48688
1997	14556	7047	11664	5440	4727	3636	1043	3325	51438
1998	14526	6786	11473	6245	4592	3444	1028	3250	51344
1999	14384	6677	9682	5943	4355	3846	908	3102	48897
2000	15367	6546	11301	6928	4652	4045	1102	3395	53336
2001	15240	7051	11007	6804	4648	3958	1098	3372	53178
2002	15495	7003	10891	6080	4526	3897	1139	3223	52254
2003	15026	7137	11491	6983	4474	4004	1048	3150	53313
2004	15864	7505	7012	5430	4935	3940	1241	3345	49272
2005	15917	6711	8665	7045	5164	4242	1237	3460	52441
2006	15577	6289	9660	6524	5570	4739	1264	4385	54008
2007	17199	7695	10468	6772	6523	5124	1555	5604	60940
2008	19163	7107	11099	7098	6243	5292	1715	6433	64150
2009	19056	8859	11062	7065	6756	5615	1616	6132	66161
2010	19438	9085	11204	7393	6998	5772	1733	6449	68072
2011	19828	9317	11348	7737	7249	5933	1858	6783	70052
2012	**20226**	**9555**	**11493**	**8096**	**7508**	**6098**	**1992**	**7134**	**72103**
2013	**20631**	**9800**	**11640**	**8472**	**7777**	**6268**	**2135**	**7504**	**74228**
2014	**21045**	**10050**	**11790**	**8866**	**8056**	**6443**	**2289**	**7892**	**76431**
2015	**21467**	**10307**	**11941**	**9277**	**8345**	**6623**	**2455**	**8301**	**78715**
2016	**21898**	**10570**	**12094**	**9708**	**8644**	**6808**	**2632**	**8730**	**81084**

Note: The cells highlighted in yellow were forecasted using the compounded growth rate formula. The growth rate used was the average annual growth rate of the number of live births attended by skilled health personnel from 1960 to 2009. Iloilo, Iloilo City, Negros Occidental, Bacolod City, Aklan, Antique, Guimaras and Capiz have average annual growth rates in the number of live births attended by skilled health personnel equal to 2.01%, 2.55%, 1.28%, 4.65%, 3.58%, 2.79%, 7.21% and 5.18% respectively.

Annex D1: Computations of the Cost Effectiveness Ratios of Upgrading Health Facilities and of Expanding Health Insurance Coverage in Western Visayas by Year and by Province from 2012 to 2016

Western Visayas

Year	HFEP	Number of Live Births Attended by Skilled Health Personnel	Cost Effectiveness Ratios
2012	1095557195	64968	16863
2013	1095557195	66725	16419
2014	1095557195	68539	15984
2015	1095557195	70414	15559
2016	1095557195	72353	15142
Total	5477785974	343000	15970
Year	**NHIP**	**Number of Live Births Attended by Skilled Health Personnel**	**Cost Effectiveness Ratios**

2012	1153177200	72103	15993
2013	1153177200	74228	15536
2014	2306354400	76431	30176
2015	2306354400	78715	29300
2016	2306354400	81084	28444
Total	9225417600	382561	24115

Iloilo

Year	HFEP	Number of Live Births Attended by Skilled Health Personnel	Cost Effectiveness Ratios
2012	292650183	20226	14469
2013	292650183	20631	14185
2014	292650183	21045	13906
2015	292650183	21467	13632
2016	292650183	21898	13364
Total	1463250914	105267	13900
Year	**NHIP**	**Number of Live Births Attended by Skilled Health Personnel**	**Cost Effectiveness Ratios**
2012	325888800	20226	16113
2013	325888800	20631	15796
2014	651777600	21045	30970
2015	651777600	21467	30362
2016	651777600	21898	29765
Total	2607110400	105267	24767

Iloilo City

Year	HFEP	Number of Live Births Attended by Skilled Health Personnel	Cost Effectiveness Ratios
2012	174916008	9555	18305
2013	174916008	9800	17849
2014	174916008	10050	17405
2015	174916008	10307	16971
2016	174916008	10570	16548
Total	874580042	50281	17394
Year	**NHIP**	**Number of Live Births Attended by Skilled Health Personnel**	**Cost Effectiveness Ratios**
2012	37029600	9555	3875
2013	37029600	9800	3779
2014	74059200	10050	7369
2015	74059200	10307	7186
2016	74059200	10570	7007
Total	296236800	50281	5892

Negros Occidental

Year	HFEP	Number of Live Births Attended by Skilled Health Personnel	Cost Effectiveness Ratios
2012	272551391	11493	23715
2013	272551391	11640	23414
2014	272551391	11790	23118
2015	272551391	11941	22825
2016	272551391	12094	22536
Total	1362756955	58958	23114
Year	**NHIP**	**Number of Live Births Attended by Skilled Health Personnel**	**Cost Effectiveness Ratios**
2012	406786800	11493	35394
2013	406786800	11640	34946
2014	813573600	11790	69008

2015	813573600	11941	68134
2016	813573600	12094	67271
Total	3254294400	58958	55197

Bacolod City

Year	HFEP	Number of Live Births Attended by Skilled Health Personnel	Cost Effectiveness Ratios
2012	17928410	8096	2214
2013	17928410	8472	2116
2014	17928410	8866	2022
2015	17928410	9277	1932
2016	17928410	9708	1847
Total	89642052	44419	2018
Year	**NHIP**	**Number of Live Births Attended by Skilled Health Personnel**	**Cost Effectiveness Ratios**
2012	15673200	8096	1936
2013	15673200	8472	1850
2014	31346400	8866	3536
2015	31346400	9277	3379
2016	31346400	9708	3229
Total	125385600	44419	2823

Aklan

Year	HFEP	Number of Live Births Attended by Skilled Health Personnel	Cost Effectiveness Ratios
2012	76855731	7508	10236
2013	76855731	7777	9882
2014	76855731	8056	9540
2015	76855731	8345	9210
2016	76855731	8644	8892
Total	384278653	40330	9528
Year	**NHIP**	**Number of Live Births Attended by Skilled Health Personnel**	**Cost Effectiveness Ratios**
2012	106113600	7508	14133
2013	106113600	7777	13644
2014	212227200	8056	26344
2015	212227200	8345	25433
2016	212227200	8644	24553
Total	848908800	40330	21049

Antique

Year	HFEP	Number of Live Births Attended by Skilled Health Personnel	Cost Effectiveness Ratios
2012	186202816	6098	30534
2013	186202816	6268	29705
2014	186202816	6443	28898
2015	186202816	6623	28114
2016	186202816	6808	27351
Total	931014080	32241	28876
Year	**NHIP**	**Number of Live Births Attended by Skilled Health Personnel**	**Cost Effectiveness Ratios**
2012	103797600	6098	17021

2013	103797600	6268	16559
2014	207595200	6443	32218
2015	207595200	6623	31344
2016	207595200	6808	30493
Total	830380800	32241	25755

Guimaras

Year	**HFEP**	**Number of Live Births Attended by Skilled Health Personnel**	**Cost Effectiveness Ratios**
2012	74452656	1992	37383
2013	74452656	2135	34867
2014	74452656	2289	32521
2015	74452656	2455	30333
2016	74452656	2632	28291
Total	372263279	11502	32364
Year	**NHIP**	**Number of Live Births Attended by Skilled Health Personnel**	**Cost Effectiveness Ratios**
2012	27652800	1992	13885
2013	27652800	2135	12950
2014	55305600	2289	24158
2015	55305600	2455	22532
2016	55305600	2632	21016
Total	221222400	11502	19233

Capiz

Year	**HFEP**	**Number of Live Births Attended by Skilled Health Personnel**	**Cost Effectiveness Ratios**
2012			
2013			
2014			
2015			
2016			
Total			
Year	**NHIP**	**Number of Live Births Attended by Skilled Health Personnel**	**Cost Effectiveness Ratios**
2012	130234800	7134	18254
2013	130234800	7504	17356
2014	260469600	7892	33004
2015	260469600	8301	31379
2016	260469600	8730	29835
Total	1041878400	39561	26336