

philippine studies

Ateneo de Manila University • Loyola Heights, Quezon City • 1108 Philippines

The Impact of Botika Binhi on Essential Drugs

Victor S. Venida, Edgar D. Jovero and Ronald U. Mendoza

Philippine Studies vol. 50, no. 3 (2002): 371–394

Copyright © Ateneo de Manila University

Philippine Studies is published by the Ateneo de Manila University. Contents may not be copied or sent via email or other means to multiple sites and posted to a listserv without the copyright holder's written permission. Users may download and print articles for individual, noncommercial use only. However, unless prior permission has been obtained, you may not download an entire issue of a journal, or download multiple copies of articles.

Please contact the publisher for any further use of this work at philstudies@admu.edu.ph.

<http://www.philippinestudies.net>
Fri June 30 13:30:20 2008

The Impact of Botika Binhi on Essential Drugs

**Victor S. Venida, Edgar D. Jovero
and Ronald U. Mendoza**

In the Philippines, drug prices remain prohibitively high for the majority of the population in both rural and urban areas. Consequently, both government and non-government organizations sought innovative ways of streamlining and rationalizing the distribution of drugs in the country such that low-income urban and rural groups can have access to affordable and essential drugs.

This article seeks to present the Botika Binhi Program as a feasible alternative to the existing freemarket system of drug distribution in the Philippines. The article first provides an overview of the pharmaceutical industry and discusses how the peculiarities of the industry lead to the marginalization of many sectors of Philippine society from adequate provision of drugs. Next, the article delves into the current patterns of consumption of drugs. In this part, the article looks into the skewed distribution and consumption of drugs as well as the prevalent pattern of drug consumption that maybe termed *irrational*. Afterwards, the article shows that the Botika Binhi Program, as an *institutional innovation*, effectively makes drugs more accessible to the marginalized sectors in Philippine society. Lastly, its projected impact on savings and consumer welfare as well as its compatibility to the industry is propounded, thus justifying the continued implementation and further expansion of the program.

The Philippine Pharmaceutical Industry

The Supply Side: Oligopoly and Effective Barriers to Entry

Studies on the pharmaceutical industry in general (Cooper and Culyer 1973) indicate that it is one of the most profitable and largest

industries worldwide. Until now, the top corporations in the world include pharmaceutical manufacturers that have consistently posted high profit ratings. Thus, a good number of the top multinational companies in the world are pharmaceutical companies which earn profits mostly from collecting royalties and franchises in copyrighted brand names of popular drugs sold worldwide. In the Philippines, pharmaceutical manufacturers have consistently landed in the yearly survey of the Top 1000 Corporations. Of these pharmaceutical companies, only one, United Laboratories (Unilab), is of local equity. Table 1 shows the performance of these pharmaceutical companies, in terms of revenue generated.

Table 1. Top 10 Companies in the Pharmaceutical Industry.

Company Name	1993		1994	
	Gross Revenues	% of total	Gross Revenues	% of total
United Laboratories	6,318,921.0	21.08	5,984,644.0	21.43
Wyeth Philippines	3,049,878.0	10.17	2,836,678.0	10.16
Bristol-Myers Squibb Phils.	1,750,558.0	5.84	2,115,543.0	7.58
Abbott Laboratories	1,436,622.0	4.79	1,266,732.0	4.54
Ciba-Geigy Phils.	1,358,615.0	4.53	1,264,059.0	4.53
Bayer Philippines	1,342,104.0	4.48	1,218,409.0	4.36
Warner-Lambert	1,284,415.0	4.28	1,225,536.0	4.39
Glaxo Philippines	1,089,742.0	3.64	956,219.0	3.42
Astra Pharmaceuticals	916,854.0	3.06	817,545.0	2.93
Smith Kline & French Overseas	753,468.0	2.51	604,028.0	2.16
Industry Total	<u>29,976,277.0</u>	64.39	<u>27,920,069.0</u>	65.51
Total No. of Firms	76		65	

Source: *Philippine Business Perspectives* (1995). 1994–1995 Top 2000 Corporations of the Philippines. Ortigas Center. Pasig City.

As table 1 shows, we can see that the Philippine pharmaceutical industry is highly concentrated with about 64–65 percent of the market being controlled by the top ten biggest companies. This is not a surprising trend, since this can also be observed in the developed countries (Cooper and Culyer 1973).

There are several reasons which can explain this high level of concentration in the number of firms in the pharmaceutical industry. First,

although drug formulation and manufacture do not require any extensive level of economies of scale in terms of actual production (and thus large companies have no real advantage over relatively smaller ones), the prohibitive costs and significant risks involved in the research and development of new drugs remain as effective barriers to potential entrants into the industry (Patel 1983). This in turn can be explained by the high specialization in skills and machinery needed for continued research in technologically advanced laboratories as well as in the search for active ingredients in flora and fauna for new drugs in the field. In this regard, high levels of product innovation and therefore, sustained competitiveness and profitability, can only be achieved through significant allocations for research and development. The only alternative for such a significant outlay in research and development is simply to become a sub-contractor in the manufacture and distribution of drugs. In fact, most of the locally owned drug companies in the country are such.

Second, the international patents and trademarks system serves as another barrier against more participants in the industry. By the very nature of drugs consumption as being dependent on the consumers' perceptions of their efficacy, establishing trademarks and brand names becomes a significant factor to consider in analyzing the industry structure. Drug firms therefore have to spend on advertising to maintain consistent consumer patronage. Consequently, large appropriations for marketing, promotion, and distribution activities enable effective brand differentiation and thus account for a drug market dominated by large multinational corporations.

This structure of the pharmaceutical industry ultimately becomes reflected in the costs of drug production and distribution. The cost structure of selected Multinational pharmaceutical companies as of 1983 (the latest available for global data) shows a substantial 42 percent of retail cost being accounted for by distribution and promotion costs and retail mark-up as shown in the following table.

Table 2 clearly shows that the sum of distribution and promotion, royalties, trademarks and patents, general administration, and retail mark-up account for well over 50 percent of the total cost of drugs at the retail level. There is therefore a considerable differential between actual production cost (at 28 percent of total cost at retail) and the sum of the factors pointed out above.

This same cost pattern is reflected in Philippine pharmaceutical firms. A more recent survey published in the Philippine Pharmaceuti-

cal Industry Factbook shows that the cost structure estimation in 1993 has experienced no significant change over the years, when based on Mahesh Patel's 1983 estimates for the cost structure for the world. For instance in 1993, operating and selling expenses including advertising, promotion, marketing, and distribution, still accounted for a considerable amount of the total net sales at 33.93 percent, as seen in Table 3.

Table 2: The Cost Structure of Pharmaceutical Companies, Retail Level

Component	Percent of Retail Cost
Manufacturing Cost	28.0
Distribution and Promotion	12.0
Royalties, Trademarks, and Patents	1.5
General Administration	7.0
Research and Development	7.0
Profit, Before and After Taxes	15.0
Retail Mark-up	30.0
Total	100.0

Source: Patel, Mahesh P. (1993). "Drug Costs in Developing Countries and Efforts to Reduce Them." *World Development*.

Table 3: Pharmaceutical Industry Cost Structure in 1993, Wholesale Level
(in percent to total sales net of VAT)

Net Sales	Total
1. Cost of Goods Manufactured and Sold	51.31
2. Operating and Selling Expenses	33.93
2.1 General Management Costs	6.75
2.2 Selling Costs	14.31
2.3 Advertising and Promotion	10.17
2.4 Research and Development	0.58
2.5 Royalties	0.59
2.6 Interest and Bank Charges	1.27
2.7 Other Operating and Selling Expenses	0.26
3. Corporate Tax	5.70
4. Net Profits	9.06

Source: *Philippine Pharmaceutical Industry Factbook* (1994)

Interestingly, these figures are still on the wholesale level. If one were to incorporate retail costs, it can be argued that there would be little difference in the retail cost structure for multinational pharmaceutical firms in 1983 and with the retail cost structure of Philippine pharmaceutical firms in 1993. It should be quite clear, therefore, that mechanisms to reduce the retail mark-up and distribution and promotion costs can substantially reduce the retail price of pharmaceutical products. These two cost factors comprise 42 percent of the total retail cost in the 1983 data for the world, and at least 33.93 percent of wholesale cost in the 1993 data for the Philippines. As shall be pointed out, the Botika-Binhi mechanism can significantly reduce costs that accrue from retail mark-up and distribution and promotion.

The Demand Side: Patterns of Drug Use

On the demand side, the consumption patterns in developing countries show what one might call an *irrational* drug use due to the imperfections of the health care market and the absence of any adequate national health care system.

For instance, with regard to the need for a national healthcare system, it was only during President Corazon C. Aquino's term that the nucleus of a national health program was designed. In dealing with the provision of drugs, the program included suggested policy measures such as: (1) the elaboration of a national formulary to control the proliferation of products; (2) the introduction of generic labeling; (3) the removal of banned, harmful, and ineffective drugs from the market and; (4) the enforcement of policies on pharmaceutical advertising and promotion.

Unfortunately for various reasons, these measures have been implemented slowly or, in the case of generic labeling, the results in the field have been less than satisfactory. Until the present, a comprehensive national healthcare program has yet to be put in place. Therefore, beyond the activities of NGOs and community-based groups, the specific health programs of the DOH (i.e. Oplan Alis Disease) and the provision of healthcare by admittedly understaffed and underfunded Rural Health Units (RHUs) and Government Health Units (GHUs), access to healthcare in the Philippines is largely concentrated in the higher income classes.

As a result, the use of safe and effective drugs when needed or the *rational* consumption of drugs becomes difficult to achieve (Hardon 1991). For instance, a study has shown that Metro Manila, which only

accounts for fourteen percent of the population, corners nearly half of total drug sales in the Philippines (Tan 1988).

This situation becomes even more alarming given the fact that the drugs that eventually reach most rural poor (and many urban poor) areas are commonly consumed without trained health care personnel. Self-medication and self-prescription of drugs commonly becomes a substitute for consultation with a physician. These situations stem from spiraling health care costs, which reach beyond the budget of most urban and rural poor households. As early as 1981 this demand pattern has been noticed as can be illustrated in Table 4.

Table 4: Distribution of Cases by Place of First Consultation, Philippines, 1981 (in percent)

Place of Consultation	Urban	Rural	Total
Home	42.6	46.2	45.1
Government Hospital	8.5	4.8	5.8
Private Hospital	5.4	4.7	4.9
Rural Health Unit/ Puericulture Center	10.3	10.9	10.8
Barangay Health Center	2.3	11.5	8.7
Private Clinic	17.6	9.6	12.1
Not Reported	<u>13.3</u>	<u>12.3</u>	<u>12.6</u>
Total	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

Source: Department of Health, 1981. National Health Survey.

In 1981, a little less than half (at 45.1 percent) of all Filipino households reported self-medication at home as their first choice in seeking medication. As expected, the proportion is higher among rural households (at 46.2 percent). This is due not only to the significantly lower purchasing power of rural families, but the absence of trained healthcare personnel and doctors in both the urban and rural poor communities. Furthermore, it is not surprising that the urban respondents tallied a much higher 5.4 percent and 17.6 percent of total cases of first consultation in private hospitals and private clinics respectively, as compared to 4.7 percent and 9.6 percent for the respondents in the rural areas. This is because most of the biggest and best equipped private hospitals and clinics are located in Manila and similar healthcare facilities in the rural areas are patronized by the very few higher income classes.

More recent figures further support the inadequate healthcare availment of the lower income classes. The results of the National Health Survey, published in 1995, indicate that the poorest households in the Philippines use neither private nor government hospitals and health facilities. This clearly suggests a disproportionate access to competent and informed medical advice. Thus, after fourteen years, the situation has hardly altered. Table 5 shows this.

Table 5: Households that used Services from Health Facilities During the Past 12 Months (in percent)

Monthly Income	Government Hospital	Rural Health Unit	Barangay Health Station	Private Hospital, Clinic
Under 500	3	3	4	2
500-999	4	5	6	3
1000-1499	8	9	11	5
1500-1999	8	10	12	6
2000-2999	19	20	22	14
3000-3999	18	18	18	16
4000-5999	19	17	16	20
6000-9999	14	11	8	19
10,000 above	7	5	3	14

Source: National Health Survey (as cited in Philippine Health Matters 1995: *Health Alert*. Health Action Information Network.)

The survey data suggest that the low-income classes are effectively marginalized from health care provision. For example, only 23 percent of those who made use of government hospitals belonged to the lowest four income brackets, while fully 70 percent of the government hospital patrons were from the next four higher brackets. Also, only 27 percent of those who used rural health stations and 33 percent of those who used barangay health stations, belonged to the lowest four income brackets. Again, a comparatively larger 66 percent and 64 percent of the users of these same healthcare facilities respectively belonged to the next four higher income brackets.

Understandably, we can note from the table that an even larger discrepancy can be expected from the use of private hospitals or clinics. Only 16 percent of the respondents who went to private hospitals or clinics belonged to the lowest four income classes. On the other hand

almost 70 percent of the respondents who went to private hospitals and clinics belonged to the next four higher income brackets. This obvious inequitable availment of health care in the Philippines is exacerbated by the increasing costs of pharmaceuticals, a major component in health care expenditures.

Table 6 summarizes the increase in drug prices as compared with the general price index, and the daily wage rates in pesos. It shows the percentage changes in the cost and price movements from year to year. It can be observed from Table 6 that drug prices, as expected, tend to follow the general direction of the price increase for consumer goods in general. Moreover, the drug price increase during several specific years was quite alarming due to the fact that the drug price increase actually overtook the general price increase of all goods (as shown by the CPI). These years were from 1986 to 1987 and from 1991 to 1993. In this regard, since there is no government policy which seeks to control these prices in the drug industry (except indirectly by means of inflationary controls), consumers are left to shoulder the consistently increasing load of higher drug prices. Considered in the light of ever-

Table 6: Comparative Movements of Cost Determinants and Pharmaceutical Prices (in percent)

Year	All Drugs	Ethical Drugs	Proprietary Drugs	Peso/Day Wage Rate	CPI All Items
1979	10.30	10.00	12.20	38.10	17.50
1980	11.60	11.36	12.66	26.00	18.21
1981	8.45	8.16	9.65	14.54	13.10
1982	7.57	7.85	6.57	1.46	10.25
1983	29.04	30.79	20.04	7.52	9.99
1984	39.13	37.56	-7.73	41.63	50.34
1985	9.00	8.25	81.23	17.77	23.11
1986	13.24	13.73	11.13	0.00	0.77
1987	8.17	8.25	7.89	2.10	3.77
1988	8.74	8.38	10.24	18.99	8.76
1989	9.38	9.29	9.67	19.55	10.60
1990	17.27	18.65	12.40	16.33	19.01
1991	19.98	19.90	20.41	22.38	15.12
1992	12.24	12.04	12.84	0.00	8.95
1993	8.55	8.61	8.41	14.41	7.55

Source: *Philippine Pharmaceutical Industry Factbook* (1994).

increasing prices of all other commodities and the sluggish increase in income, and hence purchasing power, the burden becomes all the more considerable.

Data published by the Health Action Information Network (HAIN) show that this pattern is still very much a characteristic of the pharmaceutical prices in the Philippines. Table 7 shows HAIN's findings for increases in medicine costs from 1993 to 1994 for acute bronchitis, tuberculosis, and hypertension, three of the most common illnesses in the Philippines. One would note that prices for drugs for bronchitis increased by 4.7 to 5 percent; for tuberculosis they increased by at least 10 percent; likewise for drugs for hypertension. During this same period, the inflation rate was 7.2 percent so that many essential drugs had price increases higher than the general price increase. This suggests that the effects of the drug price increases are somewhat understated as the consumers have no choice but to consume the most essential of drugs in emergency situations, almost regardless of cost.

On the whole, these data further suggest that the low-income classes are not exactly part of the market of the established pharmaceutical firms. The price increases for their products are quite high, at times overtaking the increase in prices for all consumer goods and sometimes the wage rate as well. If ever they purchase drugs, often it is a case of: self-medication because of the high cost of private medical advice; the absence of even government-funded health facilities in the rural areas; or simply because even when they can avail of government facilities the prices of prescribed and/or essential drugs are simply prohibitive. Thus it is not surprising that the general health situation of the population, the majority of whom are considered part of the lower income classes, is far from satisfactory.

Sharp increases for pharmaceutical prices can therefore be considered an indicator of the marginalization of lower income classes from this market. This is because, as pointed out by Ginson-Bautista (1990), the income elasticity of demand for pharmaceuticals (or the responsiveness to purchase more pharmaceuticals due to increases in income) is almost constant all across the different levels of income, as shown in Table 8. (The lowest income class is quintile I, progressing to the highest at quintile V).

From table 8 one can observe that the income elasticities across all the healthcare options are almost constant all across the income quintiles. Drugs, in particular, have no significant variance in income elasticity as the figures range from 1.274 to 1.265, if we look at the

Table 7: Costs of Medicines for Common Illnesses in the Philippines

Acute Bronchitis	Dec	Dec	%
Adult dosage: amoxycillin 500mg, 3x daily for 5 days, 10 capsules	1993	1994	increase
Amoxil 500 mg capsule	12.93	13.58	5.0
Total Cost with Amoxil	193.15	203.7	5.0
Moxillin 500 mg capsule	11.65	12.20	4.7
Total Cost with Moxillin	174.75	183.0	4.7
Tuberculosis	Dec	Dec	%
3-drug, 6 month regimen	1993	1994	increase
Nicetal tablet (isoniazid 400 mg)	1.22	1.35	10.7
Ciba PZA (pyrazinamide 500 mg)	4.05	4.50	11.1
Rimactane (rifampicin 600 mg)	28.00	28.00	0.0
Cost per day	33.27	33.85	1.7
Cost for 6 months	5502.6	5533	1.0
Based on standard treatment with all three drugs daily for the first two months of treatment with isoniazid and rifampicin for the last four months. For complicated cases with drug resistance—which is now quite common—the costs will be much larger.			
Hypertension	Dec	Dec	%
Using propranolol 160 mg/day	1993	1994	increase
Inderal 40 mg tablet	5.33	5.87	10.1
Cost per day	21.32	23.48	10.1
Cost per month	639.60	704.4	10.1

Source: *Health Alert Issue No. 182*. HAIN (1994).

Table 8: Income Elasticity Estimates by Quintile

Income Quintile	Hospital Services	Drugs	Dental Service	Doctors Service	Other Medical	Total
I	2.253	1.274	3.686	1.348	1.440	1.350
II	2.309	1.278	5.054	1.317	1.448	1.384
III	2.256	1.274	3.733	1.348	1.440	1.359
IV	2.200	1.270	3.045	1.389	1.430	1.329
V	2.132	1.265	2.535	1.449	1.420	1.279
Mean	2.255	1.275	3.716	1.351	1.441	1.351

Source: Ginson-Bautista (1990).

elasticity figures from the lowest income (quintile I) to the highest (quintile V). The figures also show that the demand for all health options is income-elastic. This means that the consumer responds to increases in income by increasing the expenditure for health care by a greater proportion than the increase in income. For instance, for drugs in the lowest income quintile which has an income elasticity of 1.274, for every 1 percent increase in income, there is a 1.274 percent increase in the expenditures on drugs.

This fact undoubtedly suggests that low income classes are not at all covered in the market for pharmaceuticals. We can infer this point by looking at the elasticity figures above. As the prices of drugs become ever increasing, consumer purchases of drugs will change only within an income-elastic market. This means that if the increase in income in a specific income quintile is significant, then there will be significant changes in purchases in drugs.

Since all of the consumers across the different income levels buy more drugs when their income increases (at roughly the same proportions as shown by the table), then drug purchases will increase only if there was a significant increase in income in the first place.

Since the low income classes rarely experience any significant increase in income as evidenced by the almost constant poverty rate in the country for the previous years (National Statistics Office 1995), continuously increasing drug prices on the part of the drug manufacturers and retailers will push the low income groups out of the market. They will favor the more upwardly mobile income classes that exhibit the same income elasticity levels, but have faster and more significant increases in income. Truly the established pharmaceutical manufacturers and retailers need only to cater to the middle- and upper-income classes and still be assured of profitability. The low-income classes do not carry much weight in the market, even though their health care needs are real and basic.

Thus, from these findings, two issues can be highlighted. One deals with rationalizing a policy to encourage self-medication in the absence of trained medical professionals. Because of the obvious inadequacy of trained health care personnel, such a program may be pursued with the main objective of lowering the costs of drugs. Greater welfare for rural households can therefore be achieved if they can obtain cheap, over-the-counter essential drugs without the need for trained medical professionals who are hardly present in the rural areas anyway.

Second, because of the marketing structure in the supply side of the drugs manufacturing sector, it is necessary to develop an alternative policy to provide easily accessible and cheaper drugs to the poorer households in the most remote rural areas. One apparent policy option is outright industry regulation, but implementation of this policy remains doubtful owing to the government's commitment to market liberalization. Furthermore, regulation entails a large budgetary allocation from the national government which is an additional constraint since this will worsen the government's budgetary problems.

In the light of these issues, the Botika-Binhi presents a suitable alternative program to increase the supply of essential drugs to lower income groups, but at the same time reduce the need for greater government involvement in terms of increased regulation for the pharmaceutical industry. The Botika-Binhi alternative seeks to reach out to low-income groups and make pharmaceuticals more accessible to them without entailing increased government intervention.

In the next section, we will explain why the Botika-Binhi is a sound alternative to government regulation, for two main reasons. First, the program's effectiveness, in actually providing access to pharmaceuticals among the low-income groups, is proven by the experience of several successful cases in low-income areas. And second, there is very little need for government intervention which will create non-acceptable market changes which distort the level of efficiency of a free market. In other words, this program by itself is economically and financially viable within the current market structure.

The Botika-Binhi as a Policy Option

The high costs of drugs, as explained by the nature of the pharmaceutical industry market structure, and the consequent irrational consumption of these drugs, justify an examination of another option for drug distribution, in lieu of the current freemarket system.

The Botika-Binhi Program: Making Drugs More Accessible to the Poor

The Botika-Binhi Program is a community-led project, with the objective of providing essential drugs to selected rural or urban poor communities at lower than market prices. The program makes use of the network of health organizations based on specific target communities.

The program's first drug dispensary was located in Smokey Mountain. From there, the program was established all over the country, in areas not readily serviced by commercial and government drug dis-

pensaries. There were 370 Botika-Binhi outlets as of March 1996, located from as far North as Regions 1 and 2, and as far South as Region 11. Project managers figure that with the expected increase in the demand for drugs, around 1000 Botika-Binhi outlets all across the country can be established and sustained in due time. Indeed, the program targets precisely those rural areas and urban communities which are hardly covered by the established market network of pharmaceutical firms.

The Botika-Binhi's current drug purchasing and distribution operations are funneled through the Kabalikat ng Botika-Binhi (KBB) which has an office in Project 4, Quezon City. There, inventory requirements for all Botika-Binhi outlets are coordinated with the pharmaceutical supplier, DLI Generics.

The Program's Effectiveness: Significantly Lowered Costs

As discussed earlier, the industry structure of drugs manufacturing and distribution is characterized by high costs for advertising and patenting coupled with significant increases in the drugs' selling price due to mark-up on the retail and distribution level. Ginson-Bautista (1990) showed that the bulk (89.5 percent) of drug sales to the final consumer are made by private retail drugstores all over the country, the most common route followed in drug distribution is from the manufacturer to the retail drugstore to the consumers. Another is that because the government's share of total drugs sales is very minute, at less than three percent, government efforts alone to reduce the selling prices of drugs through government hospitals and pharmacies (another route for the distribution of drugs) may prove insignificant. Lastly, the distributors, whether contracted by the manufacturer or owned by the manufacturer, add another layer of mark-up pricing as the majority of drugs produced in the market pass through these. Many of these distributors charge 12 percent to 15 percent of sales for marketing fees alone (Ginson-Bautista 1990).

In a market situation, the retail costs of a product can be reduced by either a technological innovation or an institutional innovation. A technological innovation reduces retail cost by reducing the cost of production. This entails substantial outlay in research, capital, training and the like. An institutional innovation reduces retail cost by reducing the cost of marketing and distribution of the product. But this need not entail substantial outlays since it often requires mere streamlining and simplification of the existing distribution network (Navarro et al. 1995).

The Botika-Binhi Program is essentially an institutional innovation that was designed in answer to this situation, where there is an obvious need to diminish the distribution and search costs that are added to the final selling prices of drugs. The program provides a viable cost-minimizing alternative to the predominant commercial freemarket system for several reasons.

First, the Botika-Binhi Program cuts costs by providing the manufacturer with a ready and direct market. A Botika-Binhi is established in a community by an organization whose members pay dues and set aside funds for administration and health insurance. Members are charged a price lower than non-members. They restrict their drug purchases only to generic brands of essential drugs. And many also provide herbal medicines and preparations. Thus the Botika-Binhi has an established market with a well-defined product or products to purchase.

Considering that costs and profit margins of wholesale and retail distributors, who market and sell the drugs to the end users, are estimated to account for 20 percent to 50 percent of producers' prices (Patel 1983), a significant proportion of the final selling price of drugs can be attributed to the search for the consumers. For instance, as of March 1987, a study showed that P20.6 million had already been spent on drugs advertising through the mass media (Tan 1988). It will not be surprising that advertising costs alone can run-up to the P100 million mark for a single year. Hence, a system must be designed to circumvent these costs and bring the consumers closer to the suppliers, and obviate unnecessary expenditures in the search for the final consumers.

Botika-Binhi is just such a system as it cuts the distributor and the retailer from the flow of drugs from the manufacturer to the consumer (Navarro et al. 1995). The program obviates advertising and marketing expenses as well as the search costs and mark-up of the retail drugstores, since the consumers are well-known and are well-defined. The result is a final price for drugs that is at least a fifth to half lesser than that of the current market system, as based on the cost structure provided earlier.

A field visit conducted by the authors supported these expected savings generated from Botika-Binhi. Table 9 compares the prices of three different drug stores with that of the Botika-Binhi station in Silang, Cavite, and shows the amount of savings when one purchases from the Botika-Binhi station as compared to the cheapest freemarket alternative source.

Table 9: Prices from Survey of three drugstores and Botika-Binhi in Silang, Cavite (March 1996)

Drugs	Drugstore	Botika-Binhi Member	Botika-Binhi Non-Member	Diff. Between BB Member and Drugstore
Amoxycillin 250	4.75	3.00	5.00	58%
Amoxycillin 500	8.00	5.00	7.00	60%

*Both figures were derived from comparing the Amoxycillin prices of BB with the branded equivalent in the market.

What is clearly observed from the data gathered from Silang, Cavite is that the price differentials are 58–60 percent, thus consumers' savings, are very high. Equally significant are the savings that the members can generate from not having to go to the *poblacion* in Silang, where all of the other commercial drugstores and the local government drug dispensary can be found. Thus, transportation costs become unnecessary and time spent away from their work or enterprise is minimized, as the Botika-Binhi station is only within walking distance away from the houses of the members.

Therefore, what is essentially achieved is that, at the very least, the gross margins of the middlemen, less the minimal management expenses of the Botika-Binhi, are passed on to the consumers in the form of savings. Translated into actual peso savings per year for individual households, the least amount of savings that could have been generated from the Botika Binhi in 1991 are estimated in table 10. The average household income was obtained from the FIES 1991. These three localities—Cavite, Caloocan and Surigao City—were the areas covered by the pilot study of Navarro et al. (1995).

The three places identified in the table all have Botika-Binhi stations in place for 1995, and the savings generated in each were calculated based on the conservatively estimated 20 percent of total purchase cost for drugs. The estimated savings in Cavite which has an estimated average household income of P40,666.00 and with 1 percent of income allocated for drug purchases, is P81.33 for 1991. In 1995 prices (or in inflation corrected terms), the savings generated was P164.74 per year. The corresponding savings for Surigao del Norte and Caloocan City are P99.68 and P385.49 per year respectively.

Table 10. Projected Savings from Botika-Binhi per Household

Location	Average Household Income	Estimated Drug Purchases	Percent of Income	Minimum 20% Savings Household	In 1995 Prices (per Household)
	1991	1991		1991	1995
Cavite	P 40,666.00	P 406.66	1.0%	P 81.33	P 164.74
Surigao City	P 41,011.00	P 246.06	0.6%	P 49.21	P 99.68
Caloocan City	P 105,731.00	P 951.58	0.9%	P 190.32	P 385.49

Source of basic data: 1991 FIES and Navarro, et al (2001).

One can further note from the table above that these savings account for only the minimum 20 percent cost reduction in the provision of drugs, and still does not consider the transportation and time costs. Although seemingly minuscule, these calculable savings are quite substantial on the level of the individual low-income household, specially in the rural areas of Cavite and Surigao del Norte.

In fact, Hardon (1991) showed that one out of every two families in two urban poor communities in Marikina suffered debt due to health-related borrowing. Since it was further discovered in that study that expenditures on drugs composed a considerable proportion of the total health expenditures of the respondents (as supported by Patel), then methods to reduce the drug costs will benefit low-income households such as those in Hardon's study.

Moreover, lower transportation costs to and from the Botika-Binhi outlets (which are located in the target community itself) and the minimized cost of time spent in purchasing the drugs (i.e. the consumers need not go out of their way just to purchase their medicine), lead to higher well-being for the consumers. Such was the case observed in Silang, Cavite, where the tricycle ride to the poblacion from the barangay was three pesos one-way. Consequently, the price difference between the Botika Binhi and the commercial drugstores was therefore higher than the selling price alone suggested. Transportation expense and time spent away from work are two additional factors that the Botika Binhi system enables the consumer to generate savings from.

Second, because the program operates by means of bulk buying on the part of the KBB, drug costs in terms of transportation and handling can be minimized. Furthermore such a practice provides the manufac-

turer with the incentive to lower the wholesale price to the KBB as average cost for the drugs can be effectively lessened.

A similar policy of bulk buying by the Department of Health during the Aquino administration, for example, was reputed to have saved the government approximately 30 percent of total drug purchases. This is to be expected given that the manufacturer avoids additional search costs (i.e. advertising and distributorship bills) and the full mark-up pricing (had costs been higher). The manufacturer therefore has an incentive to give discounts on the wholesale prices of drugs.

A further significant benefit can be derived from the point of view of economic efficiency, as the Botika Binhi program replaces the costly and highly inefficient system of providing drugs through numerous private retail drugstores. The practice of storing drugs in ill-suited conditions, oftentimes until their effective shelf life has expired, can be prevalent. Few regulatory measures have been implemented to constantly assess the safety and efficacy of drugs being sold and purchased in the market in both urban and rural areas. This situation becomes all the more alarming when one takes into account the illegal but widespread practice of dispensing drugs through local *sari-sari* stores. In Hardon's four-month survey of Barangays Bonanza and Balubad in Marikina, for instance, over 50 percent of all medications recorded were obtained from community sources—the *sari-sari* store.

Third, the Botika-Binhi program was designed with a specific formula of effective, safe, and affordable drugs. Special note of the drugs' cost-effectiveness is taken into consideration by the KBB in identifying drugs for distribution and sale to its members. Thus, the end-consumer of the drugs purchased through the KBB gain the benefits from lowered search costs and minimized incidence of procuring unsafe and ineffective drugs. Presumably, DLI Generics will continue to be the KBB's main supplier for as long as it allows the KBB to achieve these ends.

Moreover, the Botika Binhi formula itself takes advantage of choosing from a wide range of options under the generics list of drugs available in the market; DLI Generics being one of many suppliers to choose from. The generics list highlights the considerable price differentials in the current market system of drugs distribution, therefore implying an equally significant level of savings that can be attained from its use.

It is important to note that the use of a generics-type of list has been expected to be five times less expensive than the branded products (Foster 1989).

Furthermore, if the awareness of the use of generics is limited in the far-flung communities where Botika-Binhi stations operate (as shown in table 11), then an added gain is achieved by the continued operation of these stations there. Botika-Binhi bridges the gap in information about the use of generics by its very use of the generics system in its operations.

This gain is particularly true for the Cordillera Autonomous Region (CAR), where most of the Botika-Binhi stations have been located as of June 1994 and where only 47 percent of the respondents to the survey reported being familiar with generics.

Furthermore, table 11 suggests that the Botika-Binhi system still has much to gain in terms of operating in regions where familiarity with the generics list leaves much to be desired. For instance, 55 percent of the total Botika-Binhi stations operate in the top five regions in terms of familiarity with generics. On the other hand, excluding CAR, less than 4 percent of the total operate in the bottom five regions in terms of familiarity to generics. By expanding operations in the regions where familiarity with generics is visibly lacking, Botika-Binhi can augment government efforts to promote the generics system. This is accomplished by the routine training of members and community leaders to familiarize themselves with the operation of the Botika Binhi station, in the program. These regions, moreover, happen to have the highest poverty incidence among all regions in the country.

From the point of view of the consumer's well-being, the program thus minimizes costs by excluding drugs of little or no efficacy from distribution and sale, by its very use of generics. Furthermore, it bridges the information gap about the generics list across regions. Hence, the effectiveness of drugs which have been identified is maximized, as the consumer, through the Botika-Binhi, has chosen from the widest array of possible options on the generics list.

Fourth and last, the program utilizes an already existing network of people's organizations, as already mentioned above. No additional costs need be undertaken in order to establish Botika-Binhi outlets in rural and urban poor areas as the outlets are predominantly handled by volunteer members, with minimal allowance expenses. In fact, the Botika-Binhi system taps the community leaders and their households in integrating the Botika-Binhi as a *community pharmacy*, with the overall objective of promoting the well-being of all the members of the community. The system therefore is not an alien enterprise that the community cannot identify with.

Table 11: Familiarity of Household Respondents with Generics, by Region, 1992

Regions	Household (in %)	Botika Binhi Presence
NCR	89	29
11	70	17
10	67	14
4	65	14
3	64	23
1	55	2
8	52	24
6	51	None
9	50	None
7	48	1
12	47	None
CAR	47	46
2	44	4
5	43	1
ARMM	24	None

Source: National Health Statistics (1992) and "The Sustainability of the Botika-Binhi Program" (Navarro et al. 2001)

Furthermore, communities not normally serviced by private commercial drugstores, because of the lack of a significant market, are able to take advantage of the network of the KBB which makes the drugs more proximally accessible and lessens extra-purchase costs of drugs to the consumers, such as transportation expense and time spent away from their work.

Moreover, in such cases of insufficient demand, potential economies of scale can further be achieved through networking of individual Botika-Binhi outlets. Very small markets for drugs can band together to become group buyers, taking advantage of the lessened costs and available wholesale discounts.

Lower Drug Prices and Community Health Care

The Botika-Binhi can effectively lead to lower drug prices. However, as drug prices go down, the anticipated result may be an increase in self-medication, an already widespread practice even with the high prices of drugs. This is because when low-income households have generated savings from the lower prices of drugs, the amount set aside can either go to healthcare expenditures (i.e. drugs, medical consulta-

tion and other healthcare services) or added to the consumption of basic commodities (i.e. food and shelter).

The underlying question therefore is if the generated savings will be sufficiently high such that these will be directed towards proper and adequate medical consultation and ancillary healthcare services. Since the Botika-Binhi Program was only beginning to be implemented, it was expected that in the immediate term, the lowering of drug costs alone will simply reinforce the practice of self-medication and the subsequent irrational use of drugs.

The Botika-Binhi Program does not serve as a mere conduit for lower prices, however, so that this consequence need not be inevitable. Because Botika-Binhi is designed to be a community-based and organized drug insurance scheme premised on the principle of community health improvement through collective efforts, the lower prices of drugs will be accompanied by the training of community members in the proper administration of the drugs and the wholistic promotion of health in the community. Indeed, in the rural Botika-Binhi, Navarro et al (1995) found that these were largely managed by Barangay Health Workers (BHWs) and midwives under the government's Primary Health Care (PHC) program. These people are precisely trained in the proper administration of essential drugs and in health care in general.

Its being a drug insurance program is based on the principle that a community's collective effort is necessary to undertake health improvement programs. This is where the other aspect of Botika-Binhi activities concentrate on—by training health workers in coordination with people's initiatives. The basic idea is that a contribution or membership due of a member entitles him or her to the savings services of a "community pharmacy."

After some time when the community's aggregate savings can be pooled into one fund, this fund may be used to undertake health and other related projects aimed at further community health improvement other than an increased access to cheaper drugs. This may include inviting the services of medical personnel or funding the visit of a member to the nearest medical facilities where such services as x-ray or blood tests may be had. This in fact was being done by the Botika-Binhi stations in Surigao City.

Such a scheme is principally based on the following premises:

1. The community must be consulted about their major health problems and the alternative treatments they face as choices. Indeed, a

health survey of the community is a requirement before a Botika-Binhi can be established.

2. Every family in the community is encouraged to save one percent of their incomes for health.
3. The Botika-Binhi is managed by health workers and volunteers from the community.
4. The program is self-generating in terms of funds. The people themselves should look for resources in the community that can be used as capital fund.
5. Botika Binhi promotes preventive, promotive and primary health care as for instance the use of herbal medicines and other health related products such as iodized salt and mosbar.

These principles translate into the three essential components of Botika Binhi's community drug insurance program:

- a. **Participatory Community Organization:** Past experiences of Botika Binhi's activities with low-income activities such as those in Smokey Mountain; Silang, Cavite and Surigao City have pointed out that people have in themselves the potential for planning and carrying out into concrete action programs which will improve the over-all health conditions in their respective communities. Therefore, programs aimed at improving health conditions should begin with consultation with the people and working together with them.
- b. **Community Financing:** One factor that sets the Botika-Binhi apart is its revolutionary approach at community financing. The members themselves contribute the initial and operating funds of the insurance scheme. It is to be emphasized that the Botika Binhi is not a dole-out program. The community themselves take the initiative not only in the planning but also in the financing.
- c. **Wholistic Development of the Health Worker:** Health workers have two distinct roles: (a) the provision of health services, and (b) the promotion of health in the community. In the provision of health services, basic training on health should be provided. For the promotion of health in the community, they should be trained in community organizing, leadership skills, basic accounting and economics, counseling, teaching and value formation. It is important that the health workers be honest, sincere, committed, respected and trusted by the people in the community.

Finally, as regards the financial viability and of the Botika-Binhi Program, Navarro et al. (2001) pointed towards its sustainability. At the core of the financial analysis, findings showed that the Botika Binhi stations studied were able to generate financial resources more from their operations rather than from membership contributions. The reconstructed financial statements reflected an ability to generate cash internally, an important indicator of sustainability. What makes these stations precisely viable financially is that they are managed and operated by health workers and volunteers.

In effect, the Botika-Binhi Program can be considered socially compatible with the community backdrop as well as financially sustainable.

Conclusion and Recommendations

Currently, statistics show that each North American spends fifteen times what an Asian spends on pharmaceuticals, but one hundred times what an Asian allocates for total health care expenditures. Drugs, therefore, constitute a greater proportion of the health care budgets in Asian countries (50 percent) than in North America (6 percent), notwithstanding the relatively more expensive price of drugs in Asian countries. This discrepancy in budget allocation shows how significant drugs are in the health expenditures of Asian countries, such as the Philippines.

Furthermore, pharmaceutical demand projections show that, although developing countries account for only a third of total world drug consumption in 1981, developing countries will consume almost 60 percent of world drugs produced by the year 2000 (Patel 1983).

This by itself assures the established pharmaceutical manufacturers and distributors stable and even increasing profitability. As was shown earlier, the drug industry does not focus on the lower income classes, as they are on the most part marginalized from adequate drug provision. The result is that the Botika-Binhi Program will be a welcome innovation in the market as it seeks to serve a traditionally untapped and disaggregated part of the market demand.

The important note to be made here is that the Botika-Binhi Program is compatible with government efforts to liberalize the industry. The fact that the target market for the program is composed of the marginalized classes in the freemarket system effectively makes the

program a significant complement to the existing system. Notwithstanding the need for a more comprehensive policy vis-a-vis equity and efficiency concerns in the Philippine drug industry, the Botika-Binhi is an immediately effective option.

In conclusion, a considerable amount of savings can be achieved by low-income households from minimizing drug expenditures through the Botika-Binhi. And since it can create a secure market niche (and complement the inadequacies of the existing industry structure) because this market itself is expanding quite significantly, the program itself is implementable and financially sound.

Given this scenario, the role and impact of the Botika-Binhi program as an alternative to the market system in the Philippines cannot be overemphasized. Certainly, the government has a greater role to undertake as well through its National Drug Program. However, for various reasons, changes in the drug industry have been effected slowly. This situation, compounded by the government's perennial quandary regarding the national budget, provides ample room for considering private-sector led programs such as the Botika-Binhi. With the projected major increase in drugs consumption in developing countries such as the Philippines, major savings can be attained by the program as well as a major amount of increase in the well-being of rural and urban poor communities. The Botika-Binhi program will generate an impact on its targeted clientele greater than any amount it receives to finance its operations.

References

- Cooper, M. H. and A. J. Culyer. 1973. *The pharmaceutical industry*. Dun and Bradstreet.
- Department of Health. 1992. *National health statistics*. Health Intelligence Service.
- Ginson-Bautista, Ma. Cristina. 1990. *Determinants and policy implications of drug utilization in the Philippines*. Makati City: Philippine Institute for Development Studies.
- . 1993. *Trends in demand, expenditures, and utilization for health in the Philippines*. Makati City: Philippine Institute for Development Studies.
- Hardon Anita P. 1991. *Confronting ill health*. Quezon City: Health Action Information Network.
- Health Action Information Network. 1995. *Philippine health matters 1995*. Health Alert 6 (May)
- Ibon Data Bank Philippines. 1986. *The Philippine drug industry*. Quezon City.

- Navarro, Napoleon, et al. 2001. The sustainability of the Botika Binhi Program. *Philippine Studies* 49 (2001): 176–202.
- National Economic and Development Authority (NEDA). *Philippine Statistical Yearbook*. 1996.
- . *Medium-Term Philippine Development Plan, 1993–1998*.
- Patel, Mahesh P. 1993. Drug costs in developing countries and policies to reduce them. *World Development* 11 (March): 195–204.
- Philippine Business Perspectives. 1995. *1994–1995 top 7000 corporations in the Philippines*. Ortigas Center, Pasig.
- Pharmaceutical and Healthcare Association of the Philippines (PHAP). 1994. *Philippine pharmaceutical industry fact book*. Makati: PHAP.
- Tan, Michael L. 1988. *Dying for drugs, pill power and politics in the Philippines*. Quezon City: Health Action Information Network.
- World Health Organization. 1988. *The world drug situation*. Geneva.