CHAPTER III

METHODOLOGY

This section presents the methods or procedures used in the study. It includes data sources, data collection and data cleaning, definition of variables and their operationalization and data analyses.

1. Research design, data source and data cleaning

This study was a retrospective, cross-sectional analysis of the Phil Health inpatient claims data for the year 2003. The data was obtained from the Corporate Planning Department of Phil Health on 21st May 2004. Prior to analysis, data was first examined. It was found that admissions for the 2003 claims included the years 1997 to 2003. The years 1997 to 2001 comprised about 0.1% of the total claims (Figure 3.1). Although majority, 71% of the claims were 2003 admissions, a substantial 29% were 2002 admissions. About 90% of the 2002 admissions filed for reimbursement in 2003 were from months of September to December. For year 2003 admissions, the most number were for the months January to August although a considerable number was still observed for the month of September (Figure 3.2). It was then decided to use September 2002 to September 2003 admissions to estimate one year utilization.

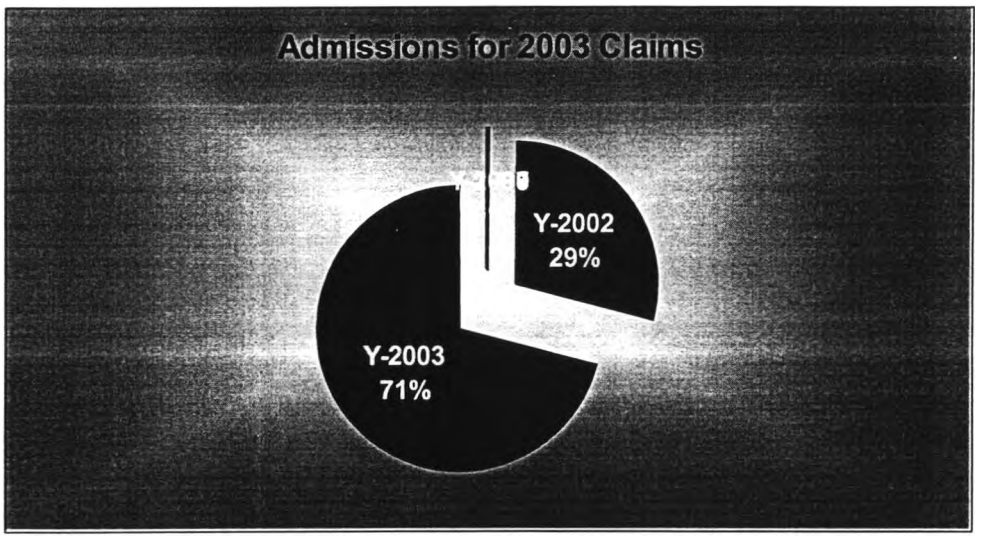

Figure 3. 1. Breakdown of the claims data according to year of admission

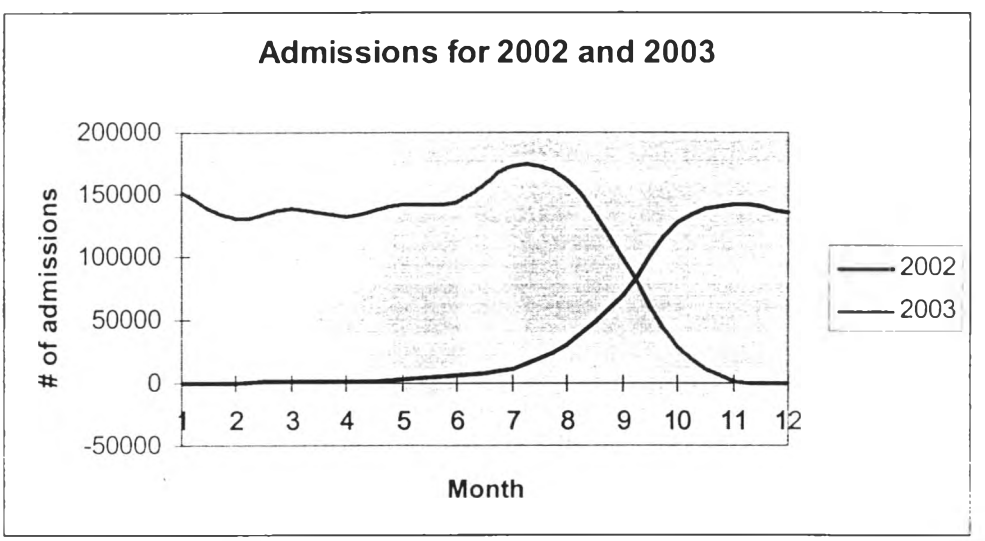

Figure 3. 2. Number of admissions per month for years 2002 and 2003

Other sources of data in the study were the DOH for health, health facilities and epidemiologic information; the National Statistics Office and National Statistical Coordination Board (NSCB) for population, demographic and poverty statistics.

Interviews were also conducted with some key personnel in the Corporate Planning and Quality Assurance Departments of PhilHealth for verification of the accuracy of data and other relevant information regarding NHIP.

The perspective of the study is that of PhilHealth.

2. Study variables, definition and measurements

The Andersen model of health care utilization was used as conceptual framework. The choice of variables in the analysis was limited to its availability in the data obtained from Phil Health. The data consisted of several variables that included patient age and sex; address; hospital category, hospital type; province; illness; class of member; medical case; amount reimbursed for room and board, drugs, operating room, professional fees for doctors; total amount reimbursed and the length of stay in the hospital. A complete list of the variables in the claims database is found in Appendix A.

The variables employed in the study were as follows:

- **Health care utilization** was defined primarily as inpatient hospitalization and was operationalized in three ways: admission rate, the average reimbursement and length of stay.

- **Predisposing factors** describe the propensity of individual to use the health care services. Age, sex and patient type were used as predisposing factors. Patient type identifies whether patient is member or dependent. An ecological or areal variable that describes poverty incidence was also included. The different regions were classified into groups according to their standard deviation from the mean.
- **Enabling factors** describe the means individuals have to them for use of services. The type of NHIP membership was used as enabling factors. The type of membership is a categorical variable that identifies the member as private (P), government (G), indigent (IP) or non-paying (N-IPP).
- **Need factors** are those that characterize the health status or the illness of the individual seeking medical attention. Medical case was used as a need factor, which is a categorical variable that classifies the disease as ordinary (O), intensive (I) and catastrophic (C).
- **Health care system** denotes the arrangements made for the potential rendering of care to consumers. This was translated as volume and distribution of accredited health care institutions or hospitals, hospital beds and health professionals across the different regions. It also included the type and category of the hospital, both of which are categorical variables that classify hospitals as private (P) or government (G) and primary (P), secondary (S) or tertiary (T).

The analyses were carried out in 5 levels (of aggregation): individual entry, membership number, hospital, provincial and regional. The provinces were grouped into regions according to proximity as determined by Phil Health and therefore slightly different from the administrative geographical classification of the country (Table 3.1). Although the same framework was employed for each level of analysis, the way each of the variables was defined or operationalized may differ from one level of aggregation to another. Other variables were also found applicable only for some level of aggregation. Table 3.2 summarizes the different variables used in the study while Table 3.3. gives the list of the different variables classified according to Andersen's behavioral model.

Table 3.1. Philippines' geopolitical subdivision and Phil Health's geographic classification

REGION	GEOPOLITICAL SUBDIVISION		PHIL HEALTH CLASSIFICATION	
NCR	Makati City	Malabon	Makati City	Malabon
	Mandaluyong City	Manila	Mandaluyong City	Manila
	Marikina City	Muntinlupa City	Marikina City	Muntinlupa City
	Navotas	Pasay City	Navotas	Pasay City
	Pasig City	Pateros	Pasig City	Pateros
	Quezon City	Taguig	Quezon City	Rizal Province
	Valenzuela City	San Juan	Taguig	Valenzuela City
	Caloocan City	Las Piñas	San Juan	Caloocan City
	Parañaque		Las Piñas	Parañaque
CAR	Abra	Apayao	Abra	Apayao
	Benguet	Ifugao	Benguet	Ifugao
	Kalinga	Mountain Province	Kalinga	Mountain Province
I	Ilocos Norte	Ilocos Sur	Batanes	Ilocos Norte
	La Union	Pangasinan	Ilocos Sur	La Union
			Pangasinan	
II	Batanes	Cagayan Valley	Cagayan Valley	Isabela
	Isabela	Nueva Vizcaya	Nueva Vizcaya	
	Quirino		Quirino	
III	Bulacan	Bataan	Aurora	Bulacan
	Nueva Ecija	Pampanga	Bataan	Nueva Ecija
	Tarlac	Zambales	Pampanga	Tarlac
			Zambales	
IV-A	Batangas	Quezon	Cavite	
	Cavite	Rizal	Laguna	
	Laguna		Quezon	
IV-B	Marinduque	Romblon	Batangas	Marinduque
	Occidental Mindoro		Occidental Mindoro	Oriental Mindoro
	Oriental Mindoro		Romblon	
	Palawan		Palawan	
V	Albay	Catanduanes	Albay	Catanduanes
	Masbate	Camarines Norte	Masbate	Camarines Norte
	Camarines Sur	Sorsogon	Camarines Sur	Sorsogon
VI	Aklan	Antique	Aklan	Antique
	Capiz	Guimaras	Capiz	Guimaras
	Iloilo	Negros Occidental	Iloilo	Negros Occidental
VII	Bohol	Cebu	Bohol	Cebu
	Negros Oriental	Siquijor	Negros Oriental	Siquijor
VIII	Biliran	Leyte	Biliran	Leyte
	Eastern Samar	Western Samar	Eastern Samar	Western Samar
	Northern Samar	Southern Leyte	Northern Samar	Southern Leyte
IX	Basilan	Zamboanga del Norte	Basilan	Tawi-Tawi
	Zamboanga del Sur	Zamboanga City	Sulu	Zamboanga del Norte
			Zamboanga del Sur	
X	Misamis Occidental	Misamis Oriental	Lanao del Norte	Lanao del Sur
	Bukidnon	Camiguin	Misamis Occidental	Misamis Oriental
			Bukidnon	Camiguin
XI	Davao del Norte	Davao del Sur	Davao del Norte	Davao del Sur
	Davao Oriental	Compostela Valley	Davao Oriental	Compostela Valley
	South Cotabato	General Santos City		
	Saranggani			
XII	Lanao del Norte	Iligan City	Maguindanao	North Cotabato
	North Cotabato	Sultan Kudarat	South Cotabato	Saranggani
	Cotabato City	Marawi City	Sultan Kudarat	
CARAGA	Agusan del Norte	Agusan del Sur	Agusan del Norte	Agusan del Sur
	Surigao del Norte	Surigao del Sur	Surigao del Norte	Surigao del Sur
ARMM	Lanao del Sur	Maguindanao	-------	
	Sulu	Tawi-tawi		

Adapted from NSCB and PhilHealth

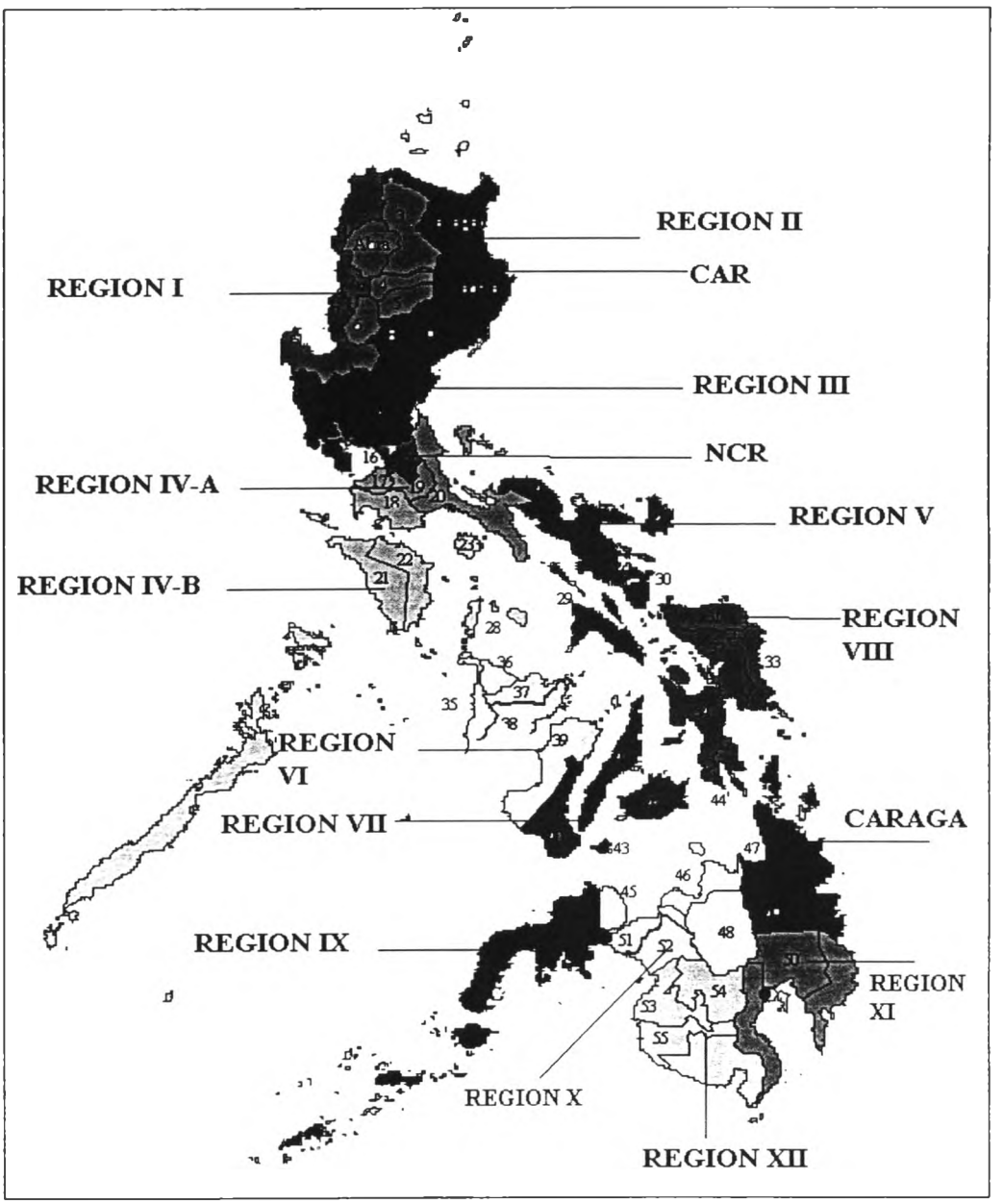

Figure 3. 3. The Philippine map with its geographic classification according to Phil Health

Table 3. 2. Variables in the study

Variables	Operational Definitions (for each level of analysis)				
	Individual entry	**Membership number**	**Hospital**	**Provincial**	**Regional**
Health Expenditure	Total amount claimed	Average reimbursement	Average reimbursement	Average reimbursement	Average reimbursement
Age	Age of patient				
Sex	Male or female	Proportion of female (# of female/ Total number of male and female)	Proportion of female (# of female/ Total number of male and female)	Proportion of female (# of female/ Total number of male and female)	Proportion of female (# of female/ Total number of male and female)
Patient type	Dependent, member	Proportion of dependents (# of dependents/ # of members and dependents)	Proportion of dependents (# of dependents/ # of members and dependents)	Proportion of dependents (# of dependents/ # of members and dependents)	Proportion of dependents (# of dependents/ # of members and dependents)
Type of membership	Government, indigent, non-paying, private	Government, indigent, non-paying, private	Proportion of indigents (# of indigents/ total number of admissions for all types)	Proportion of indigents (# of indigents/ total number of admissions for all types)	
Length of stay	Number of days in the hospital	Average # of days admitted in the hospital	Average # of days admitted in the hospital	Average # of days admitted in the hospital	
Admissions		# of admissions	# of admissions	# of admissions	Admission rate per region for pneumonia
Medical case	Ordinary, intensive, catastrophic	Proportion of ordinary cases (# of ordinary cases/ total number of cases)	Proportion of ordinary cases (# of ordinary cases/ total number of cases)	Proportion of ordinary cases (# of ordinary cases/ total number of cases)	
Hospital supply			Number of hospital beds		# hospitals/ 1000 beneficiaries # hospital beds/ 1000 beneficiaries
Physician access	Use/ not use of specialist services	Proportion of specialist (# of specialists' services/ GP + specialists' services	Proportion of specialist (# of specialists' services/ GP + specialists' services	Proportion of specialist (# of specialists' services/ GP + specialists' services	# physicians/ 1000 beneficiaries
Type of hospital	Government, private	Proportion of admissions in government hospitals	Government, private	Proportion of admissions in government hospitals	# of government or private hospitals/ 1000 beneficiaries
Category of hospital	Primary, secondary, tertiary	Proportion admissions in tertiary hospitals	Primary, secondary, tertiary	Proportion admissions in tertiary hospitals	# of primary, secondary or tertiary hospitals/ 1000 beneficaries
Poverty incidence/ measure of geographic area	Poverty incidence of the different regions, grouped in 5 (decreasing poverty incidence)	Poverty incidence of the different regions, grouped in 5 (decreasing poverty incidence)	Poverty incidence of the different regions, grouped in 5 (decreasing poverty incidence)	Poverty incidence of the different regions, grouped in 5 (decreasing poverty incidence)	# of poor/ total population

Table 3. 3. The different variables employed in the study categorized according to Andersen's behavioral model

Unit of analysis	Predisposing factors	Enabling factors	Need factors	Health care system
Individual record	Age Sex Patient type Poverty incidence	Type of membership	Medical case	Type of hospital Category of hospital Use of specialist
Membership number	Proportion female Proportion dependents Poverty incidence	Membership class Number of admissions	Proportion of ordinary cases	Proportion in tertiary hospitals Proportion in government hospitals Use of specialist services
Hospital	Proportion female Proportion dependents Poverty incidence	Proportion of indigent patients Number of admissions	Proportion of ordinary cases	Type of hospital Category of hospital Hospital beds Proportion of specialist services
Province	Proportion female Proportion dependents Poverty incidence	Proportion of indigent patients Number of admissions	Proportion of ordinary cases	Proportion in tertiary hospitals Proportion in government hospitals Proportion of specialist services

3. Data analyses

A number of statistical methods were used to analyze the data by using the statistical package program, SPSS for windows version 11.5. All statistical tests were set at $\alpha = 0.05$ unless otherwise specified.

3.1. Preliminary analyses (Frequencies and descriptive statistics)

The data was explored using frequencies and other basic statistics to obtain detailed data descriptions and describe subpopulations (regional aggregation). Admission rates and average reimbursements were computed per region.

Admission rate was computed as follows:

$$\text{AR/ region} = \frac{\text{total \# of admissions in the region}}{\text{total beneficiaries in the region}} \times 1000$$

Since the pattern of disease is a known factor affecting variation, the top 10 diseases (with the most number of claims and the highest amount paid[1]) were identified for the whole country. Pneumonia was found with the highest number of claims and second highest in terms of amount reimbursed while delivery through cesarean section had the highest amount reimbursed. The succeeding analyses (variation assessment and MRA) were then performed controlling for disease by using only the pneumonia cases.

It should be noted that data aggregation was according to the region of the hospital (provider) hence the computed admission rates were only approximates and may have been over or underestimated. In order to obtain a more accurate rate, admissions should be aggregated according to the region where patient resides.

---

[1] These counts were those cases without co-morbidities since in the identification of the case, only the ICD number of the particular disease was considered therefore it is possible that there are still cases (those with co-morbidities) not included in the figures presented

Since the data on the address was a string variable and was not encoded uniformly plus the fact that there are more than one million entries, these presented difficulty in aggregating them accordingly. After several attempts of aggregating them, the most feasible was by counting them manually by province using Microsoft Access software. Instead of using the whole data, only three diseases were chosen namely, pneumonia, end stage renal disease and delivery by cesarean section. Data, which was in SPSS format, was first exported to Microsoft Access (only the address variable was exported as large data also posed some problems). Counting was then performed as shown in the following figures.

The determination of admission rates for the two other medical cases was conducted in order to confirm or illustrate better the possibility of in- or out-migration for health care among the beneficiaries across regions, since this was observed for the pneumonia cases as exemplified by the differences in rates between the two methods of aggregation. For the other analyses such as variation assessment and multiple regression analysis, only the pneumonia cases were employed.

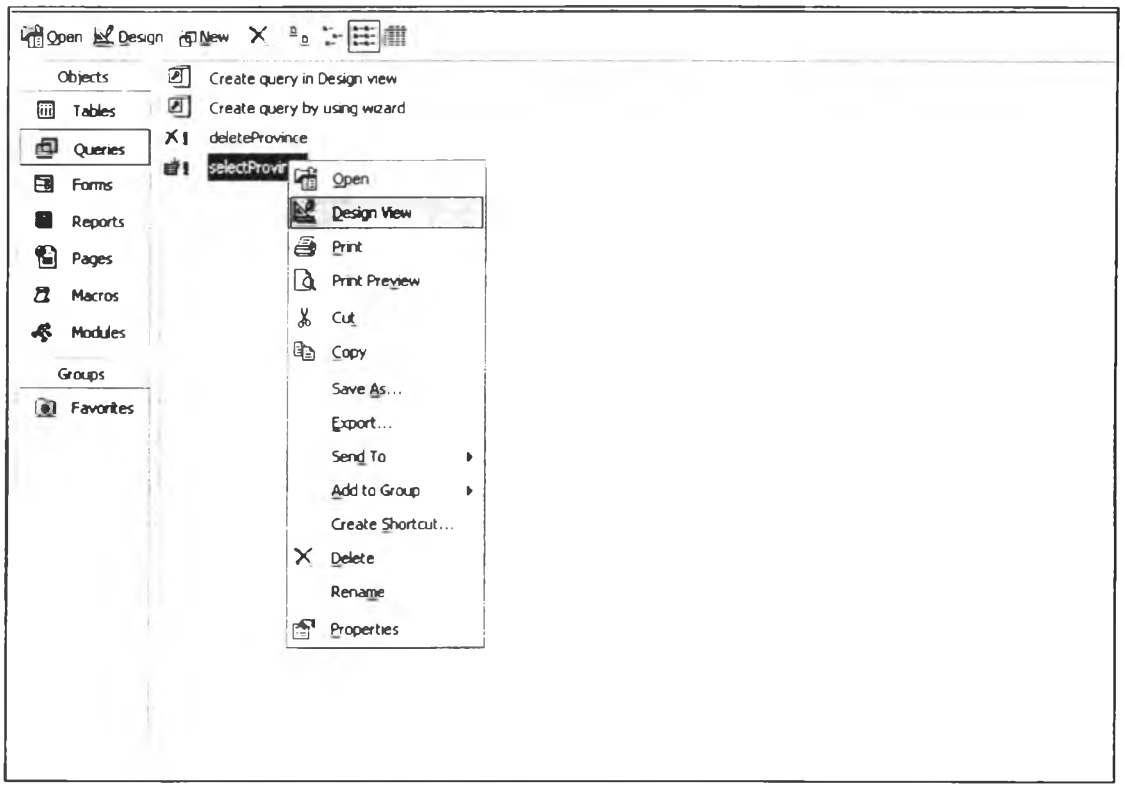

Figure 3. 4. Step 1—Go to select province, right click and choose design view

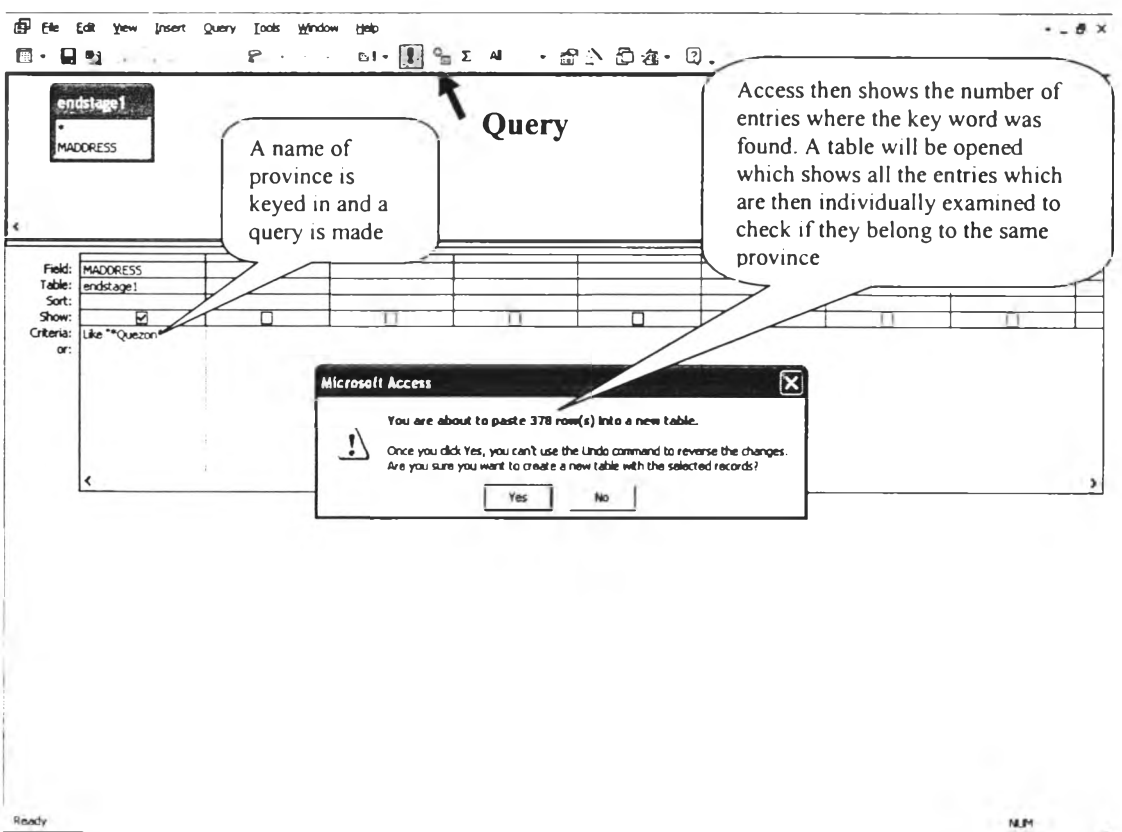

Figure 3. 5. Step 2—In the design view, key in desired province and make a query

3.2. Assessment for variation

Three measures of utilization were used in the analysis namely admission rate, average reimbursement and length of stay. Admission rates were computed only in the regional aggregation due to the unavailability of the number of beneficiaries in the provincial level. Variation in these different utilization measures were assessed separately. For the admission rates, variation was evaluated using extremal ratio and chi-square (Cain *et. al*, 1992) while for the average reimbursements and length of stay, ANOVA was used.

Extremal quotient or ratio is defined as the ratio of the highest rate to the lowest rate.

3.3. Multiple linear regression analysis

The factors that affect utilization and variation were determined using multiple linear regression analysis (hierarchical enter selection) in the 4 levels of aggregation—individual record, membership number, hospital and provincial aggregation using length of stay and average reimbursement as dependent variables. All dummy variables were binary (or indicator) coded. Multiple regression analysis was not performed at the regional aggregation because of the limited number of n (16).

The health care utilization variables, total reimbursement and length of stay which were used as dependent variables, presented a highly skewed distribution especially in the first 3 levels of aggregation (Figure 3.6) and as such the application of the MRA may have been inappropriate. However in a paper by Lumley *et al.* (2002), he argued that linear regression do not require any assumption of normal distribution in sufficiently large samples. Moreover, Hair (1998) contested that the desired level of observations is about 15 to 20 for every independent variable, which in this case particularly in the first three levels of analysis was more than achieved. In this study, n for the different levels of aggregation were as follows, 52,478 (individual entry); 48,385 (membership number); 1,313 (hospital) and 77 (province). Moreover, log transformations of the said variables were also performed prior to linear regression analysis but R^2 values of the transformed and untransformed data showed little difference (see Appendix B).

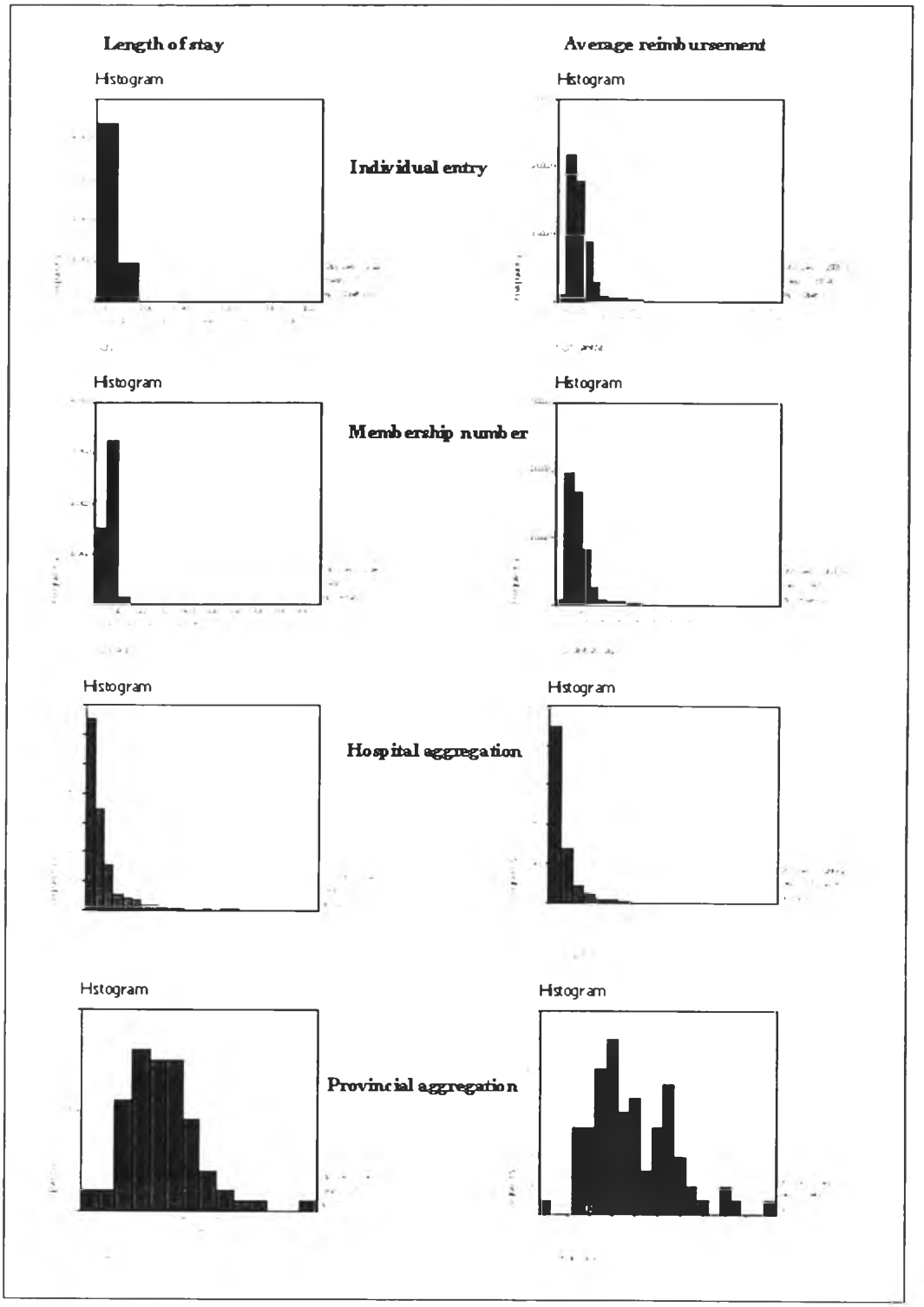

Figure 3. 6. Histogram of data for average reimbursement and average length of stay under in different levels of aggregation (Pneumonia cases)

A number of regression analyses were conducted before the final model was selected. Of particular importance is one where region (where medical care was sought) was used as one of the variables influencing variation in reimbursement and length of stay (see Appendix C). However, since it entailed several dummy variables, fifteen to be exact, it was decided to group them according to another variable in order to lessen the number of dummy variables. The poverty incidence, % urban, number of poor covered and annual average income per region were used to group the regions among which grouping, by poverty incidence gave the nearest R^2 when compared to R^2 using region itself as the variable.

At the individual entry level, total reimbursement was regressed on all applicable variables available in the database. The statistical model is as follows:

Total reimbursement = $a + b_1$patage + $b_2$dum_dd + $b_3$dum_m + $b_4$dum_pri + $b_5$dum_sec + $b_6$dum_tert + $b_7$dum_int + $b_8$dum_cat + $b_9$dum_spri + b_{10}dum_gov + b_{11}dum_npay + b_{12}dum_SP_TOT + b_{11}rank_pov2 + b_{12}rank_pov3 + b_{13}rank_pov4 + b_{14}rank_pov5

patage	Patient age
dum_dd	Dummy variable for dependent (reference category → member)
dum_m	Dummy variable for sex (reference category → female)
dum_p	Dummy variable for type of hospital (reference category → government)
dum_sec	Dummy variable for category of hospital (Secondary; reference category → primary)
dum_tert	Dummy variable for category of hospital (Tertiary; reference category → primary)
dum_int	Dummy variable for medical case (Intensive; reference category → ordinary)
dum_cat	Dummy variable for medical case (Catasrophic; reference category → ordinary)
dum_spri	Dummy variable for worker type or membership type (Private sector; refrence category → indigent)
dum_gov	Dummy variable for worker type or membership type (Government sector; refrence category → indigent)
dum_npay	Dummy variable for worker type or membership type (Non-paying; refrence category → indigent)
SP_TOT	Use or not use of specialist services
rank_pov2	Dummy variable for poverty incidence

rank_pov3	Dummy variable for poverty incidence
rank_pov4	Dummy variable for poverty incidence
rank_pov5	Dummy variable for poverty incidence

Regression was also performed at this level using length of stay as dependent variable. The statistical model is shown below:

Length of stay = $a + b_1$patage + $b_2$dum_dd + $b_3$dum_m + $b_4$dum_pri + $b_5$dum_sec + $b_6$dum_tert + $b_7$dum_int + $b_8$dum_cat + $b_9$dum_spri + b_{10}dum_gov + b_{11}dum_npay + b_{12}dum_SP_TOT + b_{11}rank_pov2 + b_{12}rank_pov3 + b_{13}rank_pov4 + b_{14}rank_pov5

Data was next aggregated according to the membership number (mecno) and regression was carried out using the following statistical models:

Average reimbursement = $a + b_1$freq + $b_2$prop_dd + $b_3$prop_fe + $b_4$prop_tert + $b_5$prop_ord + $b_6$prop_gov + $b_7$dum_spri + $b_8$dum_gov + $b_9$dum_npay + b_{10}SP_TOT + b_{11}rank_pov2 + b_{12}rank_pov3 + b_{13}rank_pov4 +b_{14}rank_pov5

Average length of stay = $a + b_1$freq + $b_2$prop_dd + $b_3$prop_fe + $b_4$prop_tert + $b_5$prop_ord + $b_6$prop_gov + $b_7$dum_spri + $b_8$dum_gov + $b_9$dum_npay + b_{10}SP_TOT + b_{11}rank_pov2 + b_{12}rank_pov3 + b_{13}rank_pov4 +b_{14}rank_pov5

freq	Number of admissions
prop_dd	Proportion of dependents
prop_fe	Proportion female
prop_tert	Proportion of admissions in tertiary hospitals
prop_ord	Proportion of ordinary cases
prop_gov	Proportion of admissions in government hospitals
dum_spri	Dummy variable for worker type or membership type (Private sector; refrence category → indigent)
dum_gov	Dummy variable for worker type or membership type (Government sector; refrence category → indigent)
dum_npay	Dummy variable for worker type or membership type (Non-paying; refrence category → indigent)
SP_TOT	Use or not use of specialist services
rank_pov2	Dummy variable for poverty incidence
rank_pov3	Dummy variable for poverty incidence
rank_pov4	Dummy variable for poverty incidence
rank_pov5	Dummy variable for poverty incidence

Data was next aggregated according to the hospital and regression was carried out using the following variables:

Average reimbursement = $a + b_1$h_beds + $b_2$freq + $b_3$prop_dd + $b_4$prop_fe + $b_5$prop_ord + $b_6$prop_ind + $b_7$prop_sp + $b_8$dum_sec + $b_9$dum_tert + b_{10}dum_hpri + b_{11}rank_pov2 + b_{12}rank_pov3 + b_{13}rank_pov4 + b_{14}rank_pov5

Average length of stay = $a + b_1$h_beds + $b_2$freq + $b_3$prop_dd + $b_4$prop_fe + $b_5$prop_ord + $b_6$prop_ind + $b_7$prop_sp + $b_8$dum_sec + $b_9$dum_tert + b_{10}dum_hpri + b_{11}rank_pov2 + b_{12}rank_pov3 + b_{13}rank_pov4 + b_{14}rank_pov5

h_beds	Accredited bed capacity
freq	Number of admissions
prop_dd	Proportion of dependents
prop_fe	Proportion female
prop_ind	Proportion indigents
prop_ord	Proportion of ordinary cases
prop_sp	Proportion of specialist services
dum_sec	Dummy variable for category of hospital (Secondary; reference category → primary)
dum_tert	Dummy variable for category of hospital (Tertiary; reference category → primary)
dum_hpri	Dummy variable for type of hospital (reference category → government)
rank_pov2	Dummy variable for poverty incidence
rank_pov3	Dummy variable for poverty incidence
rank_pov4	Dummy variable for poverty incidence
rank_pov5	Dummy variable for poverty incidence

Finally the data was aggregated according to the province and regression analysis was again performed using the following statistical model:

Average reimbursement = $a + b_1$prop_gov + $b_2$prop_tert + $b_3$admit + $b_4$prop_dd + $b_5$prop_fem + $b_6$prop_ord + $b_7$prop_ind + $b_8$prop_sp + $b_9$rank_pov2 + b_{10}rank_pov3 + b_{11}rank_pov4 + b_{12}rank_pov5

Average length of stay = $a + b_1$prop_gov + $b_2$prop_tert + $b_3$admit + $b_4$prop_dd + $b_5$prop_fem + $b_6$prop_ord + $b_7$prop_ind + $b_8$prop_sp + $b_9$rank_pov2 + b_{10}rank_pov3 + b_{11}rank_pov4 + b_{12}rank_pov5

prop_gov	Proportion of admissions in government hospitals
per_tert	Proportion of admissions in tertiary hospitals
admit	Number of admissions
prop_dd	Proportion of dependents
prop_fem	Proportion female
prop_ord	Proportion of ordinary cases
prop_ind	Proportion indigents
prop_sp	Proportion of specialist services
rank_pov2	Dummy variable for poverty incidence
rank_pov3	Dummy variable for poverty incidence
rank_pov4	Dummy variable for poverty incidence
rank_pov5	Dummy variable for poverty incidence

Multicollinearity problems were assessed by examining eigenvalues, condition indices and variance proportions from the diagnostic test results. Eigenvalues provide an indication of how many distinct dimensions there are among the independent variables. When several eigenvalues are close to 0, the variables are highly intercorrelated and the matrix is said to be ill-conditioned. Condition indices are the square roots of the ratios of the largest eigenvalue to each successive eigenvalue. A condition index greater than 15 indicates a possible problem and an index greater than 30 suggests a serious problem with multicollinearity. The variance proportions are the proportions of the variance of the estimate accounted for by each principal component associated with each of the eigenvalues. Collinearity is a problem when a component associated with a high condition index contributes substantially to the variance of 2 or more variables. Residual tests were also conducted to test for violations in homoscedasticiy.

3.4. Inequality measurements

In order to evaluate inequality across the different regions, concentration indices were computed.

The concentration index was derived by first constructing the concentration curve (or more appropriately called illness concentration curve in this case since admissions for a particular illness were employed) done by plotting cumulative percentages of the beneficiaries, ranked by decreasing poverty incidence (as a measure of the region's socioeconomic status) against the cumulative percentage of admissions (or total reimbursements). The index was then determined using the formula:

$$C = (p_1L_2 - p_2L_1) + (p_2L_3 - p_3L_2) + \ldots\ldots (p_{T-1}L_T - p_TL_{T-1})$$

Where p is the cumulative percent of beneficiaries ranked by poverty incidence, L(p) is the corresponding curve ordinate and T is the number of regions.

Likewise, concentration curves were created and concentration indices were derived for other variables such as the different health resources, i.e. hospital beds, health professionals.

3.5. Cost of treatment

In order to approximate the cost and efficiency of treatment for pneumonia across the different regions, cost analysis was performed according to Liu *et al.* (2003).

The data were selected based on the following criteria:

(1) Ordinary case

(2) Total reimbursement ≤Actual amount (or charge)

(3) Reimbursement for drugs ≤Actual charge for drugs

(4) Reimbursement for diagnostic and laboratory exams ≤Actual charge for diagnostic and laboratory exams

A total of 37,245 claims satisfied the criteria and were therefore employed in the analysis.

3.6. Data presentation

Variation was presented by choropleth mapping, a way of portraying data for geographic areas, using ArcGIS and ArcExplorer2. The admission rates and health expenditures for each of the different regions were classified using the Statistical method. The grand mean and the standard deviation of the average reimbursements and admission rates for the different regions were determined (and as such may be slightly different from the national average rate). The data were then classified according to their deviation from the grand mean. The data intervals are as follows:

Table 3. 4. Data interval for choropleth map

	Variable	Data interval
All cases	Average reimbursement (Mean ± SD) Amounts are in Philippine Peso	3,114 – 4,229
		4,230 – 5,344
		5,345 – 6,455
		6,456 – 7574
	Admission rate (Mean ± 0.5SD) Rates are per 1,000	26 – 43
		44 – 61
		62 – 80
		> 80
Pneumonia cases	Average reimbursement (Mean ± SD) Amounts are in Philippine Peso	2,387 – 3,124
		3,125 – 3,862
		3,863 – 4,600
		4,601 – 5,339
	Admission rate (Mean ± 0.5SD) Rates are per 1,000	11 -59
		60 -108
		109 – 157
		158 – 207
		>300