Ateneo de Manila University
School of Science and Engineering
Health Sciences Program

Thesis Abstracts
Monograph
2007-2011
# Table of Contents

**Batch 2007 Theses**


A Cost-Benefit Analysis of an Automated Radio Frequency Identification Drug Inventory System for Public Health Facilities ........................................................................................................ 7

Evaluating the Cost-Effectiveness of the Iron Fortification of Snack Foods on Anemic Institutionalized Children in Boy’s Town, Metro Manila.................................................................................. 8

**Batch 2008 Theses**

A Descriptive Cross-Sectional Study of Newly Enrolled PTB Patients in DOTS Programs in Several Cities in NCR ........................................................................................................................................ 10

A Descriptive Study of Inventory Management Practices among Health Centers in Quezon City .......... 11

A Prevalence Study on the Probability of Eating Disorders among 1st and 2nd Year College Students in A Private University in Metro Manila.............................................................................. 12

An Evaluation of Intervention Strategies to Decrease Treatment Default Among TB Patients in Urban Health Centers..................................................................................................................................... 13

**Batch 2009 Theses**

An Assessment of Health Reform Status in Leyte, Southern Leyte, Oriental Mindoro, and Occidental Mindoro Using the Indicators from Local Government Unit Scorecard: A Cross-Sectional Study ...... 16

A Case-Control Study of the Factors Influencing Utilization of the Outpatient Benefit Package and A Descriptive Study of Drug Utilization by PhilHealth Sponsored Program Beneficiaries in Moncada, Tarlac ........................................................................................................................................ 17

An Exploratory, Qualitative Study of the Factors Affecting the Utilization of the Expanded Programme on Immunization in San Isidro, Nueva Ecija .................................................................................................. 18

A Prospective Cohort Study of Risk Factors for Default of Newly-Enrolled Tuberculosis Patients in Directly Observed Treatment Short-Course Programs in All Cities in the National Capital Region: Identifying Significant Risk Factors Contributing to Default ........................................................................ 19

A Cost-Effectiveness Analysis of Interventions to Lower Tuberculosis Default Rates in an Urban Setting 20

The Burden of Disease of Major Depressive Disorder in the Philippines .................................................. 21

A Descriptive Study on the Burden of Hypertension in the Philippines ....................................................... 22

A Non-Intervention Retrospective Cohort Study on the Association of Tri-Leader Competencies and Tri-Leader Partnership with Specific Program Outcomes of the Leaders for Health Program Batch Two Municipalities..................................................................................................................................... 23

A Study on the Cost-Effectiveness of Rotarix as a Vaccine against Rotavirus Infection for Filipino Children below the Age of 5 ................................................................................................................... 25
Burden of Disease of Rabies in the Philippines (2007)........................................................................................................... 26
National Burden of Asthma in the Philippines: A Cross-Sectional Survey on the Quantifiable Impact on the Filipino People.................................................................................................................. 27
A Cross-Sectional Study of the Factors Affecting Preference of Parents for Vaccination Programs in Urban Poor-To-Middle Class and a Cost Analysis of its Implementation................................................................. 28

Batch 2010 Theses ................................................................................................................................................................. 29
The Effect of Asymmetric Information on Treatment Compliance among Filipino Glaucoma Patients: A Cohort Study on Patient-Doctor Relationships........................................................................................................... 30
An Ecologic Study on the Presumed Impacts of Climate Change and Seasonal Patterns on Acute Respiratory Infection and Health Services Utilization in Nueva Ecija from 1999 to 2008................................. 31
Effectiveness of a 3-Month Environmental Manipulation Intervention on Dengue Vector Density in an Urban Depressed Area in Batasan Hills, Quezon City........................................................................................................... 32
Drug Administration Errors: A Study of Its Prevalence and Exposure Factors in a Government Hospital in the Philippines............................................................................................................................................... 33
Factors Affecting the Utilization of Health Care Services Offered by the Loyola Schools Office of Health Services of the Loyola Schools Students of the Ateneo de Manila University................................................................................. 34
Development of an Assessment Tool for On-Site Infectious Waste Management Based on a Descriptive Study of Five Tertiary Hospitals in the Philippines.............................................................................. 36
A Cohort Analysis on the Determining Factors Underlying the Utilization of Newborn Screening in Newborn Screening Facilities in Quezon City......................................................................................................... 38
Nursing the Philippine Health System: A Cross-Sectional Study of the Motives and Incentives that Have Attracted and Can Attract Filipino Nurses to Practice in Underserved Areas......................................................................................... 39
Factors That Affect the Access of PhilHealth Members on the PhilHealth TB DOTS Benefit Package: A Qualitative and Quantitative Cross Sectional Study Design on High and Low Claim PhilHealth Accredited DOTS Centers in NCR.................................................................................................................. 40
The Principal Condition of School Sanitation: A Cross-Sectional Study on the Associations Between the School and Principal Profiles of Quezon City Public Elementary Schools and the Quality of Sanitation Present in their Respective Institutions............................................................................................................................................ 41

Batch 2011 Theses ................................................................................................................................................................. 42
A Pilot Study on the Effect of Medical Expenditure Discount System (MEDS) on Financial Access to Medicines in Barangay Bagong Silang, Caloocan City........................................................................................................... 43
A Usability Evaluation of an Electronic Oral Health Information Monitoring System for Public Elementary School in an Urban Setting.................................................................................................................. 44
Nutrition Knowledge and Practices of the University Athletic Association of the Philippines Season 73 Badminton Athletes...................................................................................................................................................... 45
Respiratory Disease and Varying PM2.5 and PM10 Concentrations in Metro Manila from 2001-2007..... 46
The Effects of Asymmetric Information on Compliance among Filipino Glaucoma Patients: A Prospective Cohort Study on Public Clinics .......................................................... 47

A Philippine Based, Case-Series Study on the Possible Relationship of Time of Omeprazole Intake to a Patient’s Chronotype and Alleviation of Gastritis Symptoms......................................................... 48

Eye Care for All: A Cost-Benefit Analysis and Usability Evaluation of a Web-Based Electronic Patient Referral System for Ocular Conditions........................................................................................................... 49

A Case-Control Study on the Effects of Individual Health-Seeking Behavior on Participation in Mass Treatment for Schistosomiasis in an Endemic Barangay in Western Samar .......................................................... 50

A Case-Control Study of the Factors Associated with Drug Treatment and Rehabilitation Completion and Success.................................................................................................................. 51

Comparative Table of All Thesis Abstracts................................................................................................................................. 52
Batch 2007
Theses
A COST-EFFECTIVENESS STUDY OF A MULTI-DRUG RESISTANT TUBERCULOSIS PATIENT MONITORING SYSTEM FOR THE PROGRAMMATIC MULTI-DRUG RESISTANT TUBERCULOSIS MANAGEMENT: A COMPARISON OF AUTOMATED AND MANUAL METHODS FOR DOTS REPORTING
Authors: Co, Avian Loren T. and Concepcion, Marian F.

OBJECTIVES
The study aims to evaluate the cost-effectiveness of a Multi-drug Resistant Tuberculosis (MDR-TB) patient monitoring system designed to function as an efficient reporting mechanism.

DESIGN
The study utilizes an economic evaluation of an automated MDR-TB patient monitoring system. The costs and the effectiveness of the automated system were compared with the current manual monitoring system.

SETTING
The study is set in 6 of Makati health centers: Pembo, Palanan, Carmona, Guadalupe Nuevo, Pitogo, and Cembo, to which patients were endorsed to after treatment in Makati Medical Center. The six health centers are part of the Programmatic Multi-drug resistant Tuberculosis Management (PMTM) supervised by the Tropical Disease Foundation. The study was held from December 18, 2006 to January 19, 2007.

PARTICIPANTS
The study includes the 6 patients from 6 of the health centers of Makati, and as well as the TDF staff and health workers.

MAIN OUTCOME MEASURES
Comparison of the control (pen and paper method) with the experimental (automated system) in terms of the total number of reports per week for 5 weeks, number of working hours consumed by follow-up calls, and total cost of implementing and maintaining the system

RESULTS
Within the 5-week data collection, 30 reports were gathered through the automated system, whereas there were only 12 reports for manual system. It was found that the weekly active reporting of the automatic system has more advantages for monitoring purposes. With the system, reporting could be reduced to just 2 minutes per week. Reports could be collated in a matter of seconds, since the system is automatic and real-time. Process for encoding will be reduced from 3 processes to just 1. Phone calls can be eliminated, visits limited and the time for other staff duties can be maximized. Notification for cases of missed medications and adverse drug reactions will be responded to immediately. Costs for drug medication, patient expenses, and TDF staff expenses will be cut down. TDF will spend an amount to Php1,541,461.11 for the continuous use of the manual system. On the other hand, the usage of the automatic system will only amount to Php1,097,968.40 spent. While the expenses of the manual system increase incrementally with time, the expenses for the automatic system decrease.

Moreover, the system is flexible enough that other health programs can also be integrated into the same database, including: a potential national TB registry and referral system that could endorse patients, a patient calendar, a drug-stocking component, and a weight-based dosage component.

CONCLUSION
The relatively successful implementation of the system allowed the researchers to present in this paper the capabilities, potential, and cost-effectiveness of the system. The computation for the Incremental Cost-Effectiveness Ratio (ICER) is done to measure the cost-effectiveness of the system. The automated system passed the significance test, as well as, the cost-effectiveness test. This is similar to other programs which introduced technology for provision of health services which proved to be successful in different countries.
A COST-BENEFIT ANALYSIS OF AN AUTOMATED RADIO FREQUENCY IDENTIFICATION DRUG INVENTORY SYSTEM FOR PUBLIC HEALTH FACILITIES
Authors: Doromal, Hannah Paula and Go, Muriel Tania

OBJECTIVES
This study aims to determine the cost-benefit of a Radio Frequency Identification (RFID)-based automated drug inventory system through modelling. It seeks to address issues in the current system of drug inventory in the Philippine public health facilities by introducing an RFID system that will decrease percent stack variation, decrease the percentage of expired and soon-to-be expired drugs, and increase savings and decrease potential losses in the future Category II Tuberculosis drugs in the national warehouse level and regional warehouse level of the Department of Health (DOH).

DESIGN
The project will use a Quasi-Experimental Design, or a Before and After study design. The study also undertook a cost-benefit analysis of an automated RFID Drug Inventory system to determine its feasibility.

SETTING
The study was set in a warehouse in Quirino Memorial Medical Center and 17 regional Centers for Health Development (CHD).

PARTICIPANTS
The modelling study includes the central warehouse in Quirino Memorial Medical Center and 17 regional Centers for Health Development (CHD), including the National Capital Region regional warehouse.

MAIN OUTCOME MEASURES
Main outcome measures include the following: total costs of the manual system and the total costs of the automated RFID system from the central warehouse down to the regional level; the comparison of the total cost of the manual system and the total cost of the automated RFID system; the benefits of an RFID-based and a manual drug inventory system according to percent variation between stock cards and physical count and the proportion of expiry and near-expiry drugs in shelves; and the cost-benefits of implementing an automated RFID drug inventory system.

RESULTS
The study’s results show that the RFID system is more cost beneficial than the current manual system yielding a net social benefit of Php1.6M per year. A preliminary sensitivity analysis reveals that the RFID system will remain cost-beneficial if the total percentage of stock variation is 2.59%, the lower limit of its accuracy level or the percentage expired or near-expired drugs is 5%. A preliminary threshold analysis reveals that the RFID system would break-even at a cost of Php3.3M or around 2 times its actual cost.

CONCLUSION
The implementation of an automated RFID drug inventory system in public health warehouses is potentially cost-beneficial and may save further loses. It is an investment that can provide the highest net social benefit as compared with the manual system in the long run, as it remains cost-beneficial even at the lowest level of accuracy. Further study is needed though to evaluate this system before implementing it in the lower levels of public health units.
EVALUATING THE COST-EFFECTIVENESS OF THE IRON FORTIFICATION OF SNACK FOODS ON ANEMIC INSTITUTIONALIZED CHILDREN IN BOY’S TOWN, METRO MANILA
Authors: Reyes, Monica Kristine, Villanueva, Maria Katherine and Yap, Harvey

OBJECTIVES
This study aims to evaluate the effectiveness of the Department of Health’s (DOH) fortification of processed food-chips (junk food / empty calorie food) among children in the Boy’s Town Complex in Marikina city.

DESIGN
The study follows a pre-test post-test research design, wherein two groups are randomized and their serum sodium levels and Hb levels are taken before and after the intervention (the feeding of fortified and non-fortified snacks to the two groups).

SETTING
The study was set in Boy’s Town Complex in Marikina city.

PARTICIPANTS
The study involves the whole anemic (Hb level <11g/dL but >7g/dL) population of children 6-18 years old in Boy’s Town. Based on the tests performed, only 34 out of 224 children were anemic. The assignment of subjects into the control and experimental groups was determined by drawing lots.

MAIN OUTCOME MEASURES
Main outcome measures of the study include the cost of having food fortification and the cost of not having food fortification, the effectiveness of consumption of unfortified and fortified processed foods, respectively, as indicated by change in haemoglobin, and the cost-effectiveness of the two programs.

RESULTS
There was a significant change in the haemoglobin levels before and after the intervention for both the non-fortified and fortified groups. After the intervention, there was no significant difference in the number of improved haemoglobin levels and the number of normal cases. The serum levels of the fortified group also have no significant difference compared to the non-fortified group after intervention.

CONCLUSION
The increase in haemoglobin levels could not be attributed to the presence of iron in the snacks. At the level of snack intake of an average Filipino, who consumes 2-3 packs of fortified snacks a week, the results show no significant contribution of iron fortified snacks to the body. However, since there are numerous limitations in the study and there are flaws in the study design, no definite conclusions can be made regarding the cost-effectiveness of the food fortification program, specifically the iron-fortification of snack foods, of DOH.
Batch 2008
Theses
A DESCRIPTIVE CROSS-SECTIONAL STUDY OF NEWLY ENROLLED PTB PATIENTS IN DOTS PROGRAMS IN SEVERAL CITIES IN NCR
Authors: Ishimura, Marie P. and Yap, Justin Luke D.

OBJECTIVES
The study generally aims to profile and describe Pulmonary Tuberculosis (PTB) patients who are enrolled in Directly Observed Treatment Short-course (DOTS) programs in several cities in the National Capital Region (NCR) from December 12, 2007 to January 11, 2008.

DESIGN
The overall design used for the study is a prospective cohort design. A cross-sectional design was used for data gathering.

SETTING
The study was set in health centers in eight cities in NCR, namely: Caloocan, Las Piñas, Makati, Malabon, Mandaluyong, Marikina, Pasay and Pasig city, in the period of December 12, 2007 to January 11, 2008.

PARTICIPANTS
The study sample was comprised of PTB patients aged 15 years old and above upon their start of treatment from the whole NCR, which corresponds to about 20,000 of smear (+) and (-) cases a year. Random sampling was employed. The patient yield of 53 of this study is not representative of the population because the data collection for the larger portion of the study is still ongoing at the time the paper was written.

MAIN OUTCOME MEASURES
Main outcome measure of the study is the factors which might be the best indicator of patient default.

RESULTS
In terms of TB knowledge, the study shows that more than 30% of patients failed to reach the median cut-off while 28% were at cut-off. 22% of the patients thought TB was not contagious while almost 30% believed that it wasn’t fatal. There are also cost-related concerns such transportation expenses. The average expense on visiting the health facility was almost Php 21.00, which could total to Php 2520.00 (if the patient visits the center daily for 6 months) which is about 40% of the average monthly income among the study participants.

Considering the health center, accessibility, in terms of the opening hours, which is at a standard 8 AM to 5 PM, is another reason for poor patient treatment adherence. Some patients are unable to visit the center on a regular basis due to their irregular working hours. The health center as a treatment facility was generally regarded to be conducive to good health and comfortable to the patients. All the patients gave high scores for their overall satisfaction of the health center. However, the center’s service delivery defined by the waiting time they spend before being entertained by the health worker or clinic physician emerged as a concern.

In terms of the relationship with the health worker, the researchers were only able to capture the onset of the relationship between the patient and health worker therefore it would be hard to tell how this would affect patient compliance. Nevertheless, the first impression of the health worker on the patient was checked and data shows that the patients are satisfied with their health workers. The support of friends for the patient was also considered, and data shows that more than 80% of patients had family support while a little over 35% had the support of friends. However, 60% of patients still feel the stigma of their disease.

CONCLUSION
The success rate of the DOTS program is decreased by poor treatment adherence often leading to patient default. Defaulting can be caused by a number of factors. Based on the study, these factors include the following: lack of knowledge on tuberculosis, cost-related economic factors, service satisfaction from health centers, relationship with health workers, support from family and the stigma felt due to the disease.
A DESCRIPTIVE STUDY OF INVENTORY MANAGEMENT PRACTICES AMONG HEALTH CENTERS IN QUEZON CITY
Authors: Onglao, Camille; Roxas, Ma. Carrissa Abigail and Yao, Carlo Emmanuel

OBJECTIVES
This study generally aims to describe the existing drug inventory practices of 30 health centers in Quezon city. It specifically aims to first, describe the inventory management practices in the health centers based on the baseline data that will be gathered; and second, determine the appropriateness of randomization among the health centers in Quezon city that will be enrolled in Radio Frequency Identification (RFID) cost-effectiveness study.

DESIGN
This is a cost-effectiveness study of RFID.

SETTING
The study was conducted in District IV (Bernardo, Cubao, Galas, General Roxas, Kalayaan, Kamuning, Krusna Ligas, Pinayahan, San Vicente, and Tatalon), and Districts II and III (Baesa, Bagbag, Banlat, Capri, Culiat, Gulod, M.H. Pedro, Nagkaisang Nayaon, Novaliches, Sauyo, Tandang Sora, Escopa, E. Rodriguez, Ermin Garcia, Libis, Murphy, Old Balara, Pansol, Project 4 and Socorro) of Quezon city.

PARTICIPANTS
The study population was consisted of 30 Health Centers (HC) from Quezon City, randomly assigned to two groups: 10 HCs in the experimental group (has RFID intervention) and 20 HCs in the control group (has no RFID intervention). The specific HCs enrolled in the RFID cost-effectiveness study were determined by the Quezon City Health Department.

MAIN OUTCOME MEASURES
The main outcome measure of the study is the difference of experimental and control groups in terms of the characteristics and procedures related to practices in inventory management, the significance level of which will be determined through bivariate analysis.

RESULTS
Results show that only 2 of 26 independent variables (7.6% of all variables) have been found to be significantly related to the dependent variable, the type of health center. These variables are the person who conducted rechecking being the same of different person who conducted initial checking of inventory for general medicines and person who conducted initial checking of inventory for TB kits.

CONCLUSION
The samples contained in the control and experimental groups are generally the same in terms of demographics, inventory checking, storage conditions and record keeping. Most of the independent variables were proven to be significant across the dependent variable and may be a source of confounding in the future study.
A PREVALENCE STUDY ON THE PROBABILITY OF EATING DISORDERS AMONG 1ST AND 2ND YEAR COLLEGE STUDENTS IN A PRIVATE UNIVERSITY IN METRO MANILA

Authors: Cosalan, Samantha Gail V. and Ronquillo, Jose Bernardo L.

OBJECTIVES
The study generally aims to determine the prevalence of probable eating disorders among college students enrolled in non-traditional Physical Education classes in a private university in Metro Manila. It also aims to determine the level of awareness of the study population regarding eating disorders.

DESIGN
The study utilizes a descriptive prevalence study design, making use of questionnaires (Eating Attitudes Test and Bulimia Test and Awareness Poll) and a poll measuring awareness of individuals with regard to eating disorders. A cross-sectional study was also done on the study population to screen those with probable eating disorders.

SETTING
The study was set in a private university in Metro Manila.

PARTICIPANTS
The study population consisted of 1st and 2nd year college students enrolled in non-traditional Physical Education (P.E.) classes (by non-traditional, courses not normally offered in other institutions are pertained to), both males and females. There is no defined age bracket for the study because the only factors considered were gender and year level. A total of 10 P.E. classes were selected, wherein 20 students from each class were randomly picked by their teachers to answer the questionnaires.

MAIN OUTCOME MEASURES
The main outcome result of the study include the prevalence of individuals who may possibly have an eating disorder or may develop it in the future, and the awareness of individuals with regard to eating disorders.

RESULTS
For the Eating Attitudes Test (EAT) results, the mean score and standard deviation was 14.61 (+/- 9.276). The prevalence rate was 9.3%. The mean EAT scores, standard deviation, and prevalence rate of 1st and 2nd yr students are 14.98 (+/- 10.233), 10.3% and 14.25 (+/- 8.198), 5.3% respectively. The mean EAT scores, standard deviation, and prevalence rate of male and female students are 14.55 (+/- 10.719), 9.8% and 14.67 (+/- 7.661), 5.8% respectively. For the Bulimia Test (BULIT) results, the mean score and standard deviation was 58.28 (+/- 15.079). The prevalence rate was 5.8%. The mean BULIT scores, standard deviation, and prevalence rate of 1st and 2nd yr students are 58.12 (+/- 16.571), 7.6% and 58.44 (+/- 13.428), 3.4% respectively. The mean BULIT scores, standard deviation, and prevalence rate of male and female students are 55.73 (+/- 12.011), 1.7% and 60.70 (+/- 17.150), 8.1% respectively. Of the target population to the EAT, 8% scored positive to the EAT, with scores above the cutoff score of 30. Average EAT scores for the total sample population was 14.74, with a standard deviation of 8.85.

With regard to awareness of eating disorders, 55.3% and 56%, respectively, of the sampled populations know at least one person with an eating disorder. 40.3% and 47% think that stress from family is one of the contributing factors to the development of eating disorders. The sampled population for this particular study however did not consider eating disorders as a mental illness.

CONCLUSION
There are a number of individuals who were identified through the tests that may possibly have an eating disorder. The researchers cannot be certain with regard to the number because the tests are not enough to identify whether an individual has a disorder or not but an interview with a professional psychiatrist is needed. The sample was also fairly familiar with eating disorders and their probable causes.
AN EVALUATION OF INTERVENTION STRATEGIES TO DECREASE TREATMENT DEFAULT AMONG TB PATIENTS IN URBAN HEALTH CENTERS
Authors: Bendebel, Margaret Therese; Cruz, Pamela and Cua, Kristine Elisa

OBJECTIVES
This study aims to evaluate the pre-testing of a package of tuberculosis default prevention interventions. Specifically, the study aims to design a three-module intervention package consisting of TB Education, Communication Skills Training, and Peer Support Groups that aim to increase treatment adherence. It also aims to determine the effectiveness of the TB 101, Health Worker Communication Skills Training, and the Peer Support Modules in terms of methodologies used during the session and the usefulness of the training for their professional career.

DESIGN
A quasi-experimental study type was used for the pre-testing of modules since randomization and the use of a separate control group were not employed.

SETTING
The study was set in health centers in Makati and Quezon city. For Makati, the health centers in Oblisa, Poblacion, and Pitogo were selected. The centers in Socorro, Murphy, and Escopa, on the other hand, were recommended for QC.

PARTICIPANTS
Currently assigned health care providers such as doctors, nurses, midwives, and barangay health workers from the health centers comprised the study population. The participating health centers were chosen based on patient enrolment rates, classified as high, medium and low, as recommended by the city health officers.

MAIN OUTCOME MEASURES
First main outcome measure is the correlation or association of exposure variables (ender, position of the participant in the health center, and city) and outcome variables (difference of test scores and evaluation criteria) through bivariate analysis. Second is the correlation analysis result for each module using all evaluation criteria, which used Spearman’s rho test for significance.

RESULTS
No significant values were obtained after testing for each exposure-outcome hypothesis suggesting that gender, position held by participant, city, and pre-test scores do not affect post-test scores and evaluation criteria ratings. It also implies that the two populations have more or less the same characteristics in terms of training requirements and bases in evaluating the sessions.

Correlation analysis computed significant values between several evaluation criteria related to session delivery and audience participation. In Makati, criteria such as speaker’s delivery of the material in a clear and simple way, speaker’s loud and clear voice, audience participation, and establishment of a good relationship between speaker and audience were found to be associated with the variable on session providing sufficient and relevant information (Sig. 0.000 to 0.043). For all modules, the experimental hypothesis that the Makati participants who agreed that the session was able to provide them with sufficient and relevant information also think that the training has helped them in their career as health workers tested significant (Sig. 0.000).

Correlation results for QC also showed significant values. For the first criteria, “session was able to help the participant as a Health Worker”, the variables, speaker’s delivery of important points and speaker’s loud and clear voice tested significant (Sig 0.037 to 0.043). Audience participation and establishment of a good relationship between speaker and audience showed significant associations for the variable “session provided sufficient/relevant information” (Sig. 0.024 and 0.033). Similar with the result in Makati, the experimental
hypothesis that providing sufficient and relevant information affects response on session being of help to career computed significant associations for all modules (Sig 0.001.)

CONCLUSION
There was no significant difference among the variables. The modules developed showed no preference to gender, position, or to location. However, statistically significant findings were obtained by correlating the evaluation criteria with one another. The manner in which the session was delivered contributed to the participants’ perception that sufficient and relevant information was provided during the training and that it has helped them in their professional careers. However, no general conclusions for the effect of the intervention package on increasing patient adherence to DOTS-TB medication can be made at present, as this is a pilot study.
Batch 2009
Theses
AN ASSESSMENT OF HEALTH REFORM STATUS IN LEYTE, SOUTHERN LEYTE, ORIENTAL MINDORO, AND OCCIDENTAL MINDORO USING THE INDICATORS FROM LOCAL GOVERNMENT UNIT SCORECARD: A CROSS-SECTIONAL STUDY
Authors: Alim, Justine Joyce L.; Angeles, Jose Lorenzo B.; Creencia, Pia Cerise V.; Dy, Arnel Christian K. and Escalona, Raymond Joseph Y.

OBJECTIVES
This study aims to provide the Department of Health (DOH) with a baseline description of the provincial health systems of four Philippine provinces, to compare and evaluated the health outputs of FOURmula One (F1) and non-F1 provinces, and to develop and pilot-test a cost-effective, online public health data retrieval system for the DOH.

DESIGN
This study employed a cross-sectional observational study using surveys for bivariate analysis, multiple regression and comparative cost analysis.

SETTING
The study was done in Leyte and Southern Leyte from Eastern Visayas, and Oriental and Occidental Mindoro from Region IV MIMAROPA.

PARTICIPANTS
Convenience sampling design was utilized for the selection of the study population. The study provinces were chosen based on the level of cooperation existing between the local and central governments, and as well as on the convenience for travel and accommodations within the areas due to the decentralized nature of the Philippine health system. The participating provinces were selected from two different regions in the country, each one with an F1 and a non-F1 province. A total of 72 municipalities, randomly selected from 14 districts belonging to the 4 provinces, participated in the study.

MAIN OUTCOME MEASURES
Main outcome measures used in the multiple regression statistical analysis included: percent coverage of target population in endemic provinces with mass treatment for Filariasis and Schitosomoiasis, tuberculosis (TB) cure rate, percentage fully immunized child (FIC), percentage of newborns initiated breastfeeding within one hour after birth, percentage of Protein Energy Malnutrition, among 0-5 years old based on weight for age anthropometric measurement, percentage of facility based deliveries, contraceptive prevalence rate, percentage of households with access to safe water/sanitary toilet facilities, average length of stay in hospitals in days, average occupancy rate for 1st to 3rd level public and private hospitals, average hospital gross death rate from maternal causes, percentage of families enrolled in National Health Insurance Program, (NHIP), percentage of poor families enrolled in NHIP, percentage of maintenance and other operating expenses (MOOE) to total health budget. A comparative cost analysis was also conducted to compare the proposed data collection method with that of the current DOH Local Government Unit Scorecard data collection system.

RESULTS
The regression model demonstrated that ‘F1 status’ and the ‘percentage of RHUs accredited by PhilHealth’ had a significant effect on health outcomes, with an R squared of 0.343. Comparative cost analysis also revealed that the online data collection system costs less than the current DOH method.

CONCLUSION
A health reform ‘report card’ for each study municipality has been generated. It has also been demonstrated that there is a statistically significant difference between F1 and non-F1 provinces in terms of health outputs and outcomes, validating the DOH’s F1 program. Lastly, the quality of health data has been improved through the proposed online data collection system which has also been demonstrated to be cost-effective.
A CASE-CONTROL STUDY OF THE FACTORS INFLUENCING UTILIZATION OF THE OUTPATIENT BENEFIT PACKAGE AND A DESCRIPTIVE STUDY OF DRUG UTILIZATION BY PHILHEALTH SPONSORED PROGRAM BENEFICIARIES IN MONCADA, TARLAC

Authors: Alcantara, Ma. Gerry Lyn E.; Duyongco, Keshia Lourdes L.; Feir, Michael Francis A.; and Ferraris, Kevin Paul B.

OBJECTIVES
This study aims to determine factors influencing the utilization of the Outpatient Benefit Package (OPB) and describe drug utilization of PhilHealth Sponsored Program beneficiaries in Moncada, Tarlac.

DESIGN
The study employed a population-based case-control design.

SETTING
The study was conducted in 19 barangays found within the municipality of Moncada, Tarlac.

PARTICIPANTS
Participants of the study were 299 households enrolled in the Sponsored Program from December 16, 2006 to December 15, 2007. These households were randomly selected from 19 barangays under the catchment of RHU-I, of which, 83 were cases and 216 were controls (1:2.6 ratio).

MAIN OUTCOME MEASURES
The main outcome measures for this study were odds ratios (OR) measuring multiple exposures under the following categories: socio-demographics, health seeking behavior, knowledge/awareness of package, and patient satisfaction against the single outcome of utilization of a single service under the Outpatient Benefit (OPB) package.

RESULTS
The utilization rate of the OPB package in the year 2007 by the study population was computed to be 15.3%. The age of the health decision maker (p=0.010), a high percentage of dependents comprising a household (OR = 2.06 [1.21-3.51], p=0.008), and an RHU satisfaction score above the median score of all respondents (OR=1.96, CI [1.04-3.67], p=0.036) were significant in both bivariate and multivariate analyses. Both cases and controls displayed low knowledge on OPB services and benefits given the median score of 2/16 and FGD responses. The resulting regression equation had an $R^2$ value (Nagelkerke) of 0.10 (i.e., the regression equation generated can only explain 10% of the variance).

Drugs were available and physically accessible to the respondents. Financial constraint, however, served as a barrier to access. The drug information source influenced a drug’s perceived reliability. In turn, drug prescription also influenced the perception towards drug and service providers. The concept of “hiyang” or drug accustomization contributed to the negative perception towards generic drugs. Patient compliance and extent of use of prescription/non-prescription drugs depend on many factors, such as the severity of illness and financial capability.

CONCLUSION
The age of the health decision maker, level of RHU satisfaction, and the percentage of dependents in a household are significant predictors of OPB package utilization. Interventions such as information dissemination campaigns, and evaluation, monitoring and feedback systems, are highly suggested to improve the Sponsored Program and to make sure that the beneficiaries do indeed benefit from it. Further research is also recommended.
AN EXPLORATORY, QUALITATIVE STUDY OF THE FACTORS AFFECTING THE UTILIZATION OF THE EXPANDED PROGRAMME ON IMMUNIZATION IN SAN ISIDRO, NUEVA ECJI

Authors: Dela Cruz, Anna Mae D.; Lenon, Alcarlo Raul L.; and Uy, Timothy Joseph S.

OBJECTIVES
This study aims to identify the most significant factors influencing family compliance to the Expanded Programme on Immunization (EPI) in a certain municipality, to identify strategies that contribute to the program's success at the local level of execution and formulated methodological insights for studies on immunization programs within communities.

DESIGN
The study employed a qualitative study design supported by cross-sectional quantitative methods limited to nonparametric statistical tests.

SETTING
This study was conducted in the municipality of San Isidro, Nueva Ecija.

PARTICIPANTS
Participants of the study were mothers who have children who, at the time of the study, should have already been fully immunized by EPI definitions. As such, mothers who had children aged 1-2 years (preferably their youngest) were included. Since the study design is qualitative, there is no sample size requirement; the researchers were able to interview a total of 66 respondents. These respondents were categorized into two groups: those with fully immunized children who completed the program on time and those with partially or non-immunized children or who completed the program late.

MAIN OUTCOME MEASURES
The main outcome measures of the study were immunization status and observance of schedule of each of the two groups of participants.

RESULTS
Statistical analysis showed that maternal education, possession of immunization records, suggestion of immunization by the husband, perceiving immunization as an inconvenience, learning about immunization from relatives and seminars, and the amount paid for transportation costs are significantly associated with compliance and non-compliance. Qualitative interviews reveal that disapproval of husbands, laziness, forgetfulness, and inconveniences when bringing children to the health center are the most common reasons for non-compliance.

CONCLUSION
The study finds that both research methods and government policies must be sensitive to the unique conditions found in each area, and consider both the material and immaterial elements of the immunization program. While it is clear that financial and logistical provisions are essential, the social dynamics within the community setting play a significant role in both the provision and utilization of an immunization program.
OBJECTIVES
This study aims to determine factors contributing to default, patients not returning to complete tuberculosis (TB) treatment after two months in an urban setting.

DESIGN
The study employed a prospective cohort study design.

SETTING
The study was set in Directly Observed Therapy Shortcourse (DOTS) units covering cities participating in the National TB Program in Metro Manila.

PARTICIPANTS
Participants of this study were 401 TB patients aged 15 years and above upon the start of treatment. The only subjects included were patients enrolled in the DOTS programs in their own barangay health centers. Patients who were currently having their treatment in other institutions, public and private hospitals, were excluded from the study.

MAIN OUTCOME MEASURES
Main outcome measures for this study were relative risk (RR) values measuring the likelihood of TB default related to various exposure/risk factors under the following categories: socio-demographic, psychosocial and availability and accessibility of the TB treatment to the patient.

RESULTS
Of 401 patients, 383 (95.51%) completed the 6-month course while 18 (4.49%) defaulted from treatment. Bivariate analysis of the risk factors did not identify any statistically significant variables. In addition, logistic regression showed that there were only three significant factors related to default. These included proximity of the health center (CI = 95%, p=0.007, RR = 133.99), the embarrassment of the patients for having TB (CI = 95%, p=0.033, RR = 6.039) and the belief of having two or more medications for curing TB (CI = 95%, p=0.023, RR = 0.143).

CONCLUSION
This study established that 4.49% of TB patients in the population failed to complete the 6-month regimen for TB due to the significant factors including distance of the health center, embarrassment of patients from having TB, and knowledge of TB knowledge. Intervention programs will probably be most feasible for stigma and key TB knowledge to improve on default amongst TB patients.
A COST-EFFECTIVENESS ANALYSIS OF INTERVENTIONS TO LOWER TUBERCULOSIS DEFAULT RATES IN AN URBAN SETTING

Authors: Cuisia, Justine Marka J.; Jimenez, Catherine Marie G.; and Peña, Marie Eloise Antoinette G.

OBJECTIVES
This study targets one of the major risk factors for tuberculosis (TB) patient default – poor health worker-patient communication. Through its proposed interventions, the study aims to lower the default rates of TB patients in the Directly Observed Treatment Short-course (DOTS) clinics of two Metro Manila cities. It was also the objective of this study to determine the cost-effectiveness of the said interventions.

DESIGN
The study employed a randomized controlled trial (RCT) with subsequent cost-effectiveness analysis.

SETTING
The study was conducted in urban health centers/clinics in the cities of Quezon City and Makati City.

PARTICIPANTS
All patients who obtained treatment from the health center and are above the age of 15 were allowed to take part of the study, on the assumption that they were of age to answer properly and intelligibly the interview questions posed by the study’s research assistant (RA). A total of 261 TB patients in several urban DOTS clinics participated in the study.

MAIN OUTCOME MEASURES
The main outcome measures of this study included default rate, non-default rate, incremental cost-effectiveness ratio.

RESULTS
Based on the results, in the experimental group, the default rate was 2%, while in the control group it was 6.4%. Cox Regression analysis showed a significant difference between the default rate outcomes of the control and experimental group with a significance value of 0.026. Cost Analysis showed that the total cost of the additional interventions amounted to PhP92,389.90. The computed Incremental Cost-effectiveness Ratio indicated that an additional PhP20,761.78 must be spent in order to reduce the rate of default by 1%.

CONCLUSION
Given the results obtained from this study, it was seen that the proposed default-preventive strategies were successful in reducing the default rates in Makati and Quezon City.
THE BURDEN OF DISEASE OF MAJOR DEPRESSIVE DISORDER IN THE PHILIPPINES
Authors: Sam, Ralph Ralston S.; Ubaldo, Onion Gerald; and Valenzuela, Dianne G.

OBJECTIVE
This study aims to quantify the burden of Major Depressive Disorder in the Philippines.

DESIGN
The study employed a systematic analysis of secondary data based on the World Health Organization (WHO) Burden of Disease Study.

SETTING
The study was set in the Philippines.

PARTICIPANTS
Participants of the study were Filipinos under different age groups (0-85+ years). This was done using secondary data from the Department of Health (DOH) regarding population and mortality structure. Prevalence data was acquired from a WHO based study. Meanwhile, costs for hospitalization and medications were acquired from the Philippine Health Insurance Company (PHIC).

MAIN OUTCOME MEASURES
Main outcome measures of the study were incidence, prevalence, remission, mortality, case fatality, duration, Disability Adjusted Life Years (DALYs), and economic burden in terms of pesos.

RESULTS
The results of the study show that prevalence is generally greater in women than in men. There is also a considerable difference (almost twice) between the prevalence and incidence rates between men and women. The remission rate for major depression is low for both sexes. Further, mortality rates, in the form of suicides, in males are higher than in females. Total DALYs for males are 348,987 while for females, total DALYs are 496,115. Total economic burden amounts to 21,890,040,610 to 70,285,001,490 pesos.

CONCLUSION
The trends from the various outcomes measured in the study all point to Major Depressive Disorder as emerging to be a major public health concern. Therefore, it is of utmost importance that proper attention be given to the disease through further Philippine-based studies to inform future health policy and disease management.
A DESCRIPTIVE STUDY ON THE BURDEN OF HYPERTENSION IN THE PHILIPPINES
Authors: Alog, Glenn Paulo P.; Peralta, Leander V.; Pesayco, Maia Isabel P. and Villegas, Michelle Andrea C.

OBJECTIVES
The objective of the study was to determine the burden of hypertension in the Philippines for the year 2007. Specifically, this study aims to determine the prevalence and incidence rates of hypertension, the length of hospital stay (LOS), cost of hospitalization (COH) and the Disability Adjusted Life Years (DALYs) according to age and sex groups.

DESIGN
The study conducted systematic analysis of secondary data.

SETTING
The primary setting of the study was the Philippines.

PARTICIPANTS
The study used secondary data from the following institutions: Department of Health (DOH), Philippine Heart Association (PHA) and Philippine Health Insurance Corporation (PHIC). Prevalence rates were obtained from the 6th National Nutrition and Health Survey that utilized a stratified multi-stage sampling design of 4753 adults from 2636 randomly selected households covering all Philippines provinces, except Batanes.

MAIN OUTCOME MEASURES
The main outcome measures of the study were prevalence and incidence rates (number of cases per 1000 population), costs of hospitalization (in Philippine Pesos per admission), length of stay in hospitals (in days), and DALYs.

RESULTS
Outcome measures were stratified per gender, with exception to cost of hospitalization and average length of stay in hospitals. Across all age groups, the total prevalence in males was 84 per a population of 1000 and 91 per 1000 in females. Total incidence rates in all age groups for males were 8.6 per 1000 population and 7.1 per 1000 population in females. On another note, the mean COH for all age groups was P5,020.60 per admission. Average LOS across all age groups was 2.8 days. Finally, the weighted average DALYs for all age groups were 72 per 1000 population in males and 43 per 1000 in females.

CONCLUSION
In the Philippines, hypertension has an overall incidence and prevalence rate higher in males than in females, very little in-patient cost and LOS, and high DALY values indicating a large burden of disease.
A NON-INTERVENTION RETROSPECTIVE COHORT STUDY ON THE ASSOCIATION OF TRI-LEADER COMPETENCIES AND TRI-LEADER PARTNERSHIP WITH SPECIFIC PROGRAM OUTCOMES OF THE LEADERS FOR HEALTH PROGRAM BATCH TWO MUNICIPALITIES

Authors: Manuel, Clarissa R.; Marin, Kevin Bryan E.; Santos, Patricia Therese A.; and Tongson, Carolyn Grace C.

OBJECTIVES
The objective of the study was to determine the correlation between program outputs and program outcomes of municipalities under the second batch of the Leaders for Health Program (LHP).

DESIGN
The study conducted a non-interventional retrospective cohort design.

SETTING
The setting for the study was municipalities under the second batch of Leaders LHP. This included 25 municipalities from the following provinces: Albay, Agusan del Norte, Agusan del Sur, Batanes, Bohol, Camarines Sur, Lanao del Sur, Negros Oriental, Surigao del Norte, Surigao del Sur, Western Samar and Zamboanga del Sur. Secondary data were obtained from the LHP office in Ateneo de Manila University.

PARTICIPANTS
All 25 LHP Batch 2 municipalities that graduated the program on August 2008 were the intended participants of the study. However, four municipalities were dropped from the study due to absence of data.

MAIN OUTCOME MEASURES
Main outcome measures of the study were the municipalities’ level of health budget, number of health policies, health projects, rural health unit (RHU) certifications and manpower.

RESULTS
Results show significant positive and negative correlations for some output and outcome variables with a Pearson’s R value range of 0.43 to 0.9 (p < 0.05). Program outcomes as health budget, RHU certifications and RHU manpower are found to have correlations with specific tri-leader competencies.

Based on the results, a one percent increase in the self-rated competencies of the community leader (CL) as Reflective Action, Projects Development and Management, and Research and Evaluation is associated to a 4,782,999.28Php (R2=0.56), 2,990,935.58Php (R2=0.34), and 2,664,045.05Php (R2=0.23) increase in the health budget, respectively. Results also show that per one percent increase in the attendance of the two community leaders correspond to an increase of 96,470.17Php (for CL1, R2=0.22) and 173,903.02Php (for CL 2, R2=0.26) in the health budget.

Correlations with percent increase in health budget show that there is a decrease in health budget at 46% (R2=0.27), 36% (R2=0.20), 49% (R2=0.20), 31% (R2=0.20) for every point increase in Effective Communication, Strategy Formulation, Collaboration and Participation, and Social Marketing, respectively of the Municipal Health Officer (MHO). On the other hand, a point increase in the Community Leader competencies may result to a 28% increase (R2=0.22) in the health budget.

For an increase in Rural Health Unit manpower, a point increase in Group Process Management and Organizational Development of the CL may lead to 1.54 and 1.72 percent increase in manpower, respectively.

Finally, results show that a point increase in Reflective Action may lead to a decrease of 2.06 (R2=0.33) in number of certifications.
CONCLUSION
There is a significant association among some tri-leader competencies and tri-leader partnership and the improvement in the local health system, specifically in health budget, RHU manpower, and number of certifications. These results show support LHP’s framework which emphasizes that building all of the tri-leader’s competencies and collaborative efforts among tri-leaders are important.
A STUDY ON THE COST-EFFECTIVENESS OF ROTARIX AS A VACCINE AGAINST ROTAVIRUS INFECTION FOR FILIPINO CHILDREN BELOW THE AGE OF 5
Authors: Banzon, Lyllian Grace A., Lee, Daphne Aissa T., Tady, Benedict Mario S. and Uy, Angelica C.

OBJECTIVES
The objective of the study is to determine the cost-effectiveness of Rotarix as a vaccine against Rotavirus infection in children below the age of 5 in the Philippines. This study also aims to determine the burden of rotavirus with its associated health care costs in comparison to medical cost savings and averted health effects with the rotavirus vaccination program.

DESIGN
The study conducted mathematical modeling for cost-effectiveness analysis.

SETTING
Secondary data from the Philippines were used in the study.

PARTICIPANTS
The study included annual birth cohort of Filipino children below 5 years. The total study population, subjected to systematic analysis of secondary data, was 2,101,174. This was based from the 2005 Philippine birth cohort in the 2008 United Nation’s Children Fund report on the state of children of the world. This was projected to 2007 estimates calculated with an annual population growth of 2.04 percent.

MAIN OUTCOME MEASURES
Main outcome measures include Death- and Disability-Adjusted Life Years (DALY).

RESULTS
Rotavirus diarrhea is estimated to cause 3,166 deaths, 7,825 hospitalizations, and 60,847 outpatient visits before the 2007 Philippine birth cohort reaches the age of 5, producing a net loss of 3,450,392 DALYs for the specified population. With vaccination, it is estimated that approximately 2,300 deaths, 5,684 hospitalizations, and 37,067 outpatient visits in the Philippines can be averted. The intervention is shown to have a medical break-even price of US $0.39 per 2-dose course, and is cost-effective given that the vaccine price does not go over US $221.05 (at an ICER of ≤$185/DALY). In addition, with the standard for determining cost-effectiveness in middle-income countries at an ICER of ≤$795/DALY, the vaccine priced at $948.61 can still be cost-effective.

CONCLUSION
A nationwide vaccination program for Rotavirus is cost-effective and has the potential to significantly decrease the rates of deaths, hospitalizations, and outpatient visits in children below 5 years of age. This also meets the World Bank criterion for the cost-effectiveness of interventions in developing countries (≤$185/DALY).
OBJECTIVES
The study aims to quantify the burden of Rabies in the Philippines for the year 2007. Specifically, this study aims to determine the prevalence and incidence of rabies, the Disability Adjusted Life Years (DALY), the length of stay in hospitals, the cost of medication, and its distribution by region.

DESIGN
The study conducted systematic analysis of secondary data.

SETTING
The study was set in the Philippines. Secondary data from Rural Health Units (RHUs), City Health Offices (CHOs), Provincial Health Offices (PHOs), Municipal Health Offices (MHOs) and hospitals were gathered from Field Health Service Information System (FHSIS) and the National Epidemiological Center (NEC) under the Department of Health (DOH).

PARTICIPANTS
The study used secondary data with a total projected population data of the Philippines for 2007 from the 2003 census of the National Statistics Office with an annual growth rate of 2.04%

MAIN OUTCOME MEASURES
The study utilized the Summary Measures of Population Health (SMPH) as the main outcome measures. Specifically, this includes incidence and prevalence rates (cases per 1000 population), cost of medication (in Philippine Pesos), length of stay in hospitals (in days) and the Disability Adjusted Life Years (DALY).

RESULTS
A total of 193 deaths from human rabies were identified nationwide (138 males and 55 females) with the most number for the 5 to 9 year old age group, and predominantly larger prevalence among males than females across all age groups. Across the Philippines, Region V had the most number of cases (40 cases) followed by Region III (35 cases) and Region IV-A (34 cases). National Capital Region (NCR) has a significant nine percent (17 cases) of the total cases.

The total life years lost (DALY) is 4,708 (3,408 for males and 1,299 for females), primarily due to premature death rather than to disability. The Philippine-specific value for the Disability Weights (DW), as determined by this study, is 0.84067. The years lost to disability amount to a mere 0.0324 due to the short period between exposure and death.

Costs of medication, specifically for Post Exposure Prophylaxis, were categorized in two protocols, WHO and DOH. The former, with 193 suspected rabies cases, results in estimated cost ranging from Php 1,312,400 to Php 4,728,500. The latter, with 180,000 animal bite cases, results in estimated cost ranging from Php 1,224,000,000 to Php 4,410,000,000.

CONCLUSION
As an acutely fatal disease, prevention is the only means for rabies control. Rabies incurs a high burden of disease not only on the personal level but also on the national GDP with a total of 4,708 life years lost to death and disability.
NATIONAL BURDEN OF ASTHMA IN THE PHILIPPINES: A CROSS-SECTIONAL SURVEY ON THE QUANTIFIABLE IMPACT ON THE FILIPINO PEOPLE

Authors: Chua, Ronald D.; Gonzales, Khristine Dianne D.; Villamor, Rana Rei A. and Vivo, Krixie Z.

OBJECTIVES
The objective of this study was to determine the national burden of asthma in the Philippines using these indicators: incidence, prevalence, cost, length of stay in the hospital, and Disability Adjusted Life Years (DALY).

DESIGN
The study conducted systematic analysis of secondary data.

SETTING
The setting of the study was in the Philippines. Secondary data used in the study were obtained from health records of PhilHealth and asthma mortality data from the Department of Health and National Epidemiology Center.

PARTICIPANTS
The study used secondary data with the total projected population of the Philippines of 80,861,702.

MAIN OUTCOME MEASURES
The main outcome measures of this study were incidence and prevalence rates (cases per 1000 population), costs (in Philippine Peso), length of stay in the hospital (in days), and DALYs.

RESULTS
Bulk of the cost of asthma to Filipinos is from drugs and medications that cover 44.10% of their total expenses. Other costs considered were room and boarding fees (23.66%), laboratory fees (18.21%) and professional services (14.03%). Most patients spend 2 to 3 days confined in a hospital due to asthma. There is also a noted increase in prevalence and incidence of asthma as age decreases. However, mortality increases with age. From 2003 mortality data, 8884 cases were noted among 70+ age group followed by 2679 among the 65-69 age group. There are a total of 186,385 up to 190,302 DALYs lost annually among asthma patients. Years Life Lost (YLL) is at a total of 2.30 per 1000, 19.78 among 65-69 age group and 11.81 among the 70+ age group. The 10-19 age group accounts for the least YLL at 0.36 per 1000.

CONCLUSION
Asthma is a large burden to the Filipino people primarily due to the costs associated with the disease, total mortality rates and Disability Adjusted Life Years. As few interventions were aimed to target the disease, priority should be given to asthma prevention programs.
A CROSS-SECTIONAL STUDY OF THE FACTORS AFFECTING PREFERENCE OF PARENTS FOR VACCINATION PROGRAMS IN URBAN POOR-TO-MIDDLE CLASS AND A COST ANALYSIS OF ITS IMPLEMENTATION

Authors: Martin, Alain Darryl; Sandel, Ara Monique; Solidum, Karl Josef; Soriano, Randee Tessabelle; Zaballa, Emil Rodrigo

OBJECTIVES
This study aims to determine the demographic factors and rationale that influence parent preference for a specific vaccination program. It also aims to evaluate the costs of the current Expanded Program on Immunization compared to two proposed vaccine programs containing DPT+HepB or DPT+HepB+Hib combination vaccines.

DESIGN
The study conducted a cross-sectional design.

SETTING
The setting of the study included health centers from three barangays in Marikina: Barangka, Kalumpang and Sto. Nino.

PARTICIPANTS
A total of 450 mothers who opted to immunize their children in health centers participated in the study. This sample size was calculated from 2.7 percent of the total target population of the health centers. This total number was multiplied by 0.3 yielding 30 percent of the total population size. Through cluster random sampling, 110 participants were interviewed in Barangka; 125 participants in Kalumpang and 215 participants in Sto. Nino.

MAIN OUTCOME MEASURES
The main outcome measure was the vaccine program preference of the mothers in the sample population.

RESULTS
Of the surveyed population, most mothers (72.4%) preferred Vaccination Program 3, followed by those who preferred Vaccination Program 2 and 1 with 17.3% and 10.2%, respectively. Of these three programs, Vaccine Program 3 was the most expensive and Program 1, the least expensive.

At 95% confidence interval, bivariate analysis with analysis of variances and chi square tests yielded a significant association between vaccine preference and the following variables (with respective P-values): age (0.0015), educational attainment (0.0000), working status (0.0155), income level (0.0001), inclination towards completing vaccination (0.0001), number of injections (0.0000), kind of vaccine (0.0000), familiarity to vaccine or program (0.0000), and appeal of a new program (0.0000).

In a multivariate level analysis, demographic factors as mother’s working status (0.046742) and vaccine completion for all children (0.000237) were shown to be significant. As for factors affecting preference, the number of injections (0.000027) were shown to be significant. As for factors affecting preference, the number of injections (0.000009), familiarity (0.000000) and kind of vaccine (0.000000) yielded significant P-values.

CONCLUSION
Demographics and vaccine-specific characteristics were shown to have influenced parental preference for either current EPI or the proposed multiple-antigen vaccine programs. The proposed multiple-antigen vaccine programs were also shown to have higher costs than the current EPI due particularly to wastage and vaccine price. Hence, the discounting of vaccine price and lowering of wastage costs would be needed to drive down the total costs of the proposed programs.
Batch 2010
Theses
THE EFFECT OF ASYMMETRIC INFORMATION ON TREATMENT COMPLIANCE AMONG FILIPINO GLAUCOMA PATIENTS: A COHORT STUDY ON PATIENT-DOCTOR RELATIONSHIPS

Authors: Aguinaldo, Ralph; Fuentes, Derrick; Imperio, Jose Migue; Remulla, Jose Iñigo and Santos, Carlson

OBJECTIVES
The study seeks to determine the effect of Asymmetric Information (AI) on treatment compliance behaviors of Filipino Glaucoma patients seen at Metro Manila clinics from 17 August 2009 to 15 January 2010. AI can either have a significant negative effect on patient treatment compliance behaviors or not.

DESIGN
The study follows a prospective cohort study design.

SETTING
The study took place within a period of 25 weeks and was set in the DOH Eye Center, a public clinic in East Avenue Medical Center, a tertiary hospital in Quezon City.

PARTICIPANTS
Participants of the study are newly diagnosed glaucoma patients of the selected clinics recruited throughout the study. Using one – tail test at 90% confidence level, 27.5% compliance rate among glaucoma patients to treatment regimen and 6% difference in compliance outcome, a minimum sample size of 52 subjects was initially needed for this study. Eventually, however, only 32 comprised the official valid sample.

MAIN OUTCOME MEASURES
The outcome measure is patient non-compliance.

RESULTS
From data gathered, the general trend was that patients do not have sufficient knowledge of their disease before they meet their doctors. On the other hand, most patients strongly agree that doctors treat them very personally. 17 patients were non-compliant while only 15 were compliant. Crude overall RR is < 1, and therefore shows the preventive property of exposure (AI) to outcome (non-compliance). The P-value, however, at 0.38, is way above 0.10. This makes much of the data statistically insignificant.

CONCLUSION
Data from the study reveal that AI is not a risk factor for non-compliance. In fact, it appears as if the opposite is true; patients who have been exposed to AI seem to be compliant instead of non-compliant.
AN ECOLOGIC STUDY ON THE PRESUMED IMPACTS OF CLIMATE CHANGE AND SEASONAL PATTERNS ON ACUTE RESPIRATORY INFECTION AND HEALTH SERVICES UTILIZATION IN NUEVA ECIIJA FROM 1999 TO 2008

Authors: Alcantara, Mark Angelo M.; Caballeros, Barbara Jeanne D.; Chua, Aileen Paula A.; Regala, Alfonso Miguel R.; Sacdalan, Dennis Raymond L.; and Santos, Kevin Eric R.

OBJECTIVES

Only recently has the effects of weather on disease prevalence been brought to attention in the Philippines. To better understand this relationship, the study identified the probable impacts that climate change and seasonal patterns may have to the prevalence of both acute respiratory infections (ARI) and health services utilization.

DESIGN

This is a mixed-ecologic study which explored the possible consequences that temperature, rainfall, humidity and wind had on ARI prevalence and rural health unit (RHU) consultations in the entire province of Nueva Ecija.

SETTING

The study was set in the province of Nueva Ecija in Central Luzon.

PARTICIPANTS

Because the effects of meteorological variables extend over several areas, the entire population of Nueva Ecija was considered in observing the disease outcomes. This includes 1,843,853 people with slightly more males (50.8%). The sex ratio is measured at 103 men to 100 women. Children aged 0-14 years old make up 33.6% of the total population, while residents of working age comprise 61.7%.

MAIN OUTCOME MEASURES

Main outcome measure is the correlation between the exposure variables, which are meteorological variables, and the outcome variables represented by ARI prevalence and health services utilization.

RESULTS

Further studies are necessary to establish climate change; however, the sequence graphs established seasonality of weather occurrence. In the analysis of seasonal patterns, relative humidity was found to be correlated with both ARI (Pearson’s R=0.605, CL=95%), and consults prevalence (Pearson’s R=0.584, CL=95%). Wind speed also affected ARI prevalence (R²=0.088, P value=0.045, CL=95%). Spatial analysis showed an unequal distribution of all variables across Nueva Ecija, with ARI and consultations being more prevalent in the eastern half of the province.

CONCLUSION

Due to the short study period, the study failed to prove the occurrence or non-occurrence of climate change. Thus, any correlations cannot be made in relation to such meteorological phenomena. However, several issues may be said about seasonal patterns. In Nueva Ecija, they occur from December to May for the dry months and from June to November for the rainy season, in varying degrees throughout the province. The occurrence of ARI prevalence and consults prevalence likewise follow cyclical fluctuations and differences in geographic distribution; they increase during humid conditions, when damp air is most likely to promote bacterial, fungal, and viral growth, and decrease during less humid months. Additionally, wind speed also increases ARI cases, possibly by spreading pathogens through the air. Although these weather-disease associations are confirmed by the study, causality and mechanisms behind them require more investigation.
EFFECTIVENESS OF A 3-MONTH ENVIRONMENTAL MANIPULATION INTERVENTION ON DENGUE VECTOR DENSITY IN AN URBAN DEPRESSED AREA IN BATASAN HILLS, QUEZON CITY

Authors: Lazatin, Danelle Ann; Magno, Jennifer; Medalle, Ronald Steven II; Santos, Lauren Michelle; Young, Leon James III; and Yson, Pamela Marie

OBJECTIVES
This study aims to determine the change in dengue vector population due to the environmental manipulation intervention by comparing the trend of larvitrap density indices (LDI) during surveillance in Batasan Hills, Quezon City, within a 12-week period.

DESIGN
This is a quasi-experimental study which measured the effectiveness of the environmental and educational interventions by monitoring the larval density index in three phases (pre-, during, and post-intervention). A Knowledge, Attitude and Practice (KAP) Survey was used to gather information from each of the households to be used against larval count.

SETTING
The study was conducted in Batasan Hills, an area with one of the highest incidence of dengue cases in Quezon City, during the period of June 17, 2009 to September 11, 2009.

PARTICIPANTS
The urban community in Batasan Hills was selected as the study population. A systematic sampling method was used to identify the sample population. A total of 60 households from the urban areas in Batasan Hills were included in the interventions.

MAIN OUTCOME MEASURES
Main outcome measures include the LDI and larval count, which were measured weekly throughout the study.

RESULTS
Findings have shown that there was a significant decrease in LDI specifically during the 8th and 9th weeks of the study showing the effectiveness of the implemented intervention. The test for autocorrelation yielded a significant value of 0.04 and 0.05 correlation respectively. For the demographic correlations, only gender, showed a correlation with KAP Scores with a significance value of 0.007. The other factors, age and education, had significance values of .548 and .938 respectively.

CONCLUSION
Initially, LDI for the study area was at 79.59, while after the intervention, LDI mean dropped to 32.45 signifying a 40% decrease, which proves that a three-month environmental manipulation intervention coupled with an aggressive one-on-one educational campaign is an effective strategy to significantly reduce vector population. The simple, hands-on environmental modification intervention and clean up proved to engender better habits within the population. As for the KAP survey, this also proved to be effective because it was successful in identifying the areas needed to be emphasized regarding the community’s knowledge, attitudes and practices related to dengue, effectively giving focus to the environmental campaign. Performed together, the clean up intervention and the focused environmental campaign resulted in a significant decrease in vector density as attested to by the test for autocorrelation yielding a significant negative correlation of 0.5.
**DRUG ADMINISTRATION ERRORS: A STUDY OF ITS PREVALENCE AND EXPOSURE FACTORS IN A GOVERNMENT HOSPITAL IN THE PHILIPPINES**

Authors: Flor, Nicole Therese; Go, Aron Heinrich; Iballa, Mara Renee; Justo, Ness Jerold; Pascual, Carmina and Sanciangco, Janine Marie

**OBJECTIVES**
The objectives of the study were to measure and classify the prevalence of medication errors of nurses in four high volume nursing units in a regional training hospital in Misamis Occidental; and to determine the exposure factors leading to such medication errors.

**DESIGN**
A cross-sectional study design was conducted.

**SETTING**
The setting of the study was in four high-volume nursing units (Medicine, Surgery, Obstetrics and Pediatrics) at Mayor Hilarion A. Ramon Regional Training and Teaching Hospital (MHARS-RTTH) in Misamis Occidental, Philippines.

**PARTICIPANTS**
A total of 1136 drug administration events were observed covering registered nurses administering medication to in-patients of the four ward units. This is above the minimum sample size of 1102 generated from Epi Info at a relative risk of 20.0, 95% confidence level and 80% power.

**MAIN OUTCOME MEASURE**
The main outcome measure was prevalence of medication errors.

**RESULTS**
In all four wards, medication errors occurred at greater than half of the sample population. The Obstetrics unit totaled 190 medication errors out of the total 224 in-hospital patients, with the highest percentage prevalence at 84.8%. The Pediatrics, Surgery and Medicine wards have medication error frequencies at 83.5%, 83% and 69.4%, respectively. Nursing shifts at 3 pm – 11 pm and 11 pm - 7 am have the highest cases of medication errors, both at 87.1% while the 7 am – 3 pm shift reported 70.8% medication error occurrences. In total, this sums up to 79% probability of medication errors observed throughout the study.

Using bivariate analysis, drug administration errors, in general, were found to have a significant relationship with the following exposure factors (p-value < 0.05): (1) patient type, (2) ward, (3) patient status, (4) nurse shift, (5) drug form, (6) interval (7) drug classification, (8) ward census, (9) nurse age, (10) number of patients assigned per nurse, (11) number of nurse assigned per shift, (12) number of days observed, (13) stress severity-personal, (14) stress severity-environment and (15) stress frequency-environment.

At a multivariate level analysis using logistic regression, the following variables are shown to have significant association with medication errors: form, medicine, shift, and patient days observed. Specifically, an analysis of B-value of form and medicine yields 0.39 and 0.63, respectively, indicating such as protective factors from committing drug administration errors. On the other hand, shift and patient days observed show a harmful relationship with B-values of 2.60 and 1.31 respectively.

**CONCLUSION**
Of the total observed drug administration events observed, 79% had at least one type of medication error. Exposure factors of systemic nature (including patients per nurse, length of working experience, number of nurse per shift, medicine, shift, overall stress severity, overall stress frequency, census, patient age, nurse age, form, patient sex, nurse gender, patient status, interval and days patient observed) had been associated to such medication errors.
FACTORS AFFECTING THE UTILIZATION OF HEALTH CARE SERVICES OFFERED BY THE LOYOLA SCHOOLS OFFICE OF HEALTH SERVICES OF THE LOYOLA SCHOOLS STUDENTS OF THE ATENEO DE MANILA UNIVERSITY

Authors: Faller, Luis Kristopher; Pasia, Kris Gem Danica; Rivera, Kristina Marie Michelle; Rivero, Nina Kattleya Angelica; and Uy, Chicki Florette

OBJECTIVES
The objectives of the study were to determine the factors associated with the students’ service utilization of the services offered in the Loyola Schools Office of Health Services (LSHS) and their perception of needs met.

DESIGN
A cross-sectional study design was conducted.

SETTING
The setting of the study was in the Loyola Schools of Ateneo de Manila University in Quezon City, Philippines.

PARTICIPANTS
A total of 352 undergraduate students from Loyola Schools excluding freshmen were surveyed using cluster sampling. This was 98% of the ideal sample size of 356 generated using Epi Info with projected frequency of utilization at 39% and percent disease among exposed at 61%. Confidence interval and power were set arbitrarily to 95% and 80%, respectively, yielding 178. This was doubled to adjust for bias due to cluster sampling.

MAIN OUTCOME MEASURE
The main outcome measures were service utilization in Loyola Schools Office of Health Services among students and perception of needs met.

RESULTS
The age of respondents ranged from 16 to 22, with a mean of 19. This was evenly distributed into three year levels; seniors, juniors and sophomores with 33.8%, 30.7% and 33%, respectively and the remaining 2.6% accounting for superniors. Of the total sample population, 45.2% have utilized services of the LSHS from the period June 2008 to June 2009. Most services availed corresponded to check-ups related to the Office of Social Concern and Involvement, cases of cold and headaches accounting for 21.3%, 14.8% and 13.6% of the total cases, respectively. Most of the total sample (96%) perceived their health needs to be met by the LSHS.

Using bivariate analysis, the following variables have shown a significant association with utilization of health services: year level, attitude of LSHS staff, awareness of coordinated care services, suggested mental health services, feedback from other students, and comfort of disclosure of health information.

At a multivariate level analysis using nominal regression, the following variables are shown to have a significant association with utilization of health services: year level, awareness of transportation services, perception of physical health, availability of family physician, lack of knowledge of services, and absence of sickness or need. Specifically, awareness of transportation services, perception of physical health, availability of family physician and absence of sickness are shown to have a strong negative relationship to utilization of medical services with marginal percentages at 34.7%, 89.5%, 81% and 64.8%, respectively. On the other hand, year level is shown to have a strong positive relationship with marginal percentage at 36.4%.
CONCLUSION
Of the total undergraduate students surveyed, only 45.2% utilized health services during the period of the study. Year level, awareness of such services and perception of health have been shown to have a significant relationship with utilization of these services.
DEVELOPMENT OF AN ASSESSMENT TOOL FOR ON-SITE INFECTIOUS WASTE MANAGEMENT BASED ON A DESCRIPTIVE STUDY OF FIVE TERTIARY HOSPITALS IN THE PHILIPPINES

Authors: Bangayan, Nicole Robyn; Cadiz, Juan Diego Felipe; Cembrano, Kathryne Anne; Chua, Anna Katrina; Gaston, Charles Anthony and Lee, Patricia Ann

OBJECTIVES
The objectives of the study were to develop a checklist tool that will concretize the requirements of a quality infectious waste management system; to identify and evaluate the on-site waste management practices of tertiary hospital in treatment of solid and liquid infectious wastes; and to determine hospital structures and incentives that contribute to effectiveness of these measures.

DESIGN
The study conducted a descriptive case series design.

SETTING
The setting of the study was in five tertiary hospitals in the Philippines located in Metro Manila, Eastern Mindanao, Southern Luzon and Western Mindanao.

PARTICIPANTS
Five tertiary hospitals located in Metro Manila, Eastern Mindanao, Western Mindanao and Southern Luzon were determined as the subjects for descriptive case series. Purposive sampling method was used to choose the participants with consideration given to accessibility, geo-economic location (metropolitan or provincial), ownership (private or government-owned) and operations (general or specialized).

MAIN OUTCOME MEASURES
The main outcome measure was effectiveness of hospital programs on waste disposal processes.

RESULTS
A waste management committee was found to be an efficient way to create and implement policies in hospital. Interviews with hospital staff show that most have a precise and accurate understanding of infectious wastes despite limited communication channels. While some health benefits such as hazard pay were considered lacking, hospital employees largely remain compliant out of a need to protect themselves and others. Highest rates of staff compliance were observed for hospitals that had good working relationships with colleagues and superiors. Patient and doctor non-compliance remain as pervasive problems. Other reasons given for non-compliance were supply shortages, inferior equipment, ignorance of procedures, limited budgets, and bureaucracy.

No gross difference in access to necessary resources has been determined between hospitals from the metropolitan and provincial regions. Both experience the same problems with regards to delivery of patient care and non-compliance. In the same manner, no clear differences were noted for general and specialized hospitals despite more awareness on degree of infectiousness for staff from specialized hospitals. This could be related to hospital policies which were probably tailored for the specific classification of the hospital. Finally, government hospitals have been found to experience more difficulty in certification of operating license. Specifically, problems have been traced to the bidding policies enforced by the government as granting rights to cheapest alternative despite poor performance or quality.
CONCLUSION
A comprehensive checklist for assessment of infectious waste management have been found to be relevant as such is not yet available for hospitals in the country. Other factors as regular meetings of waste management committee, increased patient education, improved communication systems and working relationships of superiors and colleagues should also be considered.
A COHORT ANALYSIS ON THE DETERMINING FACTORS UNDERLYING THE UTILIZATION OF NEWBORN SCREENING IN NEWBORN SCREENING FACILITIES IN QUEZON CITY

Authors: Chavez, Joan A.; Ong, Iris Anne T.; Perez, Juan Alfonso IV R.; Tecson, Patricia Anne S.; Uy, Jaynell Alexa U.; and Valera, John Ezekiel T.

OBJECTIVES
This study aims to determine the individual determinants that influenced the utilization of NBS in newborn screening facilities (NSFs); and to determine the societal and institutional determinants that affected the performance ratings of NSFs.

DESIGN
This study employed a cohort study designs divided into two phases: phase 1-cohort study design and phase 2- retrospective study design.

SETTING
The study was conducted at newborn screening reference center (NSRC)-registered NSFs in Quezon City.

PARTICIPANTS
For phases one and two of the study, participants were 287 patients from the 20 NSRC-registered NSFs selected using convenience sampling and 20 NSRC-registered NSFs selected using purposive sampling.

MAIN OUTCOME MEASURES
Main outcome measures of this study were risk ratio (RR) values for significance and strength of association of the different individual determinants to the outcomes of utilization of NBS in NSFs and performance ratings of NSFs.

RESULTS
Two individual determinants were significant-patient knowledge (RR = 1.30, p = 0.000021) and gravidity (RR = 1.22, p = 0.00035). Subjects with comprehensive knowledge regarding NBS were more likely to allow NBS to be performed on their newborn. Also, gravidity influenced the decision of the subject to utilize NBS as patients who had given birth more than once appeared to be more exposed to NBS; therefore, they were more likely avail it. No societal and institutional factors were significant, but three had positive associations with increasing the performance rating of the NSFs.

CONCLUSION
Two individual determinants significantly influenced NBS utilization, both of which had a positive association. Subjects who were more knowledgeable regarding NBS showed that they were more likely to utilize NBS. Also, with more exposure to the NBS due to more successful births, multiparous subjects were able to obtain more knowledge through experience. Although there were other factors that remained insignificant statistically, the use of the risk ratio showed thirteen individual, societal, and institutional variables that had a positive association with the dependent variable.
OBJECTIVES
This study aims to determine the factors that influence Filipino nurses to practice in the underserved regions of the Philippines.

DESIGN
The study employed a cross-sectional study design.

SETTING
The study was set in nursing schools (both public and private) and both hospitals (both public and private) nationwide.

PARTICIPANTS
Participants of the study were 536 nurses per nurse category pertaining to each of the three stages of their careers (graduating nursing students, nurses practicing in the Philippines, and nurses practicing abroad) selected using multi-stage cluster sampling.

MAIN OUTCOME MEASURES
The main outcome measures of the study were prevalence of nurses who decide to practice in the underserved areas and factors that influence nurses to practice in the underserved areas.

RESULTS
Sufficient salary, loans, enforced equal opportunity policy, presence of established medical centers, housing facilities, reasonable workload, sufficient resources, equipment, and facilities as a motivation to practice in the rural areas were found to be variables associated with the decision of nurses to relocate to and/or remain in rural areas. The low valuation of nurses in the country, as well as opportunities for career development and financial considerations should be addressed in order to retain these nurses.

CONCLUSION
Financial incentives were thus seen to be the primary motivators for nurses to practice in rural areas, although it is also imperative that the non-financial factors found to be significant are considered. These factors allow nurses to feel more valued and can thus convince them to remain in the country and practice in the underserved areas. A sustainable means of funding incentive programs for nurses must be established in order to achieve the goal of long-term retention. It is hoped that the study will be used for future programs that attract nurses to practice in these areas of the Philippines.
OBJECTIVES
This study aims to describe factors that influence the access of PhilHealth Accredited Centers in Metro Manila to the PhilHealth Tuberculosis Directly Observed Treatment Short-course (TB DOTS) Benefit Package and to evaluate which key areas in the PhilHealth accredited DOTS centers may be addressed to improve access.

DESIGN
The study employed qualitative and quantitative cross-sectional study designs via combined survey and interview methods

SETTING
The study was conducted in PhilHealth Accredited Centers in the National Capital Region.

PARTICIPANTS
Participants of the study were 64 PhilHealth-accredited health centers in Metro Manila that were accredited as of May 2009.

MAIN OUTCOME MEASURES
The main outcome measures of this study were frequencies of responses pertaining to the different factors that influence the access to the PhilHealth TB DOTS Benefit Package.

RESULTS
Interruptions in the flow of information regarding the PhilHealth procedures were identified by the respondents as a significant factor impeding access to the PhilHealth benefits. Identified problem areas in the flow of information included the transmission of information from the local government units to the health center. Similarly financial burdens contingent to the claiming process were seen to impede access.

CONCLUSION
Delays in access to the PhilHealth funds arose in some health centers due to the difficulties in claiming checks addressed to the local government unit. Conversely, centers provided with direct access to claim the benefits were more likely to increase claim. Administrative and procedural issues in the claim cycle were weakly correlated with claims. Motivation for the follow up of documents and other requirements necessary for the PhilHealth TB DOTS Benefit Package did not affect the center's claiming status.
THE PRINCIPAL CONDITION OF SCHOOL SANITATION: A CROSS-SECTIONAL STUDY ON THE ASSOCIATIONS BETWEEN THE SCHOOL AND PRINCIPAL PROFILES OF QUEZON CITY PUBLIC ELEMENTARY SCHOOLS AND THE QUALITY OF SANITATION PRESENT IN THEIR RESPECTIVE INSTITUTIONS

Authors: Carpio, Francis Angelo M., Co, Jelvin T., Go, Rafael Francisco C., Luz, Paulo Hector C., Malvar, Alberto Teodoro S., Nibungco, Gabriel Francisco C.

OBJECTIVES
This study aims to find possible associations between the school and principal profiles of Quezon City public elementary schools and the quality of sanitation present in their respective institutions.

DESIGN
The study employed a Cross-sectional study design.

SETTING
The study was set in public elementary schools in Quezon City.

PARTICIPANTS
Participants of the study were 60 out of a sample size of 95 public elementary schools.

MAIN OUTCOME MEASURES
Main outcome measures of the study were school and principal profiles and the quality of sanitation as reflected by a sanitation index score.

RESULTS
A mean sanitation index of 20.12, with a standard deviation of 3.52, out of 32 pointed to a collective difficulty with achieving proper sanitation. Linear regression with t-test and Pearson’s Product-Moment Correlation Coefficient were the statistical tests used in analyzing the data.

CONCLUSION
Associations were found between the school and principal’s profile and the quality of sanitation present in their respective institutions. It is recommended that more factors be considered in order to provide more precise information to show the effects of school and principal profiles on sanitation. Due to this being a pioneer study, there are many areas for improvement leaving a lot of potential for further studies.
A PILOT STUDY ON THE EFFECT OF MEDICAL EXPENDITURE DISCOUNT SYSTEM (MEDS) ON FINANCIAL ACCESS TO MEDICINES IN BARANGAY BAGONG SILANG, CALOOCAN CITY

Authors: Albornoz, Jose Miguel; Crisostomo, Jean Marco; de Plata, Jennifer Rose; Prudente, Maria Celina; Tan, Paula Vivian and Zuniga, Brian Karlo

OBJECTIVES
The objectives of the study are to implement a Financial Augmentation System (FAS) for Barangay Bagong Silang Phase 7 (Australia) and Phase 9 (Gawad Kalinga staging area and Damayan) and determine factors that affect membership and usage of the system.

DESIGN
The study conducted a quasi-experimental and qualitative design.

SETTING
The setting of the study was in Barangay Bagong Silang Phase 7 (Australia) and Phase 9 (Gawad Kalinga staging area and Damayan).

PARTICIPANTS
The population of the study included residents of Australia Village in Phase 7, the GK staging area in Phase 9, and the Damayan area in Phase. These included members of the Medical Expenditure Discount System (MEDS) as the experimental group and the non-members forming the control group.

There were 127 participants in the experimental group. The same number had been randomly selected for the control group. However, only 103 had returned accomplished surveys. The total sample size of the study was 230.

MAIN OUTCOME MEASURES
The main outcome measures were the frequencies of categories in the following variables among members and non-members: changes in medical expenditure, percent coverage of FAS, reasons for non-availing and non-renewal of MEDS, amount spent on medicines per month, partner institutions, and premiums.

RESULTS
Using Welch’s t-test, results from the pilot study showed a significant decrease in the medicine expenditures of members ($t = 10.05178733$; $t$-critical = 1.975) of the FAS before and after implementation of the program. No significant changes in medical expenditure had been noted for non-members ($t = 1.642654762$; $t$-critical = 2.096).

After the program, 63% of the members were willing to renew their membership. On the other hand, 6% opted not to with concerns on the high cost of premiums and the stability of the. For non-members, non-frequency of buying medicines (66.67%), high cost of premiums (52.2%) and program stability concerns (48.49%) were seen as the main reasons for non-membership on the FAS.

CONCLUSION
Financial and stability concerns were the main reasons for non-membership on the Financial Augmentation System.
A USABILITY EVALUATION OF AN ELECTRONIC ORAL HEALTH INFORMATION MONITORING SYSTEM FOR PUBLIC ELEMENTARY SCHOOL IN AN URBAN SETTING

Authors: Apostol, Geminn Louis C.; Cruz, Oliver Neil C.; Inocentes, Preciosa Ellyn T.; Lingao, Joseph P.; Ramos, Eric Paul B; and Tamon, Johnny Raymund

OBJECTIVES
The study aims to evaluate the usability of the electronic Oral Health Information Monitoring System (OHIMS)—a software program developed to assist the dentists of the Department of Education (DepEd) Oral Health Units.

DESIGN
A descriptive study design was conducted both in developing and in evaluating the usability of the electronic OHIMS.

SETTING
The setting of the study was the DepEd Oral Health Units of fifteen schools from the Divisions of Pasay City, Quezon City, Caloocan City, Mandaluyong City and Valenzuela City.

PARTICIPANTS
The participants of the study were fifteen school dentists from the various DepEd oral Health Units of Metro Manila. Sample size was computed with the equation \( n = \frac{Z^2S^2}{d^2} \) where \( Z \) is the desired score at a given confidence level, \( S \) is the standard deviation and \( d \) is the critical difference. A 95% confidence interval was chosen yielding a \( z \)-score of 1.96. Critical difference was set to the maximum limit where it should not exceed half the standard deviation (\( d = 0.5S \)).

MAIN OUTCOME MEASURES
The main outcome measures of the study were the usability and efficiency of the electronic OHIMS evaluated through the following frequencies in the performance test: time to complete each task, number of participants who finished the task successfully, number of participants who encountered errors, average number of errors for each task, and the number of critical and noncritical instances for each tasks.

RESULTS
For the performance test, all fifteen participants completed all six tasks, but 60% did so with errors (mean: 3 errors, SD: 2.7), of which 40% experienced critical circumstances. Variance of the performance times on the six tasks were likewise determined to be very high. The OHIMS was given an overall Satisfaction Rating of 7.33.

CONCLUSION
The QUIS results indicate that the present version of the electronic OHIMS is usable and performed higher than satisfactory. Challenges to usability, however, were identified; the most pertinent of which refer to record retrieval, report generation, conducting examinations and record editing. These issues have to be addressed accordingly as part of the continuous process of software development.
OBJECTIVES
The primary objective of the study is to evaluate the nutrition knowledge and practices of the UAAP Season 73 badminton athletes.

DESIGN
The study conducted a cross-sectional design.

SETTING
The setting of the study was in respective badminton training grounds of each UAAP Season 73 Badminton Varsity Teams including courts within the University Campuses and private sponsored courts around Metro Manila.

PARTICIPANTS
Purposive sampling of the total 126 UAAP badminton athletes was done. These were recruited subjects from the university team line-up of the Badminton Varsity Athletes for UAAP Season 73 (Academic Year 2010-2011) of the eight universities: Adamson University, Ateneo de Manila University, De La Salle University, Far Eastern University, National University, University of the East, University of the Philippines and University of Santo Tomas.

MAIN OUTCOME MEASURES
The main outcome measures of the study were the Nutrition Knowledge and Nutrition Practice Scores.

RESULTS
Findings have shown that the overall nutrition knowledge and nutrition practices of U.A.A.P. Season 73 Badminton Athletes was fair (based on the Casco’s Modified Scoring System) with the mean ± standard deviations of 10.13 and 5.29, respectively. Based on the Pearson correlation analysis with the chosen demographic variables, the gender of respondent was found to be significantly related to nutrition knowledge scores with a p-value of 0.000. The age of respondent and total daily allowance were also found to be significantly related to nutrition practice scores with p-values of 0.017 and 0.030, respectively.

Nutrition knowledge scores were higher for female players (11.03; SD = 2.46) than their male counterparts (9.22; SD = 2.93). The nutrition practice score of both genders were significantly equal with a mean of 5.38 (SD of 1.87) for males and 5.19 (SD of 1.90) for females.

CONCLUSION
There was a significant association between gender of players and nutrition knowledge scores. However, no such association was noted for nutrition practice scores.
RESPIRATORY DISEASE AND VARYING PM2.5 AND PM10 CONCENTRATIONS IN METRO MANILA FROM 2001-2007
Authors: Estanislao, Grace Lynn S.; Manapat, Sophia P.; Pabila, Ryuji Nichol K.; Presbitero, Jericho Anthony B.; Quiwa, Khia Anne Patricia Erisha S. and Santiago, Dianne Kristine A.

OBJECTIVE
The objective of the study is to determine a relationship between particulate matter (PM$_{2.5}$ and PM$_{10}$) concentration levels from various sources and the morbidity of specific respiratory diseases (namely, asthma, bronchitis, pneumonia and acute lower respiratory tract infection, tuberculosis, and acute upper respiratory tract infection) in the cities of Metro Manila over a 6-year period (2001-2007).

DESIGN
The study conducted a mixed ecological design.

SETTING
This study setting was in Metro Manila, Philippines.

PARTICIPANTS
The study used the atmospheric dispersion model to map specific concentrations of particulate matter in an 11 km X 11 km square area. Thus, Metro Manila with an area of 25.5 km x 49 km was subdivided in a 3 X 5 grid. This geographical model did not require the selection of a sample population.

MAIN OUTCOME MEASURES
The main outcome measures of the study were particulate matter concentrations per city (PM$_{10}$ and PM$_{2.5}$), the frequencies of cases for asthma and bronchitis, and the direct and indirect costs of these illnesses.

RESULTS
Particulate matter emissions according to 2001 and 2007 sources were very similar, attributing 47-51% of the emissions to transport and area sources and 0.32-2.00% for stationary sources. However, in 2004, transport emissions accounted for 90% particulate matter emissions while stationary and area sources amounted to 3.5% and 6.5%, respectively.

Particulate levels decreased slightly from 2001 to 2004, and suddenly increased from 2004 to 2007. Averaged PM$_{2.5}$ concentrations for the whole Metro Manila were 29.78, 26.52 and 44.09 $\mu$g/m$^3$ in 2001, 2004 and 2007, respectively. Averaged PM$_{10}$ concentrations were 44.94, 36.26 and 83.01 $\mu$g/m$^3$ in 2001, 2004 and 2007, respectively. All modeled PM results exceeded the WHO air quality guideline values. These results are consistent with the WHO report of over-all poor ambient air quality in the Asia Pacific Region (WHO, 2008c). PM has been particularly high in developing cities from 2000-2003, most cities exceed the WHO guideline value.

The total number of attributable cases of asthma due to exceeding the WHO PM air quality guidelines are 1,543, 2,698 and 3,126 in 2001, 2004 and 2007, respectively; and 18,681, 10,736 and 12,767 for bronchitis in 2001, 2004 and 2007 respectively. Total direct costs of the effect of PM on respiratory health due to exceeding the WHO air quality guideline cost P368.8 million in 2004 and P400 million in 2007.

CONCLUSION
There is a significant association between PM$_{2.5}$ and PM$_{10}$ concentrations, of which the identified major source is the transport sector, and the respiratory disease morbidity in Metro Manila (p-value=0.0000). As such, over-all high levels of particulate matter exceeding the WHO air quality guideline for PM$_{10}$ had led to increased direct and indirect expenditures. With the transport sector as the biggest producer of particulate pollution, this should be prioritized in directing mitigation efforts.
THE EFFECTS OF ASYMMETRIC INFORMATION ON COMPLIANCE AMONG FILIPINO GLAUCOMA PATIENTS: A PROSPECTIVE COHORT STUDY ON PUBLIC CLINICS
Authors: Bay, Francis Vincent C.; Palma, Isabella Gianna P.; Ramos, John Edison P.; and Santos, Luis Andino F.

OBJECTIVES
The study aims to determine the effects of asymmetric information on the compliance of Filipino patients afflicted with glaucoma.

DESIGN
The study utilized a prospective cohort study design.

SETTING
The setting of the study was the Department of Health Eye Center at East Avenue Medical Center along East Avenue, Quezon City.

PARTICIPANTS
The study population included patients from the said health facility who were (1) suspected to have glaucoma or (2) diagnosed to have ocular hypertension, normal tension glaucoma, primary and secondary open angle glaucoma, and primary and secondary angle-closure glaucoma.

A total sample size of 26 was required for the study. This was calculated using the software G-Power, with an effect size of 0.5, Type I error or alpha level of 0.05, a power of 0.80 and a two-tailed model for correlation. However, the study was able to survey only 21 glaucoma patients.

MAIN OUTCOME MEASURES
The main outcome measures of the study were information asymmetry and patient compliance.

RESULTS
The Pearson Correlation Coefficient and Linear Regression tests showed that Patient Compliance was not significantly related to Asymmetric Information, Patient Satisfaction, and Educational Attainment. This meant that there were other major factors not accounted for in this study. However, Asymmetric Information displayed moderate relationships directly with Patient Satisfaction (r = 0.680, p < 0.05) and inversely with Educational Attainment (r = -0.540, p < 0.05). The variance of Asymmetric Information was accounted for by Patient Satisfaction and Educational Attainment by 44.40% and 26.70%, respectively.

CONCLUSION
The study found that Educational Attainment, Asymmetric Information, and Patient Satisfaction were not predictors of Patient Compliance. As such, other significant factors could be the outcome measure. However, as a significant association is established on Educational Attainment and Patient Satisfaction with Asymmetric Information, more studies should be done to further investigate these relationships.
A PHILIPPINE BASED, CASE-SERIES STUDY ON THE POSSIBLE RELATIONSHIP OF TIME OF OMEPRAZOLE INTAKE TO A PATIENT’S CHRONOTYPE AND ALLEVIATION OF GASTRITIS SYMPTOMS

Authors: Bautista, Philippe Anthony; Cabrera, Paulo Vicente; Del Mundo, Ma. Paulina Francesca; Miguel, Red Thaddeus; and Rojas, Kenneth Edward

OBJECTIVES
This study aims to determine the effect of taking omeprazole at a certain time in relation to a patient’s chronotype on the alleviation of symptoms.

DESIGN
The study employed a case study design.

SETTING
The study was set in the Outpatient Department at Quirino Memorial Medical Center (QMMC), a tertiary public hospital in Quezon City.

PARTICIPANTS
Participants of the study were 5 patients from QMMC who have taken omeprazole for gastritis and whose ages range from 15 to 65 years old.

MAIN OUTCOME MEASURES
The main outcome measures for this study were the patients’ chronotypes, and alleviation of gastritis symptoms.

RESULTS
The researchers collected data from gastritis outpatients of QMMC to look into the possible relationship between the recovery from gastritis and time of omeprazole intake based on chronotype. In so doing, they took into consideration the patients’ gastritis case, medical and health-related history, recovery from the medications taken and the patients’ chronotypes.

CONCLUSION
It was concluded that within the realms of the study there was a relationship between taking the medication in accordance with their chronotype and the alleviation of gastritis symptoms. Though this is not a final conclusive finding, the goal of generating a basis for further studies was achieved.
EYE CARE FOR ALL: A COST-BENEFIT ANALYSIS AND USABILITY EVALUATION OF A WEB-BASED ELECTRONIC PATIENT REFERRAL SYSTEM FOR OCULAR CONDITIONS

Authors: de Guia, Maria Isabela E.; Ellescas, Gresa Francesca C.; Ferraris, Kieffer, James B.; Kingsu, Jonnecker Jalph C.; Mendoza, John Aaron O.; and Mombay, Sherry Rose S.

OBJECTIVES
This study aims to determine the cost-benefits and functionality of a web-based electronic patient referral system (EPRS) for ocular conditions that allows for an easier and more organized exchange of patient information, in eventually creating a more efficient referral system.

DESIGN
The study employed economic and usability evaluations in the assessment of the web-based EPRS, using a cost-benefit analysis (CBA) and a customized Questionnaire for User Interaction Satisfaction (QUIS).

SETTING
The study was set in Luzon, particularly Regions III, IV-A, IV-B, and in the National Capital Region (NCR) for the economic evaluation and colleges for the usability evaluation.

PARTICIPANTS
For the economic evaluation, participants of the study were nine graduates of the residency training program in ophthalmology of the DOH Eye Center, practicing in Luzon, particularly Regions III, IV-A, IV-B, and in the National Capital Region (NCR) all selected using purposive sampling technique. For the usability evaluation, participants of the study were 30 respondents who were from conventional pre-medical courses also selected using purposive sampling technique.

MAIN OUTCOME MEASURES
Main outcome measures of this study were cost-benefit ratio and the mean value for QUIS.

RESULTS
The cost-benefit analysis, based on the calculations for the benefit-cost ratio, resulted in 2.32 for the patients, 1.83 for the referring physicians, 1.81 for the institution, and 1.84 overall.

CONCLUSION
With a benefit-cost ratio of greater than 1, the web-based EPRS is cost-beneficial. For the usability evaluation, since the overall mean value of the QUIS is 7.67, which is greater than 7.2, which is at least 80% of the highest rating (9), then the web-based EPRS is usable.
A CASE-CONTROL STUDY ON THE EFFECTS OF INDIVIDUAL HEALTH-SEEKING BEHAVIOR ON PARTICIPATION IN MASS TREATMENT FOR SCHISTOSOMIASIS IN AN ENDEMIC BARANGAY IN WESTERN SAMAR

Authors: Antonio, Terence John M.; Locaylocay, Kaye Lani Rea B.; Manalastas, Miguel F.; Mendoza, Maria Dolorosa R.; Nuevo, Christian Edward L.; and Sangalang, Ann Janelle M.

OBJECTIVES
The study aims to determine the factors that affect participation in mass treatment for Schistosomiasis.

DESIGN
The research followed a case control study design to determine which factors affect participation in Schistosomiasis mass treatment. The Andersen's Model for Health-Seeking Behavior was also used to predetermine possible factors that might influence participation.

SETTING
The study was conducted in La Paz, San Jorge, a Schistosomiasis endemic barangay in the endemic province of Western Samar, Philippines in December 2009.

PARTICIPANTS
Individuals who have been residents in the barangay for the past five years and who are between 16 and 65 years old comprised the study population. There were 149 cases and 130 controls. Cases were selected from the list of participants during the last mass treatment, while controls were selected among the neighbors of these cases.

MAIN OUTCOME MEASURES
The factors that affect the health-seeking behavior, particularly in the participation of the mass treatment for Schistosomiasis, are the main outcome measures of the study.

RESULTS
Four variables were found to be significant; these are: (1) probability of being poor (OR=0.260; CI=0.072–0.94), (2) lack of knowledge of the possibility of side effects due to treatment (OR=0.090; CI=0.049–0.164), (3) number of household members (OR=1.152; CI=1.028–1.291), and (4) perception of symptom of enlarged liver and spleen as severe to seek treatment (OR=0.436; CI=0.216–0.880). However the variable on wearing of protective gear as a preventive measure against contracting the disease (OR=0.574; CI=0.307–1.073), having exceeded the null value only by a little, may become significant if the sample size were to be increased.

CONCLUSION
It was found out that predisposing (probability of being poor, lack of knowledge of possibility of side effects due to treatment) and need (perception of symptom of enlarged liver and spleen as severe to seek treatment) factors affect the health-seeking behavior, particularly in the participation of the mass treatment for Schistosomiasis. Specifically, the lack of knowledge of possible side effects accounted for the strongest influence to participation among the four, while the number of people in the household accounted for the weakest influence.
A CASE-CONTROL STUDY OF THE FACTORS ASSOCIATED WITH DRUG TREATMENT AND REHABILITATION COMPLETION AND SUCCESS

Authors: Buensalido, Socorro Marie; Chavez, Janet; Go, Rina Janine; Go, Teeffany Edannie; Nitorreda, Martina Lean; Veloso, Mary Camille

OBJECTIVES
The study aims to determine the factors associated with completion and success (no relapse within 18 months of release) in drug and treatment rehabilitation (DTR) centers in the Philippines.

DESIGN
A case-control study design was used to analyze the relationships between the risk factors and their outcome.

SETTING
The study was set in government-run DTR centers found in urban cities in each major island group in the Philippines: 3 from Metro Manila (Luzon), one from Cebu (Visayas), and one from Davao (Mindanao).

PARTICIPANTS
The study's sample population is composed of subjects who underwent treatment in DTR centers. From the sample size calculations in Epi Info, the largest sample size obtained was 798, with 399 cases and 399 controls. However, a sample size of 349 only was obtained. With this, Epi Info was used to find the weakest odds-ratio (OR) that would be able to detect the accurate sample size of 349. The OR was found to be 2.71.

MAIN OUTCOME MEASURES
The study’s main outcome is the factors associated with completion and success in Philippine DTR centers.

RESULTS
For completion (of the treatment program) factors, one of the significant variables include the finding of increased likelihood that the person uses shabu [2.0 (1.2 – 3.5)] and marijuana [2.1 (1.3 – 3.3)]. Also, those who completed are more likely to have previously been admitted to a Therapeutic Community (TC) program [1.7 (1.0 – 2.7)] and more likely to have been in an eclectic program in their last DTR admission. Added to this, family awareness and involvement [3.2 (1.2 – 11.8)] is an important factor for treatment completion. For success, the study shows that for those who relapse, there are significant chances of the individual being previously admitted to a DTR center before [159.5 (46.2 – 601.1)]. More importantly, there is a positive association between current TC program [2.0 (1.0 - 4.0)] and relapse; as such, in the long run, TC program is most effective to decrease an addict’s chances of relapse and increase their chances of being successful in treatment. Also, for those who were successful, jobs that require higher educational attainment [2.3 (1.0 – 5.0)] were more likely. For the DTR center, individuals who completed and were successful were more likely to have been offered extra services (such as medical, vocational / livelihood, mental, financial services) [2.6 (1.4 – 4.8)]. Qualitative analysis of aftercare programs shows that cooperation between the DTR center and the local government unit increases the chances of no relapse and closer monitoring. From the variables taken into account in the study, only few came out significant, mostly attributed to the incompleteness of the files of the DTR center, as well as its inconsistency.

CONCLUSION
First-time DTR patients should be handled more critically as once the individual leaves the DTR and relapses, the cycle of admission into DTR and relapse will be harder to break. Also, DTR’s should focus on implementing a TC program that integrates family awareness and involvement as well as having extra services to help the individuals succeed in treatment. Although, as Eclectic programs are associated with better completion (not success), DTR’s should be cautious in moderating and adjusting the TC program for patients who seem likely to drop out until the patient can cope and be integrated back into the rigidity of the TC program. In regards to aftercare, an aftercare program of continuity at a local Barangay level will be more effective in ensuring success and avoiding relapse.