

**Decentralization and Local Government
Health Expenditures in the Philippines**

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MEASURE
Evaluation

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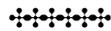
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**Working Paper
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ACRONYMS

ARI	Acute Respiratory Infections
BIR	Bureau of Internal Revenue
CDD	Control of Diarrheal Disease
CHCA	Comprehensive Health Care Agreement
CO	Capital Outlays
COA	Commission on Audit
DOH	Department of Health
EPI	Expanded Program of Immunization
GDP	Gross Domestic Product
GNP	Gross National Product
GSIS	Government Service Insurance System
HMO	Health Maintenance Organization
HPDP	Health Policy Development Program
IEC	Information, Education and Communication
IRA	Internal Revenue Allotment
LGAMS	Local Government Assistance Monitoring Service
LGU	Local Government Unit
MHO	Municipal Health Office
MOOE	Maintenance and Other Operating Expenses
NCR	National Capital Region
NGO	Non-Government Organization
NSCB	National Statistical Coordination Board
NHA	National Health Accounts
NSO	National Statistics Office
PHO	Provincial Health Office
UNICEF	United Nations Children's Fund
WHO	World Health Organization

1. Introduction

A number of countries have decentralized some or all of public health care functions from the central government to lower levels of government in the last twenty years.¹ These reorganizations typically have involved the national government providing a block grant to local governments, with the local government then assuming the direct responsibility for the publicly provided health care goods and services and operation of health facilities in its jurisdiction.

Many studies have examined the structure of various forms of decentralization, but only one known study has examined the economic efficiency consequences of these changes.² It is important to know if decentralization leads to the provision of more or less public good types of health care goods and services (e.g., immunization, family planning) where at least some of the consumption benefits accrue to the community at large, or whether governments choose to allocate more or less to private good types of health care goods and services (e.g., hospital services) which only benefit the individual who consumes them. Allocative efficiency criteria in the health sector requires governments to focus scarce resources on public good types of health care and some have argued that decentralization may actually compromise this goal and reduce societal welfare.³

This paper examines allocative efficiency changes in government health expenditures in the Philippines before and after its devolution (decentralization) became effective in 1993. Previous studies typically have focused on the choices made by local governments following decentralization, but it is also important to include expenditure choices made by the central level in countries like the Philippines where the central health agency retains a significant role in the provision of health care

¹ Examples include the Philippines, Nepal, Sri Lanka, Papua New Guinea, Indonesia, Ghana, Botswana, Senegal, Tanzania, Venezuela, Mexico, Brazil, Chile, Colombia, Argentina, Guatemala and Honduras.

² Strumpf, et al., 1999, uses data from Uganda to examine allocative efficiency outcomes following decentralization.

³ Strumpf, et al., 1999, provides a review of the economics literature on decentralization.

goods and services. Central level changes in expenditures on public and private health care in response to decentralization can have significant overall allocative efficiency consequences in these countries. In addition, in the Philippines there are two levels of local government below the central level for which substantial responsibility for the provision of health services was decentralized, namely, provinces and city/municipalities. Each level was given specific, and very different, responsibilities and the choices made at each level are important in the overall assessment of changes in allocative efficiency following devolution.

Specifically, the paper addresses three issues:

- i) changes in the level and composition of health care expenditures by central and local governments on a total and per capita basis;
- ii) changes in the share of total local government resources allocated to health by level of local government; and
- iii) changes in the share of local government health resources allocated to public good types of health by level of local government.

The study uses data collected to examine these questions including: i) government audited annual expenditure reports from nearly 1600 local governments for pre- and post devolution years (1992, 1993, 1995 and 1998) collected and encoded for the purposes of this study and never before used to examine these questions; ii) the Philippines National Health Accounts, 1991-1997, which provide annual aggregate pre- and post devolution health expenditures for central and local governments; iii) the 1990 Philippines Census and 1995 Philippines Inter-Censal data which provide indicator variables of population characteristics at the local level for use in multivariate estimations; iv) the 1993 Philippines National Demographic Survey and 1998 Philippines National Demographic

and Health Survey which provide an indicator of wealth differences at the local level; and iv) Philippines Statistical Yearbooks which provide additional indicator variables for characteristics of local governments.

The following sections of the paper provide: i) background on the devolution of health care services to local governments in the Philippines; ii) descriptions of data sources and methods; iii) empirical results; and iv) conclusion and discussion of results.

2. Background

The Philippines is a good example of the trend toward decentralization of health care services in developing countries. Until the early 1990s the national government provided health care services through a centralized hierarchal system of national, provincial and district hospitals, rural health units (RHUs), and barangay health stations (BHSs). The Department of Health (DOH) was responsible for centralized planning, spending and decision-making. This centralized structure was radically changed in 1991, when the Government of the Philippines (GOP) enacted the Local Government Code (LGC) which devolved major fiscal responsibilities to local government units (LGUs).⁴ The LGC went into effect beginning in 1992, with time allowed for implementing rules and regulations to be developed. Actual fiscal reorganization began in 1993.

The intent of the devolution was to improve the well being of the people by empowering local voters to change the kind, quantities and qualities of the public services they receive from their local authorities. More specifically, there were three rationales. First, The Philippines has substantial spatial variations in physical conditions, economic circumstances and social attributes. The LGC

⁴ Republic of the Philippines, Department of Interior and Local Government, Local Government Code of 1991, Republic Act No. 7160, 1992.

reasoned that some types of services could be better delivered by local authorities who could take into account these differences and provide services that suit local needs and preferences better than the central government that was predisposed to provide a uniform bundle of services throughout the country. Second, less national government intervention would make it possible for local residents to hold locally elected officials accountable for their actions. Third, a higher degree of local autonomy, and therefore local participation in collective decision making, would help reduce political alienation among residents and policy makers outside Metro Manila.

The LGC required a significant amount of public services and functions to be devolved to LGUs from DOH, as well as from the Departments of Agriculture, Environment and Natural Resources, Public Works and Highways, and Social Welfare Development. National government transfers to LGUs in the form of unconditional block grants, called Internal Revenue Allotments (IRAs), were significantly increased. All smaller national government transfers to LGUs were absorbed into the new IRA, and the IRA itself was increased from a maximum of 20 percent to 40 percent of national internal revenue collections for the third preceding year. In addition, natural resource related taxes, that previously were shared by the LGUs and the national government, were devolved to the LGUs where they were physically located. Of the total IRA, about 23 percent is shared by the 78 provinces, 23 percent by the 65 Chartered cities, 34 percent by 1600 municipalities, and 20 percent by the nearly 42,000 barangays. Allocation among individual LGUs within the same category of LGUs (provinces, cities, and municipalities) is determined as follows: 50 percent is allocated based on population; 25 percent is allocated by land area; and the remaining 25 percent is divided equally by all LGUs of the same category (called an equal share).

The formula for allocating the IRA among levels of governments and among individual LGUs is based on no other economic grounds. Therefore, the amount of the IRA has no necessary relationship to the actual costs of the devolved functions. Nor does the amount of the IRA take into

account the capacity of local governments to raise their own resources or to carry out devolved functions. Also absent from the LGC were conditions on LGUs, such as provision of essential services or mobilization of local revenues, that would have to be met if they were to receive their formula-based share of national government revenues.

There is little central government control over how the IRA is spent by local governments. There are no conditions on 80 percent of the IRA. The remaining 20 percent is released to the LGUs after a Local Development Plan (investment program) has been approved by the central authority.

There were two major consequences of the LGC that concerned health policy makers in the Philippines. First, with the exception of salaries to health care workers previously employed by DOH, no portion of the IRA allocation to LGUs is earmarked specifically to the provision of health care services. While LGUs are supposed to provide the health services which were devolved to them, the allocation of the IRA to expenditures by the LGU has few restrictions.⁵ Thus, there was no assurance that central DOH public health care initiatives would be carried out by the LGUs. Second, the IRA allocations to LGUs are not based on their need or capacity to deliver health care services. This created winners and losers among LGUs, with some better able to finance devolved health care services than others. It was feared that some LGUs would fall well short of previous levels of support for public health care services.

Each national government agency included in the LGC (the notable exception was the Department of Education, Culture and Sports), was required to develop rules and regulations for implementing the LGC. While some of the DOH concerns were addressed in these rules and regulations, the LGC prohibited DOH from directly transferring funds from its budget to LGUs to

⁵ This requirement was intended to protect national civil servants who were transferred to the LGUs. New hires are not necessarily granted similar tenure by the LGUs.

help offset health care service shortfalls. Instead, DOH included a clause in its rules and regulations that allowed a Memorandum of Agreement (MOA) to be established with LGUs “to cover technical, financial, and other forms of assistance, compliance of LGUs to DOH guidelines, standards and criteria, augmentation of local health services and facilities, and such other concerns that pertain to the enhancement of local health services and facilities.”⁶ DOH has attempted through these MOAs and other mechanisms to assist needy LGUs with the transition of health services from the central to the local levels.

Of the five devolved national government agencies, DOH had the largest amount of revenue transferred to the IRA. In 1993, the first year of fiscal devolution, the DOH budget was decreased by 50 percent, from about ₱10 billion to about ₱5 billion. Virtually all publicly provided health care functions below the regional level of the DOH, including provincial and district health offices, construction, operation and maintenance of provincial and district hospitals, purchase of drugs and medicines, operation of the primary health care system through RHUs and BHSs, operation of field health services, aid to puericulture, and operation of 5-bed health infirmaries were devolved to the LGUs. Provinces, in general, fared much worse than cities and municipalities in the devolution of health care functions because all provincial hospitals (the largest expenditure category of devolved health services) were assigned to them. Cities, because of their large population bases, received a disproportionately large share of the IRA, but had few health care services devolved. Municipalities, with few exceptions, had the fiscal ability to cover devolved services which consist mainly of the primary health care RHUs and BHSs. Overall, however, there was no assurance that services previously provided by the central system under DOH would actually be delivered under the devolved system.

⁶ Republic of the Philippines, Department Health, Rules and Regulations Implementing the Local Government Code of 1991, 1992.

Since 1992, the transition to the devolved public health care system has been met with opposition both within and outside of DOH. In principle, the new role for DOH was to enforce public health care service standards and regulations, monitor health status, implement a national health insurance scheme, and conduct medical research and development. In fact, DOH initially retained operation of the largest 47 hospitals in the country (National Capital Region hospitals, Special Hospitals, Regional Hospitals and Specialty Hospitals), and has added about 20 more hospitals by reclassifying some provincial hospitals into regional or national centers. Hospital operations currently account for more than 60 percent of the central DOH budget. In addition, DOH has continued to provide substantial health care services through its vertical health care programs, most notably by providing vaccines and family planning support to LGUs. Over the last seven years there have been repeated attempts by legislators to re-centralize DOH with numerous bills proposed in Congress, but none have been passed. The current DOH administration appears committed to the devolution policy, and continues to seek ways in which it can support the LGUs in the provision of public health care services according to the LGC implementing rules and regulations.

3. Data and Methods

The study is based on a wealth of Philippines health care financing data at the national and local government levels that dates from pre-devolution in the early 1990's to the present. A large data collection effort was undertaken for the purposes of this study to obtain local government expenditure data.

Local Government Expenditures

The Philippines National Health Accounts framework and definitions were used as guidelines for data collection and classification of type of health care expenditure at the local government level (described below). Health care expenditure data for nearly 1,600 local governments were collected for

the purposes of this study from the national level agency, the Commission on Audit (COA), which monitors local government expenditures for all provinces, cities, and municipalities. Expenditures are monitored by the local provincial and municipal budget and accounting offices, and are reported to COA in an end-of-year report, the Status of Allotment, Appropriations and Obligations (SAAO). Detailed data were obtained for each province, city and municipality on all “obligations incurred” which represent goods and services actually purchased by the government, for private and public good types of health care and family planning,⁷ as well as all expenditures by each LGU for 1992 (the year prior to devolution), and for three years following devolution – 1993, 1995, and 1998. A detailed description of the LGU expenditure data collection and encoding is provided in Appendix 1.

Local government expenditure data are stated in current (nominal) prices for each year. To adjust for inflation so that real comparisons can be made over time, nominal peso values (current prices) are converted to constant prices using the GDP Implicit Price Index (IPI) with 1992 defined as the base year.⁸ This allows for comparisons of health expenditures to be made over time without the confounding effects of price inflation. The population of each local government is taken directly from original 1990 and 1995 census dataset files and interpolated to obtain per capita expenditures in each of the four years examined.

National Health Accounts

The National Health Accounts (NHA) of the Philippines, 1991-1997, which were initially developed and institutionalized with USAID funding, are annually updated by the National Statistical

⁷ Family planning in the Philippines is a separate line item in expenditure reports, and not included in overall health expenditures. In this paper we consider family planning expenditures separately, and also combine these expenditures with public health expenditures.

⁸ The Implicit Price Index for GDP was taken from selected issues of *The National Accounts of the Philippines, CY1990 – CY 1998*, NSCB.

Coordination Board (NSCB).⁹ The NHA allow an analysis of the changes in the level and source of all public and private health care expenditures at the aggregate national level, as well as changes in public expenditures that affect allocative efficiency by the central and aggregated local levels of government.

The National Health Accounts essentially quantify the flow-of-funds in the health sector. Public and private sector health care funding sources operate through financing intermediaries, such as government health agencies and social health insurance programs, as well as directly providing funding to providers and end-use consumers. This allows a mapping of the flow of health care funds from sources of funds through financing intermediaries to health care providers and uses in the Philippines, and identifies public health sector, social insurance, and private sector sources of funds. Funding sources, financing intermediaries and providers and uses of funds are defined as follows:

- i) financing sources - institutions or individuals which ultimately bear the expenses of financing the health care system;
- ii) financing intermediaries - institutions or individuals which pass funds from financing sources to other financial intermediaries or providers in order to pay for the provision of health services; and

⁹ The estimation of the NHA 1991-1997 series was a joint undertaking of the University of the Philippines School of Economics (UPSE) through the UPEcon Foundation and the National Statistical Coordination Board (NSCB). UPEcon initially estimated the 1991-1994 NHA series funded through USAID's Philippines Health Finance Development Project. The NHA were institutionalized within the national accounts system at NSCB, which estimated the 1995-1997 NHA series. The 1998 NHA are scheduled for official public release in September, 2000.

- iii) providers & uses of funds - institutions or individuals which produce and provide health care goods and services, or the actual health care goods and services themselves, which benefit individuals or the population at large.

Health care providers and uses of health care funds are listed under three broad categories, defined as follows:

- i) private (or personal) health care – health care goods and services whose benefits accrue only to the individuals who receive the treatment or service (e.g., kidney dialysis, radiation therapy for cancer or a cast for a broken bone);
- ii) public health care – a) services that benefit everyone in the community simultaneously (e.g., information/education campaigns or IEC, safety and standards regulation, spraying for malaria control and other vector control activities, b) services whose benefits accrue not only to persons receiving the service but also to others in the community (e.g., immunization, family planning), and c) programs providing some personal care services combined with information, education, and other services that benefit the community (e.g., primary health care, maternal and child care, control of diarrheal diseases, control of acute respiratory infections); and
- iii) other services – expenditures for health-related activities that are not direct health care provision but which support, enhance and facilitate the production, provision, delivery, payment and consumption of the two main categories of health care goods and services (e.g., central DOH administration).

Further details of the Philippines NHA assumptions, definitions, methods of estimation, and other technical notes are available from NSCB.¹⁰ The NHA are stated in current (nominal) prices for each year. To adjust for inflation so that real comparisons can be made over time, nominal peso values (current prices) are converted to constant prices using the GDP Implicit Price Index (IPI) with 1991 defined as the base year.¹¹ This allows for comparisons of health expenditures from the NHA to be made over time without the confounding effects of price inflation.

Indicator Data

Several secondary data sources were obtained for this study to develop a set of multivariate indicators of local government expenditures.¹² These include: i) the 1990 Philippines Census data set; ii) the 1995 Philippines Inter-Censual data set; iii) the 1993 Philippines National Demographic Survey (NDS); the 1998 Philippines National Demographic and Health Survey (DHS); and iv) Philippines Statistical Yearbooks.

Indicator variables were chosen to represent city, municipality and province population characteristics under the assumption that responsive local governments will allocate health resources toward groups most in need. Primary health care expenditures, for example, are expected to be higher in LGUs with a higher proportion of infants and children under 5 years of age. Similarly, LGUs with a wealthier population may choose to provide less government provided health services if income and wealth translate into higher demand for privately provided health services.

¹⁰ see NSCB, 1999c.

¹¹ The Implicit Price Index for GDP was taken from selected issues of *The National Accounts of the Philippines, CY1990 – CY 1997*, NSCB.

¹² Names and definitions of multivariate estimation variables are given in Appendix 2.

Original census datasets were used to calculate population characteristics for each province, city and municipality including the percentage of infants, children under 5, elderly (65+ years), women of child bearing age (WCBA), disabled, workers, overseas workers, highest level of education attained (no formal education, primary, high school, college+), and LGU population.

The 1993 NDS and 1998 DHS were used to calculate an average asset index for each LGU as a proxy index for wealth.¹³ The asset index is based on household assets where the coding for each asset is 1 if the household had the asset, and 0 if not. Assets include: i) own flush toilet, ii) electricity; iii) television; iv) refrigerator; v) bicycle; vi) motorcycle; vii) car; and viii) house floor made of vinyl, polished wood, ceramic, or marble. For each of these eight factors, the household was assigned the value of the natural log of the inverse of the proportion of households that had a value of one. This transformation weights the factor so that the scarcer the factor is, the higher its value. The sums of the eight factors form the asset index which ranges from 0.14 (low) to 5.36 (high), depending on how many of the factors each household scored.

Other LGU specific data was obtained from Philippines Statistical Yearbooks, including land mass (square kilometers), whether a city is designated as a Chartered City, and whether a city or municipality is home to the provincial capital. Land mass was used with census data to calculate population density for each province and major city for each year (1992, 1993, 1995, 1998), which forms a continuous indicator of the common urban/rural classification.

All multivariate estimations are ordinary least squares performed using Stata. The standard errors of coefficient estimates are corrected for multiple observations on LGUs using the cluster

¹³ Detailed documentation of the 1993 NDS and 1998 DHS are given in NSO, 1994 and 1999.

option. Huber-White standard errors are calculated using the robust option for estimations that have dependent variables defined as a percentage.¹⁴

4. Results

Overview of Health Sector Expenditures in the Philippines

Health Care Flow-of-Funds. The flow of health care funds in the Philippines is complex, involving many institutions, providers and uses. Figure 1 maps the flow of health care funds from sources of funds through financing intermediaries to health care providers and uses in the Philippines, and identifies public health sector, social insurance, and private sector sources of funds.

Public sector funding sources include the government at the national and local (provinces, cities, and municipalities) levels, and foreign assistance. Public sector sources are tax-financed institutions at the national and local levels, and include the Department of Finance and local government Treasurer Offices. These sources provide funds to health care departments and offices at the central and local levels, and to social insurance programs (National Health Insurance, Employment Compensation, and the Health Insurance Plan), which act as financing intermediaries that ultimately deliver funding of health care goods and services through health care providers and other direct uses. Foreign assistance primarily is routed through the Department of Finance, but also directly supports the provision of health care goods and services through in-kind donations and technical assistance to government health departments and providers.

Other intergovernmental transfers not shown in Figure 1 have been reported in some provinces (e.g., Palawan), where some municipalities make payments to the province to support

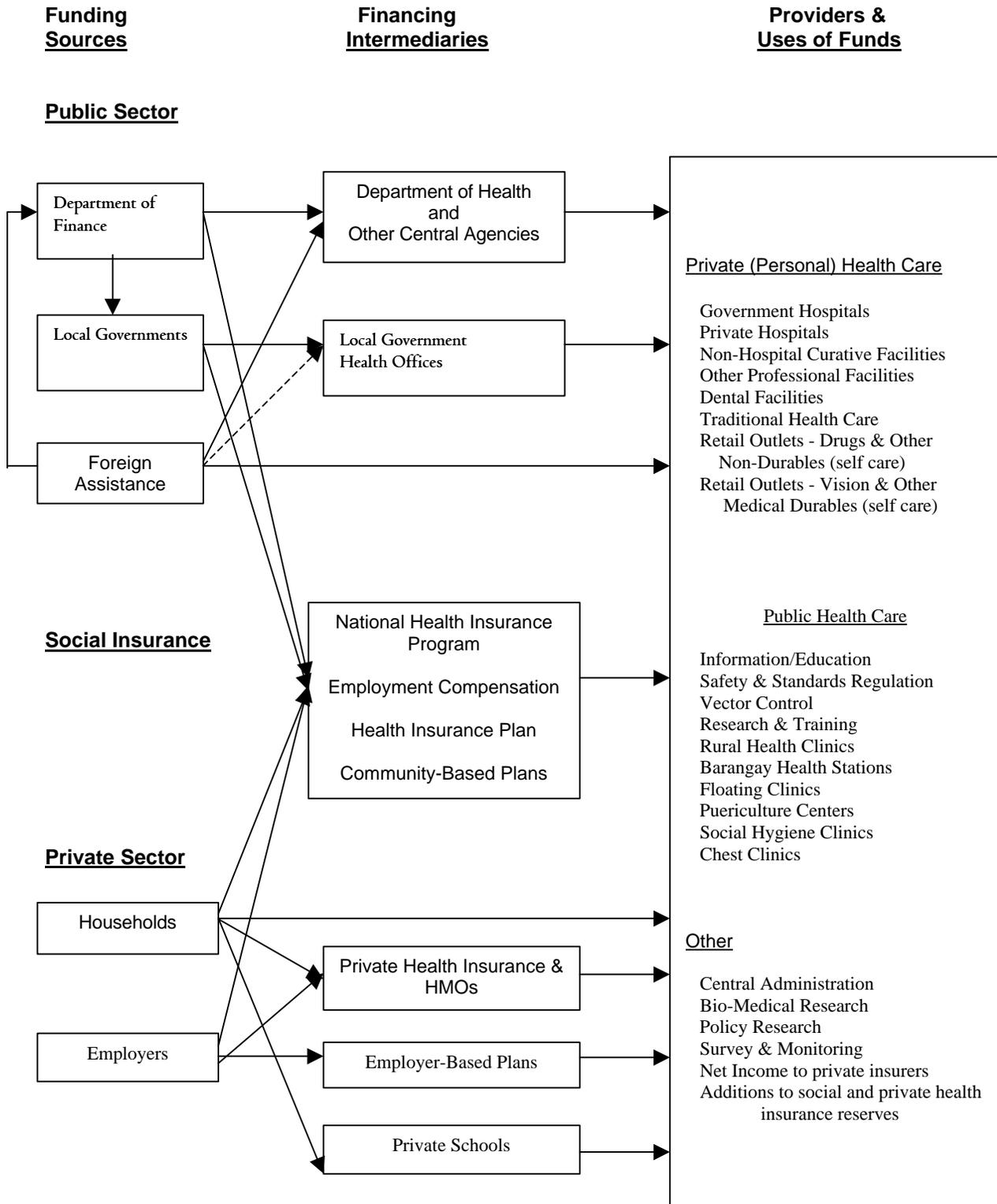
¹⁴ The theoretical framework for the multivariate estimations is based on a model developed by Strumpf, et al., 1999 for a study of decentralization in Uganda.

hospitals. In addition, some local governments have their own unique set of social insurance institutions including a variety of community-based schemes, province-wide insurance (e.g., Guimaras and Bukidnon provinces have their own local insurance programs), cooperatives, and other risk-pooling schemes that may receive funding from the local government, households, employers, and NGOs. Data for these local government initiatives are not yet available in the NHA.

Private sector sources include households through out-of-pocket payments, and employers. Households make payments directly to providers, purchase social and private health insurance premiums, finance other community-based or provider schemes, and pay fees for private school health care services. Employers purchase social and private health insurance for employees, and also provide services directly through employer-based health care programs.

The level of activity of private sector varies across local governments. In the more remote provinces, for example, there may be no private health insurance available. In other provinces (e.g., Palawan), a private HMO hospital program may be available. Other provinces may have private cooperatives for the purchase of drugs. Private, for-profit employers may make payments to local community-based insurance schemes. Others may purchase private health insurance for employees, enroll in HMO plans, provide their own group health insurance coverage, or even provide health care services directly. Private schools often provide health care services for students. Donors that operate through the private sector primarily fund NGOs and other non-profit institutions. Health service expenditure data for private sector NGO and other non-profit initiatives at the local level are not yet available in the NHA.

Figure 1. Health Care Flow-of-Funds in the Philippines



National Health Expenditures, GDP and Health Status. In 1997, total National Health Expenditures (NHE) from all sources in the Philippines amounted to ₱88.4 billion, or the equivalent of 3.7 percent of GDP. In per capita terms, this represented the equivalent of ₱1,236 per person, or about US\$42 per person.¹⁵ The 1997 level of national health expenditures in the Philippines as a percentage of GDP is about average compared with other developing countries, and compared with some other Asian countries (Table 2). In South East Asia, Philippines health expenditures as a percentage of GDP is lower than in Thailand, but higher than in Malaysia.

It is important to note, however, that a direct link between the percent of national resources devoted to health and actual health outcomes has yet to be established. Sri Lanka, for example, has a relatively low percentage of GDP devoted to health expenditures and enjoys good health status indicators, while India has a relatively high percentage of GDP for health expenditures but performs poorly in health indicators.

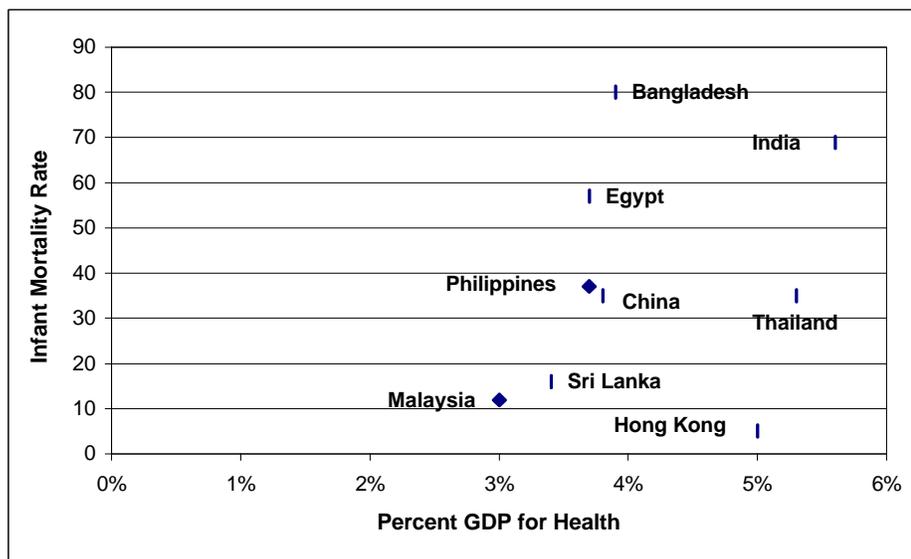
The efficiency of the use of health sector resources is more likely to influence health outcomes than the share of national resources allocated to health. Compared with many countries, the Philippines has a lower proportion of GDP devoted to health care, but relatively good health indicators. The infant mortality rate (IMR) in the Philippines, for example, is relatively low compared with other developing countries which spend a higher percentage of GDP on health (Figure 2).

¹⁵ The average annual peso to US dollar exchange rate for 1997 was 29.47. See NSCB, 1998a.

Table 2. National Health Expenditures, Government Share, and Per Capita Income, Selected Countries

Country	Year	NHE (Percent of GDP)	Government Share (Percent of NHE)	Per Capita Income (US\$)
Philippines	1997	3.7	39	600
Bangladesh	1997	3.9	34	260
India	1992	5.6	21	340
Lao PDR	1998	3.5	36	400
Zambia	1990	3.3	70	400
China	1993	3.8	47	620
Sri Lanka	1996	3.4	50	700
Egypt	1995	3.7	44	790
Thailand	1992	5.3	26	2,740
Malaysia	1990	3.0	43	3,890
Hong Kong	1996	5.0	50	22,990
Japan	1994	7.0	79	39,640
United States	1995	14.5	48	26,980

Sources: NSCB (1999), World Bank (1998), Berman (1996), Berman, et. al (1995), Rannan-Eliya, et. al (1998), Schwartz (1999b).

Figure 2. Infant Mortality and Percent of GDP for Health in Selected Countries

Sources: NSCB (1998a), World Bank (1998), Berman (1996), Berman et. al (1995), Rannan-Eliya, et. al (1998), Schwartz (1999b).

Sources of Health Expenditures. Figure 3 lists the amount contributed by the major sources of national health expenditures for the Philippines in 1997, and Figure 4 shows percentage shares of these sources. The largest single source of health care financing is private out-of-pocket payments by households, which accounts for about ₱41 billion in health expenditures, or 46.3 percent of the total.

The second largest source of health care expenditures is the public sector, including the national government (central level and foreign assistance funding) and local governments, which account for 38.6 percent of national health expenditures. The central government accounted for about the same amount of health expenditures, ₱16.4 billion or 19 percent, as local governments, ₱15.5 billion or 18 percent, in 1997. Foreign assistance contributed only 2 percent of national health expenditures in 1997. Compared with advanced capitalist market economies, other Asian and

developing countries, the share of government financing of national health expenditures in the Philippines, including foreign assistance, about 39 percent, is below average.¹⁶

Social health insurance benefit payments account for a relatively small ₱6.3 billion, or 7.1 percent of the total. All other sources of health sector financing, including private health insurance, HMOs, employer-based plans and private school health care, account for the remaining 8 percent of the total.

¹⁶ The average public funding share for countries shown in Table 2, for example, is 46 percent.

Figure 3. National Health Expenditures in the Philippines, in 1997 Nominal Prices

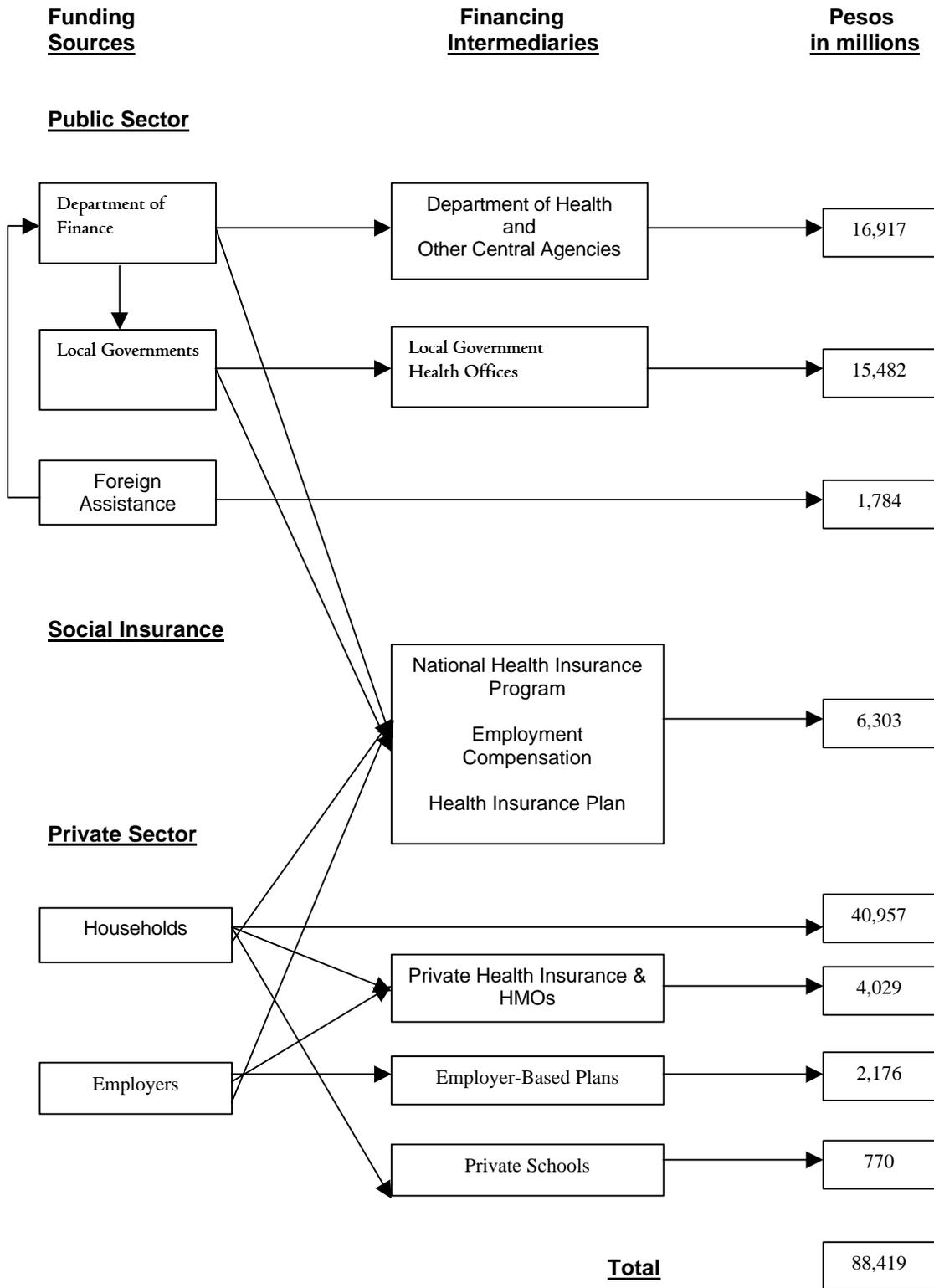
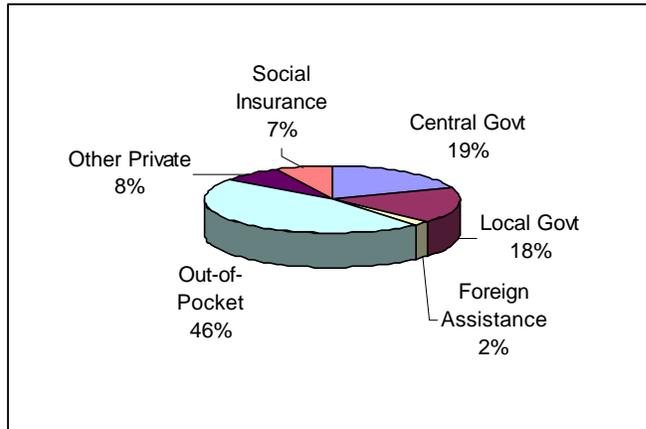
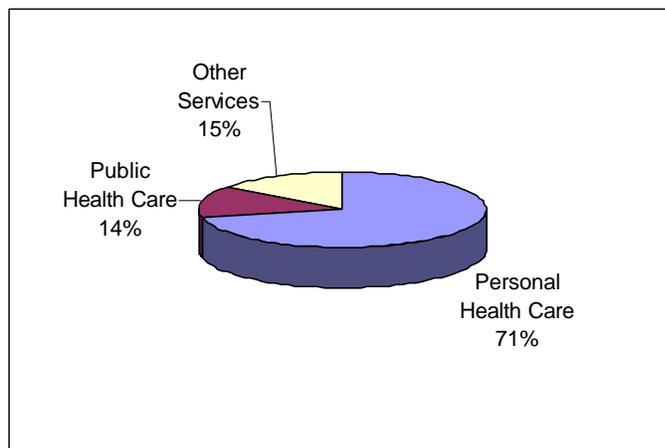


Figure 4. Sources of National Health Funds, 1997

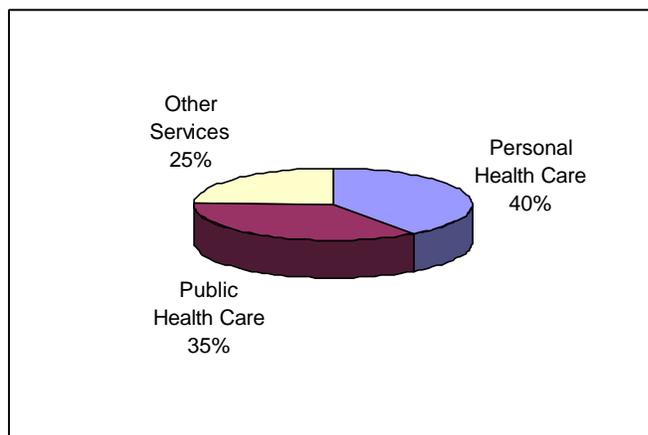
Uses of National Health Funds. Figure 5 shows the percentage share of the major categories of uses of health care funds from all sources of financing for 1997. Personal health care dominates the use of health care funds, at 71 percent, followed by other services (general administration and operating costs, bio-medical research, operations and policy research, survey and monitoring, training, and net income and additions to reserves for health insurance plans) at 15 percent, and public health care at 14 percent.¹⁷

Figure 5. Uses of Health Care Funds From All Sources, 1997

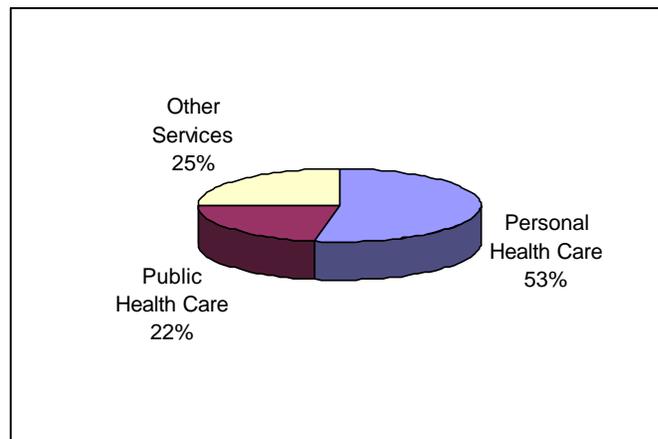
¹⁷ Some would argue that many of the items included in other services, including bio-medical research, operations and policy research, survey and monitoring, training, and certain administrative and operating costs, actually benefit the community at large and should be included under public health care.

Uses of Government Health Care Funds. The uses of total government health funds, including central, local and foreign assistance funding in 1997, are shown in Figure 6. Overall, 40 percent of government funding is devoted to personal health care, 35 percent is spent on public health care, and 25 percent on other services.

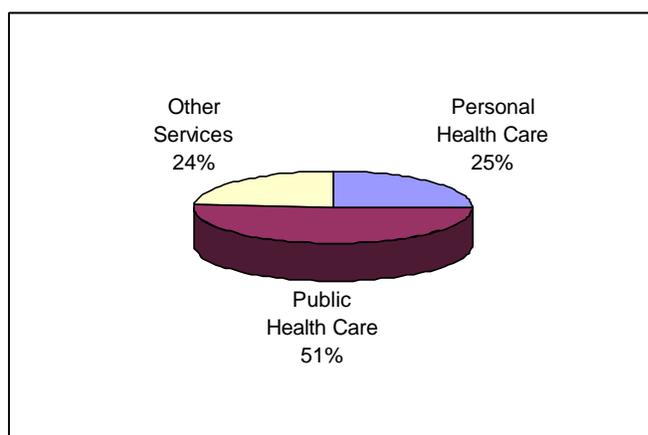
Figure 6. Uses of Total Government Health Care Funds, 1997



National Government. The profile of uses of national government funding, including central level and foreign assistance, is different than the uses of local government health funds. Figure 7 shows the percentage shares of uses of national government funding. More than half of national government health funding is used for personal health care, 53 percent, primarily at retained hospitals which receive 98 percent of national government personal health care funding (Figure 8).

Figure 7. Uses of National Government Health Care Funds, 1997

Local Governments. In contrast to the central government, more than half (51 percent) of local government health spending in 1997, was used for public health care services, 25 percent for personal health care services, and 24 percent for other services (Figure 8). Virtually all (99 percent) of local government spending on personal health care is for government hospitals which, at the local level, are primarily devolved provincial hospitals. All local government spending for other services is for general administration and operating costs.

Figure 8. Uses of Local Government Health Funds, 1997

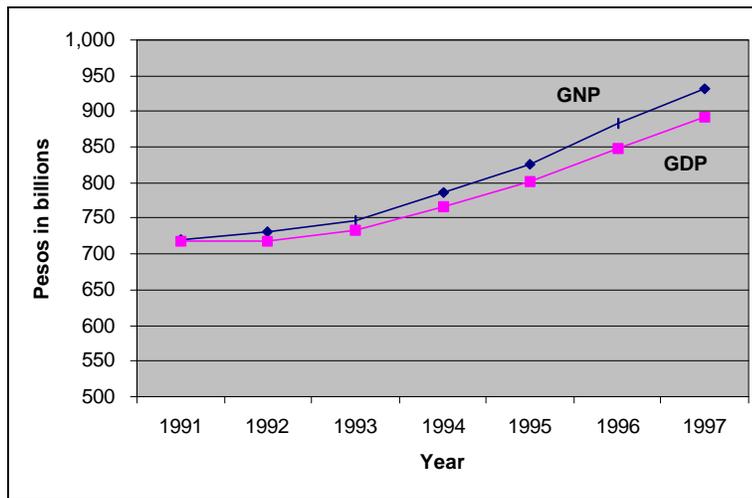
Trends in Aggregate Health Care Expenditures

The level of government funding of the health sector in the Philippines largely depends on the state of the economy. In the following paragraphs we review the macroeconomic context in which devolution of the health sector occurred.

Economic Growth. The Philippines had stable economic growth, averaging an annual growth rate in nominal GNP of 12.4 percent between 1991 and 1997. This period also had an annual average inflation rate of 7.9 percent per year, however, which decreases the real average annual rate of growth in GNP to 4.4 percent per year.¹⁸ In the same period, the real average annual growth rate of GDP was 3.8 percent per year. Figure 9 shows the annual growth in GNP and GDP in real terms.

¹⁸ NSCB, 1998a.

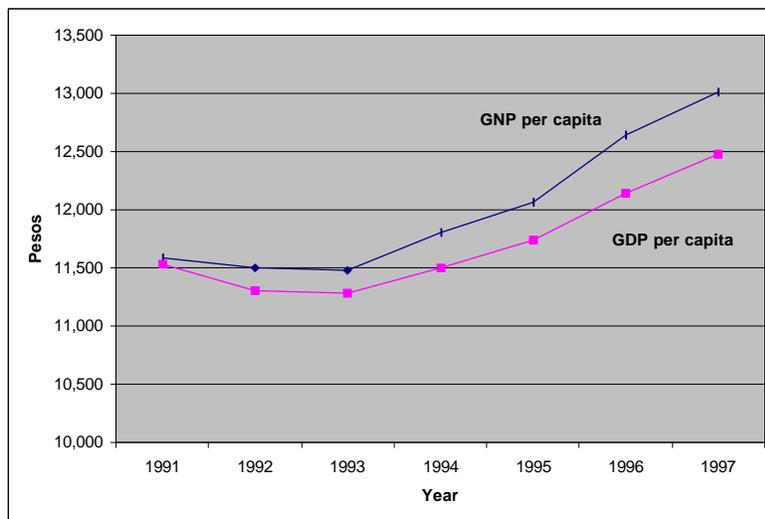
Figure 9. GNP and GDP, 1991-1997, in Constant 1991 Prices



Source: NSCB (1998a)

A slightly declining fertility rate helped support a real average annual increase in GNP per capita (2 percent) and GDP per capita (1.7 percent) between 1991 and 1997 (Figure 10). Overall, after an initial two year decline, real GNP per capita increased 12.3 percent, and real GDP per capita increased 8.2 percent over the seven year period.

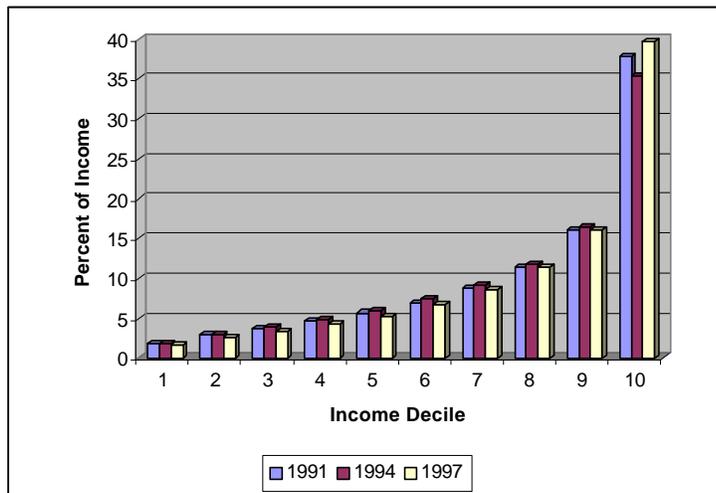
Figure 10. GNP and GDP per Capita, 1991 – 1997, in Constant 1991 Prices



Source: NSCB (1998a)

Distribution of Income. The distribution of income remains highly skewed, with the upper 10 percent of the population receiving an even larger share of national wealth in 1997, 39.7 percent, than in 1991, 37.8 percent. The lower 50 percent of the population received a smaller share of national wealth in 1997, 17.4 percent, than in 1991, 18.9 percent (Figure 11).

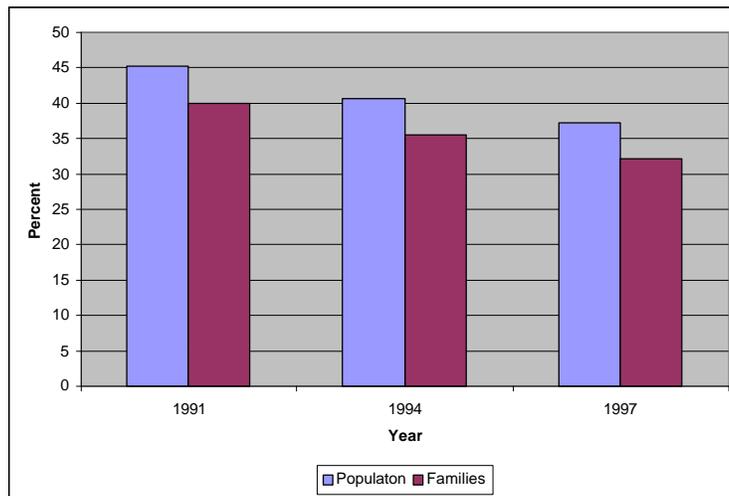
Figure 11. Income Distribution, 1991, 1994, and 1997



Source: NSCB (1998a)

Poverty. Poverty levels, while still high, decreased over the same time period, however. The incidence of poor population fell from 45.3 percent in 1991 to 37.5 percent by 1997, and the incidence of poor families decreased from 39.9 percent in 1991 to 32.1 percent in 1997 (Figure 12).¹⁹

¹⁹ The poverty threshold is defined as annual per capita income required to satisfy nutritional requirements (2,000 calories) and other basic needs.

Figure 12. Incidence of Poor Population and Poor Families, 1991, 1994, and 1997

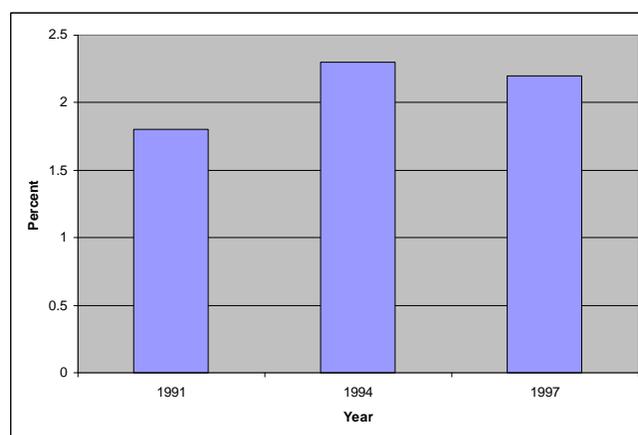
Source: NSCB (1998a)

Effect on Health Care Financing. The favorable macroeconomic environment of the Philippines between 1991 and 1997 had important effects on health sector financing. First, steady economic growth resulting in increased tax revenue allowed for increases in government health care funding, both at the national and local levels. Real national level funding increased annually beginning in 1995 and continued to receive increases through 1997. Because of devolution and economic growth, local governments received large increases in the IRA in 1993, and significantly increased real annual expenditures on health throughout the 1993-1997 period.

Second, the steady economic growth of per capita income and accompanying decline in poverty allowed for increases in private out-of-pocket health expenditures. The percent of family income devoted to medical care increased from 1.8 percent in 1991 to 2.2 percent in 1997 (Figure 13). Continued high poverty rates along with the skewed income distribution at the end of the period, however, places a limit on the capacity of most households to finance health care expenditures. Limited population coverage of social insurance and low benefit payment levels also limited the

amount of risk-pooling to protect those in need of health care services from large unanticipated health care expenses.

Figure 13. Percent of Total Family Expenditure on Medical Care, 1991, 1994 and 1997



Source: NSCB (1998a)

Health Expenditure Trends. Historically, health care spending in the Philippines has been relatively low compared with other countries of similar income.²⁰ In 1991, national health expenditures (NHE) amounted to ₱37.3 billion, or ₱600 (US\$22) per capita, from all public and private sources of funds. Since 1991, however, national health expenditures increased significantly in nominal terms. By 1997, annual NHE had more than doubled to ₱88.4 billion, an increase of ₱51 billion, and per capita expenditures climbed to ₱1,236 (US\$42).²¹ Virtually all public and private sources of health care financing contributed to this large increase in varying degrees.

²⁰ See Herrin et. al, 1993, Schwartz, 1993, Solon, et. al, 1992, and Solon, et. al, 1999.

²¹ National Statistical Coordination Board. 1999a.

There were significant increases in government funding for health between 1991 and 1997. National government expenditures for health in 1997 amounted to ₱18.7 billion, ₱6.2 billion more than in 1991. Local governments (LGUs) spent ₱15.5 billion in 1997 on health care, a substantial increase from only ₱1.4 billion in 1991, prior to devolution in 1993. The single largest source of health care financing, private out-of-pocket expenditures, increased by ₱23.8 billion, from ₱17.1 billion in 1991 to nearly ₱41 billion in 1997. Other private sources of financing, including private health insurance, health maintenance organizations, employer-based plans, and health care provided by private schools, also more than doubled nominal expenditures, from ₱3.2 billion in 1991 to nearly ₱7 billion in 1997.

On the surface, these large increases in health care financing are impressive. They may be misleading, however, because they do not take into account the eroding effect of inflation on the real value of health expenditures. Between 1991 and 1997 the Philippines experienced stable economic growth, averaging an annual growth rate in nominal GNP of 12.4 percent. This period also had an average inflation rate of 7.9 percent per year, however, which decreased the real average annual rate of growth in GNP to 4.4 percent per year.²²

Increases in Real National Health Expenditures. In real terms, increases in total national health expenditures in the Philippines outpaced the rate of growth of real GNP between 1991 and 1997. After adjusting for inflation, total annual expenditures in the health sector increased by more than 50 percent, nearly ₱20 billion, between 1991 and 1997, at an average annual growth rate of 7.4 percent. In addition, a slightly declining fertility rate helped support an increase in real annual per capita health expenditure of nearly ₱200 (US\$6.55) per person by 1997. Moreover, the percent of GNP devoted to health care increased from 3.0 percent in 1991 to 3.5 percent in 1997. After

²² NSCB, 1998a.

correcting for inflation, in real terms, these are not small increases.²³ Questions remain, however, about the efficiency and equity of these increases for improving the health status of the population.

Changes in Government Health Expenditures. Overall annual government financing of health, in real terms, increased by more than ₱8 billion, or about 60 percent, between 1991 and 1997. This large increase in government health spending, however, was not from the national level. It came from increased discretionary spending on health care services by provinces, cities, and municipalities following devolution. In fact, annual national government health expenditures in real terms were 2 percent lower in 1997 than in 1991.

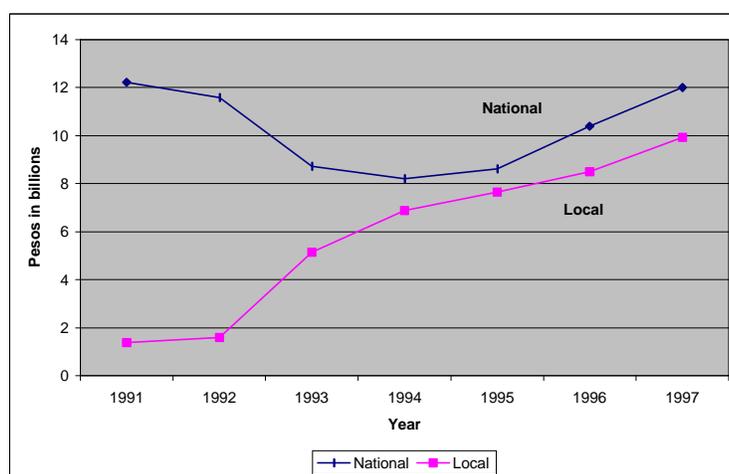
Local governments significantly increased health care funding following the implementation of the Local Development Code, which transferred about ₱5 billion of the DOH budget and funds from other central agencies to LGUs through increases in the Internal Revenue Allotment (IRA) in 1993 alone.²⁴ Local governments, which have discretionary spending authority over the IRA and local tax revenue, chose to increase real annual expenditures on health by ₱8.3 billion by 1997 compared with local health spending in 1992, the year prior to devolution. By comparison, annual national government health expenditures in real terms increased by only ₱0.4 billion over the same period (Figure 14).

Reallocation of Government Expenditures from Private to Public Health Care. Based on the NHA, in the aggregate, devolution appears to have changed the allocation of total government health care resources toward the provision of more public health care. The percent of total

²³ Since 1997, increases in real national health expenditures may have slowed, or perhaps even decreased, due to the regional economic crisis. Some government budgets were decreased, and the currency crisis likely undermined some of the gains achieved since 1991. The latest statistics on macroeconomic growth for 1998 indicate a significant slowdown, with real GNP growth estimated to be less than one-half of one percent, though inflation remained relatively steady at 9.7 percent. (NSCB StatWatch, May 1999).

government health expenditures allocated for private (personal) health care (which provide benefits only to the individual) decreased from 55 percent in 1991 to 40 percent by 1997. Over the same period, public health care (which benefits the community at large in addition to the individual) increased from 20 percent to 35 percent of total government health expenditures. This reallocation of 15 percent of overall government expenditures to public health care is largely attributable to increased health financing by local governments (provinces, cities and municipalities), which allocated more than half of their health resources to public health care in 1997. More than half of national government health expenditures, on the other hand, was allocated to personal health care in 1997, 98 percent of which was used for retained hospitals. Because of this, overall government financing was still biased in favor personal over public health care, 40 percent to 35 percent in 1997.²⁵

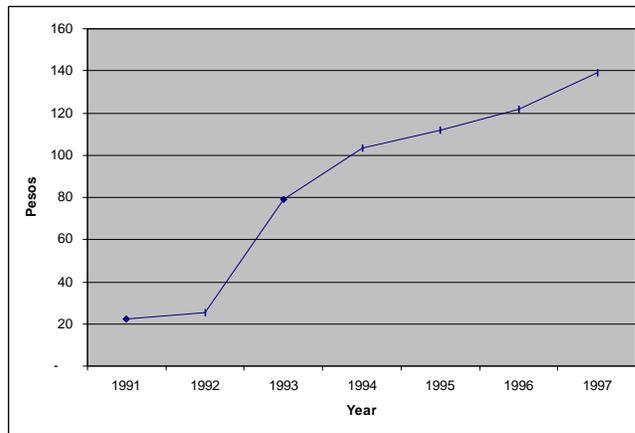
Figure 14. National and Local Government Health Expenditures, 1991-1997 at constant 1991 prices



Similarly, LGUs increased real per capita health expenditures by ₱114 per person between 1992 and 1997, contributing the largest share (59 percent) of the ₱193 increase in real total national health expenditures per capita (Figure 15).

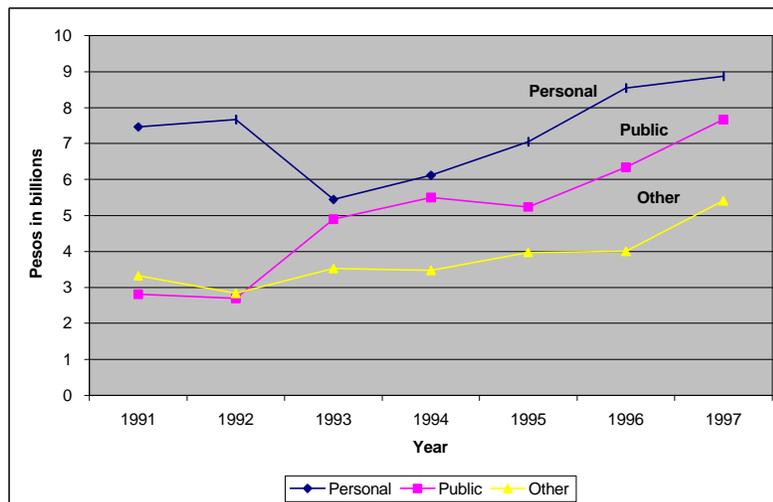
²⁴ The IRA essentially is a block grant from the national government to local governments with few restrictions on use.

Figure 15. Local Government Health Expenditures per Capita, 1991-1997, at constant 1991 prices



Composition of Government Health Expenditures. Transferring the responsibility for much of the public health care provision from the central government to the local governments appears to have significantly changed the composition of expenditures (Figure 16).

Figure 16. Uses of Total Government Health Funds, 1991-1997, at constant 1991 prices

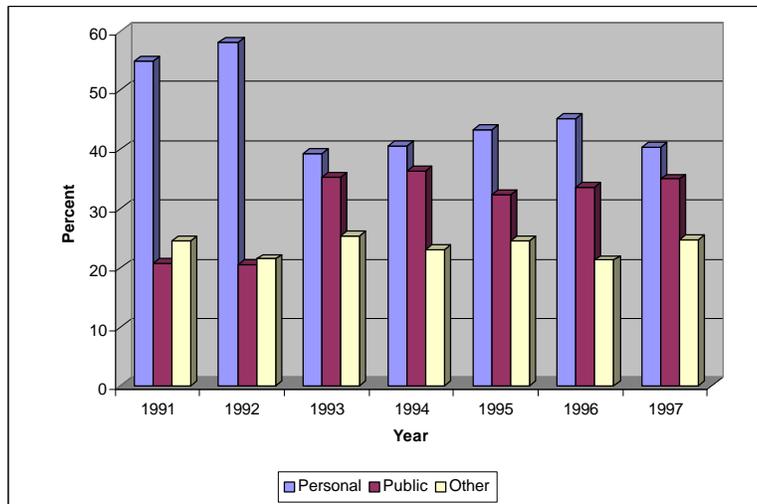


²⁵ The remaining 25 percent is allocated to other services, largely administrative expenses.

Real total government expenditures, including national and local level expenditures, and especially public health care and other services, all experienced significant increases between 1991 and 1997. Public health services gained ₱4.9 billion, a 173 percent increase over its 1991 level. Expenditures for other services increased by ₱2 billion, a 63 percent increase over 1991. Real expenditures for personal health care services initially decreased from 1991 to 1993, but recovered by 1997 to post a ₱1.4 billion increase, or a net 19 percent increase over 1991.

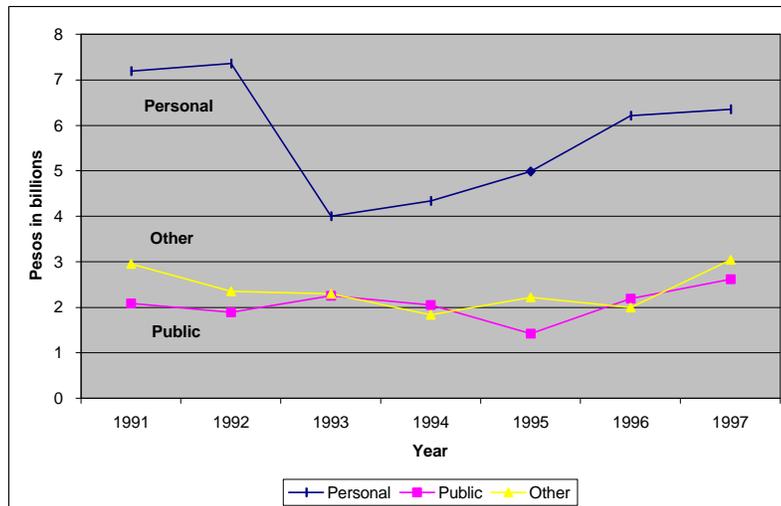
The percentage allocation of government health care resources changed dramatically between 1991 and 1997 (Figure 17). The percent of government expenditures for personal health care services (those that primarily benefit the individual) decreased from 55 percent in 1991 to 40 percent by 1997. Public health care services (those which benefit the community at large in addition to the individual) increased from 20 percent to 35 percent of total government health expenditures. The share of expenditures on other services remained about the same. Thus, there was a significant shift in government spending (15 percent) from personal health care services to public health care services from 1991 to 1997.

Figure 17. Percent Share of Government Health Expenditures for Private, Public and Other Health Care Services, 1991-1997



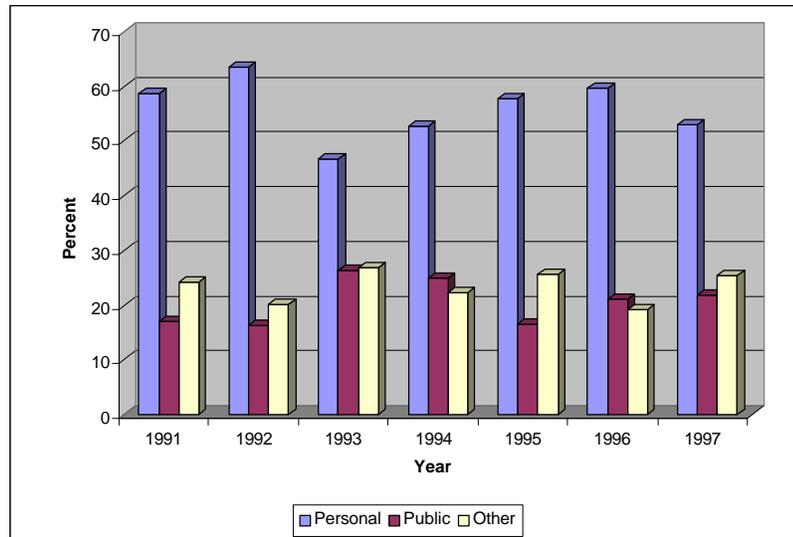
The growth of the share of government expenditures on public health care services can be traced directly to the increased financing of health care by local governments, which spent more than half of their increased health resources on public health care services in 1997. Beginning in 1993, the first year of devolution, the share of personal health care services decreased and the share of public health care services increased dramatically as local governments were empowered to spend mainly for primary health care which largely consist of public health care services.

National Government Health Expenditures. The structural change in government financing of health care services at the national level is shown in Figure 18. Expenditures on personal health services declined by more than ₱3 billion in 1993 as the responsibility for most of the hospitals were shifted from DOH to the provinces. Following 1993, however, the national level has increased real expenditures on personal health care nearly back to the 1991 pre-devolution level, primarily through increased support of retained hospitals, resulting in only a net decline of ₱0.8 billion, or 12 percent, between 1991 and 1997. National government expenditures on public health care increased a modest ₱0.5 billion (2.5 percent), on net, between 1991 and 1997, with most of the increase beginning in 1995. Expenditures for other health care services, primarily administration, also received a small net increase of ₱0.09 billion by 1997 after declining over much of the period.

Figure 18. Uses of National Government Health Funds, 1991-1997 at constant 1991 prices

Despite relatively large increases in personal health service expenditures beginning in 1993, the percent share of personal health services shifted in favor of public health care services from 1991 to 1997 (Figure 19). The percent share of personal health care services decreased from 59 percent in 1991 to 53 percent in 1997, while the percent share of public health care services increased from 17 percent to 22 percent between 1991 and 1997. The percent share of other health care services gained 1 percent over the same period. In 1993, the first year of devolution, the shift from personal health services to public and other health services by the national government was at its highest level, but the share of personal health services has grown at the expense of public health care services since devolution. In 1995, the share of public health services fell to pre-devolution levels, but by 1997 had partially recovered.

Figure 19. Percent Share of National Government Health Expenditures for Private, Public and Other Health Care Services, 1991-1997



Central government health expenditures (national government health expenditures excluding foreign assistance), which are dominated by DOH budget allocations, are more heavily weighted in favor of personal health care than national government expenditures mainly because much of foreign assistance is directed to public health care (Figure 20). The share of personal health care by the central government prior to devolution was 69 percent, and initially decreased to 47 percent in favor of public health care with devolution in 1993. Within the next three years, however, the allocation of central government funds returned to the pre-devolution shares of private and public health care, with a heavy emphasis on increased funding for retained hospitals. By 1997, more than half of central level expenditures, 57 percent, were dedicated to personal health care.

Figure 20. Percent Share of Central Government Health Expenditures for Private, Public and Other Health Care Services, 1991-1997

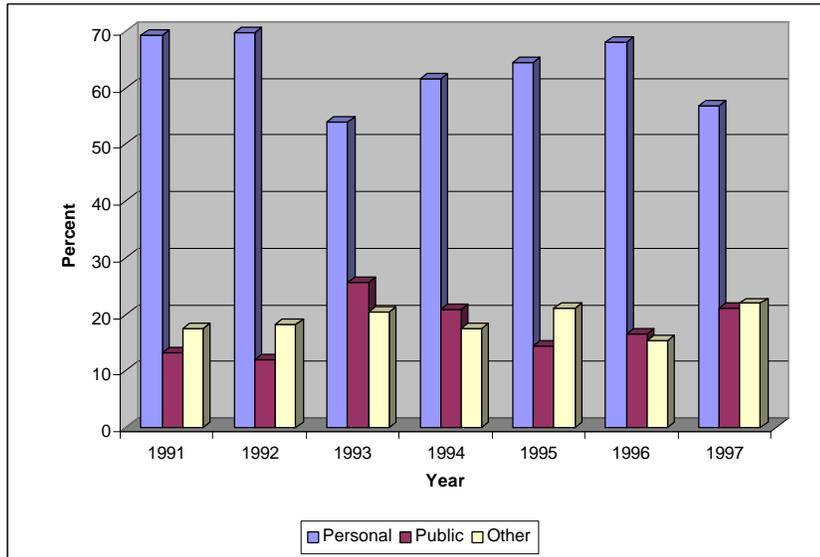
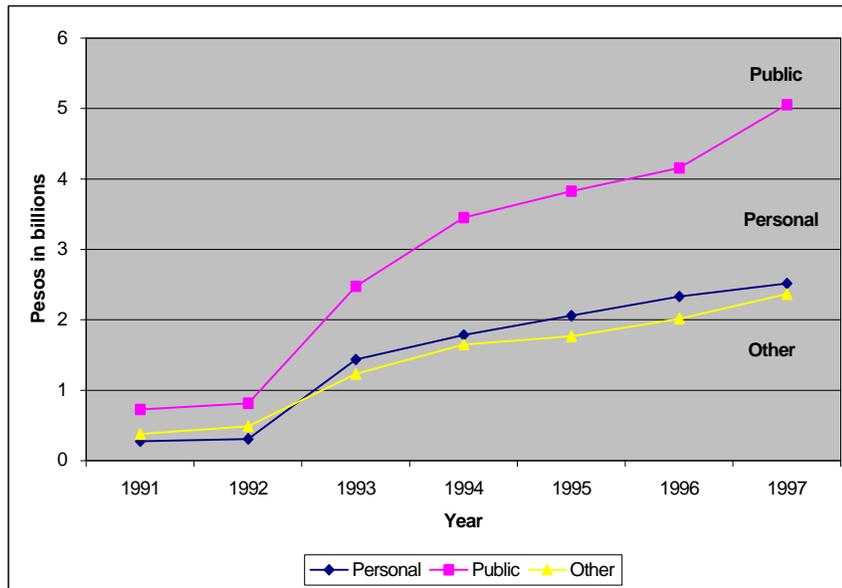


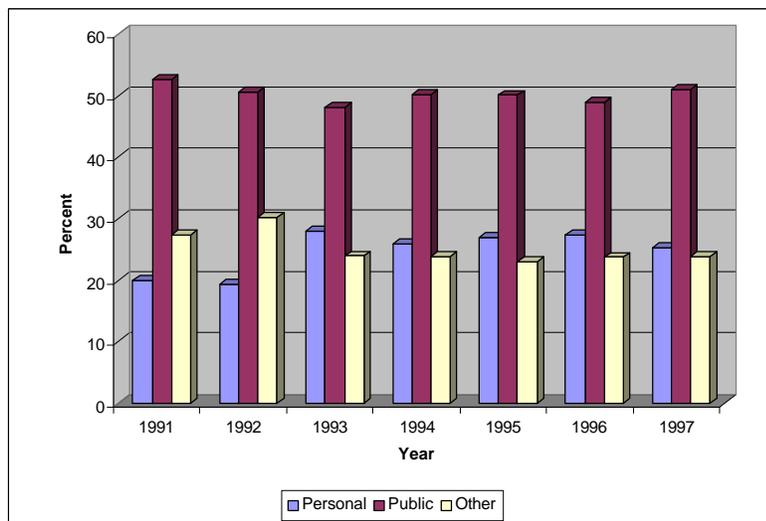
Figure 21. Uses of Local Government Health Funds, 1991-1997 at constant 1991 prices



Local Government Health Expenditures. Even prior to devolution, local governments (combined provinces, cities and municipalities) spent about twice as much on public health services than personal and other health services (Figure 21). Since devolution, real expenditures for all locally provided health services have increased by large amounts, but local governments have maintained approximately the same ratio of expenditures on public services to private and other health services, spending about twice as much on public health services.

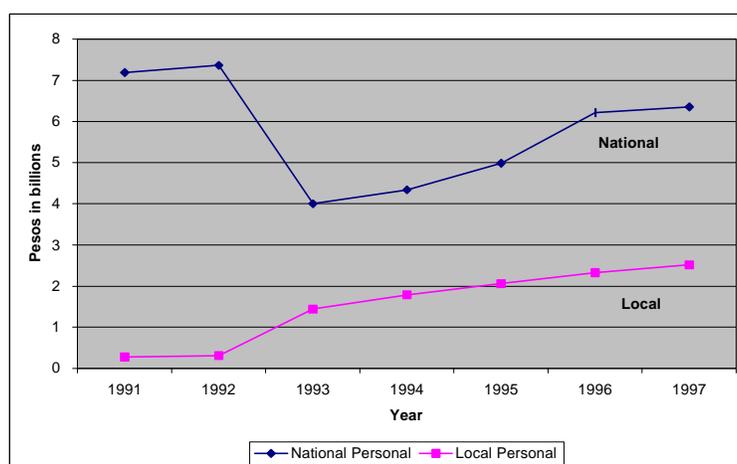
In terms of percentage shares, local governments actually have allocated about 5 percent more to personal health services between 1991 and 1997, decreased the percent share of public health services by 4 percent, and decreased the percent share for other health services by 1 percent (Figure 22). The expenditure share for public health services, however, still dominates the use of local government health funds at 51 percent in 1997.

Figure 22. Percent Share of Local Government Health Funds for Private, Public and Other Health Services, 1991-1997



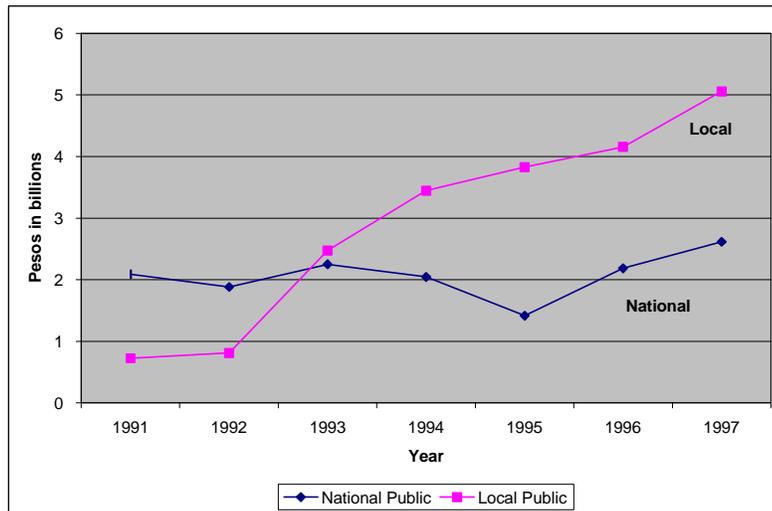
Comparison of National and Local Government Use of Health Funds. There are large differences between national and local government allocation of health funds between personal and public health services. In virtually every year between 1991 and 1997, the national government outspent local governments for personal health care services (Figure 23). Even in the first year of devolution (1993), the national government spent ₪2.5 billion more on personal health services than local governments. Since 1993, this difference has grown to nearly ₪4 billion in real terms.

Figure 23. National and Local Government Expenditures on Private Health Care, 1991-1997 at constant 1991 prices



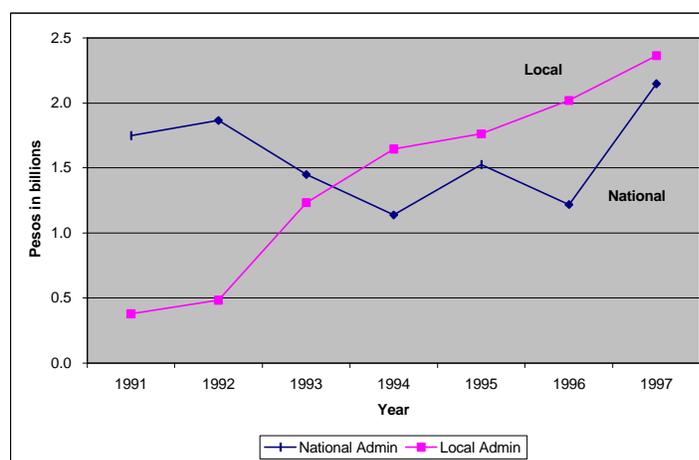
In contrast, national government expenditures for public health services prior to devolution were about ₪1.3 billion higher than public health expenditures by local governments (Figure 24). Beginning with devolution, however, real expenditures for public health services by local governments grew to nearly twice the level of national expenditures for public health services by 1997. This large increase in expenditures on public health services by local governments accounts for the structural change in health care financing in favor of public health services observed in aggregate national health expenditures and overall government health expenditures.

Figure 24. National and Local Government Expenditures on Public Health Care, 1991-1997 at constant 1991 prices



The devolution of health care to the local governments also resulted in significant real increases in the allocation of health care funds for administration and other operating costs at the local level, and an initial decline in administrative expenditures at the national level (Figure 30). By 1997, however, national level administration and operating costs increased to nearly the same level as local government expenditures.

Figure 30. National and Local Government Expenditures on Administration, 1991-1997 at constant 1991 prices



In 1997, combined personal and public health services expenditures for the national government (about ₱14 billion) and for local governments (about ₱12 billion) are close to the same level, and the administrative and other operating expenditures required to manage these services are similarly close in value.

Multivariate Estimations

In this section, we focus on local government expenditures more closely by separately examining city/municipality and provincial expenditures. Data used for the analysis is taken from annual government audited local government expenditure reports for 1992, 1993, 1995 and 1998. Also shown are combined city, municipality and provincial expenditures. All nominal values have been adjusted to constant 1992 pesos.

Dependent Variables. Table 3 gives LGU average annual per capita expenditures for health and family planning for 1992 (pre-devolution), 1993, 1995 and 1998, by type of LGU, and type of health care expenditure (public health, family planning, private health).²⁶

Table 3. Average Annual Per Capita Expenditures for Health and Family Planning by Type of Local Government (constant 1992 pesos)

Expenditure Category	1992 (₱)	1993 (₱)	1995 (₱)	1998 (₱)
City/Municipality Expenditures				
Public Health	2.3	30.3	42.6	53.3
Family Planning	0.2	0.4	0.4	0.4
Public Health and Family Planning	2.5	30.7	43.0	53.7
Private Health	0.2	1.8	1.9	1.1
Public Health, Family Planning and Private Health	2.7	32.5	45.0	54.8
Quartiles				
25	0.0	20.2	28.9	37.2
50	0.0	27.3	37.4	48.7
75	1.3	32.5	50.3	63.7
100	105.3	533.8	756.5	558.4
Provincial Expenditures				
Public Health	3.4	21.7	23.8	51.1
Family Planning	0.7	0.5	0.6	0.7
Public Health and Family Planning	4.1	22.2	24.4	51.8
Private Health	0.3	18.5	36.2	30.8

²⁶ Historically, family planning in the Philippines has been a separate line item in the budget and accounting system

Table 3 Continued

Public Health, Family Planning and Private Health	4.4	40.8	60.5	82.5
Quartiles				
25	1.9	21.2	35.9	39.7
50	4.1	32.5	48.2	62.7
75	5.7	44.1	73.0	95.8
100	20.3	639.8	976.2	1359.6
Combined City/Municipality and Provincial Expenditures				
Public Health	5.7	52.0	66.4	104.4
Family Planning	0.9	0.9	1.0	1.1
Public Health and Family Planning	6.6	52.9	67.4	105.2
Private Health	0.5	20.3	38.1	31.9
Public Health, Family Planning and Private Health	7.1	73.3	105.5	137.3
Quartiles				
25	2.7	46.9	71.8	83.8
50	4.9	60.8	91.1	115.5
75	8.1	79.4	118.6	155.9
100	106.5	782.7	1222.5	1685.1

Per capita expenditures are seen to dramatically increase from 1992 to 1993 as a result of devolution. Cities and municipalities, which assumed much of the responsibility for primary health care appear to have followed this mandate with a large portion of increased revenue being devoted to public health care, and much less to private health care. Provincial governments, which assumed responsibility for hospitals, are seen to have substantially increased both public and private per capita health care expenditures. On a per capita basis in 1998, provinces allocated more than one and a half times private health expenditures to public health expenditures. Family planning, by contrast, received little increase in funding from either city/municipalities or provinces. This is mainly due to DOH implementing rules and regulation which largely retained its vertical programs, which include family planning.²⁷ By 1998, overall per capita expenditures for public health including family planning outstripped per capita private health expenditures by more than 3 to 1.

The percentage of total local government expenditures devoted to health and family planning also is seen to have substantially increased (Table 4). Pre-devolution, LGUs allocated less than 5 percent of expenditures to the health sector. In the first year of devolution, 22 percent of all expenditures went to health. By 1998 this proportion had grown to nearly 24 percent. Increases at the provincial level were largely responsible for this large re-allocation of government expenditures. The proportion of total provincial resources allocated to health grew from about 5 percent to more than 25 percent. Of the 25 percent health allocation in 1998, 14 percent was allocated to public health and 11 percent to private health. Cities and municipalities spent less than one percent pre-devolution, which grew to about 11 percent by 1998. The large majority of this re-allocation was to public health and family planning (10.7 percent), and only 0.1 percent to private health.

²⁷ Donor agencies, primarily USAID, have largely supported population and family planning programs directly through central DOH.

The percent public/private composition of local government health expenditures is given in Table 5. Pre-devolution, more than 95 percent of local health expenditures were allocated to public health. By 1998, the share devoted to public health had dropped to about 60 percent, and private health expenditures had grown to 40 percent. This large increase in the share of private health expenditures can be traced directly to provincial governments which changed their pre-devolution allocation of 95 percent public, 5 percent private to about 58 percent public, 42 percent private by 1998. The primary reason for this shift in allocation toward private health expenditures is the devolution of hospitals to the provincial governments. This new responsibility transferred a large private health responsibility that was previously supported by central DOH. Cities and municipalities, on the other hand, have continued to maintain a 99 percent public to 1 percent private health care allocation. The responsibility for primary health care (largely public health care) was devolved to cities and municipalities, and it appears that these types of local governments have continued to support public health much in the same proportion as pre-devolution.

Table 4. Average Annual Percentage Allocation of Total Local Government Expenditures to Health and Family Planning

Expenditure Category	1992 (%)	1993 (%)	1995 (%)	1998 (%)
Total City/Municipality Expenditures				
Public Health	0.8	9.3	9.8	10.6
Family Planning	0.1	0.1	0.1	0.1
Public Health and Family Planning	0.9	9.4	9.9	10.7
Private Health	0.0	0.3	0.3	0.1
Public Health, Family Planning and Private Health	0.9	9.7	10.2	10.8
Quartiles				
25	0.0	7.4	7.6	8.5
50	0.0	9.3	9.9	10.8
75	0.7	11.4	12.3	13.3
100	20.8	59.8	63.2	38.1
Total Provincial Expenditures				
Public Health	3.6	11.0	8.8	14.0
Family Planning	0.9	0.4	0.3	0.2
Public Health and Family Planning	4.5	11.4	9.1	14.2
Private Health	0.4	11.8	15.5	11.0
Public Health, Family Planning and Private Health	4.9	23.3	24.6	25.2
Quartiles				
25	1.9	17.8	17.8	16.7
50	3.9	24.3	26.9	25.6

Table 4 continued

75	6.6	30.8	32.3	30.8
100	15.6	63.8	52.8	58.3
Combined Total City/Municipality and Provincial Expenditures				
Public Health	3.5	10.8	9.0	13.8
Family Planning	0.8	0.3	0.2	0.2
Public Health and Family Planning	4.3	11.1	9.2	14.0
Private Health	0.3	10.9	14.3	9.9
Public Health, Family Planning and Private Health	4.7	22.1	23.5	23.9
Quartiles				
25	1.8	17.1	17.1	16.7
50	3.8	22.6	23.6	24.6
75	6.4	29.2	30.9	30.0
100	15.2	61.5	51.1	54.5

Table 5. Average Annual Percentage Allocation of Total Local Government Health Expenditures to Public Health, Family Planning and Private Health

Expenditure Category	1992 (%)	1993 (%)	1995 (%)	1998 (%)
City/Municipality Expenditures				
Public Health	89.2	97.5	97.8	98.4
Percent Family Planning	9.6	0.6	0.5	0.6
Public Health and Family Planning	98.8	98.1	98.3	99.0
Quartiles				
25	100.0	100.0	100.0	100.0
50	100.0	100.0	100.0	100.0
75	100.0	100.0	100.0	100.0
100	100.0	100.0	100.0	100.0
Private Health	1.2	1.9	1.5	1.0
Provincial Expenditures				
Public Health	77.0	51.5	41.2	56.9
Family Planning	18.1	1.6	1.6	1.1
Public Health and Family Planning	95.2	52.1	42.8	58.1
Quartiles				
25	100.0	11.9	6.3	19.1
50	100.0	40.9	28.1	61.5
75	100.0	100.0	99.9	100.0
100	100.0	100.0	100.0	100.0
Private Health	4.8	47.9	57.2	41.9
Combined City/Municipality and Provincial Expenditures				
Public Health	77.6	53.0	43.3	60.0
Family Planning	17.7	1.7	1.7	1.3
Public Health and Family Planning	95.3	54.7	45.0	61.3
Quartiles				
25	100.0	14.5	10.1	24.7
50	100.0	43.0	29.6	64.5
75	100.0	100.0	99.9	100.0
100	100.0	100.0	100.0	100.0
Private Health	4.7	46.2	55.0	39.0

Indicator Variables. Table 6 lists the means and standard deviations of indicator variables used for the multivariate estimations. The means of the indicator variables are in line with what would be expected in a developing country which experienced stable economic growth over the seven year period from 1992 to 1998.

Average province and major city population density nearly doubled from 298 people per square kilometer in 1992 to 559 people per square kilometer in 1998 as a marked urbanization trend continued to occur. It is important to note that Chartered Cities are not necessarily large or have a high population density in the Philippines. Virtually all of the large cities are chartered, but this political designation for 65 cities also is granted to “cities” with populations under 20,000 people. Under the DOH implementing rules and regulations for devolution, chartered cities are responsible for primary health care, similar to the municipalities. Unlike municipalities, however, chartered cities do not have rural health units to support, and many of the larger cities had been funding their own primary health care services and even city hospitals prior to the devolution. Because population partially determines the amount of the IRA, cities generally fared well under devolution because fewer new services had to be assumed, yet their IRA disproportionately increased. The purpose of chartered cities as an indicator variable is to control for these differences. Similarly, if the city or municipality is the home of the provincial capital, it is likely that some provincial health expenditures spill over to the city or municipality thus relieving the responsibility for these services, and the provincial capital indicator is used to control for these differences.

The average provincial asset index is seen to increase over the four annual time periods, from 2.0 in 1992 to 2.2 in 1998, as expected during a period of economic growth. The average percent of the population 15+ years of age that is working also is seen to increase, as well as the average percent of the population 15+ years of age working overseas. The average highest level of education attained is also seen to increase between 1992 and 1998. These indicator variables are proxies for wealth and

income of the LGU. It is a common practice for families in the Philippines to send at least one member overseas to work for much higher wages than available locally, and send funds home to support the rest of the family. Thus, a higher percentage of overseas workers likely increases an LGU's income level. It is expected that LGUs with higher asset indices, larger percentages of workers, larger percentages of overseas workers, and larger percentages of higher education levels would elect to provide less health care services as privately provided health services likely would be substituted for publicly provided services, usually available except in the most remote areas.

LGUs with higher percentages of infants, children under 5, elderly (65+ years), women of childbearing age (15-49), and disabled are expected to provide higher levels of health care services, because these are groups typically targeted for publicly provided health care especially maternal and child care including pre-natal and neo-natal care, immunizations, control of diarrheal disease, acute respiratory infections, family planning, etc.

In addition to the indicator variables listed in Table 6, three dummy variables are included in the estimations to indicate observations for 1993, 1995, and 1998, with 1992 omitted as the base year on which to compare changes over time.

Table 6. Indicator Means and Standard Deviations for Cities, Municipalities and Provinces by Year

Indicator	1992		1993		1995		1998	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
City/Municipality Population	34,809	44,538	36,546	52,100	39,418	58,258	39,881	53,863
Province Population	932,442	578,976	962,038	591,695	985,498	616,647	1,028,432	664,263
Province and Major City Population Density (per sq kilometer)	298	558	301	2,358	539	1,984	559	1,972
Percent Chartered Cities	3.6	18.6	3.8	19.2	4.3	20.2	4.1	19.1
Percent Provincial Capitals	4.5	20.7	4.3	19.9	4.5	20.6	4.1	19.5
Province Asset Index	2.0	0.9	2.0	1.0	2.2	1.0	2.2	1.0
Percent Infant	3.1	0.6	3.1	0.6	2.7	0.5	2.7	0.5
Percent Children under 5	14.4	2.2	14.4	2.2	14.0	1.9	14.0	1.9
Percent elderly (65+ yrs old)	3.6	1.7	3.7	1.7	3.6	1.6	3.6	1.6
Percent WCBA	23.2	1.8	23.1	1.9	22.0	2.0	22.0	1.9
Percent Disabled	1.5	0.8	1.5	0.7	1.5	1.2	1.5	1.2
Percent Working (15+ yrs old)	50.8	9.4	50.9	9.4	61.2	14.8	61.3	14.9
Percent Working Overseas (15+ yrs old)	1.1	1.2	1.1	1.3	1.6	1.5	1.6	1.5
Percent No Formal Education (21+ yrs old)	8.4	8.5	8.3	8.3	6.2	7.8	6.3	7.9
Percent 6 yrs Highest Education Level Attained (21+ yrs old)	24.7	6.9	24.9	7.0	24.0	7.1	24.1	7.2
Percent HS Diploma Highest Education Level Attained (21+ yrs old)	11.5	5.3	11.5	5.3	15.3	6.7	15.3	6.7
Percent College Degree+ Highest Education Level Attained (21+ yrs old)	8.3	4.1	8.3	4.2	9.0	5.0	8.9	4.8

Results

Ordinary least squares estimations were performed on three types of dependent expenditure variables, each estimated separately for city/municipalities, provinces, and combined cities, municipalities and provinces.

Per Capita Expenditures. The results for total health and family planning expenditures per capita for cities, municipalities and provinces over time (Table 7) suggest, as expected, that per capita expenditures increased immediately following devolution and continued to increase in 1995 and 1998 compared to expenditure levels prior to devolution. The results suggest that cities and municipalities spent ₱20 more per capita on health and family planning in 1993; ₱30 per capita in 1995; and ₱37 per capita in 1998 compared with 1992. Similarly, the results suggest provinces spent an additional ₱37 per capita in 1993; ₱46 per capita in 1995; and ₱66 per capita in 1998. Overall, the results suggest that local governments spent an additional ₱66 per capita in 1993; ₱83 per capita in 1995; and ₱118 per capita in 1998 on health and family planning than prior to the 1992 devolution.

Table 7. Ordinary Least Squares Estimations – Total Health and Family Planning

Variable	City and Municipality Per Capita Expenditures			Provincial Per Capita Expenditures			Combined City, Municipality, Provincial Per Capita Expenditures		
	Coefficient	Standard Error	t Statistic	Coefficient	Standard Error	t Statistic	Coefficient	Standard Error	t Statistic
% infant	540.705	112.967	4.786	288.217	151.953	1.897	639.276	202.342	3.159
% children	-116.705	51.481	-2.267	22.090	59.019	0.374	-108.229	86.022	-1.258
% elderly	123.779	55.396	2.234	390.722	94.262	4.145	419.935	116.104	3.611
% wcba	-130.129	53.357	-2.439	-163.619	64.762	-2.526	-347.705	93.571	-3.716
% disabled	123.301	54.158	2.277	95.125	92.444	1.029	236.411	112.264	2.106
% overseas	18.089	50.945	0.355	84.668	74.543	1.136	113.789	98.971	1.150
% working	26.136	4.576	5.710	21.612	8.564	2.523	47.910	10.610	4.515
% no education	-27.240	7.716	-3.530	-3.626	11.781	-0.308	-14.874	16.205	-0.919
% primary educ	-19.352	10.417	-1.858	-21.361	13.392	-1.595	-49.519	19.289	-2.567
% hs education	15.446	18.095	0.854	81.631	23.187	3.521	103.209	31.124	3.316
% college +	-56.657	19.261	-2.942	53.851	26.140	2.060	15.233	35.822	0.425
asset index	0.606	0.606	1.000	-11.256	1.030	-10.922	-10.767	1.315	-8.182
pop density	-0.001	0.001	-1.356	-0.005	0.002	-2.063	-0.008	0.004	-2.055
chartered city	46.668	6.445	7.242	-8.909	3.473	-2.565	36.230	7.547	4.800
province capital	46.668	6.127	3.214	12.903	5.527	2.334	21.738	7.594	2.863
1993	19.693	0.768	38.871	37.007	1.693	21.991	65.669	1.962	33.462
1995	29.867	1.678	22.546	46.211	1.758	26.276	83.186	2.554	32.566
1998	37.829	1.560	30.954	65.785	2.211	29.744	117.920	2.999	39.440
constant	19.908	18.874	1.055	18.569	21.707	0.855	61.527	31.605	1.947
observations	5703			4409			4474		
F (18,1582)	267.45			176.41			313.54		
prob > F	.0000			.0000			.0000		
R-squared	0.3561			0.3667			0.5017		
Interpretations									
1993	+P20 per capita			+P37 per capita			+P66 per capita		
1995	+P30 per capita			+P46 per capita			+P83 per capita		
1998	+P38 per capita			+P66 per capita			+P118 per capita		

The results for assets and income proxy variables were mixed. The asset index is statistically significant and negative in two cases, suggesting LGUs with higher asset indices (wealth) choose to spend less provincial per capita health funds and less combined city, municipality and provincial per capita for health and family planning. On the other hand, the percentage of workers, presumably indicating larger household incomes, is found to be statistically significant and positive in all cases, suggesting LGUs with higher income levels choose to spend more per capita for health and family planning at all levels of local government. Similarly, higher percentages of higher attained education levels are found to be statistically significant and positive, again suggesting those LGUs with higher levels of income choose to spend more per capita on health and family planning.

The percentage of infants, elderly and disabled are found to be statistically significant and positive for combined city, municipality and provincial health and family planning per capita expenditures, suggesting that LGUs with higher percentages of these population groups spend more per capita. The percentage of women of childbearing age, however, was found to be statistically significant and negative for both levels of local government funding and combined funding per capita, suggesting LGUs with higher percentages of WCBA are associated with lower levels of per capita funding of health and family planning. Perhaps LGUs are substituting central level funding for maternal care and family planning through central vertical programs for WCBA.

Finally, chartered cities and provincial capitals are found to be statistically significant and positive for combined city, municipality and provincial per capita health and family planning expenditures suggesting these LGUs tend to spend more per capita than other LGUs. Higher population densities, however, are found to be statistically significant and negative, suggesting LGUs with higher densities spend less per capita on health and family planning.

Percent of Total Local Government Expenditures. The results for health and family planning expenditures as a percentage of total local government expenditures over time (Table 8) are essentially the same as found for per capita expenditures – statistically significant and positive in all cases, and suggest that the percent of revenue allocated to health and family planning increased immediately following devolution and continued to increase in 1995 and 1998 compared to the percent of expenditures prior to devolution. The results suggest that cities and municipalities increased the percent of total expenditures allocated to health and family planning by 8.7 percent in 1993; 9.5 percent in 1995; and 10.2 percent in 1998 compared with 1992. Similarly, the results suggest that provinces increased health and family planning allocations by 18.6 percent in 1993; 19.2 percent in 1995; and 19.8 percent in 1998 compared with 1992. Overall, the results suggest that local governments increased health and family planning expenditures by 17.7 percent in 1993; 18.3 percent in 1995; and 18.7 percent in 1998 compared with pre-devolution.

Table 8. Ordinary Least Squares Estimations – Health and Family Planning Expenditures, Percent of Total Local Government Expenditures

Variable	City and Municipality Percent of Total Expenditures			Provincial Percent of Total Expenditures			Combined City, Municipality, Provincial Percent of Total Expenditures		
	Coefficient	Robust Standard Error	t Statistic	Coefficient	Robust Standard Error	t Statistic	Coefficient	Robust Standard Error	t Statistic
% infant	1.091	0.161	6.797	4.295	0.405	3.194	1.161	0.383	3.027
% children	-0.183	0.068	-2.694	-0.303	0.171	-1.769	-0.281	0.161	-1.745
% elderly	0.211	0.068	3.091	0.495	0.187	2.637	0.502	0.176	2.847
% wcba	-0.052	0.066	-0.784	-0.319	0.159	-1.997	-0.301	0.149	-2.025
% disabled	0.158	0.058	2.703	-0.304	0.242	-1.256	-0.265	0.227	-1.168
% overseas	-0.259	0.066	-3.901	-0.017	0.157	-0.109	0.029	0.146	0.200
% working	0.010	0.001	1.731	-0.039	0.017	-2.329	-0.037	0.015	-2.431
% no education	-0.102	0.012	-8.352	-0.154	0.032	-4.798	-0.149	0.029	-5.001
% primary educ	0.044	0.013	3.391	0.088	0.033	2.658	0.093	0.031	3.001
% hs education	-0.038	0.019	-2.070	0.92	0.047	1.956	0.077	0.044	1.740
% college +	-0.022	0.026	-0.876	-0.054	0.059	-0.910	-0.072	0.053	-1.338
asset index	0.002	0.001	1.807	-0.012	0.002	-5.448	-0.012	0.002	-5.310
pop density	-0.001	0.000	-0.291	0.000	0.000	2.183	0.000	0.000	2.255
chartered city	0.017	0.011	1.512	-0.001	0.010	-0.056	-0.032	0.007	-4.289
province capital	0.027	0.001	3.281	0.006	0.009	0.699	0.005	0.008	0.604
1993	0.087	0.001	69.509	0.186	0.004	51.803	0.177	0.003	52.497
1995	0.095	0.002	41.773	0.192	0.005	38.963	0.183	0.005	40.008
1998	0.102	0.002	54.111	0.198	0.006	34.894	0.187	0.005	36.008
constant	0.001	0.024	0.037	0.144	0.058	2.479	0.137	0.054	2.532
observations	5702			4490			4474		
F (18,1582)	501.79			344.23			349.69		
prob > F	.0000			.0000			.0000		
R-squared	0.4944			0.4787			0.4935		
Interpretations									
1993	+8.7%			+18.6%			+17.7%		
1995	+9.5%			+19.2%			+18.3%		
1998	+10.2%			+19.8%			+18.7%		

The asset index again is statistically significant and negative in two cases, suggesting LGUs with higher asset indices (wealth) choose to spend a smaller percentage of provincial revenue on health and family planning and a smaller percent of combined city, municipality and provincial revenue. The asset index for the percent of municipal expenditures is found to be statistically significant and positive, suggesting that LGUs with a larger asset index spend a larger percentage of municipal funds on health. The same results were found for the percentage of workers, and suggest wealth and income level have the same direction of association with the percentage of revenue allocated to health and family planning. Higher percentages of higher attained education levels at the primary and secondary level are found to be statistically significant and positive, suggesting those LGUs with higher levels of income choose to spend more per capita on health and family planning.

The results found for the percent of infants, children under 5, elderly and women of childbearing age are similar to those found for per capita expenditures. The results suggest that higher percentages of infants and elderly are associated with a higher percentage of total LGU revenues allocated to health and family planning. On the the other hand, higher percentages of children under 5 and women of childbearing age are found to be associated with lower percentages of LGU revenues allocated to health and family planning. Again, perhaps LGUs choose to allocate less for health and family planning in the presence of central level support to these groups.

Population density is found to be statistically significant and positive for combined expenditures, suggesting that LGUs with higher density choose to spend a larger percentage of revenues on health and family planning. Chartered cities, on the other hand, appear to spend a smaller percentage of total revenue on health and family planning.

Public Health and Family Planning as a Percent of Total Health and Family Planning

Expenditures. The results for health and family planning expenditures as a percentage of total local health and family planning expenditures over time (Table 9) are the opposite of those found for the percent of total LGU expenditures, i.e., statistically significant and negative in all cases. It appears the percent of revenue allocated to public health and family planning decreased immediately following devolution and continued to decrease in 1995 and 1998 compared to the percent of public health and family planning expenditures prior to devolution. The results suggest that cities and municipalities modestly decreased the allocation of public health expenditures from total health and family planning expenditures by 1.1 percent in 1993; 1.2 percent in 1995; and 1.0 percent in 1998. The results suggest that provinces made large decreases in the allocation of public health expenditures from funds dedicated to total health and family planning, amounting to 42.5 percent in 1993; 56.1 percent in 1995; and 42.1 percent in 1998 compared with 1992. Overall it appears that local governments significantly decreased the allocation of public health expenditures, amounting to a 41.2 percent reduction in 1993; 54.0 percent in 1995; and 39.6 percent in 1998 compared with 1992.

Table 9. Ordinary Least Squares Estimations – Public Health and Family Planning Expenditures, Percent of Total Health and Family Planning Expenditures

Variable	City and Municipality Percent of Total HFP Expenditures			Provincial Percent of Total HFP Expenditures			Combined City, Municipality, Provincial Percent of Total HFP Expenditures		
	Coefficient	Robust Standard Error	t Statistic	Coefficient	Robust Standard Error	t Statistic	Coefficient	Robust Standard Error	t Statistic
% infant	-0.346	0.436	-0.795	-2.251	1.662	-1.354	-2.005	1.556	-1.289
% children	0.136	0.169	0.805	1.563	0.651	2.401	1.604	0.605	2.649
% elderly	0.301	0.161	1.864	1.612	0.597	2.700	1.551	0.568	2.729
% wcba	-0.109	0.135	-0.804	-1.401	0.516	-2.712	-1.307	0.493	-2.650
% disabled	0.138	0.139	0.995	-1.267	0.588	-2.152	-1.231	0.562	-2.189
% overseas	0.218	0.134	1.615	5.246	0.497	10.540	5.021	0.476	10.540
% working	0.010	0.011	1.009	-0.105	0.044	-2.344	-0.081	0.042	-1.897
% no education	0.046	0.030	1.534	0.628	0.102	6.115	0.639	0.098	6.499
% primary educ	0.017	0.026	0.664	-0.160	0.099	-1.614	-0.144	0.095	-1.512
% hs education	0.029	0.034	0.880	0.334	0.131	2.543	0.345	0.125	2.747
% college +	-0.141	0.478	-2.955	-0.406	0.194	-2.088	-0.275	0.183	-1.495
asset index	-0.003	0.002	-1.864	-0.13	0.007	-1.958	-0.011	0.006	-1.766
pop density	-0.000	0.000	-5.578	-0.000	0.000	-1.871	-0.000	0.000	-2.077
chartered city	-0.060	0.007	-7.467	0.001	0.032	0.022	0.045	0.031	1.453
province capital	-0.031	0.007	-4.226	0.064	0.029	2.227	0.056	0.027	2.028
1993	-0.011	0.004	-2.572	-0.425	0.014	-30.148	-0.412	0.013	-30.526
1995	-0.012	0.005	-2.277	-0.561	0.017	-31.707	-0.540	0.016	-31.835
1998	-0.010	0.005	-1.574	-0.421	0.018	-22.252	-0.396	0.018	-21.935
constant	1.002	0.050	20.046	1.096	0.186	5.886	1.033	0.177	5.832
observations	4784			4317			4365		
F (18, 4765)	42.52			112.98			113.85		
prob > F	.0000			.0000			.0000		
R-squared	0.1784			0.3212			0.3204		
Interpretations									
1993	-1.1%			-42.5%			-41.2%		
1995	-1.2%			-56.1%			-54.0%		
1998	-1.0%			-42.1%			-39.6%		

These results are somewhat expected as provincial governments, in particular, were forced to change their pre-devolution allocation from high public health allocations to private allocations due to the devolution of hospitals to the provincial governments. This new responsibility transferred a large private health responsibility that was previously supported by central DOH. In addition, even though cities and municipalities have continued to maintain a high percent public percentage share of total health and family expenditures, the results are statistically significant and negative in 1993 and 1995, suggesting that cities and municipalities initially decreased the percentage of total health and family planning resources devoted to public health and family planning, but by 1998 have maintained the distribution of public and private expenditures relative to pre-devolution allocation levels. The size of the coefficients suggest the percentage decrease in the allocation of public health funding is more pronounced for provincial expenditures than city/municipality expenditures, as expected.

The asset index is found to be statistically significant and negative in all cases, suggesting LGUs with higher asset indices (wealth) choose to spend a smaller percentage of total health and family planning resources on public health and family planning. The same results were found for the percentage of workers for public health and family planning at the provincial and combined levels, and suggest wealth and income level have the same direction of association with the percentage of revenue allocated to public health and family planning, i.e., higher asset indices (wealth) and higher percentages of workers (income) tend to be associated with lower percentages of public health allocations. These results appear to be consistent with the results found for education levels. Larger percentages of no formal education and high school levels are found to be statistically significant and positive for the percentage of provincial expenditures devoted to public health, suggesting LGUs with lower levels of income choose to spend a higher percentage on public health and family planning. Also consistent with these results is a statistically significant and negative result found for the percent of college+ education level for provincial expenditures, suggesting the percent of total health and family planning allocated to public health and family planning is lower for LGUs with higher income levels.

The results found for the percent of children under 5 and elderly are statistically significant and positive for the percentage of provincial and combined percentage expenditures allocated to public health. The results suggest that higher percentages of these population groups lead to a higher percentage allocation of public health and family planning from total health and family planning resources. On the other hand, higher percentages of women of childbearing age and disabled are found to be statistically significant and negative, suggesting LGUs with higher percentages of these groups have lower percentage allocations of total LGU revenues allocated to public health and family planning. The results found for the percentage of infants are statistically insignificant. Overall the results suggest that the allocation of public health and family planning from total health and family resources is positive for children under 5 and the elderly, and negative for WCBA and the disabled.

Population density is found to be statistically significant and negative for all cases, suggesting that LGUs with higher density choose to spend a smaller percentage of total health revenues on public health and family planning. High density urban areas appear to spend a smaller fraction of health resources on public health. Provincial capitals, on the other hand, are found to be statistically significant and positively associated with the percentage of total health funds devoted to public health and family planning. Chartered cities are found to be statistically significant and negative for the percentage of city/municipality expenditures allocated to public health and family planning, suggesting that these cities spend a smaller percentage of total health resources on public health and family planning.

5. Conclusions

The purpose of this paper is to address three allocative efficiency questions regarding government expenditures for health in the Philippines before and after decentralization. On the first issue, changes in the level and composition of health care expenditures by central and local governments on a total and per capita basis, aggregate results indicate that overall real annual government expenditures on health increased by more than ₱8 billion, or about 60 percent, between 1991 (pre-devolution) and 1997. This

large increase in government health spending, however, was not from the national level. It came from increased discretionary spending on health care services by provinces, cities, and municipalities following devolution. Annual national government health expenditures in real terms were 2 percent lower in 1997 than in 1991.

Local governments significantly increased health care funding following the implementation of the Local Development Code, which transferred one-half of the DOH budget and funds from other central agencies to LGUs through increases in the IRA in 1993 alone. Local governments, which have discretionary spending authority over the IRA and local tax revenue, chose to increase real annual expenditures on health by ₱8.3 billion by 1997 compared with local health spending in 1992, the year prior to devolution. By comparison, annual national government health expenditures in real terms increased by only ₱0.4 billion over the same period.

In the aggregate, devolution appears to have changed the allocation of total government health care resources toward the provision of more public health care. The percent of total government health expenditures allocated for private good types of health care decreased from 55 percent in 1991 to 40 percent by 1997. Over the same period, public good types of health care increased from 20 percent to 35 percent of total government health expenditures. This reallocation of 15 percent of overall government expenditures to public health care appears largely attributable to increased health expenditures by local governments (provinces, cities and municipalities), which allocated more than half of their health resources to public health care in 1997. More than half of national government health expenditures, on the other hand, were allocated to personal health care in 1997, 98 percent of which was used for retained hospitals. Because of this, overall total government financing was still biased in favor of private over public health care, 40 percent to 35 percent in 1997. This movement of overall total central and local government expenditures toward public health clearly is in the direction of allocative efficiency. Government operated hospitals both at the central and provincial levels, however, are responsible for the

large share of scarce health resources devoted to private health, and present a significant obstacle to allocative efficiency.

At the local level, multivariate results suggest that per capita expenditures increased immediately following devolution and continued to increase in 1995 and 1998 compared with per capita expenditure levels prior to devolution. Per capita increases appear to be more pronounced for provincial expenditures than for city/municipality expenditures, probably because more costly responsibility for hospitals was devolved to provincial governments. The results suggest that local governments, at least in times of increasing budget allocations from the central government, increase the amount of per capita resources devoted to health.

On the second issue, changes in the share of total local government resources allocated to health by level of local government, multivariate results are similar to those found for changes in per capita expenditures and suggest that the percent of revenue allocated to health by both city/municipalities and provinces increased following devolution and continued to increase in 1995 and 1998 compared with the share allocated to health prior to devolution. The results suggest that local governments, which have discretionary authority over the IRA, allocated increasing shares of total resources to health at the expense of other locally provided government services following devolution. Given the low level of total national health expenditures in the Philippines prior to devolution compared with other developing countries, these results combined with those found for per capita expenditures suggest local governments are committed to expenditures for health. The effectiveness of these increased expenditures in the provision of services and improved health outcomes remains a question for further exploration.

On the third issue, changes in the share of local government health resources allocated to public good types of health by level of local government, multivariate results suggest the percent of revenue allocated to public health decreased immediately following devolution and continued to decrease in 1995

and 1998 compared to the percent of public health expenditures prior to devolution. The result is not surprising given that provincial governments, in particular, were forced to change their pre-devolution allocation of high public health allocations to private health allocations due to the devolution of the operation of hospitals to the provincial governments. This new responsibility transferred a large private health responsibility that was previously funded by central DOH. In addition, even though cities and municipalities have continued to maintain a high percent public percentage share of total health and family expenditures, the results suggest that cities and municipalities initially decreased the percentage of total health resources devoted to public health, but by 1998 maintained the distribution of public and private expenditures relative to pre-devolution allocation levels. The allocative efficiency implications of these changes are clear. The implementing rules and regulations for decentralization developed by DOH essentially tied the hands of provincial governments who traditionally provided a large share of public health relative to private health. Regardless of which level of government pays, until the government gets out of the business of operating hospitals at the provincial and central level, allocative efficiency has little hope of being achieved in the Philippines.

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Appendix 1

Documentation for the 1992, 1993, 1995 and 1998 Local Government Expenditure Database for the Philippines

The local government units (LGU) expenditures database for the Philippines was created based on documents available at the Local Government Auditing Office (LGAO), Commission on Audit (COA), Commonwealth Avenue, Fairview, Quezon City. The effort would not have been possible without the permission granted by the LGAO Director, Ms. Felicita Ona, and the assistance provided by her staff. The Staff of COA's Records Division have likewise been of great help particularly in locating documents that have been turned over to this Division for archiving.

The succeeding sections do the following: 1) describe the basic document from which LGU expenditures data were obtained; 2) provide a background on the COA expenditure classification scheme; 3) describe the database creation process; 4) present completeness of the data; and 5) describe encoded data.

Reporting of LGU Expenditures

The Philippine fiscal year coincides with the calendar year, i.e. starts in January and ends in December. Reporting of financial transactions by government agencies, national and local, are therefore made at the end (or immediately after the end) of each calendar year. All government agencies, including each individual LGU²⁸, are required to submit to COA a document referred to as the "Trial Balance" along with a number of supporting documents. These documents become the basis for the audit each government unit undergoes every year.

Among the supporting documents of the Trial Balance are those titled "Status of Appropriations, Allotments and Obligations" (SAAO).²⁹ The SAAOs report expenditures (of the specific government unit) in great detail – i.e. by function, by program or activity and by expense item (i.e. personal services or PS, maintenance and other operating expenses or MOOE, and capital outlays or CO.) The level of detail in the SAAO makes possible the identification of expenditures made by LGUs for specific functions such as health.

Local governments do accounting of expenditures by type of fund. The two largest funds common to all city and municipality LGUs are the General Fund (Code 101) and the Special Education Fund or SEF (Code 221.) Provincial governments only have the General Fund. The General Fund accounts for at least 90 percent of all funds of LGUs and is the main source for most of the routine expenditures (except for the education sector which has the SEF as another source.) The LGUs report separate SAAOs for each type of Fund. Thus, there is a SAAO for the General Fund and another SAAO for the Special Education Fund.

²⁸ There are three types of LGUs in the Philippines (below national) that have extensive governing and service functions and, therefore, have substantial budgets. These include: provincial governments (immediately below national), city governments and municipal governments. The Philippines comprise about 73 provinces and each province consist of one to two cities and from 5 to 30 municipalities.

²⁹ Some refer to the SAAO also as "Status of Appropriations, Allotments and Expenditures" or SAAE.

Separate SAAOs are also reported for Current Legislative Appropriations (or current year budgets) and for Continuing Appropriations -- both for the General Fund. The SAAO report for continuing appropriations is only reported when an LGU has appropriations or budget allocations from previous years that it has been permitted to continue spending in the current year. In general, spending from continuing appropriations is not significant and most LGUs have none. Thus, only the SAAO for Current Appropriations was collected.

Some Trial Balances included two types of SAAOs, “pre-closing” and “post-closing”; although, most only had one. The pre-closing SAAO was collected in those cases where the post-closing SAAO was not available. For those LGUs with both types, the post-closing SAAO was used.

Samples of SAAOs are attached – a provincial General Fund SAAO, a city General Fund SAAO, a municipality General Fund SAAO, and a municipality Special Education Fund SAAO. The columns are standard for all SAAOs. The first two columns provide a description and COA code for the different expense items. The remaining columns show three types of reporting of expenditures (excluding the two “balance” columns): i) appropriations; ii) allotments; and iii) obligations. Appropriations and allotments are planned or budgeted, and not actual expenditures. Obligations are the entries in the SAAO that represent actual expenditures. It is these latter entries that are encoded in the database. The reporting of expenditures by type (types as shown in the rows of the SAAO) are made according to the COA Chart of Accounts. The COA classification scheme is described in the next section.

Government Expenditure Classification

COA classification of LGU expenditures is done two ways: by function/activity and by expense item. Expenditures are first classified by function (sector or activity) and then expenditures for each function are further classified by expense item. Thus, expenditure codes have two levels: the four-digit sector or function code and the three-digit expense item code. The first digit of the function codes indicates the broad functional category to which an expenditure item belongs and these could be any of the following:

- 1-General Public Services
- 3-Education, Culture, Sports and Manpower
- 4-Health Services
- 5/6-Housing and Community Development
- 7-Social Welfare Services
- 8-Economic Services

The remaining three digits of the function code indicate the specific activity or office for which the spending was made. For example, under General Services are the following (selected) subcategories:

<u>COA ExpenditureCode</u>	<u>Function</u>
1011	Governor’s or mayor’s office
1041	Provincial or municipal development office
1071	Budget office
1081	Accounting office
1091	Treasurer’s office
1111	Auditing office

Expenditures for each functional category are further classified according to expense item or type of input as follows:

<u>Expenditure Sub-code</u>	<u>Expense Item</u>
100	Personal Services or PS
200	Maintenance and Other Operating Expenses or MOOE
300	Capital Outlay or CO

Another distinction that is made among the kinds of expenditures made by LGUs is between expenditures for regular or “office” functions and expenditures for special projects or “non-office” activities. Expenditures for office functions include the salaries of regular LGU employees and operating expenses of LGU offices. The codes (and descriptions) used for these expenditures are the same for all LGUs as these are “fixed” categories of expenditures. Expenditures for non-office activities, on the other hand, are LGU-specific, and thus the codes may represent different types of expenditures for different LGUs. Non-office activities are generally coded as “xxx9”, “x9xx”, “9xxx”, etc. (identifiable because of the presence of the number “9” in the function code.) Most non-office expenditures are charged to the Local Government Development Fund (LGDF) or to the 20% Social Development Fund.

The COA expenditure coding system aids the identification of health-related expenditures of LGUs. All expenditure items with function codes starting with a “4” are labeled by COA as health expenditures. Some of these may be for regular or office functions such as provincial, city or municipality health offices while others may be for special or non-office activities such as “Aid to the Philippine National Red Cross” and “Mobile Clinic Project.” Health-related activities and projects may also be implemented through other offices such as the Governor’s or Mayor’s office or through the Social Welfare office. These other health expenditures had to be identified through their descriptions.

The concepts, definitions and rules established for the National Health Accounts of the Philippines were used as basis for determining whether an expenditure item is considered a health expenditure or not. Examples of health expenditures of LGUs (along with their COA codes) are listed below for each type of LGU. The examples also illustrate the distinction between regular or office functions versus non-office activities.

Provincial government spending for health are as follows (with COA's four-digit expenditure codes):

Regular Functions

- 4411-Provincial Health Office or PHO
- 4421(x)-Provincial, District or Medicare Hospitals (separate entries per hospital)
- 7611-Provincial Social Welfare and Development Office/Nutrition Program
- 8721-Provincial Veterinarian/Quarantine Services

Non-office Activities and Special Projects (An “(x)” indicates multiple entries for the same four-digit code, e.g. 1011(1), 1011(2), 1011(3), etc.)

- 1011(x)-Provincial Population Management Program
- 4412(x)-Mobile Clinic Project
- 4412-(x) Medicare Program II
- 4917 to 18 - Repair and Maintenance of Government Health Facilities
- 4919-Construction and Improvement of Government Health Facilities
- 4919(x)-PHO ICHSP
- 4919(x)-PHO Stop Death
- 4919(x)-Upgrading Hospital Facilities
- 6911-Social Health Insurance
- 7611(x)-Nutrition Program

7799-Nutrition Program
8711-Quarantine Program
8721-Anti-Rabies Program
8997-Veterinary Sanitation/ Support
8919(x)-Institutions Development Program/Sanitation Component
9919(x)-Population Development Program
9921-Aid to Philippine National Red Cross
9997(x)-Assistance to BHW

City government spending for health are as follows (with COA's four-digit expense codes):

Regular Functions

4411-Office of the City Health Officer or CHO
4421-Office of Hospital Administration
7611-City Social Welfare and Development Office/Nutrition Program
7621-City Population Control Office
8721-Office of the City Veterinarian/Quarantine Services

Non-office Activities and Special Projects (An "(x)" indicates multiple entries for the same four-digit code, e.g. 1011(1), 1011(2), 1011(3), etc.)

4412(x)-Barangay Health Program
4412(x)-CHCA
4911-City Nutrition program
4912-City Satellite Hospitals
4913-City Day Care Program
4918(x)-Indigent Assistance Program
4918(x)-Public Health Program
4918(x)-Aid to City Nutrition Council
4918(x)-Local Health Board
4918(x)-Community Health (HIV/AIDS)
4918(x)-Nutrition Program
4918(x)-Aid to Philippine National Red Cross
6913-Rabies Control Program
7611(x)-Supplemental Feeding
7611(x)-Service for Disabled Persons
7919-City Population Control Program
9931-Medical Assistance
9996-Special Transfers-Hospitals

Municipal government spending for health are as follows (with COA's four-digit expense codes):

Regular Functions

4411-Office of the Rural Health Unit (RHU)
7611-Municipal Social Welfare and Development Office/Nutrition Program
7621-Municipal Family Planning Service
8721-Office of the Municipal Veterinarian/Quarantine Services

Non-office Activities and Special Projects

4412-Health Services-Day Care Clinic
4413-Municipal Nutrition Program
4421-Aid to District Hospital
4441(x) Mayor's Office-Municipal Health Program
4421, 4918-Improvement of Government Health Facilities
4919-Purchases of Health Supplies; Miscellaneous Health Services
6521, 22-Sanitary Services
6911(x)-Municipal Nutrition Program
6911(x)-Municipal Health Building
6911(x)-Population Management
6919 - Population and Development
8911-Barangay Development Fund-ICHSP
9999-Maintenance of Ambulance

Note that health expenditures are also to be found under other (non-health) functional categories including General Public Services (code 1), Community Development (code 6), Social Welfare Services (code 7) and Economic Services (code 8.) Also note the constancy of the codes used for office functions (i.e. 4411, 4421, 7611, 7621 and 8721) across the different types of LGUs; while similar non-office activities could be coded differently by different LGUs.

Data Collection and Encoding

The *first activity* was data collection. This involved locating, examining and then photocopying relevant sections (i.e. the SAAOs) of LGU Trial Balances submitted to COA. Altogether, more than 6,000 Trial Balances were processed (about 1,600 Trial Balances per year for four years.)

The *second activity* was setting-up of the structure of the LGU expenditure database. This required examination of the formats of the SAAOs across the four years to establish parallel groupings or categories of expenditures. The structure was used in the succeeding coding and encoding activities.

The *third activity* consisted of two parts: marking (or coding) and encoding. Instead of entering expenditure figures from the SAAOs into coding sheets (i.e. coding), the photocopied SAAO pages were instead “marked” with various colored pens to indicate entries that were to be encoded into the electronic files. Most crucial in this phase was being able to identify all health expenditures of LGUs, particularly the non-office health activities that could not be detected through their function codes and could only be identified through their descriptions. (See previous section for the discussion on how health expenditures are identified.) Also crucial in this phase was getting the subtotals for each major expenditure function computed correctly. Encoding easily followed once the SAAO pages were properly marked. A pre-formatted database file was prepared to facilitate encoding of the data. (For more detail on this phase of the data preparation refer to the document titled “Instructions for Marking and Encoding”.)

The *fourth activity* was verification/validation of entries in the electronic files. This was done in two ways: mechanically and manually. Mechanical checking was done by inserting formulas that check for internal consistency of entries in the database. For example, the Grand Total (reported in the SAAO) minus the sum of the encoded expenditures for all major categories cannot be less than zero. Manual checking was done by comparing entries in a specific line in the electronic file versus those marked in the hard copies of the SAAO. Manual checking was done for every ten lines of data.

Initial processing, the *fifth activity*, involved assigning (and encoding) city/municipality codes and generating indicator codes including for data availability, provincial SAAO and city SAAO. Initial processing contributed to checking for data coding errors.

Marking and Encoding Instructions

The study mainly examines local government expenditure data as detailed in accounting statements titled “Status of Appropriations, Allotment and Obligations (SAAO)”³⁰ for the years 1992, 1993, 1995 and 1998 and for all provincial, city and municipal governments. Separate SAAO statements are reported for each type of LGU (revenue) Fund by every local government unit or LGU in the Philippines. Two types of funds are particularly relevant for this purpose, namely: (1) General Fund (Code 101); and (2) Special Education Fund (Code 221).

General instructions

- a. For provinces, cities or municipalities that have both the “pre-closing” and “post closing” SAAOs, use the “post-closing.” Also, for statements reporting both “current” and “continuing” obligations, use the “current”³¹. Use whatever is available for those that have only one SAAO.
- b. Write the following where applicable, on the top right corner of the SAAO statement :
 - Year = _____ (i.e., 1992, 1993, 1995, 1998)
 - Region = _____ (i.e., NCR, CAR, 1,....12, ARMM, CARAGA)
 - Province = _____ (e.g. Ilocos Norte, Ilocos Sur, etc.)
 - City/ Municipality = _____

Step 1. Marking OFFICE expenditure entries with a **yellow** marker.

1a. Marking office expenditure items:

Mark with **yellow** marker entries under the column on “obligations” or “expenditures”, **regardless of whether they are liquidated or not**, for the expenditure items with the following codes: (Note that each expenditure item listed below may have entries for sub-codes 100, 200 and 300).

1-General Public Services:	1011, 1016, 1021, 1031, 1032, 1041, 1061, 1071, 1081, 1091, 1111
3-Health Services:	4411, 4421, 4431
7-Social Welfare Services:	7611, 7618, 7621
8-Economic Services:	8711, 8721

The description and specific instructions for each of the above codes are as follows:

³⁰ In the more recent years (latter part of the 1990s), the title of this statement was changed to “Status of Appropriations, Allotment and Expenditures” or SAAE.

³¹ Another way of determining the right statement or expenditures to use is to compare total expenditures with the total revenues indicated in the Report of Revenues and Receipts (RRR). Pick the expenditure column with the totals closest to the reported total revenues.

- 1011 Executive Services (Mayor)
1016 Executive Services (Vice mayor)

1021 Legislative Services (Sanggunian)

Note: For statement with entries under 1021, ignore 1022.

For statements with no entries under 1021, check whether 1022 refers to **Sanggunian** services. If it is, mark the expenditure entry with a yellow marker, otherwise, ignore. Note that there are statements denoting 1022 for Legislative Services (Secretariat). This is not a valid entry.

- 1031 Administrator
1032 Personnel officer
1041 Planning and Development Coordination
1061 General services officer
1071 Budgeting services
1081 Accounting services
1091 Treasury services
1111 Auditing services
4411 Health officer

Field health services

In cases where there are more than one health unit (e.g., 2 or 3 RHUs) sum the expenditure entries for the health units by sub-codes, 100, 200 and 300.

NOTE: In most SAAOs the expenditures for Field Health Services are lumped-in in the expense item coded 4411. If these are reported separately, add these to the entries for 4411.

- 4421 Hospitals are easily identified from the description as these are most times listed individually by name. For these cases, mark in yellow the following : (1) Name of the hospital; (2) the obligations for sub-codes 100, 200 and 300. (Total obligations across hospitals will eventually be entered under 4421B.)

For cases where only total expenditures for all hospitals are reported, mark these entries in yellow. (These reported totals will eventually be entered under 4421A.)

NOTE: Although rare, a few LGUs have been found to report all health sector expenditures as 4411; but who are, in fact, also spending for hospitals. An example is the Provincial Government of Guimaras.

- 4431 Chest clinic

7611 Social welfare and development
7618 Nutrition
7621 Population/ Family Planning

8711 Agriculture

In cases where statements contain several expenditure entries for Agriculture (e.g. 8711-Agriculturist I; 8712-Agriculturist II ; 8713-

Agriculturist III), mark in yellow all the expenditures under this category, enclose them in bracket and label as 8711.

8721 Veterinary services

1b. Marking missing office expenditure entries

If any of the 100, 200 or 300 codes have missing expenditure entries, write a “dash (-)” in the corresponding expenditure line item and mark the dash with a **yellow** marker. (Note: entry in the spreadsheet for a missing item will be a blank or zero).

1c. Marking grand totals

Mark in yellow AND ENCIRCLE IN PENCIL the Grand Total obligations/expenditures for the General Fund (Code 101) and the SEF (Code 221).

Step 2. Marking HEALTH, NON-OFFICE expenditure entries with a **pink** marker.

Mark with **pink** marker the following SAAO entries for **health non-office** (or special programs/projects) items: (a) description; (b) 4-digit COA code; (c) obligations for 100, 200 and 300 – (or a total of five entries per non-office item.)

2a. Identification of non-office expenditure items (General Rules)

1. Non-office items are special (non-routine) projects or programs of LGUs and are usually coded in the following manner:

xxx9 (e.g., 8859, etc.)
 x9xx (e.g., 4999, 1991, etc.)
 9xxx (e.g., 9911, 9991, etc.)

2. Expenditure items under the (1) 20% Local Development Fund and (2) Other or Miscellaneous Services, are usually non-office expenditure items.

NOTE: There are statements where all non-office items are reported at the end or under “Others”.

2b. Identification of a health non-office expenditure item

In looking for a health non-office expenditure item, pay particular attention to the following major categories under which health special projects are likely to fall:

- General Services
- Health Services
- Local Development Fund
- Social Reform Agenda
- Other Services

Note that all expenditure items under Health Services are either categorized as an office (to be marked in yellow) or non-office (to be marked in pink) expenditure. If the COA code for an expenditure item identified as health is not 4411, 4421, 4431, 7611, 7618, 7621 or 8721 then it is automatically considered as a non-office health expenditure.

Examples of health non-office items:

- Aid/Support to health worker (Barangay Health Worker (BHW)/ Midwives
- Purchase of medicines/medical equipment
- Aid/Support to health facilities
- Support to health services development
- Support to health insurance program
- Medical assistance fund
- Medical/Dental clinic mission
- Nutrition program
 - Supplementary feeding
 - Vitamin supplement to malnourished children

Examples of seemingly health but are not health projects:

- Aid to food
- Food sufficiency programs
- Vaccination programs under livestock

Step 3. Crossing out NON-HEALTH, NON-OFFICE expenditure entries with pencil.

Cross-out all obligations for non-office or special programs that are for non-health purposes (Note: See Step #2a above for General Rules on how to identify non-office items).

Cross out individual expenditure entries for non-health, non-office items; do not cross out sub-totals.

Step 4. Encircling/Enclosing Expenditure Entries in Brackets for SUBTOTALS.

Case 1: Statements with no sub-totals reported

Enclose in brackets or encircle, using pencil, all expenditures with the same “first digit” COA Code. Pencil in the “one-digit” code for each set of brackets.

For your information, the “one-digit” expenditure groupings are as follows:

- 1- General administration
- 3- Education
- 4- Health
- 5/6 – Community Development and Housing
- 7 - Social welfare
- 8 - Economic service

Case 2: Statements with sub-totals including non-office items

Encircle the reported sub-totals and pencil in the appropriate labels or the “one-digit” COA codes (e.g., 1-General services; 2-Education; etc.)

Case 3: Statement with sub-totals excluding non-office items

Encircle the reported sub-totals and pencil in the appropriate labels or “one-digit” COA codes (e.g., 1-General services; 2-Education; etc.)

Step 5. Other Instructions

IMPORTANT: Set aside statements or consult with Emily/ Joyce on items with the following irregular codes:

- Regular functions with five-digit code COA codes, e.g. 1011-1, 1011(1), etc.
- Codes that are more detailed than 100, 200 or 300.
- Very detailed reporting of expenditures for each 100, 200 and 300

Encoding

We have prepared pre-formatted encoding spreadsheets in MS Excel into which you will key-in the data from the SAAOs. Columns are labeled to indicate where expenditures and other relevant information are to be entered. Each file represents a particular year and area, and consists of two sheets, as follows:

- 1 – MAIN
- 2 – HOSPITAL

MAIN. You will encode the following information into the MAIN sheet: obligations or expenditures incurred (1) for selected office functions (1011 to 8721), (2) for broad categories of office functions (i.e. the “one-digit” subtotals), (3) for the entire General Fund (i.e. grand total for GF101), (4) for the entire Special Education Fund (i.e. total for SEF221), and (5) for individual health non-office projects. Entries from one SAAO statement (whether for a province, city or municipality) will all be entered on one line of the MAIN sheet. Thus, the rows of MAIN refer to a specific geographic area which could be a province, city or municipality. (The pre-formatted spreadsheets assign one row for every possible city or municipality existing in the different provinces as of 1998. One row therefore represents data taken from one SAAO. One row is also assigned for each provincial SAAO.) Columns in MAIN refer to specific variables on expenditures including descriptions of health non-office items.

Note: Do not enter detailed hospital information in the MAIN sheet. The entries for hospitals in the MAIN sheet (i.e. entries for 4421B) should be totals only across all hospitals. Expenditure data by individual hospital should be entered in the HOSPITAL sheet (see instructions below.) In cases where only totals for hospitals are reported, then enter these in the column for 4421A in the MAIN sheet and enter nothing in the HOSPITAL sheet. Make sure, however, that the entries under MAIN for 4421B includes all expenditures reported for individual hospitals in the HOSPITAL sheet if there are any.

HOSPITAL. Encode the following information on individual hospitals into the HOSPITAL sheet: (1) year of data, (2) location of hospital (region, province and city/municipality) and (3) obligations or expenditures incurred (100, 200 and 300). Entries for one specific hospital should all be entered on one line of the HOSPITAL sheet. Thus, information for provinces or cities with more than one hospital will be found on as many lines or rows as there are hospitals in the province or city. The columns are labeled with the types of information or data that are to be entered for each hospital.

General instructions

- a. Ignore centavos.
- b. Some statements do not report expenditures in the proper sequence (i.e., lowest to highest COA code). Make sure obligations are entered in the proper columns of the spreadsheet

1. Encoding obligations for regular functions (GF101)

- Enter obligations with yellow markings in the order indicated in the MAIN sheet, i.e., 1011 to 8721, except for hospitals.

In cases where a regular function may have multiple entries (e.g. 8711-Agriculturist I; 8712-Agriculturist II; 8713-Agriculturist – III or 4421-RHU I and 4421- RHU II), sum the entries **by** sub-codes (i.e., 100, 200, 300) and enter the figures in the designed columns.

- For statements with hospitals (4421 B), enter for each hospital in HOSPITAL sheet the following:
 - Year
 - Region
 - Province
 - City/Municipality
 - Hospital name
 - Obligations for 100, 200 and 300

2. Encoding Sub-totals (Obligations, GF101)

Case 1: Statements with no sub-totals

Following the grouping of expenditures according to the first digit of COA code (i.e., enclosed in brackets), add all items excluding non-office items (i.e., expenditure items that are either marked in pink or penciled/crossed out).

Case 2: Sub-totals including non-office items

Subtract expenditures marked in pink or penciled out from the reported sub-total.

Case 3: Sub-totals excluding non-office items

Enter reported sub-totals as is.

3. Encoding Grand Total (General Fund 101)

Enter the reported **Grand Total** expenditures for the GF101. This will be used for checking purposes later.

4. Encoding Special Education Fund (SEF) Grand Total

Go to the SAAO for SEF, pick up the **Grand Total** expenditures for SEF and enter in the allocated column.

In cases where there are two SEF statements provided (one for liquidated and unliquidated expenses), sum the two expenditures and enter the figure in the designated column.

5. Encoding non-office expenditures for health (items marked in pink).

Enter the following in the corresponding columns allocated for non-office items:

- Description (verbatim or “as is”) of the special project/program
- COA code
- Obligations corresponding to 100, 200 and 300

6. Entering Indicator and Check Columns

For purposes of: a) tagging the different types of SAAO statements (i.e province vs. city vs. municipality) and SAAO availability; and b) checking internal consistency of encoded data, the following six columns should be inserted in the leftmost side of the MAIN sheet. (Do the insertion only after all expenditure data have been encoded.)

- Indicator Columns
 - a. provincial SAAO indicator: 1= if provincial SAAO or 0 = otherwise
 - b. city SAAO: 1= if city SAAO or 0 = otherwise

NOTE:

If province indicator=0 and city indicator=0, then the line contains data from a municipality SAAO.

- c. SAAO availability indicator: 1= if SAAO was available for the specific area for the given year or 0 = otherwise
- Check Columns
 - a. total of office expenditures (out of the General fund) across all major (1-digit) categories of expenditures including health – label as (A)
 - b. total of non-office expenditures for health – label as (B)

- c. grand total for expenditures (out of the General Fund) *minus* (A) *minus* (B) – this amount can only be greater than or equal to zero; this amount is also the total non-office expenditures for non-health programs and activities

Completeness of LGU Expenditure Data

The next four tables report on the extent of completeness of the LGU SAAO reports retrieved at COA for each of the four years. As the tables indicate, the provincial and city SAAOs had the highest percentages missing for all years. In 1993, more municipality SAAOs were missing because a number of the ARMM provinces were not audited by COA.

Data Availability: 1998

Status of Data Collection	Type of LGU			
	All	Provincial	City	Municipality
Expected Number of SAAOs	1,697	78	70	1,549
Number of SAAOs Retrived	1,552	49	34	1,469
Number of Missing SAAOs	145	29	36	80
Percent of SAAOs Missing	8.5%	37.2%	51.4%	5.2%

Data Availability: 1995

Status of Data Collection	Type of LGU			
	All	Provincial	City	Municipality
Expected Number of SAAOs	1,697	78	72	1,547
Number of SAAOs Retrived	1,593	66	60	1,467
Number of Missing SAAOs	104	12	12	80
Percent of SAAOs Missing	6.1%	15.4%	16.7%	5.2%

Data Availability: 1993

Status of Data Collection	Type of LGU			
	All	Provincial	City	Municipality
Expected Number of SAAOs	1,697	77	73	1,547
Number of SAAOs Retrived	1,512	56	55	1,401
Number of Missing SAAOs	185	21	18	146
Percent of SAAOs Missing	10.9%	27.2%	24.6	9.4%

Data Availability: 1992

Status of Data Collection	Type of LGU			
	All	Provincial	City	Municipality
Expected Number of SAAOs	1,697	76	74	1,547
Number of SAAOs Retrived	1,591	69	61	1,461

Number of Missing SAAOs	106	7	13	86
Percent of SAAOs Missing	6.2%	9.2%	18.6%	5.6

Description of Encoded Data

Sources of Data

Expenditure data (i.e. obligations incurred) were obtained from the following financial reports for the years 1992, 1993, 1995 and 1998:

1. provincial SAAO for General Fund No. 101, Current Legislative Appropriations
2. city SAAO for General Fund No. 101, Current Legislative Appropriations
3. city SAAO for Special Education Fund No. 221, Current Legislative Appropriations
4. municipality SAAO for General Fund No. 101, Current Legislative Appropriations
5. municipality SAAO for Special Education Fund No. 221, Current Legislative Appropriations

Format and Structure of the Data Files

1. Data are encoded in MS Excel files. Data for each year were originally encoded in nine (9) separate files and which were then combined into two (2) large files per year. These large files are:

92REG1TO6NCRCAR.XLS
 92REG7TO12ARMMCRG.XLS
 93REG1TO6NCRCAR.XLS
 93REG7TO12ARMMCRG.XLS
 95REG1TO6NCRCAR.XLS
 95REG7TO12ARMMCRG.XLS
 98REG1TO6NCRCAR.XLS
 98REG7TO12ARMMCRG.XLS

The first two characters of the filenames indicate the year and the remaining characters give the geographic areas for the data encoded.

2. Each Excel file contains two pages or worksheets labeled MAIN and HOSPITALS.
3. In the HOSPITALS sheet, hospitals are listed individually and consecutively as they appeared in the SAAOs. One row of the HOSPITALS spreadsheet contains information for one hospital. The following information are encoded for each hospital:
 - a) year of data (numeric)
 - location variables ----
 - b) region code (numeric)
 - c) region name (alphanumeric or text)
 - d) province name (alphanumeric or text)
 - e) province code (numeric)
 - f) city name (if applicable; alphanumeric)
 - g) municipality name (if applicable; alphanumeric)
 - hospital name and expenditures ----
 - h) hospital name (alphanumeric)
 - i) obligations – 100/PS or personal services (numeric)

- j) obligations – 200/MOOE or maintenance and other operating expenses
- k) obligations – 300/CO or capital outlay

The columns of the HOSPITALS sheet are labeled to indicate the type of information (as listed above) which have been encoded for each hospital. The HOSPITALS sheet does not include all provincial, district and city hospitals in the country. Some LGUs do not report expenditures per individual hospital so that these could not be entered in the HOSPITAL sheet. The total expenditures are, however, entered in the MAIN sheet.

4. In the MAIN sheet, one row or line contains information for one LGU. Expenditure data entered for one line (or for one LGU) come from the General Fund SAAO and the Special Education Fund SAAO. Total numbers of LGUs with available SAAOs are as follows:

<u>Year</u>	<u>Number of LGUs With SAAO</u>
1992	1,591
1993	1,512
1995	1,593
1998	1,552

The columns of the MAIN sheet are labeled to indicate the types of data encoded for each LGU. The data is grouped into seven types:

- a) indicator variables (columns 1-3 of MAIN) – indicators for type of LGU and availability of data
 - b) check columns (columns 4-6 of MAIN) – calculations that check for internal consistencies in the entries
 - c) year of data and LGU location (columns 7-14 of MAIN) – year of data and region, province, city/municipality of LGU
 - d) OBLIGATIONS for General Services and Health Services (for office functions, GF101) (columns 15-74 of MAIN) – amounts of office expenditures by specific type (i.e. by 4-digit code) of general administration and health services and by expense item (i.e. by PS, MOOE and CO)
 - e) OBLIGATIONS Subtotals (for office functions, GF101) (columns 75 and 80) – subtotals of office expenditures calculated for each major function or sector
 - f) TOTALS (columns 81 and 82) – grand total obligations for GF101 and grand total obligations for SEF221 (both grand totals as reported in the SAAOs)
 - g) OBLIGATIONS for Health (for non-office functions, GF101) – detailed data on non-office health activities of LGUs including expenditure description (in text), 4-digit COA expenditure code and obligations by expense item
5. The kinds of expenditure data encoded (in the MAIN sheet) for each LGU was determined by the purpose for which the database was created, i.e., to examine the devolution of the health sector in the Philippines. Thus, LGU Health Services expenditures data was compiled in greater detail than expenditures for other sectors. Expenditures for General Administrative Services were similarly compiled with more detail because these are considered “support services” to health service provision. Expenditures for other LGU functions were encoded only in totals.

Description of Data Encoded in the MAIN worksheet for each LGU

[insert Append1a.xls here]

List of Philippine Regions, Provinces, Cities, Municipalities and Assigned Codes

[insert Append1b.xls here]

Examples of SAAOs for Municipalities, Cities and Provinces

[Insert the following *.JPG files - sample SAAOs pages - here]

MUN1.JPG
MUN2.JPG
MUN3.JPG
MUN4.JPG

CITY1.JPG
CITY2.JPG
CITY3.JPG
CITY4.JPG
CITY5.JPG
CITY6.JPG
CITY7.JPG

PROV1.JPG
PROV2.JPG
PROV3.JPG
PROV4.JPG
PROV5.JPG

Appendix 2. Variable Definitions**Local Government Expenditure Data**

mpriv	local city/municipality government expenditures on private good types of health care goods and services, primarily hospitals, including personnel, materials (including drugs and medicines), equipment, operating expenses, and capital outlay for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
mpub	local city/municipality government expenditures on private and public types of health care, not including family planning for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
mfp	local city/municipality government expenditures on family planning including personnel, materials, equipment, operating expenses, and capital outlay for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
mpublic	local city/municipality government expenditures on public good types of health care goods and services, mainly primary health care and family planning, including personnel, materials, equipment, operating expenses, and capital outlay for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
mhfp	total city/municipality local government expenditures on health care and family planning for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
mtotal	total city/municipality local government expenditures on all publicly provided services, including personnel, materials and other operating expenses, and capital outlay for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
mpcap	per capita total local city/municipality government expenditures on health care and family planning (mhfp divided by city/municipality population) for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
mpcen	percent of total local city/municipality government expenditures devoted to health care and family planning (mhfp divided by mtotal) for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
ppriv	local provincial government expenditures on private good types of health care goods and services, primarily hospitals, including personnel, materials (including drugs and medicines), equipment, operating expenses, and capital outlay for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
ppub	local provincial government expenditures on private and public types of health care, not including family planning for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
pfp	local provincial government expenditures on family planning including personnel, materials, equipment, operating expenses, and capital outlay for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
ppublic	local provincial government expenditures on public good types of health care goods and services, mainly primary health care and family planning, including personnel, materials,

	equipment, operating expenses, and capital outlay for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
phfp	total local provincial government expenditures on health care and family planning for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
ptotal	total local provincial government expenditures on all publicly provided services, including personnel, materials and other operating expenses, and capital outlay for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
ppcap	per capita total local provincial government expenditures on health care and family planning (phfp divided by provincial population) for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
ppcen	percent of total local provincial government expenditures devoted to health care and family planning (phfp divided by ptotal) for 1992, 1993, 1995 and 1998.
tpcap	per capita total municipal and provincial government expenditures on health care and family planning for 1992, 1993, 1995 and 1998 in constant (1992=100) pesos.
tpcen	percent of total municipal and provincial government expenditures devoted to health care and family planning for 1992, 1993, 1995 and 1998.

1990 Census and 1995 Inter-Censal Philippines Local Government Means

infant	percent of population under 1 year of age by city, municipality and province for 1992, 1993, 1995 and 1998.
under5	percent of population under 5 years of age by city, municipality and province for 1992, 1993, 1995 and 1998.
elderly	percent of population over 65 years of age by city, municipality and province for 1992, 1993, 1995 and 1998.
wcba	percent of population who are women of child bearing age (15 – 49 years old) by city, municipality and province for 1992, 1993, 1995 and 1998.
disabled	percent of population with disability (totally or partially blind, low vision, totally or partially deaf, mute, speech defect, missing or paralyzed limbs, quadriplegic, retarded, insane, other) by city, municipality and province for 1992, 1993, 1995 and 1998.
working	percent of working age population (15 and older) who are working by city, municipality and province for 1992, 1993, 1995 and 1998.
overseas	percent of working age population (15 and older) who are working overseas by city, municipality and province for 1992, 1993, 1995 and 1998.
educ1	percent of population age 21 and older with no formal years of education by city, municipality and province for 1992, 1993, 1995 and 1998.

educ2	percent of population age 21 and older with 6 years of primary education (highest grade attained) by city, municipality and province for 1992, 1993, 1995 and 1998.
educ3	percent of population age 21 and older with high school diploma (highest grade attained) by city, municipality and province for 1992, 1993, 1995 and 1998.
educ4	percent of population age 21 and older with college degree or higher by city, municipality and province for 1992, 1993, 1995 and 1998.
mpop	population by city/municipality for 1992, 1993, 1995 and 1998.
ppop	population by province for 1992, 1993, 1995 and 1998.

1993 National Demographic Survey and 1998 National Demographic and Health Survey

assets	average Index of household assets for each city, municipality and province, which serves as a proxy index of wealth. Coding for each asset in the index is 1 if the household had the asset, and 0 if not. Assets include: i) own flush toilet, ii) electricity; iii) television; iv) refrigerator; v) bicycle; vi) motorcycle; vii) car; and viii) house floor made of vinyl, polished wood, ceramic, or marble. For each of these eight factors, the household was assigned the value of the natural log of the inverse of the proportion of households that had a value of one. This transformation weights the factor so that the scarcer the factor is, the higher its value. The rounded sums of the eight factors form the asset index which ranges from zero (low) to sixteen (high), depending on how many of the factors each household scored. Based on 1993 and 1998 DHS data.
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Philippines 1995, 1998 Statistical Yearbooks

area	square kilometers, by province and major city
density	population density by province and major city for 1992, 1993, 1995 and 1998.
city	city is designated as a Chartered City, yes=1, no=0
provcap	city or municipality is the provincial capital, yes=1, no=0

Other

yr92	1992 observation, yes=1, no=0 (omitted category)
yr93	1993 observation, yes=1, no=0
yr95	1995 observation, yes=1, no=0
yr98	1998 observation, yes=1, no=0