

Nepal: Reproductive Health Commodity Pricing Survey

*Understanding Equity,
Access, and Affordability
of Essential Reproductive
Health Commodities*

Raja Rao
Dhruba Thapa

USAID | NEPAL
FROM THE AMERICAN PEOPLE

 **DELIVER**
No Product? No Program. Logistics for Health

Nepal: Reproductive Health Commodity Pricing Survey

*Understanding Equity, Access, and Affordability
of Essential Reproductive Health Commodities*

Raja Rao
Dhruba Thapa

USAID | **NEPAL**
FROM THE AMERICAN PEOPLE

 **DELIVER**
No Product? No Program. Logistics for Health

DELIVER

DELIVER, a six-year, worldwide technical assistance support contract, is funded by the U.S. Agency for International Development (USAID).

Implemented by John Snow, Inc. (JSI), (contract no. HRN-C-00-00-00010-00) and subcontractors (Manoff Group, Program for Appropriate Technology in Health [PATH], and Social Sectors Development Strategies, Inc.), DELIVER strengthens the supply chains of health and family planning programs in developing countries to ensure the availability of critical health products for customers. DELIVER also provides technical management of USAID's central contraceptive management information system.

This document does not necessarily represent the views or opinions of USAID. It may be reproduced if credit is given to John Snow, Inc./DELIVER.

Recommended Citation

Rao, Raja, and Dhruva Thapa. 2005. *Nepal: Reproductive Health Commodity Pricing Survey: Understanding Equity, Access, and Affordability of Essential Reproductive Health Commodities*. Arlington, Va.: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.

Abstract

Regulatory guidelines under the Nepal Drug Act of 1978 govern the sale and distribution of pharmaceutical products in Nepal. Regulations are based on a 1995 National Drug Policy that promotes community drug financing programs in the public sector and establishes profit and distribution margin rates. Those policies were put in place to encourage equity, access, and use of medicines. The findings from this analysis indicate that cumulative distribution and profit margins for some reproductive health (RH) medicines in the private sector exceed the established norms. Partially because of Nepal's proximity to India and its well-established local pharmaceutical industry, public sector procurement efficiency exceeds international benchmarks according to median price ratio comparisons. As a result, many generic RH medicines are available to patients at affordable prices. There is, however, a significant brand premium between low- and high-priced generic RH medicines. Analysis of 83 private pharmacies, public health facilities, and nongovernmental clinics indicates that several essential RH medicines are not available in many of those outlets. The geographic composition of Nepal, combined with the Maoist insurgency, has also made product distribution and patient access to RH medicines difficult, which raises the cost and treatment options in several Mountain and Hill districts in the country. This analysis informs Nepal's RH commodity security decision makers—and others interested in the relationship between price and access—through examination of the price, price components, availability, and affordability of RH medicines. Other country stakeholders are expected to replicate the methodology by using pricing analysis to promote equity and access to essential medicines.



DELIVER

John Snow, Inc.
1616 North Fort Myer Drive
11th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
Email: deliver_project@jsi.com
Internet: deliver.jsi.com

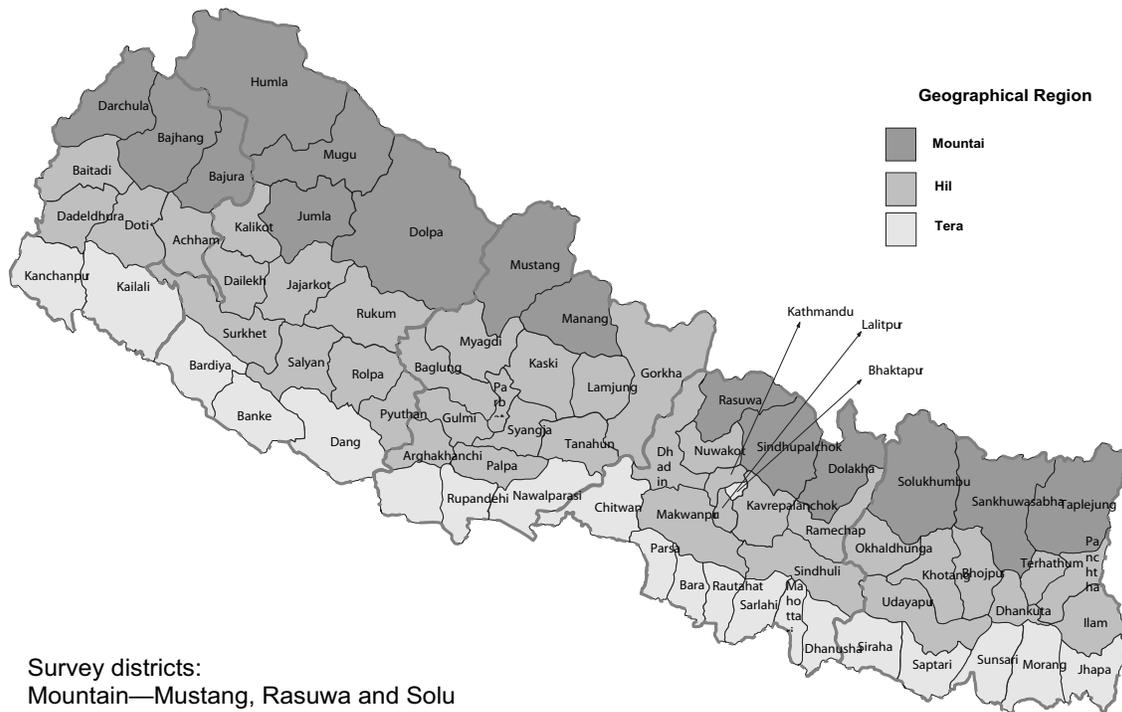
Contents

Map of Nepal.....	viii
Abbreviations and Acronyms	ix
Acknowledgments	xi
Executive Summary	xiii
Main Findings.....	xiv
Main Recommendations	xv
1. Introduction.....	1
1.1 Background	2
1.2 Goal and Objectives	2
1.3 Country Context	3
1.4 Drug Financing.....	4
1.4.1 Pricing Framework	5
1.4.2 Community Drug Financing Schemes	6
2. Methodology.....	9
2.1 Reproductive Health Commodities Tracer List	9
2.2 Sampling	10
2.2.1 Site Selection and Facility Type	11
2.3 Data Collection	12
3. Survey Findings.....	15
3.1 Procurement	16
3.1.1 Procurement Efficiency	17
3.1.2 Brand Premium.....	17
3.1.3 Sector Comparison	18
3.2 Patient Prices	19
3.2.1 Medicine Outlet Prices Across Sectors	20
3.2.2 Medicine Outlet Prices by Region	20
3.2.3 Medicine Outlet Prices by Topography	23
3.3 Product Availability	24
3.3.1 Product Availability by Region and Sector (LPGs)	27
3.3.2 Product Availability by Topography and Sector.....	29
3.4 Product Affordability.....	30
3.5 Product Margins.....	33
3.5.1 Observed Cumulative Margins	35
3.5.2 Cumulative Margins by Region	36
3.5.3 Cumulative Margins by Topography.....	38
4. Summary of Findings and Implications	41
4.1 Procurement	41

4.2	Patient Prices	42
4.3	Availability	43
4.4	Affordability	44
4.5	Product Margins.....	45
5.	Recommendations.....	47
	Glossary	49
	Bibliography.....	51
Annexes		
1.	Reproductive Health Medicines Tracer List	53
2.	Medicine Price Data Collection Form	55
3.	Facilities Surveyed	61
4.	Comparison of Brand Prices by Region (private sector)	64
5.	Product Availability by Region and Sector (LPGs)	66
6.	Product Availability by Topography and Sector (LPGs)	70
Figures		
3.1	Median Procurement Efficiency and Brand Premium	16
3.1.3	Sector Comparison of Procurement Efficiency for Lowest-Priced Generics	18
3.2	LPG and HPG Patient Price Ratios for All Sectors	19
3.2.1	Median LPG Patient Price Ratios by Sector	20
3.2.3	Private Sector Retail Price Distribution by Topography.....	24
3.3.2	Product Availability by Topography and Sector.....	29
3.3.3	RH Product Availability for Selected Tracer Medicines by Topography	30
3.4	Reproductive Health Product Affordability in Days' Wages (Private Sector)	32
3.5	Pharmaceutical Price Components (Private Sector).....	34
3.5.1	Observed Median Cumulative Price Margins.....	36
3.5.1	Distribution of Price Components for Selected RH Commodities (Private Sector).....	36
Tables		
1.4.1	Maximum Private Sector Pharmaceutical Import Margins	5
2.2	Facility Sample Distribution.....	11
2.2.1	Survey Sample by Facility Type	12
3.1.2	Procurement Brand Premium	18
3.2.2a	Medicine Outlet Price Ratios by Region	21
3.2.2b	Regional Medicine Outlet Price Distribution by Brand (private sector)	22
3.2.3	Topographical Price Distribution and Variance (Selected RH Tracer Commodities)	24

3.3	RH Commodity Availability by Sector	26
3.3.1	LPG Product Availability by Region and Sector	28
3.3.2	Regional LPG Product Availability.....	28
3.4.1	Cost as a Percentage of Annual Income for Selected RH Commodities	33
3.5.2	Median Cumulative Margins by Region	37
3.5.3	Median Cumulative Margins by Topography.....	38

MAP OF NEPAL



Source: www.mapsofworld.com/nepal/nepal-district-map.html

Abbreviations and Acronyms

BNMT	British Nepal Medical Trust
CDP	Community Drug Program
CIF	Cost, Insurance, and Freight
CIP	Carriage and Insurance Paid TO
CPR	contraceptive prevalence rate
CTO	Chief Technical Officer
CYP	couple-years of protection
DDA	Department of Drug Administration
EDM	Essential Drugs and Medicine
EDP	external development partner
FHD	Family Health Division
FPAN	Family Planning Association of Nepal
GNI	gross national income
GoN	Government of Nepal
HAI	Health Action International
HMG	His Majesty's Government of Nepal
HP	health post
HPG	highest-priced generic
IDA	International Dispensary Association
INN	international nonproprietary name
IRP	International Reference Price
IUD	intrauterine device
JSI	John Snow, Inc.
LMD	Logistics Management Division
LPG	lowest-priced generic
MOH	Ministry of Health
MPP	median procurement price
MSH	Management Sciences for Health
MSP	manufacturing selling price

NCDA	Nepal Chemists and Druggists Association
NFHP	Nepal Family Health Program
NGO	nongovernmental organization
OC	oral contraceptive
PATH	Program for Appropriate Technology in Health
PHCC	primary health care center
PPR	procurement price ratio
PSI	Population Services International
RDF	revolving drug fund
RH	reproductive health
SHP	sub-health post
STI	sexually transmitted infection
TAG	Technical Advisory Group
UCS	unsubsidized commercial sector
UNFPA	United Nations Population Fund
USAID	U.S. Agency for International Development
VDC	Village Development Committee
WHO	World Health Organization

Acknowledgments

The Ministry of Health (MOH) of His Majesty’s Government of Nepal (HMG) granted permission to undertake this survey. It was conducted under the leadership of the Director General of Health Services; Director, Logistics Management Division (LMD); Director, Family Health Division (FHD); and Director, Department of Drug Administration (DDA).

The authors wish to express their sincere gratitude to all the people who gave their time and lent their expertise to participate in the survey, to provide technical guidance, and to help ensure that the effort resulted in relevant findings. Those individuals include our primary data collectors—Babu Ram Adkikari, Kiran Sunder Bajracharya, Laxman Bharati, and Suresh Panthee—whose enthusiasm, willingness to learn, and resolve in the field resulted in pricing data and qualitative insight that were indispensable to this report. The staff at John Snow, Inc., in the Nepal Family Health Program (NFHP) provided the survey team with technical support, office space, computers, vehicles, and staff time for assorted survey tasks. We express our thanks to the Nepal RH Commodity Survey Technical Advisory Group (TAG) for their feedback, advice, and support. Finally, we are grateful to the U.S. Agency for International Development (USAID) for providing financial support for the survey and analysis through the John Snow, Inc./DELIVER project.

Members of the Technical Advisory Group

Dr. Nirakar Man Shrestha, Director General, DHS and Chair

Dr. M. K. Chhetri, Director, LMD

Dr. Pivush Kumar Rajendra, Director, FHD

Dr. Bhupendra B. Thapa, Director, DDA

Dr. Shyam Sundar Mishra, Director, FHD

Mr. Bal Krishna Khakurel, Senior Pharmacist, MOH

Mr. Bhoj Raj Pokhrel, Country Director, Policy Projects Offices, Nepal

Mr. Radha Raman Prashad, President, Nepal Pharmacy Council

Mr. Deepak C. Bajracharya, Deputy Country Representative, PSI

Mr. Pradip Vaidhay, Director, Pharmaceutical Manufacturers’ Association of Nepal

Mr. Paras Baral, Director, Nepal Chemists and Druggists Association

Mr. Rasmus Pior Gjesing, Technical Officer, EDM, World Health Organization

Mr. Pangday Yonzon, CTO, United States Agency for International Development, Nepal

Dr. Peden Pradhan, Assistant Representative, United Nations Population Fund

Dr. Janardan Lamichhane, Logistics Team Leader, Nepal Family Health Program

Executive Summary

During April and May 2005, a field survey to measure the prices of reproductive health (RH) commodities in Nepal was conducted using a methodology developed by the World Health Organization (WHO) and Health Action International (HAI). The survey team was led by the John Snow, Inc. (JSI)/DELIVER project, with technical and logistics support from the Nepal Family Health Program (NFHP). Support for the survey was based on the assumption that an understanding of prices and price components—and an appreciation of their policy context—would help promote equity and access to RH commodities, thereby strengthening RH commodity security.

The goal of the pricing survey was to provide data and analysis that will be used to help promote *equity*, *access*, and *affordability* of RH commodities for *all* population segments. The following objectives were identified to meet the goal:

1. In Nepal, inform RH commodity security decision making by better understanding the prices and price components of essential RH commodities.
2. Examine procurement efficiency and brand premiums.
3. Measure prices in the medicine outlets of the public, private, and nongovernmental organization (NGO) sector.
4. Determine product availability and affordability.
5. Identify price components and their cumulative mark-up effects.
6. Contribute data and analysis to support community drug financing programs and objectives.
7. Evaluate the efficacy of the survey methodology for potential replication and comparisons.

Married women of reproductive age make up 20 percent of Nepal's population of 24.7 million. Maternal and infant mortality rates are high; skilled health workers attend only 11 percent of births. While the use of modern methods of contraception has increased steadily over the past decade—to 36 percent in 2001—the affordability and availability of contraceptives and other RH commodities are inadequate in a country with a per capita gross national income (GNI) of US\$240.

In Nepal, 70 percent of drug expenditures are paid for with out-of-pocket payments (MOH 2002). The Government of Nepal (GON) and donors provide some financing for public sector drugs. Increasingly, communities are becoming responsible for financing drugs through self-sustaining community drug programs, which are supported by client-financed revolving drug funds (RDFs).

The survey team sampled 83 public, private, and NGO medicine outlets in four of the five administrative regions. The outlets included hospitals, primary health care centers (PHCCs), health posts (HPs), pharmacies, NGO clinics, and cooperative facilities. The government, private importers, and NGOs provided the procurement prices. The sample distribution included 18 districts, 49 urban facilities, and 34 rural facilities. By type, it included 47 private sector pharmacies, 15 public sector outlets, and 11 NGO clinics. The topographical distribution included 44 Terai, 29 Hill, and 10 Mountain zone medicine outlets.

Main Findings

The main survey findings fall into five categories: central-level procurement, medicine outlet prices, product availability, product affordability, and cumulative margins.

Central-Level Procurement

- Public sector procurement of low-priced generics (LPGs) is more efficient than private and NGO sector procurement, and is cheaper than international reference procurement prices.
- The median procurement brand premium price variation between LPGs and high-priced generics (HPGs) is 426 percent—higher than in three comparison countries (Kenya, Peru, and the Philippines).
- Local manufacturing and Nepal’s proximity to India help account for relatively low central-level procurement prices across the sectors.

Medicine Outlet Prices

- The cross-sectoral median of medicine outlet price ratio is 2.11 (LPG) and 4.11 (HPG), which represent a 95 percent brand premium.
- The private sector median of medicine outlet price in the Hill and Terai zones is comparable. The variance with the Mountain zone outlets is almost 100 percent.
- The Western region has the lowest ratio of medicine outlet prices for LPGs in the public sector, and the Eastern region has the highest ratio of prices for LPGs. The Midwestern region has the highest ratio of prices for the public sector. The Central region has highest ratio of medicine outlet prices for HPGs.

Product Availability

- The mean product availability across all products, sectors, and prices was 21.3 percent. The figure was 9.1 percent for HPGs and 33.4 percent for LPGs.
- The availability of condoms, oral contraceptive (OC) pills, and injectable contraceptives was more than 75 percent in public sector’s medicine outlets. The availability of intrauterine devices (IUDs) was greater in the public sector than in the other two sectors.

- Mean product availability for LPGs is lower in the Mountain zone (23 percent) than in the Terai (37 percent) and the Hill (35 percent) zones.

Product Affordability

- It costs the lowest-paid government worker 21 days of wages for a year's worth of HPG ferrous folic acid. It costs that same worker 12.8 days of wages for 15 cycles (one year's supply) of HPG OC pills.
- The cost of one couple-years of protection (CYP)—using the socially marketed Sunaulo Gulaf OC pill and Dhal Deluxe condom—is less than 1 percent of annual income for the highest-earning 60 percent of the population.
- The cost of one year's supply of Kama Sutra condoms and Ovrall L OC pills for family planning exceeds 1 percent of the annual income for all wealth groups. For the very poor, the cost of 15 cycles of Ovrall L represents more than 18 percent of annual per capita income.

Cumulative Margins

- The maximum cumulative margin allowed for imported RH commodities in the private sector, on the basis of existing practices, is 42 percent. The same margin for locally manufactured commodities, which excludes import taxes and importer margins, is 26 percent.
- Controlling for ampicillin (only one retail price was recorded), the mean cumulative margin in the Mountain zone is 130 percent. It is 230 percent when including ampicillin.
- The median cumulative margin observed was 259 percent for ampicillin 500 mg, 163 percent for oxytocin, and 84 percent for ferrous folic tablets. The median cumulative margins for tetanus toxoid vaccine and metronidazole were considerably lower (33 percent and 58 percent, respectively).

Main Recommendations

1. To increase the number of reproductive health commodities available at each level in the health system, have the Department of Drug Administration (DDA), in collaboration with other MOH agencies and stakeholders, update the essential medicines list.
2. The DDA's regulatory mechanism for pricing to help ensure that retail prices for all essential medicines are within the margins set out in its regulatory guidelines.
3. Devise a pharmaceutical information management system, and consider integrating it within the existing health management information system to include *access* and *rational use* indicators, per WHO guidelines. Share this report with those development partners who have a direct or indirect stake in the issues.
4. Disseminate the findings of this report to the key staff members of the MOH and external development partners (EDPs), and seek their feed-

back to determine how they can participate in addressing the issues raised in this report.

5. Launch an advocacy campaign to inform and educate consumers on the benefits of using LPG medicines. The first stage of this campaign should focus on districts that have community drug programs (CDPs), where cost sharing is more prevalent.
6. To increase medicine efficacy and reduce costs, encourage the use of rational prescribing and rational use of RH medicines.
7. Conduct regular consultations with EDPs to make NGOs and private sector providers more visible in the Mountain districts, as they are in the Hill and Terai districts. At the same time, using a review of existing data, assess the availability of medicine outlets in the Mountain districts.
8. Coordinate the findings of this study with the ongoing work of the Health Economics and Financing Unit on alternative financing methods.
9. To validate the baseline procurement and the wholesale and retail price margins discussed in this report, conduct a similar, but broader, pricing analysis of other essential medicines.
10. After the report is finalized, post the findings on the MOH website.

1. Introduction

During April and May 2005, a field survey measuring the prices of reproductive health (RH) commodities was carried out in Nepal. The decision to investigate RH commodity prices was made during the previous year by an essential RH medicines consultative group, led by the World Health Organization (WHO), the United Nations Population Fund (UNFPA), and the U.S. Agency for International Development (USAID) and including John Snow, Inc. (JSI). A central objective of the group was to develop an essential *RH medicines* list, which would be similar to the model essential medicines list promoted by WHO—and adapted by more than 100 countries. It was accepted that an understanding of prices and price components of the commodities on the essential RH medicines list, as well as an appreciation for the policy context surrounding those prices, would help promote equity and access.

The Nepal survey team was lead by John Snow, Inc. (JSI)/DELIVER, with technical and logistics support from the Nepal Family Health Program (NFHP). The survey and resulting analyses are based on a methodology developed by WHO and Health Action International (HAI)¹ (2003) to measure prices of essential medicines. Detailed information about the methodology can be found in a manual that WHO and HAI developed in a collaborative technical project, thus standardizing methods for collecting and analyzing medicine prices.

The manual is a guide to measuring the price that people pay for medicines across sectors (private, public, nongovernmental organization [NGO]). It also helps researchers identify price components (e.g., margins, taxes) and assess the affordability and availability of medicines.

JSI modified the WHO methodology to account for a medicine list (RH commodities) different from the one issued in the original WHO/HAI manual. The availability of innovator brands, for example, was not applicable in the Nepal survey, because only multiple-priced RH *generic brands* were available.² Additionally, a number of contextual factors in Nepal, including travel constraints, limited resources, and complexity of drug financing programs, also forced the team to rethink original assumptions and to modify the survey approach to fit the in-country environment. Overall, however, the survey team attempted to follow the WHO/HAI methodology in sampling selection, data collection, and analysis.

1. HAI is a European-based network of organizations that focuses on health care systems and policies. The promotion of the essential medicines concept and of equitable access and rational use of medicines is one of their program areas.

2. See section 2 for a detailed discussion on the effect of generic brand comparisons in the absence of innovator brands.

1.1 Background

Ample evidence suggests that RH medicines are unaffordable and unavailable throughout the developing world. In South Asia, medicines account for 80 percent of total health care spending and more than 25 percent of government health budgets (Creese 2002). Yet, despite the proportion of resources spent on medicines, 33 percent of the world's population does not have access to basic, essential medicines (including RH commodities). Information gaps and difficulty obtaining prices—particularly procurement price data—further compound the problem by making it more difficult to examine pricing systems. Several groups have conducted pricing surveys of essential medicines using methodologies such as the one developed by WHO and HAI (2003). Those surveys indicated that procurement prices, disproportionate profit margins, and large brand premiums remain obstacles to affordable medicines. Pricing surveys for essential RH medicines have rarely been documented and have not historically commanded the attention that the broader issue of essential medicines has.

As mentioned, WHO, UNFPA, the Program for Appropriate Technology in Health (PATH), JSI, and other groups formed a consultative body to address the issue of essential RH commodities (UNFPA and WHO 2003). With the acknowledgment that RH commodities are frequently not a category of focus in many developing countries, the group recommended that the RH essential medicines list be used for two pilot surveys. The list represents specific RH treatment areas: family planning; sexually transmitted infections (STIs) and HIV/AIDS; and prenatal, obstetric, and neonatal care. As a result, JSI committed to conducting the Nepal survey; PATH led a survey team that conducted a similar survey in Nicaragua. Results from the two country surveys are expected to be compared, and additional surveys will be carried out in other countries. Ultimately, the aim is to answer several questions: What price do consumers pay? How efficient are procurement systems? Are commodities (on the essential RH medicines list) available? Are margins too high? Who profits? Can the information be used to increase equity, access, and use of RH commodities?

1.2 Goal and Objectives

Many developing countries, including Nepal, are increasingly decentralizing their health care systems, thus providing broader power to district and community authorities in the management of health services. One central problem remains: achieving a full supply of essential medicines, particularly RH medicines. Attempts to secure sufficient supplies are often plagued by inadequate sources of financing to meet the demand—most notably in severely resource-poor settings. Consequently, one aspect of health sector reform has been to introduce user fees for medicines thereby providing local health authorities with additional (client-sourced) income with which to procure essential medicines.

In Nepal, the added challenge of regulating the commercial sector to ensure affordability in pricing also plays a big role in access to RH medicines. The goal of the pricing survey was, therefore, to provide pricing

data and analysis that could be used to help promote *equity, access, and affordability* of RH commodities for *all* population segments. The analysis and any resulting pricing policy changes alone cannot meet this objective. Greater client information and education, provider training (including rational prescribing), increased procurement financing, and other systemic factors make up the broader agenda. To *help* meet the goal through pricing analysis, the survey team identified the following objectives:

1. Inform Nepal's RH commodity security decision making by better understanding the prices and price components of essential RH commodities.
2. Examine procurement efficiency and brand premiums.
3. Measure prices in the public, private, and NGO sector's medicine outlets.
4. Determine product availability and affordability.
5. Identify price components and their cumulative mark-up effect.
6. Contribute data and analysis to support community drug financing programs and objectives.
7. Evaluate the efficacy of the survey methodology for potential replication and comparisons.

Results from this survey will be reviewed by the Nepal Technical Advisory Group (TAG), which is made up of policymakers, donors, and technical agencies. The findings will then be compared with the results of similar studies in other countries to understand the price components and policies that determine client prices of RH commodities. The data collected will help policymakers and advocates identify the factors contributing to price in each sector. The findings can also help policymakers determine how changes in RH commodity pricing policies can result in greater *access, affordability, and equity*.

1.3 Country Context

Nepal is engaged in a civil conflict between the government and pro-Maoist forces. The long-standing unrest has resulted in the deaths of thousands of people and makes the political future of the country uncertain. Nepal is already one of the poorest countries in the world, with a gross national income (GNI) of US\$240 per capita. The civil war has compounded the effects of poverty through the decreases in tourist revenue, the migration of rural workers and farmers to the cities, and the additional obstacles to delivering social services to rural Mountain, Hill, and Terai districts.³

3. The topography of Nepal consists of three geographic bands that stretch from east to west and begin with the Terai zone on Nepal's southern border with India. North of this flat farming plain is the Hill zone, and further north is the Mountain zone, where access to health and other social services is limited by topography, climate, and an absence of transportation infrastructure.

Country Statistics:

• Population	24.7 million (WHO 2004)
• Population growth rate	2.2 percent
• Fertility rate	4.2 percent
• Infant mortality rate	61 per 1,000 live births
• Under-five mortality rate	82 per 1,000 live births
• Maternal mortality rate	539 per 100,000 live births (PRB 2004)
• Married women of reproductive age	4.5 million
• Contraceptive prevalence rate (CPR)	36 percent (Nepal MOH et al. 2001)
• Skilled attendant births	11 percent

Inadequate transportation infrastructure, notably in the rural and Mountain areas, results in increased costs and delays in the delivery of goods and services. This factor is likely one that contributes to the low level of births attended by skilled health workers. In general, the inadequate infrastructure limits patient access to basic health services.

For political and administrative purposes, Nepal is divided into five development regions: Eastern, Central, Western, Midwestern, and Far Western. Across regions, there are 75 districts, 3,912 Village Development Committees (VDCs), and 58 municipalities. The district health office is responsible for managing the health outlets in the district. Those outlets include the district hospital, primary health care centers (PHCCs), health posts (HPs), and sub-health posts (SHPs) (Nepal MOH 2000). Nepal's essential medicines list contains 310 items.⁴ Each facility, depending upon its level in the system, has a prescribed list of such medicines that it is required to keep in stock. District hospitals, for example, are stocked with medicines for advanced tertiary care, while SHPs are stocked with a limited range of medicines for outpatient primary care (Nepal MOH et al. 2002).

In the private sector, there are 12,700 registered commercial pharmacies (MOH 2000). Most outlets are not managed by a trained pharmacist. However, the Department of Drug Administration (DDA)—which has regulatory oversight of commercial pharmacies—requires a three-week training course for individuals who dispense medicines to clients. The government is aware that this training is inadequate and is taking steps to address the issue. As in many countries, the distribution of pharmacies is concentrated in and around major urban areas including the Kathmandu Valley, Biratnagar, Pokhara, and Nepalganj. Of 75 districts, only Manang does not have a registered drug retailer (MOH 2000).

1.4 Drug Financing

The policies on drug financing in Nepal are contained in the Ministry of Health (MOH) document titled “Policy for Drug Financing Schemes,” which was last updated in 2000. In it, the MOH comments that it ensures

4. The Nepal National List of Essential Drugs, Third Revision, was updated in 2002.

“a continuous and adequate supply of drugs at health facilities” (Nepal MOH 2000). The document also acknowledges that the availability of essential medicines remains an important challenge. The policy recognizes that health sector resources committed by His Majesty’s Government of Nepal (HMG) and donors are inadequate for a full supply of essential medicines and that “the ultimate responsibility for drug financing (schemes) lies with communities” (Nepal MOH 2000). This section examines those community drug financing mechanisms and the regulatory framework in which they operate; then it raises questions about how they influence availability at medicine outlets.

1.4.1 Pricing Framework

The DDA has the primary responsibility for drug registration, quality assurance, and development and enforcement of pricing policies and regulations. In the private sector, the Nepal Chemists and Druggists Association (NCDA) provide the DDA with a list of recommended retail prices for all medicines it distributes to wholesalers and retailers. The DDA has authority to establish a final retail price, which is based, in part, on the maximum price margin allowance for each entity in the distribution chain.

Table 1.4.1 indicates the maximum allowable margin for each level and the cumulative effect of price components on the final retail price. An import duty is levied on all medicines coming from abroad, including India. Importers are permitted to add distribution and profit margins. Wholesalers are entitled to an additional 8.5 percent profit margin in sales transactions with retailers. The maximum allowable retail mark-up is 16 percent. Table 1.4.1 shows that a medicine that is imported at an index (hypothetical) price of Rs 100 per unit *should* have a maximum retail price of Rs 141.6. A key output of the survey was the ability to compare this theoretical maximum price with actual, observed prices. The results of this analysis are discussed in the section 3.5. Pharmaceuticals manufactured in Nepal fall under similar guidelines, except that import taxes and importer margins are not included as price components. Instead, only the retailer

Table 1.4.1. Maximum Private Sector Pharmaceutical Import Margins

Entity	Price Component	% Mark-Up	Cumulative % on Price
International	CIF/CIP Index Price	0	100.0
HMG Nepal	Import Tax	5	105.0
Importer	Distribution Margin	2.5	107.6
Importer	Profit Margin	4.5	112.5
Wholesaler	Profit Margin	8.5	122.0
Retailer	Profit Margin	16	141.6
Cumulative Mark-up		37	42.0
Final Retail Price			141.6

margin and, in some instances, the wholesaler margin—when products go through wholesalers—are included in the final retail price.

Public sector medicine prices are determined by community health management committees and are influenced, in part, by the procurement source. The Logistics Management Division (LMD) procures and distributes the bulk of medicines available at public sector medicine outlets. It is also responsible for distributing essential medicines to outlets (free of charge) and provides some financing for local purchases by the facilities. According to the Community Drug Program (CDP) guidelines, the facilities are encouraged to charge cost prices (the LMD procurement price) for the medicines that they receive free of charge. The prices the outlets charge to patients for medicines they purchase in the private market are generally at or slightly above their purchase prices. The maximum price for any medicine, regardless of source, must be 16 percent below the retail price—or, as table 1.4.1 indicates, wholesale price.

1.4.2 Community Drug Financing Schemes

Private expenditure on health care is 72.8 percent of total expenditure, ranking Nepal just behind Myanmar, India, and Bangladesh, with a high proportion of out-of-pocket expenditures for health care (WHO 2004). Similarly, 70 percent of drug expenditures in Nepal are financed by out-of-pocket payments. Even with those payments, a full supply of essential medicines, including RH commodities, is not available in the public sector because the sum total of financing is inadequate to meet demand. As a result, the MOH is promoting the development of self-sustaining community drug schemes. In general, those mechanisms recover costs through client payments and purchase additional medicines through a revolving drug fund (RDF). In theory, the health facility is able to increase the availability of essential medicines because it is allowed and encouraged to maintain an RDF to use for additional purchases after the government allotment has been distributed.

There is no single national community drug financing model. The MOH's drug financing policy concludes that the *diverse topographical and socio-cultural variations* of the country encourage variations in the schemes (Nepal MOH 2000). In each scheme, however, the health management committees carry out the regulatory and management responsibilities, which are part of community government or VDCs. In some instances, those responsibilities are contracted to NGOs working in the communities. The two main drug financing schemes are the MOH-sponsored CDPs and the British Nepal Medical Trust (BNMT) Drug Scheme.

Community Drug Program

The MOH designed the national CDP to increase the availability of essential medicines by introducing cost sharing with clients. It began in 3 districts and is now being implemented, to varying degrees, in nearly 20 districts. Certain exemptions exist. Treatments for tuberculosis and leprosy, vaccines available under the Expanded Program on Immunization, and

contraceptives are distributed free of charge. Prices for other medicines cannot exceed local wholesale prices.

British Nepal Medical Trust

The BNMT program works with local health authorities to increase the provisions of essential medicines and supplies. BNMT community programs aim to achieve full supply and financial sustainability through a combination of sources: LMD-supplied medicines, VDC contributions, BNMT subsidies and patient user fees. The local health management committees retain management of the community financing schemes, including oversight of the RDF.

A number of other smaller community and NGO-supported financing schemes charge registration fees for treatment and essential medicines (Nepal MOH 2000). However, a number of challenges remain to the sustainability of all the community drug programs, including limited public sector financing, ability to pay (poor clients), inadequate skills and training at the VDC level, and audit and oversight of the RDFs.

2. Methodology

The survey methodology used by the team was based largely on the guidance provided in the WHO/HAI manual. The methodology described in the manual and the accompanying electronic database, which is used for data entry and analysis, were indispensable to the survey. They provided a planning outline for site, sector, and sampling selection; the identifying data collectors and data collection techniques; and the several thematic areas for analysis (e.g., procurement, cross-sectoral comparison, availability, price ratios).

After securing permission from the MOH agencies to conduct the survey, the team established a TAG of MOH agency directors, donors, and other technical experts.⁵ The TAG was to provide relevant technical and policy feedback to the survey team and to help guide the data collection and analysis process. It also supported early-stage ownership of the price survey by Nepali stakeholders, and it is expected to be a focal point for any future policy-related initiatives stemming from the survey findings.

2.1 Reproductive Health Commodities Tracer List

The survey team had earlier prepared a model RH tracer list made up of a cross-section of essential and commonly used RH commodities. This list was based on previous RH pricing work and was thoroughly vetted by RH technical experts at UNFPA, WHO, the World Bank, PATH, and JSI. The list was further subdivided into major RH treatment areas: family planning (contraceptives); STIs and HIV/AIDS; prenatal, obstetrical, and neonatal care. The team shared this list with TAG members and other Nepali experts before starting to collect data. The original list contained several items that are not found in Nepal. TAG members identified other products they thought should be added to make the final list specific to treatment guidelines and the essential medicines list in Nepal. As a result, a number of products were added, revised, or deleted. Methylergometrine 2 mg (ampoule), for example, was added; the dosage of oxytocin was reduced from 10 IU to 5 IU; and the dosage for metronidazole capsules or tablets was increased to 400 mg (see annex 1 for the final RH commodity tracer list). Female condoms remained on the list, although it was established before data collection that none would be found in-country. In this case, some TAG members thought that evidence of what RH products were *not* found would have policy implications.

5. See the acknowledgments for a full list of individuals who served on the TAG.

Another modification that the survey team made to the WHO/HAI methodology concerned the comparison of innovator and generic brand medicines. The manual included a list of 30 essential medicines whose innovator brands were generally available in the private sector—making a price or brand premium comparison with the generic brand relatively straightforward. The commodities on the RH tracer list, however, had been off patent for decades. Therefore, the team quickly realized, and the TAG confirmed, that the survey team would find only *generic* brands in the country. As a result, data were collected for two products under each international nonproprietary name (INN):⁶ (1) the highest-priced generic and (2) the lowest-priced generic brand.

In the private sector, the team generally found (and recorded) two prices (highest and lowest price) for each product. Often, more than two products were available in urban pharmacies. In rural pharmacies, generally only one generic product for each nonproprietary medicine was available. In public facilities, the teams were prepared to record the sale prices for RH commodities provided free by the LMD and the prices for commodities purchased in the local private market. In practice, the commercially sourced product (and, therefore, price) was often not available. In facilities where this product was available, the price, as expected, was usually marginally higher than the LMD-sourced product, because the facility had to cover its purchase cost. Regardless, most public sector outlets provided the survey teams with only one price. Prices recorded at NGO facilities were entered in a separate category (Other) so that cross-sectoral price comparisons could be made between the private, public, and NGO sectors.⁷

2.2 Sampling

Using guidance provided in the WHO/HAI manual, the team sampled 83 public, private, and NGO sector medicine outlets. Five specific price categories were included:

1. *Medicine Procurement Prices*: This sector includes government, private importers, and NGO procurers.
2. *Public Sector Patient Prices*: If prices were not found, procurement prices were not recorded. Instead, it was noted that the product is free and available.
3. *Private Sector Retail Prices*: Prices clients pay at pharmacies, private hospitals, and other for-profit outlets.
4. *Other Sector Retail Prices*: This sector includes client prices at NGO clinics, *Sajha Swastha Sewa* (nonprofit cooperatives), and nonprofit hospitals.
5. *Wholesaler (Stocklist) Prices*: A limited number of wholesale prices were obtained in the follow-on data collection effort in May 2005.

6. A common, generic name selected by experts to identify a new pharmaceutical product. An updated list of INNs can be found at <http://www.who/edm/qsm/>.

7. This comparison was done for NGO clinics and other nonprofit outlets that were neither public nor private. Socially marketed contraceptives found in pharmacies, however, were recorded in the private sector section of the database, and their brands were noted for further analysis.

The survey team spent several days in the Kathmandu Valley collecting procurement prices before beginning data collection in the field. In Kathmandu, central-level procurement prices were collected from four private importers, the LMD (the primary public sector procurer of essential medicines), and two NGOs. The prices recorded during those interviews were based on the CIF/CIP price, which are trade terms that indicate the unit price and include the cost of the goods, insurance, and shipping and freight charges.

The WHO/HAI manual recommends that medicine outlets be sampled from at least four geographic areas, selected on the basis of their proximity to urban centers and to one another.⁸ While collecting data in four distinct regions increased the cost and complexity of the survey, team members felt certain that if they reduced the geographic scope, they would be unable to conduct a compelling cross-regional comparison of price and availability.

Table 2.2. Facility Sample Distribution

		Geographic Distribution						
Region	Anchor	Districts	Urban	Rural	Terai	Hill	Mountain	Total
Western	Pokhara	6	11	11	6	11	5	22
Midwestern	Nepalganj	2	12	7	18	0	0	18
Central	Kathmandu	6	15	5	8	11	2	21
Eastern	Birtnagar	4	11	10	11	7	3	21
Totals		18	49	34	44	29	10	83

As table 2.2 indicates, the anchor urban facilities were the Kathmandu Valley, Pokhara, Birtnagar, and Nepalganj. Each anchor represented the main urban area in each of the four regions. Facilities were classified as rural if they were farther than 15 km from the urban areas. The TAG further recommended that the survey team consider collecting data from facilities in the Mountain zone, because data on pricing and availability in those remote areas has been difficult to obtain. The team included 10 Mountain facilities in three regions.

2.2.1 Site Selection and Facility Type

The survey team had originally planned to collect data at no more than 60 outlets. However, after the team presented the original findings to TAG members in late April 2005, they suggested that data from additional outlets, particularly in the public sector, would strengthen the validity of the findings. An additional 23 outlets were surveyed in May 2005, bringing the total to 83. This figure represented an urban-rural and Terai, Hill, and Mountain districts cross-section of the country; attempts were made to balance the facility count by sector.

8. Security in the Far Western region at the time was unstable, so no attempt was made to include this region in the survey.

Table 2.2.1. Survey Sample by Facility Type

Region	Facility Type				Total
	Hospital	Pharmacy	PHCC/HP/SHP	NGO Clinic	
Western	5	9	3	4	21
Midwestern	1	12	3	3	19
Central	3	13	4	0	20
Eastern	2	13	3	4	22
Totals	12	47	13	11	83

Within each of the four administrative zones, the selection of medicine outlets was based on their proximity to each of the urban centers. Though additional facilities were included in the survey, the following represented the core selection:

- Public sector: Main hospital—two urban and two rural medicine outlets
- Private sector: Four pharmacies per region, within 5 km of a survey public sector outlet
- NGO sector: NGO or *other* outlets, determined by their proximity to public sector outlets (within a 10 km range). (If none were available, other factors were considered, such as geography and region.)

As mentioned, the actual number of facilities exceeded the number originally planned, primarily as a result of convenience and opportunities to collect data identified by the team in the field, the cooperation of medicine outlet staff, and the recommendation by the TAG for surveys of additional outlets. As noted in table 2.2.1, there was a balance between hospitals (public and private), public sector outlets, and NGO facilities. As a result of the disproportionate number of pharmacies compared to other types of outlets (particularly in urban areas), the sample included 47 pharmacies.

A standard medicine price data collection form was used to record information for procurement and medicine outlets. This form, included in the WHO/HAI's price survey CD-ROM, allowed the team to record facility information (e.g., name, location) and to develop a unique facility identification number for data entry.

2.3 Data Collection

The TAG also recommended that some qualitative questions be added to the form, including the qualifications of the dispenser and the percentage profit margin charged on their products⁹ (see annex 2).

9. All but three pharmacies reported charging the maximum profit margin allowed by government guidelines—16 percent. Initial findings indicate that this report may not be accurate.

Using the standard form, the survey team collected procurement price information for only the most recent procurements for each sector, instead of multiple procurements over time. This information should be considered when comparing the results with the International Reference Prices (IRPs),¹⁰ which was used as a baseline in the survey analysis (MSH 2004). It is unclear at this stage of the analysis whether any of the procurement prices provide a distorted impression. Procurement data at multiple points in time should be collected, as they become available.

In surveying medicine outlets, the team attempted, with guidance from the TAG, to focus on the public health facilities participating in the CDP and other community-based drug financing schemes, where price data were available. Drug financing in Nepal, as in many countries, is complex. As noted in the previous section, in approximately 20 of 75 districts, community health authorities have set up RDFs by charging patients for certain categories of medicines. As shown in table 2.2.1, the team collected data from 13 PHCCs, HPs, and SHPs. In addition, 3 of the 11 hospitals were categorized as public. Of the 15 public sector sites surveyed, 11 participated in a community-based drug financing program and were able to provide price data. However, most of the outlets, including many hospitals, did not have a number of the RH tracer commodities on our collection list. This case was also true for commercial sector importers.¹¹

The data collection at the central procurement level was conducted by the authors, who also served as the survey co-managers and who presented the preliminary findings to the TAG. The majority of the medicine outlets in the areas outside the Kathmandu Valley were surveyed by four fourth-year pharmacy students from Tribhuvan University in Kathmandu. Those students were identified by TAG members (and confirmed through the survey process) as possessing the pharmacological and country knowledge and skills necessary for effective data collection. After a full day of training that included pre-testing the tool at pharmacies in Kathmandu, the data collectors were in the field for eight days in April 2005, then for three days in May 2005 (to collect data from the additional outlets).

The effort of the survey team resulted in the collection of RH pricing data from 18 districts in 5 regions, including 10 Mountain and 33 rural medicine outlets (see annex 3). The next section provides a detailed analysis of the findings of this survey. It includes data on and analysis of procurement efficiency and brand premium, patient prices, availability, affordability, and the effect of cumulative margins on price. The analysis is segmented by region, topography, and brand. Section 4 then discusses some of the themes and policy implications raised by the findings.

10. The IRPs used in the survey are based on the median procurement prices in the 2004 MSH Price Indicator Guide.

11. See section 3.3 for a discussion on availability at procurement facilities and medicine outlets.

3. Survey Findings

The survey findings are based on the analysis of data from 83 public, private, and NGO medicine outlets throughout Nepal. In addition, seven central-level procurement agencies¹² and four wholesalers provided procurement and sale prices.

The description of findings and the analysis in this section cover

1. central-level procurement
2. medicine outlet prices
3. product availability
4. product affordability
5. the effect of cumulative margins on price

The procurement section examines brand premiums¹³ and procurement efficiencies, and it describes the results of a cross-sectoral comparison of the public, private, and NGO sectors. The medicine outlet analysis also examines the implications of brand premiums; price variations between sectors; and a segmentation of price data by sector, region, brand, and topography. The sections on product availability and affordability look at the percentage availability in medicine outlets of the RH tracer medicines and the affordability of those medicines for users. Both sections also provide segmentation analyses by sector, region, brand, and topography. The variables are used to examine pricing, availability, and affordability implications in more detail than the initial median price and ratio analysis suggested in the WHO/HAI manual. This analysis provides data on variations in, for example, brand prices between the Central and Eastern regions; the availability of ampicillin in the Terai and Hill zones; the affordability of RH medicines by different income groups; and similar comparisons using a range of variables.

The section concludes with a comparison of the maximum cumulative margins allowed by statute and the observed margins of the RH tracer commodities. The margins are an aggregation of price components (e.g., taxes, distribution mark-ups, retailer profit) and the cumulative effect that those components have on client price. Consequently, the section attempts to determine the proportion of price components on retail prices, and if those components—expressed individually and cumulatively—exceed pricing statutes established by the DDA.

12. Four private importers, the main public sector procurer (the LMD) and two NGOs were surveyed in Kathmandu to obtain procurement price data.

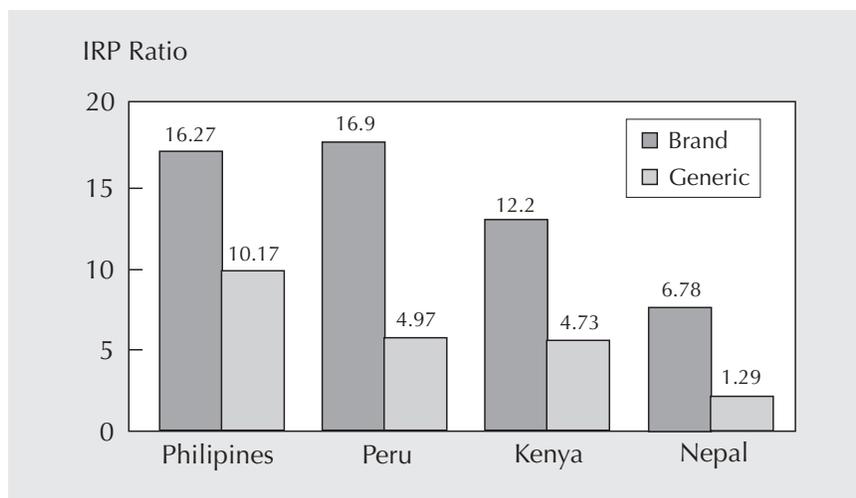
13. The definition of brand premium for this survey is the difference in price between the highest and lowest-priced generic product. This difference can be expressed as a ratio, percentage, or monetary value.

3.1 Procurement

Previous pricing surveys indicated that a number of countries, including the Philippines, Peru, and Kenya, are paying substantially more for generic essential medicine procurement than standard IRPs (WHO 2003; WHO and HAI 2003). Some of the price variation is due to the use of higher priced suppliers, the excessive freight and insurance costs, the absence of capacity to negotiate effectively, or a combination of these and other variables. The benchmark used for this survey and widely used in a number of other surveys is an IRP established by the *International Drug Price Indicator Guide*, published by Management Sciences for Health (MSH) with support from WHO (MSH 2004). The annual guide details maximum, minimum, and median international procurement prices for more than 900 drugs and nondrug consumables. The guide lists only prices for *generic* products supplied, for example, by the International Dispensary Association (IDA), UNFPA, and other procurement agents. Therefore, direct comparisons between IRPs listed in the guide and innovator brand¹⁴ products need to consider the price premium for the procurement of brands. Further, the IRP established for this survey is based on the median procurement reference price in the MSH guide, which means, for example, that even a comparison of HPG products with the median IRP would probably show considerable variation.

Figure 3.1 highlights both those variations and provides a comparison of median country procurement prices (for all sectors) with 2004 IRPs. The comparison is expressed not in price, but in price ratios. Procurement prices for the lowest-priced generic products (indicated by the yellow bar) should be somewhat close to the MSH reference prices. A ratio of 1.00, for example, would indicate parity with the median reference price.¹⁵

Figure 3.1. Median Procurement Efficiency and Brand Premium



14. The innovator brand is the first product authorized for use under patent protection.

15. Procurement price ratios for the Philippines, Peru, and Kenya are based on a list of 30 essential medicines. For Nepal price ratios are based on an entirely different set of 32 RH tracer medicines. The overlap consisted of two products.

The medicines (indicated by the blue bar) for the Philippines, Peru, and Kenya are innovator brands, which are still on patent. The brands that constitute the Nepal sample (indicated by the blue bar) are the procurement prices for the highest-priced generics. An innovator brand comparison between Nepal and the three other countries was not possible because most of the innovator RH tracer medicines in the survey were not found in Nepal, because they are off patent.

3.1.1 Procurement Efficiency

Figure 3.1 indicates that the median cross-sectoral (public, private, and NGO) procurement ratio in Nepal for the lowest-priced generics is 1.29, indicating that the country is procuring RH products at prices comparable with median international prices—or simply that its procurement is efficient. The procurement price ratios (PPRs) for the lowest-priced generic products in the Philippines, Peru, and Kenya, by contrast, indicate that the procurement systems are not obtaining competitive prices. The PPR in the Philippines is 10.17, indicating that median procurement prices (MPPs) are 10 times more than IRPs. In Kenya and Peru, the PPR indicates that prices are nearly 5 times IRPs.¹⁶ The reasons should be investigated separately. Nonetheless, the PPR for Nepali LPGs is both comparable with IRPs and considerably more efficient (as defined by prices) than in the other countries.

The PPR for the innovator brands on the essential medicines tracer list (found in the Philippines, Peru, and Kenya) and for the highest-priced generic brands (found in Nepal) is, as expected (see footnotes 14 and 15), significantly higher than the IRP. As indicated earlier, this fact is because the IRPs are based on median generic procurement prices, not on innovator or highest-priced brands.

3.1.2 Brand Premium

The brand premium is the difference in price between the highest-priced generic (or innovator brands in the case of the Philippines, Peru, and Kenya) and the lowest-priced generic of the same product. It is important to highlight this difference because the price effect of clients purchasing the highest-priced generic instead of the lowest-priced one (with similar efficacy) is significant when that premium is large. This significance is particularly true in Nepal and other countries where many low-income consumers may not have adequate information to make rational selection choices. This issue is discussed in greater detail in the examination of brand premiums at medicine outlets. However, procurement-level brand premiums do affect clients, because the premium becomes even larger as price components are added.

Table 3.1.2 highlights the procurement brand premium in Nepal between the lowest- and highest-priced generic RH tracer medicines. The table indicates that, even though brand samples used for the other countries

16. Data for the Philippines, Peru, and Kenya are from WHO (2003).

Table 3.1.2. Procurement Brand Premium

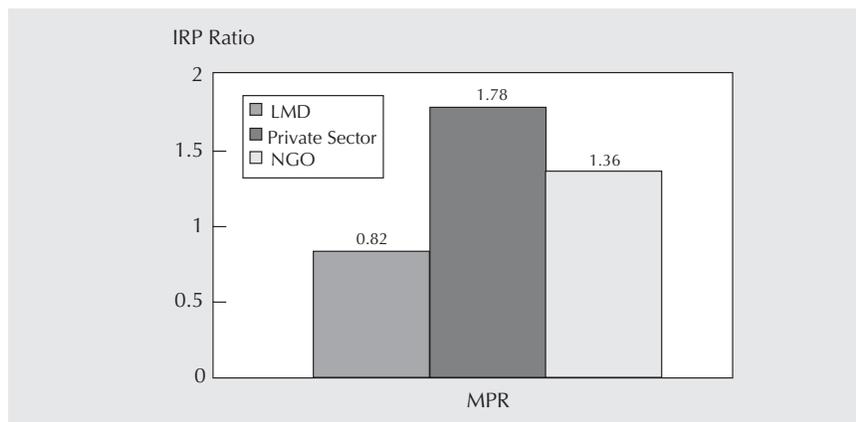
	Philippines	Peru	Kenya	Nepal
Brand (Rs.)	16.27	16.9	12.2	6.78
Generic (Rs.)	10.17	4.97	4.73	1.29
Brand Premium (%)	60	240	158	426

are innovator brands, median brand premium in Nepal is 426 percent—considerably higher than the other examples. A likely explanation for this gap is the considerably high procurement efficiency of low-cost generics in Nepal.

3.1.3 Sector Comparison

Figure 3.1 illustrated the comparative and absolute procurement efficiency in Nepal. LPG procurements are near parity with the RH tracer medicines, at a ratio of 1.29/1.00. Equally significant is the comparative advantage that Nepal has over the other countries in the LPG category. A disaggregation of that figure by sector reveals the composition of the median PPR for the public (LMD), private, and NGO sectors. Drawing on the sample, figure 3.1.3 indicates that public sector procurement is more efficient than the median IRP for those same products. In other words, the LMD is obtaining prices below the international median prices. For example, if the median IRP¹⁷ for the basket of RH tracer drugs is Rs. 100,¹⁸ then the public sector in Nepal is procuring that drug at a median price of Rs. 82. The median procurement ratios of both the NGO and private sectors are also relatively efficient. In general, the close proximity of India, with its established generic pharmaceutical manufacturing industry, plays a key role in allowing all

Figure 3.1.3. Sector Comparison of Procurement Efficiency for Lowest-Priced Generics



17. The MSH Price Indicator Guide will be the international price ratio reference for all tables and figures in this report, unless stated otherwise.

18. Rs. is an abbreviation for rupee, the Nepali unit of currency. When the survey began, Rs. 70 was equal to US\$1. All prices in the tables, graphs, and figures in this report are denominated in rupees, unless stated otherwise.

sectors to obtain competitive prices. Specifically, the LMD is also able to obtain significantly low prices for generic products by purchasing through Nepali manufacturers. The implication of the comparatively low PPRs (for all sectors), is that they may translate into low prices from medicine outlets across all sectors. Sections 3.2 and 3.5 provide details on this topic.

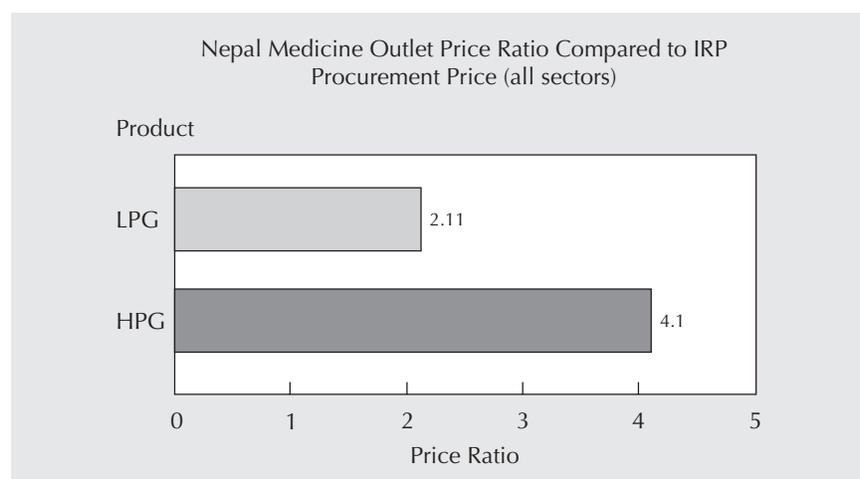
3.2 Patient Prices

Patient price levels are largely dependent on the efficiency of procurement systems in selecting and purchasing the appropriate range of high-quality products at a low cost. The previous section indicated that there is a substantial procurement price difference between LPGs and HPGs—a ratio of 1.29/6.78, or 426 percent. Therefore, a similar brand premium should be found at the retail level. Procurement efficiency *is not*, however, the only independent variable responsible for access to low-cost RH commodities at the client level. Wholesale profit margins, distribution costs, demand, and retail profit margins are all factors that affect consumer prices. In theory, for example, a pharmacy located in an urban area across the road from a medicine wholesaler should have lower prices than one in an isolated Mountain district where distribution costs are higher and demand may be lower.

This section examines and disaggregates patient prices in the public, private, and NGO sectors.¹⁹ Price ratios, median prices, and brand-specific prices are used to examine and compare pricing by region, topography, and sector.

Figure 3.2 illustrates the brand premium paid by consumers between the lowest- and highest-priced generic RH commodities. For all sectors (public, private, and NGO), the median patient price for low-priced generics (LPG) was equivalent to a ratio of 2.11/1 when compared with IRPs. Those same products were nearly double the price when the highest-priced generic equivalents were purchased (primarily in commercial pharmacies).²⁰

Figure 3.2 LPG and HPG Patient Price Ratios for All Sectors



19. The analysis of NGO patient prices will be less comprehensive than the analysis of public and private sector prices because of the absence of sufficient patient price data.

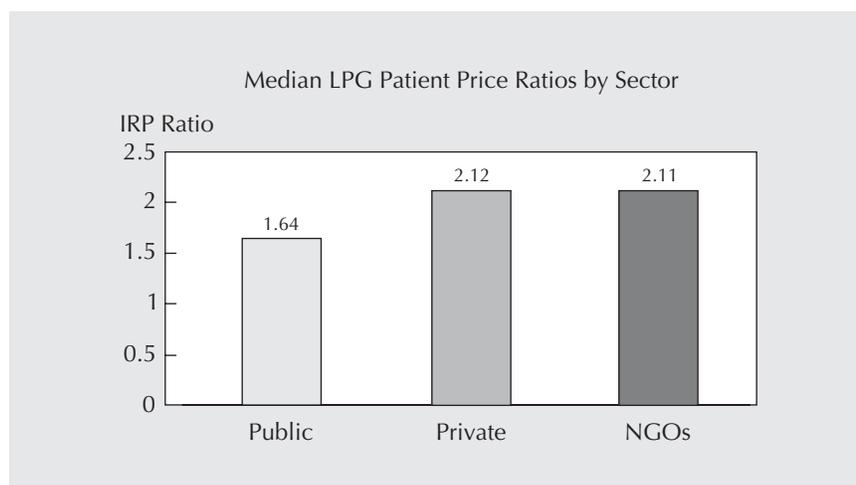
20. HPG figures are based on HPGs found at private and NGO outlets. Only three HPGs were found at public sector outlets. Consequently, public sector LPG prices were not used in figure 3.2. The LPG figure is based on median outlet prices.

The ratio represents a 95 percent brand premium. When compared with the 426 percent median brand premium for public procurement, the client price premium indicates that profit margins may be lower for the higher-priced products because the price differences between the two product categories narrow considerably at the retail level. Lower margins for higher-priced products have been found in other pricing surveys (Sarley et al. 2003), and they may be one of several factors that resulted in the substantial contraction of the brand premium between the procurement and retail levels.

3.2.1 Medicine Outlet Prices Across Sectors

Figure 3.2.1 disaggregates the LPG price ratios given in figure 3.2. The median public sector's LPG price ratio is 1.64/1, while the IRP ratios for the private and NGO sectors are comparable at 2.12 and 2.11. The comparatively high patient price at NGO outlets may result from the fact that many of the facilities are Nepali NGOs and hospitals, which were operating without significant international donor support. The facilities included community hospitals, Sajha Swastha Sewas, and a smaller number of FPAN and Marie Stopes clinics. The availability of LPGs from India may be another reason the private sector LPG prices are also relatively comparable with NGO and public sector LPG prices.

Figure 3.2.1. Median LPG Patient Price Ratios by Sector



3.2.2 Medicine Outlet Prices by Region

The survey identified measurable differences in price across the four regions where information was collected (Eastern, Central, Midwestern, and Western). Specific causes for those interregional variations are only speculative at this point. Distribution costs, profit margin variations among wholesalers and retailers, demand, and region-specific income levels may all contribute to the observed price differences. However, those price variations do have an effect on the affordability of, and thus access to, RH products. They also raise questions about equity: Why should clients in region A pay more than clients in region B? Policymakers should address this inequity.

Table 3.2.2. Medicine Outlet Price Ratios by Region

	Public	Private		NGO		Median		Brand Premium (%)
	LPG	LPG	HPG	LPG	HPG	LPG	HPG	
Central	2.13	2.03	4.71	2.36	5.20	2.13	4.96	133
Eastern	1.43	2.72	3.90	3.05	5.14	2.72	4.52	66
Midwestern	2.50	2.11	3.92	2.24	3.28	2.24	3.60	61
Western	1.17	2.08	3.87	2.14	5.08	2.08	4.48	115

Table 3.2.2 displays the median LPG and HPG price ratios by region and indicates the brand premium within each region. The Central region has the highest median HPG price ratio. The median price ratio for HPGs (compared with IRPs) in the Central region is 4.96/1. Consequently, the brand premium in that region is 133 percent. In contrast, the lowest median HPG price ratio for the RH commodities tracer list is in the Midwestern region, at 3.60/1. It follows that this region also has the lowest brand premium. By region, the lowest-priced RH commodities are the LPGs surveyed in the Western region (2.08/1).

There are also considerable differences in median price between LPGs and HPGs by sector. Table 3.2.2 indicates that *clients obtain the lowest median price in the country at public sector medicine outlets in the Western region (1.17/1)*. By contrast—and something the survey team did not expect—*clients pay the highest median price for RH commodities at Central region NGO outlets (5.20/1)*.²¹ Prices for LPGs at public sector medicine outlets in the Eastern and Western regions were the lowest in the country; they result from public sector procurement efficiencies and medicine outlet pricing policies (i.e., low-cost procurements and no margin client prices). Public sector medicine outlet prices in the Central and Midwestern regions are approximately 100 percent greater than in the other two regions. One reason may be that a number of health management committees have set higher prices in those regions to account for income levels or other factors. Further analysis of the community drug programs in those regions is needed to determine the reasons for the differences.

The preliminary analysis conducted by the survey team failed to include a regional analysis by price and brand. Instead, in part because of the limitations of the software program used to record and measure prices, the analysis was restricted to median price ratios. Subsequently, a more specific

21. The sample size for the Central NGO outlets was significantly small enough, at three, to warrant further NGO surveys in the region to confirm this finding. Further, all three outlets were located in urban areas, where prices are generally higher.

analysis, focusing on pricing variations by brand and region, was conducted. Table 3.2.2 illustrates the results.²²

Overall, the table indicates that prices for the brands of RH commodities in the table are highest in the Western region. It is followed by the Midwestern region, the Eastern region, and the Central region—which has the lowest median prices of the 13 brands in the table. The analysis is not weighted by value, because the team did not obtain data on quantities procured, distributed, or sold. It may be more useful to focus instead on brand analysis, though it is much more difficult to establish patterns across regions. Some observations include the following:

- The retail price of the socially marketed oral contraceptive (OC) pill *Sunaulo Gulaf* and the condom *Dhal Deluxe* are consistent across regions, at Rs. 8 and Rs. 1, respectively.
- The median price of *Penidure* (benzathine penicillin) is 50 percent higher in the Midwestern region, than in the three others.

Table 3.2.2. Regional Medicine Outlet Price Distribution by Brand (private sector)

Product	Brand	Regional Distribution in Rs.			
		Central	Eastern	Midwestern	Western
Ampicillin 500 V	Aristocillin	30.42	29.40	29.55	29.00
Beuzethrine benzylpenicillin powder 1.2	Penidure	20.02	20.23	30.00	20.81
OC Pill	Sunaulo Gulaf	8.00	8.76	8.20	8.00
Condom	Kama Sutra	4.57	5.83	n/a	7.33
	Dhal Deluxe	0.90	0.93	1.18	0.86
Co-trimoxazole T 800	Bactrim DS	2.18	2.05	2.22	1.79
Ferrous Folic Acid	Ferrofolic	2.13	2.00	1.86	1.81
Metronidazole vial	Metronidazole	26.37	24.33	30.83	26.50
Oxytocin Ampule	Syntocinon	20.94	24.20	24.45	28.26
Tetanus Toxoid	Bett	10.11	11.61	9.61	9.93
Doxycycline Tablet	Peridox	5.35	5.82	5.44	5.25
Methylergometrine Ampule	Methergin	31.25	31.72	29.44	35.11
Folic Tablet	Folvite	1.94	1.81	1.77	1.87
		n = 14	n = 14	n = 13	n = 9

22. A regional price analysis for the public and NGO sectors was not included because the sample size for each of the sectors (15 and 18) was insufficient to produce statistically significant results when segmented by region. Further, many of the public and NGO medicine outlets had a limited set of products available, which compounded the difficulty of making comparisons of this type. By contrast, the private sector sample—a majority were retail pharmacies—included 50 facilities distributed somewhat evenly throughout the four regions.

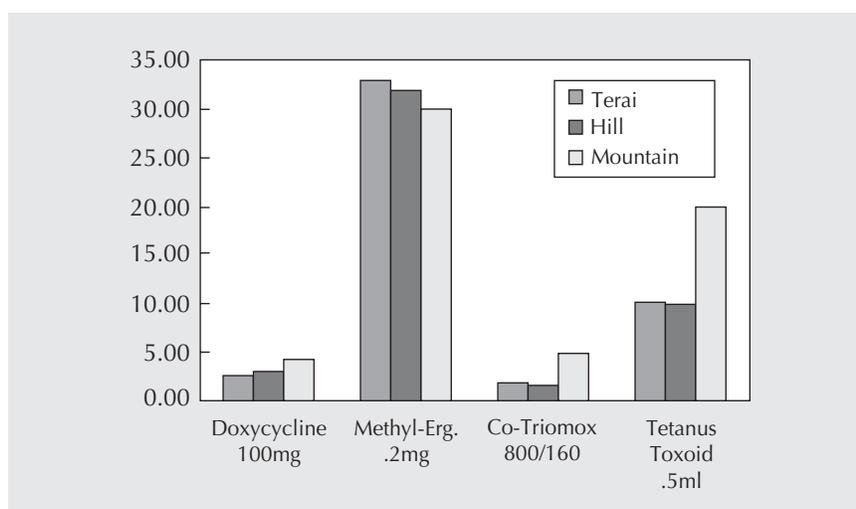
- Similarly, the median price of *Metronidazole* is 50 percent higher in the Midwestern region than in the three others.
- The median price of *Syntocinon* (oxytocin ampoule) varies between Rs. 20, 24, and 28 across regions, which is consistent with the overall price differences between regions.
- The Western region has 3 of the 13 most expensive brands; the Midwestern, 4; the Eastern, 3; and the Central, 3, which illustrates the absence of substantial aggregate pricing trends across regions.

While no particular region emerges as significantly more or less expensive (in aggregate), significant regional variations do appear when individual brands are examined. Annex 4 contains tables for 12 RH commodity tracer brands. The tables in the annex suggest that, on a percentage basis, there are considerable variations in pricing between regions for several tracer products. For example, the median price of *Ferrous folic* in the Central and Western regions shows an 18 percent price variance. In the same regions, the median price of *Syntocinon* varies by 35 percent. Private medicine outlet clients in the Midwestern region pay 35 percent more for *Metronidazole* than do such clients in the Eastern region. Conversely, the median retail price for the tetanus toxoid vaccine brand *Bett* is 21 percent higher in the Eastern region than in the Midwestern region. The examples suggest that interregional pricing variations are brand specific and do not conform to aggregate product comparisons.

3.2.3 Medicine Outlet Prices by Topography

As discussed earlier, the topographical map of Nepal is composed of three distinct zones: The Terai is a flat farming plain that stretches along Nepal's southern border with India. The Hill districts, which include the Kathmandu Valley, are north of the Terai and south of the Mountain districts. The inadequate transportation infrastructure in the country, primarily the lack of paved roads and the inadequate maintenance of existing ones, results in long delays and increased costs to transport goods, particularly from urban areas to the remote parts of the country. Consequently, many public, private, and NGO health facilities are relying more often on the expensive but reliable air transportation network to move products and people within the country.

Figure 3.2.3 illustrates the effect that many of the barriers are having on price in the private sector. The average median prices of three of the four RH tracer products listed (doxycycline, tetanus toxoid vaccine, and co-trimoxazole) are considerably higher in the Mountain zone than in the Terai and Hill zones.

Figure 3.2.3. Private Sector Retail Price Distribution by Topography

The median retail price of doxycycline 100 mg tablets is 49 percent higher in the Mountain zone than in the other two zones.²³ For the tetanus toxoid vaccine, the difference is 96 percent. Surprisingly, the median retail price of methylergometrine was consistent across topographical zones. Table 3.2.3 provides comparisons for eight additional products. Notably, the percentage variance between the (average) Terai and Hill median prices and the Mountain median price is more than 100 percent for ampicillin, co-trimoxazole, and metronidazole.

Those and other substantial price variations result in a 99 percent (unweighted) greater average median price in the Mountain districts. It must, however, be stressed that the sample size of private sector outlets there was limited to four facilities because of the difficulty the survey team had in traveling in the districts, the added transportation costs, and the low density of retail providers. Nonetheless, the results do provide evidence that RH products are considerably more expensive in the Mountain districts; policymakers should consider this issue when devising strategies to increase equity and access.

3.3 Product Availability

The RH commodity tracer list developed for this survey was initially based on a broader list put together by a group of technical experts from UNFPA, USAID, the World Bank, WHO, JSI, and other technical partners. That list represented a cross-section of RH medicines prevalent in West Africa. The Nepal survey team used those commodities as the basis to develop a Nepal-specific RH commodity tracer list. Through consultations with

23. The figure was derived by averaging the median prices of the products in the Terai and Hill districts and by dividing that figure by the median price in the Mountain district.

Table 3.2.3. Topographical Price Distribution and Variance (selected RH tracer commodities)

Product	Topographical Distribution				
	Terai	Hill	Average	Mountain	Variance (%)
Ampicillin	21.31	29.37	25.34	120.00	374
Benzathine benzylpenicillin powder 1.2	20.46	26.42	23.44	68.00	190
OC Pill	8.00	4.81	6.40	10.00	56
Condom HPG	4.08	4.72	4.40	7.33	67
Co-trimoxazole 800 mg	2.08	1.55	1.81	4.92	172
Ferrous Folic Acid	1.92	1.76	1.84	2.00	9
Metronidazole vial	20.90	25.12	23.01	49.57	115
Oxytocin	27.12	25.13	26.12	18.83	-28
Tetanus Toxoid	10.42	9.98	10.20	20.00	96
Doxycycline Tablet	2.85	3.11	2.98	4.43	49
Methylethergometrine Ampule	32.82	31.87	32.34	30.00	-7
Folic Acid	1.30	1.27	1.28	n/a	n/a
	n = 31	n = 15	n = 46	n = 4	99

pharmacists, personnel from the DDA, FHD, and other TAG members, a number of changes were made to the original tracer list to better reflect a cross-section of RH products in Nepal. One week before data collection, a final list was created that the survey team felt represented a cross-section of RH commodities available in Nepal. The final tracer list contained 32 RH products in the major RH treatment categories—family planning (contraceptives); STIs and HIV/AIDS; and prenatal, obstetrical, and neonatal commodities. Products were marked as *available* if an outlet contained at least one unit ready for distribution to clients. Attempts to measure stock levels were beyond the scope of the survey.

Table 3.3 displays the availability of all 32 RH products on the Nepal tracer list. There were 83 facilities surveyed, with a possible total sample size of 166 when the two product categories (HPGs and LPGs) were added together. Overall, the mean or average availability across sectors (including HPGs and LPGs) was 21.3 percent. This figure is somewhat misleading when trying to determine whether at least one product is available to clients, because the overall average is affected by the low prevalence of HPGs in all sectors, which was 9.1 percent. The mean availability of HPGs in public sector outlets, for example, was 0.8 percent. (Two separately priced brands of doxycycline and co-trimoxazole were available at an urban HP in Thimi [Kathmandu district], and two brands of co-trimoxazole were recorded at a rural PHCC in the

Table 3.3. RH Commodity Availability by Sector

Medicine or Drug Name	Medicines Availability in Outlets (% available)						
	HPG			LPG			Average (n = 166)
	Public (n = 15)	Private (n = 50)	NGO (n = 18)	Public (n = 15)	Private (n = 50)	NGO (n = 18)	
Ampicillin (250 mg)	0.0	10.0	11.1	6.7	34.0	16.7	13.1
Ampicillin (500 mg)	0.0	14.0	27.8	0.0	50.0	50.0	23.6
Benzathine benzylpenicillin (1.2)	0.0	0.0	0.0	13.3	56.0	38.9	18.0
Benzathine benzylpenicillin (2.4)	0.0	0.0	0.0	0.0	12.0	5.6	2.9
Condom (male)	0.0	90.0	66.7	86.7	92.0	72.2	67.9
Co-trimoxazole 400/80	13.3	8.0	5.6	93.3	46.0	38.9	34.2
Co-trimoxazole 800/160	0.0	36.0	38.9	13.3	84.0	61.1	38.9
Doxycycline	6.7	68.0	55.6	66.7	90.0	83.3	61.7
Ergometrine Injection	0.0	0.0	5.6	0.0	2.0	5.6	2.2
Female Condom	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ferrous Salt + Folic Acid	0.0	24.0	16.7	66.7	46.0	33.3	31.1
Ferrous Salt + Folic Acid (additive)	0.0	18.0	22.2	0.0	28.0	33.3	16.9
Folic Acid	0.0	28.0	22.2	0.0	70.0	38.9	26.5
Implant (subdermal)	0.0	0.0	11.1	46.7	0.0	38.9	16.1
Iron	0.0	0.0	0.0	0.0	2.0	5.6	1.3
IUD	0.0	0.0	0.0	53.3	0.0	5.6	9.8
Levonorgestrel	0.0	2.0	5.6	0.0	0.0	5.6	2.2
Magnesium Sulfate	0.0	2.0	0.0	0.0	0.0	5.6	1.3
Medroxyprogesterone Acetate	0.0	0.0	0.0	86.7	28.0	16.7	21.9
Methylethergometrine	0.0	14.0	0.0	40.0	64.0	38.9	26.1
Metronidazole Bottle	0.0	4.0	5.6	26.7	72.0	61.1	28.2
Metronidazole Tablets	6.7	68.0	44.4	73.3	96.0	88.9	62.9
Nevirapine Syrup (100 ml bottle)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nevirapine Tablets	0.0	0.0	0.0	0.0	6.0	5.6	1.9
Nifedipine	0.0	2.0	0.0	0.0	52.0	38.9	15.5
OC Pill (E+L)	0.0	16.0	11.1	20.0	74.0	38.9	26.7
OC Pill (E+N)	0.0	18.0	16.7	73.3	76.0	55.6	39.9
OC Pill (levonorgestrel)	0.0	0.0	5.6	13.3	18.0	16.7	8.9
OC Pill (norgestrel)	0.0	0.0	0.0	0.0	2.0	0.0	0.3
Oxytocin	0.0	30.0	16.7	60.0	78.0	61.1	41.0
Sulphadoxine/Pyrimethamine	0.0	2.0	0.0	0.0	26.0	33.3	10.2
Tetanus Toxoid Vaccine	0.0	2.0	5.6	40.0	74.0	55.6	29.5
Averages	0.8	14.3	12.3	27.5	39.9	32.8	21.3
Average LPG Availability							33.4
Average HPG Availability							9.1

Bardia district.) Conversely, the mean availability for LPGs was—as expected—considerably higher, at 33.4 percent. A number of products remained on the final tracer list despite knowledge that they were unlikely to be found.²⁴ Some product-specific observations include the following:

- For the 32 products, only 2 of 15 public sector outlets stocked at least one HPG and one LPG product (an HP in Thimi and a PHCC in the Bardia district).
- As expected, LPG intrauterine devices (IUDs) were more available in the public sector outlets (53 percent). Of those outlets, 87 percent also stocked three-month injectables, 86 percent stocked condoms, and 93 percent stocked with co-trimoxazole.
- The overall availability of magnesium sulfate across sectors and product prices was just over 1 percent. It was available only in a pharmacy in Lalitpur (Kathmandu Valley) and an FPAN clinic in Pokhara.
- In public sector outlets, the average availability of the full range of LPG contraceptives on the tracer list was 48 percent. Availability of condoms, injectables, and (at least one) OC pill was 82 percent.
- Condoms are the most widely available RH product in all sectors and are available in more than 90 percent of the pharmacies and public sector outlets.
- Sulphadoxine/pyrimethamine, nifedipine, folic acid, and magnesium sulfate were unavailable in all 15 public sector outlets.

Additional observations can be made from those data. Overall, the implication for policymakers is to determine what strategies to implement to increase the availability in all sectors of RH products, particularly sulphadoxine/pyrimethamine, magnesium sulfate, benzathine–benzylpenicillin, nifedipine, and ferrous salt and folic acid. The following sections segment the data from table 3.3 by region and topography.

3.3.1 Product Availability by Region and Sector (LPGs)

Product availability is highest in private sector outlets in the Eastern region (45.3 percent) and lowest in public sector outlets in the Western region (16.7 percent). The mean product availability *across the four regions*, however, is surprisingly consistent (see table 3.3.1)—ranging from 29.9 percent (Central) to 31.7 percent (Midwestern). By contrast, variations between sectors, both across and between regions, are significant. NGO product availability is 17 percent in the Eastern region, compared with more than 35 percent in the Western region. Conversely, public sector mean availability is highest in the Eastern region (27 percent) and lowest in the Western region (17 percent). Mean availability by sector across regions varies considerably (public, 21 percent; private, 40 percent; NGO, 30 percent).

Within the surveyed regions, variance between sectors is considerable. In the Western region, availability ranges between 37 percent in NGOs and 17 percent in public sector outlets. The percentage of RH products avail-

24. The products included female condoms, ergometrine, levonorgestrel, and nevirapine syrup and tablets.

Table 3.3.1. LPG Product Availability by Region and Sector

Sector	Regional Product Availability by Sector				
	Central n = 22	Eastern n = 21	Midwestern n = 18	Western n = 22	Mean n = 83
Public	20.3	27.6	21.9	16.7	21.6
Private	38.8	45.3	37.9	38.9	40.2
NGO	30.5	17.7	35.4	37.5	30.3
Mean	29.9	30.2	31.7	31.0	30.7

able in public sector outlets in each region is also substantially lower than in the other sectors.

Table 3.3.2 indicates that the availability of a basket of 13 tracer products across regions is product specific. For example, condom availability is more than 80 percent in each region, while folic acid availability ranges from 24 percent in the Central region to 41 percent in the Western region. Metronidazole is available in 92 percent of Central region facilities, but only 66–78 percent is available in the other three regions' facilities. The availability of folic acid in the Western region is nearly double that in the Central region. Overall, the availability of folic acid, magnesium sulfate, ampicillin, and nifedipine is low in each region. The causes and implications will be further examined

Table 3.3.2. Regional LPG Product Availability

Medicine Name	Regional Product Availability			
	Central n = 22	Eastern n = 21	Midwestern n = 18	Western n = 22
Combined oral pill	59.5	59.5	68.9	77.5
Ampicillin (500 mg)	26.2	30.2	42.2	36.5
Condoms	81.0	86.5	86.7	81.2
Co-trimoxazole 800/160	45.2	46.0	53.3	59.0
Doxycycline 100 mg tab	83.3	64.3	63.3	74.1
Ferrous salt + folic acid	20.2	50.8	33.3	7.4
Folic acid	23.8	37.3	33.3	41.3
Magnesium sulfate	0.0	0.0	0.0	4.8
3 - Month injectable	36.9	45.2	37.8	50.3
Metronidazole tablets	91.7	66.7	67.8	77.8
Nifedipine	4.8	0.0	0.0	8.5
Oxytocin	38.1	53.2	65.6	51.6
Tetanus toxoid vaccine	48.8	58.7	66.7	48.7

Note: Annex 5 contains the percentage availability for all 32 LPG RH tracer products by region and sector.

and brought to the attention of policymakers by the TAG through a findings review process.

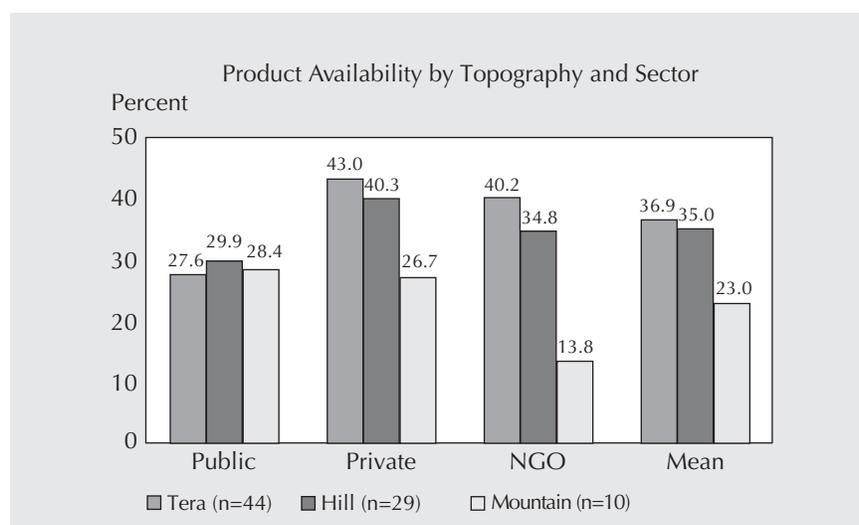
3.3.2 Product Availability by Topography and Sector

Equally worth noting is product availability by topography, between the Mountain, Hill, and Terai zones. On the basis of anecdotal evidence, a number of TAG members and the survey team expected that availability would be markedly lower in the Mountain zones, given the greater transportation costs, the poor road infrastructure, and the security situation.

Figure 3.2.2 suggests that this hypothesis was, in part, correct. The mean availability of RH tracer products was the lowest in the Mountain zone, at 23 percent, compared with 37 percent in the Terai and 35 percent in the Hill zones. However, the figures should be considered preliminary because of the low number of facilities surveyed in the Mountain zone. Nonetheless, it is reasonable to extrapolate from the preliminary figures that overall availability in the Mountain districts is low. The issue should be addressed in any policy action arising from this report. Further observations include the following:

- Public sector product availability is consistent across the three zones—between 28 and 30 percent.
- Private and NGO outlet availability in the Mountain sites surveyed is substantially lower than in such outlets in the Hill and Terai zones.
- The highest concentration of RH product availability is in private sector outlets in the Terai (43 percent). The lowest is in NGO outlets in the Mountain zone (13.8 percent).²⁵

Figure 3.3.2. Product Availability by Topography and Sector



25. The NGO sample in the Mountain districts was limited to two, a number insufficient for making any concrete observations on NGO product availability.

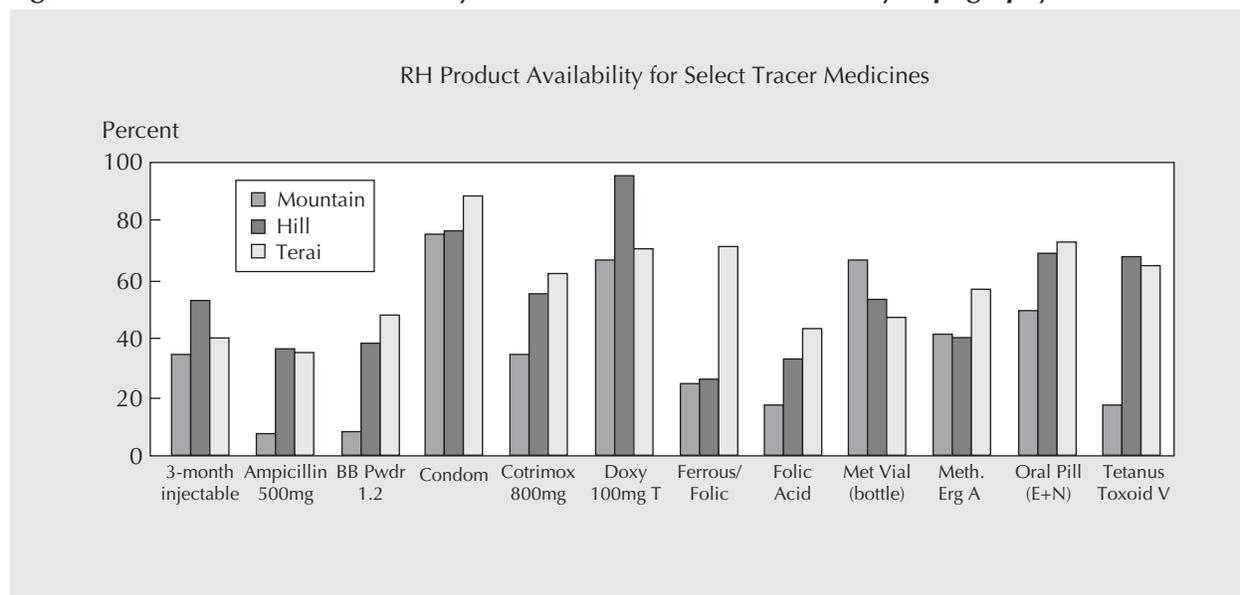
The availability of a subsection of 12 RH tracer products by topography is illustrated in figure 3.3.3.²⁶ As indicated in previous analysis, condoms are the most widely available RH product. By topography, their availability was the highest in the Terai zone, at 88 percent. The availability of doxycycline, ferrous folic tablets, and oral contraceptives was also more than 70 percent in the Terai. By contrast, ampicillin and benzathine benzylpenicillin were available in 8 percent of Mountain sites surveyed. Finally, availability in Mountain facilities of metronidazole, methylethylgometrine, and condoms was comparable with availability in the two other zones.

Low product availability is also due, in part, to which products and services are offered. For example, SHPs and HPs stock only a limited variety of medicines—PHCCs and hospitals stock many more. Pharmacies are not expected to carry clinical contraceptives such as IUDs.

3.4 Product Affordability

The WHO/HAI manual encourages researchers to conduct an affordability analysis of the tracer medicines. There are a number of ways to do this. First, as suggested in the manual, survey researchers can obtain the annual wage of the lowest-paid government worker to use as a benchmark to index affordability. Annual wages are then divided by 365 (days in a year) to obtain the worker's average daily income. In Nepal, the income of the lowest-paid government worker is approximately Rs. 36,000 a year, or Rs. 98.6 daily. Multiplying the unit cost

Figure 3.3.3. RH Product Availability for Selected Tracer Medicines by Topography



Note: BB Pwdr = Benzathine Benzylpenicillin Powder, Cotrimox = Co-trimoxazole, Doxy = Doxycycline, Met = Metronidazole, and Meth. Erg = Methylethylgometrine.

26. Annex 6 contains the percentage availability for all 32 LPG RH tracer products by topography and sector.

of the medicine by the total units needed for treatment gives a total treatment cost. That cost is divided by the daily wage of the worker to obtain total treatment cost expressed in days' wages. For example, WHO standard treatment guidelines require that pregnant women use 270 units of ferrous and folic acid during the third trimester of pregnancy (WHO 2003).²⁷ Multiplying 270 units by the cost per unit gives the total treatment cost. This figure is then divided by 98.6 (the daily wage), resulting in treatment costs expressed in days' wages.

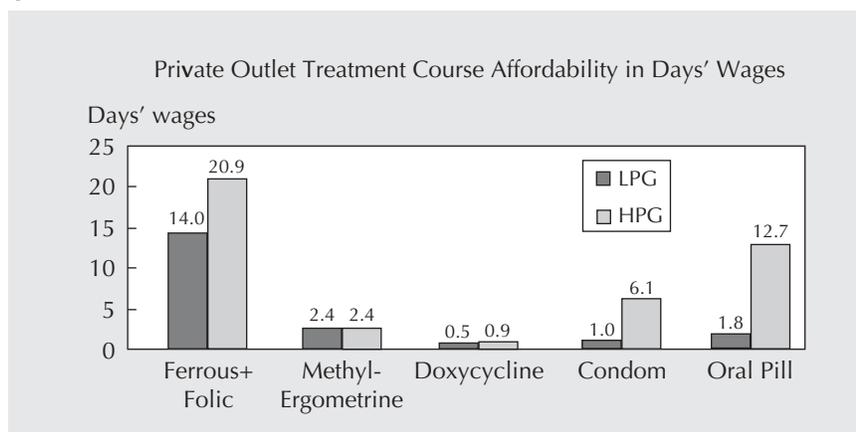
Although the WHO/HAI method may prove useful for a number of medicines, an alternate measure is often used to express the treatment cost of contraceptives. The annual cost for each contraceptive method is determined by multiplying the unit price of the product by the couple-years of protection (CYP) factor for each method. CYP factors used in the analysis are 120 condoms and 15 cycles of OC pills (Stover et al. 1997). Cost, as a percentage of annual income, is then determined by dividing the annual cost per CYP for each product by average per capita income for each wealth quintile. While there is debate about the maximum percentage of annual income that individuals should spend on contraception, one figure that has been used is 1 percent (Harvey 1994). In other words, contraceptives are categorized as unaffordable if the cost exceeds 1 percent of a worker's annual income. For the poor, who have less disposable income, this figure is probably excessive; 0.5 percent may be appropriate.

Figure 3.4 provides an analysis of treatment costs expressed in days' wages for six RH tracer products. As shown, there is a substantial difference, in days' wages, between the median prices of HPGs and LPGs purchased in private medicine outlets. It takes almost 21 days of wages for the lowest-paid government worker in Nepal to pay for the median-priced ferrous and folic acid HPG, but only 14 days to pay for the median-priced LPG. There is an even larger difference between HPG and LPG oral pills (12.7 and 1.8 days) and condoms. However, it is difficult to determine the effect that days' wages has on affordability. Are 12.7 days' wages for HPG oral pills affordable? What about HPG ferrous and folic acid at 21 days' wages? Those treatment costs seem high, but further research establishing a benchmark in days' wages should be conducted before any conclusions are drawn. Further, the RH products used for each treatment are specific to acute and chronic conditions. A year's supply of condoms and OC pills for family planning (see figure 3.4), should not be compared with 14 units of doxycycline to treat an acute infection. Rather, each product should be measured against comparable treatments for the same conditions.

Table 3.4.1 displays treatment affordability expressed as a percentage of per capita annual income. This method has been used in several countries in recent years to determine the ability to pay for contraceptives (Chawla et al. 2003; Rao 2004). The first three columns on the left side of the table

27. WHO's standard treatment guidelines were used to obtain units of medicine required per treatment. The guidelines vary by country and program. However, they provide a relatively accurate benchmark to measure treatment costs.

Figure 3.4. Reproductive Health Product Affordability in Days' Wages (private sector)



indicate product type, brand, and cost per treatment.²⁸ The rows in the upper-right corner are per capita income figures for Nepal, divided by five income subgroups or quintiles (expressed in dollars and rupees).

The richest one-fifth of individuals in the population (Q1), for example, earns an average of Rs. 37,082 annually, and the poorest group (Q5) earns an average of Rs. 6,291.²⁹ Those figures may appear low, because they represent averages per one-fifth of each income segment. The richest 10 percent in quintile 1 may earn substantially more than the average figure, while the poorest 10 percent in quintile 5 might earn very little monetary income at all. The cells under the columns labeled Q1–Q5 represent the percentage of per capita income required for each treatment by the corresponding product and for each brand.

Overall, the table indicates that there is a measurably significant difference in affordability between two brands of the same products. The private sector brands—*Kama Sutra*, *Ovral L*, *Ferric Plus*, *Peridox*, and *Methergin*—require expenditure of more per capita income than the comparable socially marketed (*Dhal Deluxe*, *Sunaulo Gulaf*) and public sector products.

Further observations include the following:

- By the 1 percent standard of measure, the unsubsidized commercial sector (UCS) products—*Kama Sutra condoms*, *Ovral L OC pills*, and *Ferric Plus*—are unaffordable for all income groups (the exception is likely a percentage of individuals in Q1).
- *Kama Sutra condoms* are more than 600 percent more expensive than the socially marketed *Dhal Deluxe condoms*. If purchased by an individual in the poorest group (Q5) for one year of CYP, the cost would represent 11 percent of annual income.

28. The cost of treatment for contraceptives represents annual treatment costs and were determined by multiplying CYP factors by median brand price. For all other products, treatment costs were derived by unit cost by total units needed for treatment.

29. The sources are World Bank national accounts data and OECD National Accounts data files (GNI, 2003, Atlas method).

Table 3.4.1. Cost as a Percentage of Annual Income for Selected RH Commodities

			Estimated per Capita Income				
			Rich/Q1	Q2	Q3	Q4	Poor/Q5
		US\$	526	247	177	135	89
		Rs.	37,082	17,382	12,499	9,519	6,291
Product	Brand	Cost per Treatment (Rs.)	Percentage of Annual Income				
			Q1	Q2	Q3	Q4	Q5
Condom	Kama Sutra	709.20	1.91	4.08	5.67	7.45	11.27
Condom	Dhal Deluxe	116.40	0.31	0.67	0.93	1.22	1.85
OC Pill	Ovral L	1,176.45	3.17	6.77	9.41	12.36	18.70
OC Pill	Sunaulo Gulaf	123.60	0.33	0.71	0.99	1.30	1.96
Ferrous Folic Acid	Ferric Plus	1,957.50	5.28	11.26	15.66	20.56	31.12
Ferrous Folic Acid	Ferrofolic	526.50	1.42	3.03	4.21	5.53	8.37
Doxycycline	Peridox	76.44	0.21	0.44	0.61	0.80	1.22
Doxycycline	Public Sector	49.00	0.13	0.28	0.39	0.51	0.78
Methylethylmetrine	Methergin	223.16	0.60	1.28	1.79	2.34	3.55
Methylethylmetrine	Public Sector	126.00	0.34	0.72	1.01	1.32	2.00

Note: Costs in excess of 1 percent are shaded red; costs under 1 percent are shaded green.

- *Sunaulo Gulaf* pills and Dhal Deluxe condoms are evenly priced and represent affordable contraceptive choices for the top 60 percent of the population (Q1–3).
- The cost of the generic doxycycline 100 mg tablets that are available in public sector outlets represents only 0.78 percent of annual income for Q5 (the poorest). The cost of *Peridox*, a low-priced UCS brand, represents 1.22 percent of income for this same group.
- Ferric Plus is an example of the proliferation of high-priced ferrous salt and folic acid brands in the commercial market. These and other similar brands contain additives (e.g., zinc, vitamin C) that are marketed to higher-income consumers. On the basis of 270 total treatment units, which are a minimum figure, the product represents more than 5 percent of the annual income of Q1.
- Doxycycline distributed through public sector outlets and *Peridox* are the only 2 products that cost less than the 1 percent benchmark for the poorest 40 percent of the population (Q4–5).

3.5 Product Margins

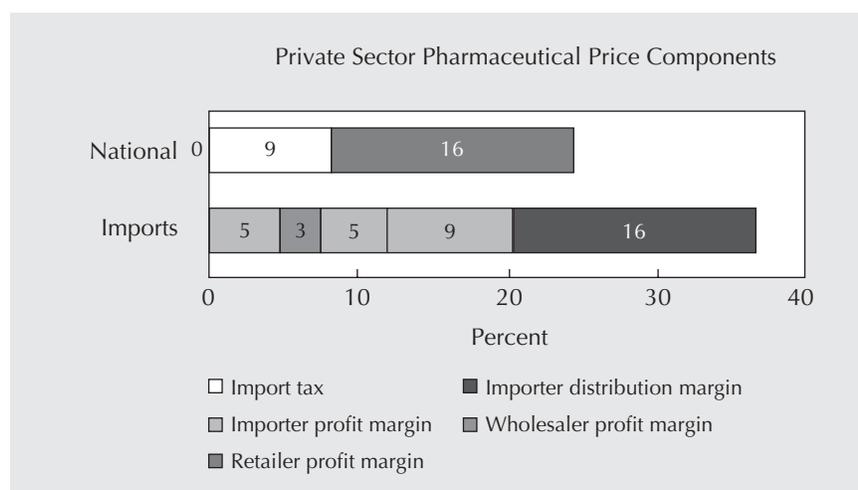
The DDA reviews the recommended retail prices for pharmaceuticals established by the NCDA. Using those recommendations, the DDA issues the maximum pharmaceutical retail prices allowed for imported and nationally manufactured products. Those prices are based on maximum allowable profit and distribution margins for each entity in the price chain (i.e., importer, wholesaler, and retailer). The National Drug Policy is somewhat

unclear on the issue. It indicates that the DDA has the authority to establish an official price, but not a fixed price (Nepal MOH 2000). For example, the policy indicates that retailers in remote areas can include reasonable higher margins for additional transport costs. This policy is no doubt that is one reason higher retail prices were observed in Mountain districts. Nonetheless, the survey team was told that the DDA does have regulatory authority and can apply punitive measures if it uncovers egregious violations of maximum margin levels.

Figure 3.5 indicates the maximum margins allowable for each entity in the pharmaceutical price chain. As stated in section 1.4.1, imported medicines are subject to a flat 5 percent government import tax. Importers can then charge a 3 percent distribution margin and a 5 percent profit margin. Wholesalers and retailers then levy a 9 percent and a 16 percent profit margin, respectively. The total of those price components is 37 percent above the CIF/CIP³⁰ procurement price (the price of the medicine after it arrives in-country), plus the cost of insurance and freight charges. Yet, because those margins are levied on top of previous margins, they have a cumulative effect. The 16 percent retail profit margin, for example, is not added to the CIF/CIP price, but to the price after taxes and importer and wholesaler margins have been applied. The cumulative effect that those margins have on price is, therefore, 42 percent (see table 1.4.1).

Locally manufactured pharmaceuticals are not subject to import taxes and importer margins. In some instances, local manufacturers sell directly to retailers; this approach eliminates the wholesale margins. Locally manufactured medicines are, therefore, subject either to retail margins or to retail and wholesale margins. Nonetheless, locally manufactured generic drugs are typically less expensive than imports from Europe or India. On the

Figure 3.5. Pharmaceutical Price Components (private sector)



30. A shipping term meaning that the seller usually pays the costs, insurance, and freight charges necessary to bring the products to the port of destination (WHO and HAI 2003).

basis of the data collected for the survey, the manufacturing selling price (MSP) for locally manufactured products is lower than for imported generics, and they are subject to only two price components. The production of more locally manufactured RH medicines should be investigated and possibly promoted as a strategy to reduce costs.

3.5.1 Observed Cumulative Margins

The DDA has regularly communicated to importers, wholesalers, and retailers the maximum that margin each entity in the price chain can add to medicines. The four private importers that were surveyed for this analysis indicated that they were aware of the margins. Data collectors reported that 47 of the 50 private sector medicine outlets were also aware of the 16 percent maximum retail mark-up. Most indicated that they charge between 14 and 16 percent.

The cumulative margins observed were substantially higher than they should have been if the formula issued by the DDA had been used. In theory, cumulative margins should fall between 26 and 42 percent (the maximum cumulative margins for locally manufactured and imported medicines, respectively). The cumulative margins observed were higher for four of the five selected RH products shown in figures 3.5.1.³¹ The median cumulative margin for ampicillin 500 mg was 259 percent; for oxytocin, 163 percent, and for ferrous salt and folic acid, 84 percent. The margins for tetanus toxoid vaccine and, to an extent, metronidazole fell within and near what would be expected by the statutory margin levels.

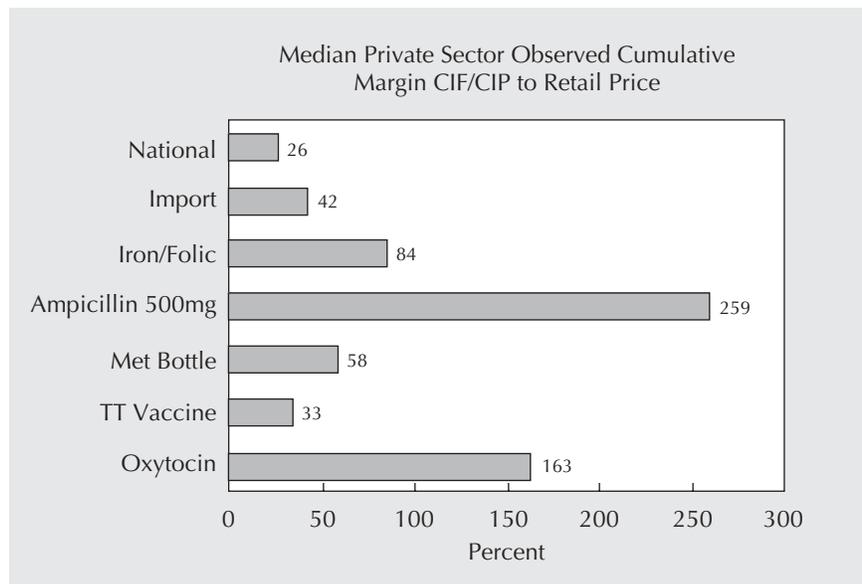
One principal question relating to the analysis remains unanswered: How are the additional margins distributed between importers, wholesalers, and retailers? For example, the median CIF/CIP procurement price for oxytocin is Rs. 10.58 (see figure 3.5.1.a). Oxytocin is imported from India and is, therefore, subject to a 5 percent government import tax. The median retail price of oxytocin is Rs. 27.80. The amount remaining after subtracting the procurement price and tax is Rs. 17.20 (see figure 3.5.1.b). This cumulative margin represents 61 percent of the median retail price of oxytocin. The cumulative margin on ampicillin constitutes 72 percent of the median retail price. What needs to be determined in future analysis is the proportion of that amount that each actor in the system is levying on RH medicines (and on pharmaceuticals, in general). These data can then be used to support pricing policy changes, additional enforcement, or other strategies that promote equity and access.

3.5.2 Cumulative Margins by Region

On the basis of median retail price figures from section 3.2, cumulative margins were established by region for RH commodities that are sold

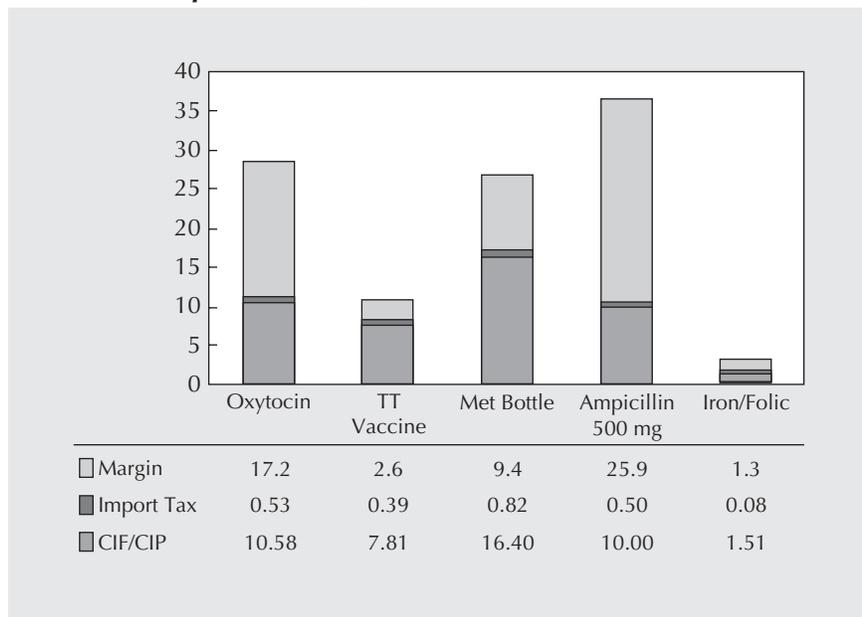
31. The cumulative margins were established by comparing the median CIF/CIP private sector procurement price with the median retail price for the selected RH commodities listed in figure 3.4.1.

Figure 3.5.1.a Observed Median Cumulative Price Margins



through private outlets. Table 3.5.2 compares the cumulative margins across the four regions. According to unweighted average, the Western region has the highest margins—82 percent—for the 12 tracer products in the table, but the variance between this figure and the average cumulative margins for the three other regions is not likely to be statistically significant—only 2–5 percent. Yet again, as in the product availability analysis—which was also characterized by uniformity at the regional (aggregate) level—the divergence is product specific.

Figure 3.5.1.b Distribution of Price Components for Selected RH Commodities (private sector)



Further observations include the following:

- The average cumulative margin across regions is 80 percent, nearly double the allowable maximum of 42 percent.
- The median retail margin for benzathine benzylpenicillin is 286 percent greater in the Midwestern than in the Central region. The margin is similarly greater in Eastern and Western regions.
- Across regions the margins for HPG OC pills (not including socially marketed products) are below the maximum margin allowable (between 26 and 42 percent).
- Across regions all OC pills are under the regulated margins. In the Midwestern region, HPG condoms and the tetanus toxoid vaccine are within the established margin. Co-trimoxazole and benzathine benzylpenicillin (40 and 22 percent) fall within the accepted cumulative margin in the Eastern region. In the Central region, benzathine benzylpenicillin and oxytocin are within the established cumulative margin. In the Western region, median cumulative margins for benzathine benzylpenicillin, co-trimoxazole, and the tetanus toxoid vaccine (25, 23, and 43 percent) are all within the established range.
- Products with high cumulative margins include doxycycline, ampicillin, and folic acid (across all regions). Cumulative margins for condoms in the Western region and metronidazole in the Midwestern region (129 percent and 108 percent) are also substantially above the established range and the mean.

Table 3.5.2. Median Cumulative Margins by Region (%)

Product	Median Margins by Region			
	Central n = 14	Eastern n = 14	Midwestern n = 13	Western n = 9
Ampicillin 500 mg	204	194	196	190
Benzathine benzylpenicillin Powder 1.2	21	22	81	25
OC Pill HPG	26	14	11	13
Condom HPG	43	82	25	129
Co-trimoxazole 800 mg	49	40	52	23
Ferrous Folic Acid	82	71	59	55
Metronidazole Vial	78	64	108	79
Oxytocin	38	60	61	87
Tetanus Toxoid	46	67	38	43
Doxycycline 100 mg	176	200	181	171
Methylethylmercurine	65	68	56	86
Folic Acid	95	82	78	87
Mean	77	80	79	82

3.5.3 Cumulative Margins by Topography

The distribution of cumulative margins across the Terai, Hill, and Mountain zones is characterized by an unambiguous observation: Cumulative margins in the Mountain districts—as expected after reviewing retail prices by topography—are considerably higher than in the Terai or Hill districts. The size of the Mountain zone private retail sample—which was four—also must be considered. It is unclear to what extent the sample size biased the findings. As mentioned earlier, the survey team was constrained by a number of factors that limited the ability to survey additional Mountain facilities.

Table 3.5.3 details the median cumulative margins for a basket of 12 RH tracer products. Unlike the distribution by region, where mean margins showed very little variance, and where additional sites in the Terai and Hills diluted the effect of Mountain facilities, the distribution by topography shows marked differences between the Terai and Hill districts and Mountain districts.

Controlling for ampicillin (for which only one retail price was recorded), the mean cumulative margin in the Mountain zone is 130 percent, as opposed to 230 percent with ampicillin included. Across zones, the mean cumulative margin is 113 percent. Controlling for ampicillin, that mean drops to 80 percent—the same mean cumulative margin seen across regions.

Additional observations are as follows:

- Figures from the Terai and Hill zones (and from the regions) provide some evidence to suggest that the cumulative margin for ampicillin 500 mg is relatively high. Therefore, the price recorded in the single

Table 3.5.3. Median Cumulative Margins by Topography (%)

Product	Terai n = 31	Hill n = 15	Mountain n = 4
Ampicillin 500 mg	113	194	1100
Benzathine Benzylpenicillin Powder 1.2	23	59	310
OC Pill HPG	14	20	49
Condom HPG	28	48	129
Co-trimoxazole 800 mg	42	6	237
Ferrous and Folic Acid	64	50	71
Metronidazole Vial	41	70	235
Oxytocin	79	66	24
Tetanus Toxoid	50	44	188
Doxycycline 100 mg	47	60	129
Methylethylmetrine Ampule	74	69	59
Folic Acid	30	27	
Mean	50	59	230

Mountain outlet may be consistent with other retail outlets in that zone.

- By topography, mean cumulative margins in the Terai and Hill districts are not excessively higher than the established rate.
- In the Terai districts, 50 percent of RH products (those in the table) have cumulative margins above the acceptable rate. In the Hill districts, 67 percent do. At the two private retailers surveyed in the Mountain zone, only one product (oxytocin) had a cumulative margin below the established rate.

Cumulative margins contribute to high RH medicine prices in many countries. In Nepal, the median rate of those margins for the basket of RH tracer products is 80 percent. In many other countries, that figure is much higher. Nonetheless, in Nepal, private sector clients pay nearly double the procurement price for RH medicines (on a median basis). If the analysis of price components (e.g., importer distribution margins, retail profit margins) was extended to cover the price before the product was procured, the cumulative margin would be even greater because of freight and insurance costs.

One of the next steps following the dissemination of this report will be to determine how and to what extent the price components examined here affect the equity, access, and affordability of RH commodities. Though this was beyond the scope of this report, the findings did indicate that a number of middle- and lower-income clients might have difficulty affording RH commodities at the current prices. Cumulative margins are just one contributing factor. The next section provides a summary and brief analysis of the survey findings to determine the implications for clients and policymakers.

4. Summary of Findings and Implications

Married women of reproductive age constitute 20 percent of Nepal's population of 24.7 million. His Majesty's Government of Nepal (HMG) has established that the equitable pricing, distribution, and availability of RH products to meet the demands of this population are important public health goals. The use of modern methods of contraception has steadily increased during the past decade, from 26 percent in 1996 to nearly 40 percent in 2005.³² HMG has also successfully expanded the availability of essential RH medicines through efficient central-level procurement and HMG's support of community drug programs. Reproductive health indicators, however, point to a number of ongoing challenges: the unmet need for contraception and the maternal and infant mortality remain high, while access to RH services, notably by the rural poor, is low.

Some of the reasons why those and other RH indicators are below the targets set out in HMG's planning documents are likely attributable to the issues discussed in this report: RH commodity procurement, medicine outlet pricing, availability and affordability, and effect of cumulative margins. Other factors that challenge RH commodity security—including prescribing practices, levels of consumer and provider information, and education and socio-political-economic status—must also be considered in any strategy to improve equity, access, and affordability. The RH pricing survey provides evidence that RH commodity security can be improved by policy actions that are based on the implications of the findings.

4.1 Procurement

Key Findings

- The cross-sectoral median procurement price ratio (PPR) for LPGs is 1.29/1.00.
- The cross-sectoral median PPR for HPGs (in the private and NGO sectors) is 6.78/1.00.
- The cross-sectoral median PPR for LPGs and HPGs is substantially lower than in the Philippines, Peru, and Kenya.

32. Estimates are from HMG experts.

- The median procurement brand premium (price variation between LPGs and HPGs) is 426 percent—higher than in the three comparison countries.
- The public sector median PPR (from the LMD) is .82/1.00, which indicates greater efficiency than the IRP.
- Local manufacturing and Nepal’s proximity to India help account for relatively low central-level procurement prices across sectors.

Implications

Central-level procurement for all sectors in Nepal is comparatively more efficient than in other countries. The high brand premium indicates that consumers pay substantially more by not choosing the lowest-priced generic RH product. The procurement efficiency of the LMD results in the purchase of low-cost generic products, which it is able to distribute to health facilities for substantial savings for the MOH and public sector clients.

4.2 Patient Prices

Key Findings

- The cross-sectoral median price ratios at medicine outlets are 2.11 (LPG) and 4.11 (HPG), representing a 95 percent brand premium.
- The median price ration at public sector medicine outlets is 1.64; at private sector outlets, 2.12; and at NGO sector outlets, 2.11.
- The Western region has the lowest medicine outlet price ratios both for LPGs and in the public sector. The Eastern region has the highest price ratios for LPGs. The Midwestern region has the highest price ratios for the public sector. The Central region has the highest medicine outlet price ratios for HPGs.
- Public sector medicine outlet prices in the Central and Midwestern regions are approximately 100 percent greater than in the two other regions.
- The prices of the socially marketed products *Sunaulo Gulaf* (OC pill) and *Dhal Deluxe* (condom) are consistent across regions.
- Each region has three or four of the most expensive brands, making it difficult to compare aggregate pricing trends across regions. Instead, price variations are brand and product specific.
- The UCS median price of the *Ferrofolic*, *Syntocinon*, *Metronidazole*, and *Bett* brands vary by more than 10 percent across regions.
- The UCS median prices of three of four RH tracer products are more than 50 percent higher in the Mountain zone than in the Hill or Terai zones.
- The UCS median medicine price in the Hill and Terai outlets are comparable, while the variance with the Mountain outlets is close to 100 percent.

Implications

- The brand premium between the procurement and medicine outlet levels narrows considerably, implying lower cumulative margins

for higher-priced products and higher margins for lower-priced products.

- The regional medicine prices do not indicate aggregate variations by region. Instead, the significant variations are product and brand specific. Policymakers should ask additional questions about why there are differences between regions: for example, for *Methergin*, *Syntocinon*, and *Penidure*.
- Private sector clients in the Mountain district are paying significantly more for RH products than are clients in the Hill and Terai districts, which indicates an inequitable distribution of pricing across the topographical zones.

4.3 Availability

Key Findings

- Mean product availability across all sectors and product prices was 21.3 percent. The figure was 9.1 percent for HPGs and 33.4 percent for LPGs.
- The availability of HPGs in public sector outlets was 0.8 percent. (Two of the 15 public sector outlets stocked one HPG and LPG pairs for two products.)
- The availability of condoms, OC pills, and injectable contraceptives was more than 75 percent in public sector medicine outlets. The availability of IUDs was greater in the public sector than in the other two sectors.
- The overall availability of magnesium sulfate across sectors and product prices was just over 1 percent. It was available only in a pharmacy in Lalitpur (Kathmandu Valley) and an FPAN clinic in Pokhara.
- In public sector outlets, the average LPG availability for the full range of contraceptives on the tracer list was 48 percent. Availability of condoms, injectables, and at least one OC pill was 82 percent.
- Condoms are the most widely available RH product in all sectors; they are available in more than 90 percent of pharmacies and public sector outlets.
- Sulphadoxine/pyrimethamine, nifedipine, folic acid, and magnesium sulfate were unavailable in all 15 public sector outlets.
- By sector, product availability was highest in private sector facilities (40 percent), followed by NGO outlets (30 percent) and public sector facilities (21 percent).
- By region and sector, median product availability was highest in private sector outlets in the Eastern region (45 percent). It was lowest in public sector outlets in the Western region (17 percent).
- By region, product availability varied by less than 2 percent (29.9 percent for Central to 31.7 percent for Midwestern).
- Across regions, availability of condoms is more than 80 percent and availability of OC pills is 60 percent. By contrast, the availability of nifedipine and magnesium sulfate is less than 5 percent across regions.

- Mean product availability is the lowest in the Mountain districts (23 percent), compared with the Terai (37 percent) and the Hill districts (35 percent).

Implications

- The availability of RH commodities across regions, sectors, and zones (less than 50 percent) is likely related to a number of RH challenges in Nepal. In the Mountain districts, the average availability is less than 25 percent. Between regions mean availability is less than 32 percent. Those figures should raise questions about access between zones and across regions.
- The availability of important RH medicines—including nifedipine, ampicillin, and magnesium sulfate—is low across the country, implying that key RH commodities for STI prevention and prenatal care are unavailable for a majority of clients.
- Despite considerable procurement efficiency and support for CDPs, median product availability in the 15 public outlets surveyed is less than 25 percent, while contraceptive availability in those outlets is more than 60 percent. The implications for women seeking STI, prenatal, and obstetric care in public facilities are that the RH commodity security needs to be strengthened.

4.4 Affordability

Key Findings

- It takes 21 days of wages for the lowest-paid government worker to pay for HPG ferrous folic acid. It costs that same worker 12.8 days of wages for 15 cycles of HPG OC pills.
- Most recent figures indicate that the poorest fifth of the population earns an average of Rs. 6,291, and the richest fifth earns an average of Rs. 37,082 per year.
- One year's supply of Kama Sutra condoms and Ovral L OC pills for family planning costs more than 1 percent of annual income for all wealth groups. For the very poor, 15 cycles of Ovral L represents more than 18 percent of annual per capita income.
- The cost of one treatment of the HPG Ferric Plus (90 days) exceeds 5 percent of annual income for the richest group and more than 30 percent for the very poor. By contrast, the cost of the LPG brand Ferrofolic is only 1.4 percent and is 8.37 percent of annual income for those two groups.
- The costs for one year of family planning protection using the socially marketed Sunaulo Gulaf OC pill and Dhal Deluxe condom are less than 1 percent of annual income for the top 60 percent of the population.

Implications

- The costs of many unsubsidized RH products are likely to be a barrier to access for the bottom 60 percent of the population. Afford-

ability of socially marketed condoms and OC pills is also likely an issue for the bottom 20–40 percent of the population.

- LPG products provide an affordable alternative for the middle-poor. The poorest clients should be encouraged to go to public sector outlets—where contraceptives are distributed free of charge and where other RH products are sold for a much lower price.
- When it can be proven that the price of protection is not a burden to access, income groups should be encouraged to use commercial sector outlets for RH products, making more public resources available to poorer clients.

4.5 Product Margins

Key Findings

- On the basis of guidelines established by the DDA, the maximum cumulative margin for imported RH commodities in the private sector is 42 percent. The maximum margin for locally manufactured commodities, excluding import taxes and importer margins, is 26 percent.
- The median cumulative margins observed were 259 percent for ampicillin 500 mg, 163 percent for oxytocin, and 84 percent for ferrous folic acid tablets. The median cumulative margins for tetanus toxoid vaccines and metronidazole were considerably lower (33 percent and 58 percent).
- The cumulative margin for oxytocin was 61 percent of the median retail price, and for ampicillin was 72 percent.
- The average cumulative margins across regions (for select RH products) is 80 percent, double the 42 percent regulatory figure.
- The median retail margin for benzathine benzylpenicillin is 286 percent greater in the Midwestern region than the Central region. This figure is comparable to the Eastern and Western regions.
- Across regions, margins for HPG OC pills (not including socially marketed products) are below the regulatory margin rate (between 26 and 42 percent).
- Products with high cumulative margins include doxycycline, ampicillin, and folic acid (across all regions). Cumulative margins for condoms in the Western region and metronidazole in the Midwestern region (129 percent and 108 percent) are also substantially above the established range and mean.
- Cumulative margins in the Mountain districts—as expected after reviewing retail prices by topography—are considerably higher than in the Terai or Hill districts.
- Controlling for ampicillin (for which only one retail price was recorded), the mean cumulative margin in the Mountain zone is 130 percent as opposed to 230 percent with ampicillin included.

Implications

- In the commercial sector, median cumulative price margins for RH products exceed the regulatory guidelines established by the DDA.

Observed margins range to more than 1,000 percent and average more than 80 percent across regions. Although a number of products are near or below the maximum allowable margin, the implication is that price components, notably profit margins, are inflating the retail costs of RH commodities.

- The provision of lower cost RH products in the public and NGO sectors should be strengthened to address the substantially higher cumulative margins observed in commercial sector outlets. Transportation and distribution costs likely account for those margins. The net effect, however, is significantly higher retail prices for clients in the Mountain districts.
- Cumulative margins (price components) made up more than 60 percent of the retail price for oxytocin and ampicillin. The proportion is equally significant for a number of other tracer products. The identification of importers, wholesalers, and retailers who may be charging excessive profit margins for those products and the enforcement of regulatory guidelines can make such products more affordable, thereby increasing access and, potentially, use.

5. Recommendations

1. Increase the number of RH commodities available at each level in the health system by having the DDA, in collaboration with other MOH agencies and stakeholders, update the essential medicines list.
2. Strengthen the DDA's pricing regulatory mechanism to help ensure that retail prices for all essential medicines are within the margins set out in its regulatory guidelines.
3. Devise a pharmaceutical information management system, and consider integrating it in the existing health management information system so it includes *access* and *rational use* indicators as directed in the WHO guidelines. Share this report with those development partners that have a direct or indirect stake in these issues.
4. Disseminate the findings of this report to the key staff members of the MOH and external development partners, and seek their feedback to determine how they can participate in addressing the issues raised in this report.
5. Launch an advocacy campaign to inform and educate consumers on the benefits of using the lowest-priced generic medicines. The first stage of this campaign should focus on CDP districts, where cost sharing is more prevalent.
6. To increase medicine efficacy and to reduce costs, encourage the use of both rational prescribing and rational use of RH medicines.
7. Conduct regular consultations with external development partners to make the presence of NGOs and private sector providers more visible in the Mountain districts, as they are in the Hill and Terai districts. At the same time, using a review of existing data, assess the availability of medicine outlets in the Mountain districts.
8. Coordinate the findings of this study with the ongoing work of the Health Economics and Financing Unit on alternative financing methods.
9. Validate the baseline procurement price margin, and the wholesale and retail price margins discussed in this report, by conducting a similar, but broader, pricing analysis of other essential medicines.
10. After this report is finalized, post the findings on the MOH website.

Glossary

affordability. The cost of treatment in relation to income and expenses. This survey used the daily wage of the lowest-paid government worker and the average income by population quintile to measure affordability.

brand name. Name given to a pharmaceutical product by the manufacturer. The use of this name is reserved exclusively to its owner, as opposed to generic names. In this report, the brand name drug may be referred to as the *innovator brand*.

brand premium. The difference in price, expressed in monetary, ratio, or percentage terms, between various brands of the same product. The term is often used to describe the difference between innovator brand and generic products, but in this report it also refers to price variance between generic medicines.

cost, insurance, and freight (CIF). A shipping term meaning the seller pays the costs, insurance, and freight charges necessary to bring the goods to the port of destination. Those costs are reflected in the unit price of the product.

generic medicine. A pharmaceutical product usually intended to be interchangeable with the innovator brand product. It is manufactured without a license from the innovator brand manufacturer and is marketed after the expiry of patent or other exclusivity rights.

low priced generic (LPG), high-priced generic (HPG). Innovator brand products, whose patents have expired, that are manufactured under a variety of generic brand names. In Nepal and many other countries, there is a wide range of price differences between the generic products. LPG is used to identify the low-priced generic medicine or basket of medicines. HPG is used to identify the high-priced medicine or basket of medicines in relation to all generic brands of a specific medicine.

mark-up. A percentage added to a purchasing price by an importer, wholesaler, or retailer to cover storage, distribution, and profit.

median price. The value that divides the distribution in half. If the observations are arranged in increasing or decreasing order, the median price is the middle observation. It is a useful measure in cases where there is an asymmetrical distribution of price data or when there are one or two extremely high or low values.

MSH (Management Sciences for Health) reference prices. MSH issues an annual International Price Indicator Guide (<http://erc.msh.org>). It has two sections: the first lists procurement prices offered by not-for-profit suppliers to developing countries for multisource generic procurements; the

second lists tender prices offered to procurement agencies in developing countries. A median unit price is calculated for each product. The median price used in this report is the IRP.

procurement price. The price paid by the government, private sector importers, or wholesalers to manufacturers or suppliers of medicines.

wholesaler. An intermediary between manufacturers and retailers in various activities such as promotion, warehousing, and the arranging for transport or distribution. The wholesaler usually adds a profit and distribution margin to the products, thereby increasing the retail price. In Nepal, the wholesaler is often referred to as a *stockist*.

Bibliography

- Association of Ghana Industries (AGI). 2003. "Proposals to the Government of Ghana 2004 National Budget, November 14, 2003." Available at <http://www.agi.org.gh/2004Proposal.pdf> (accessed February 26, 2004).
- Chawla, D., Asma Balal, Ruth Berg, David Sarley, and Susan Scribner. 2003. *Bangladesh Contraceptive Market Segmentation Analysis*. Arlington, VA: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.
- Creese, Andrew. 2002. *Medicine Prices: A WHO and Health Action International Collaboration: The Approach, Some Results, and Implications of Policies to Improve the Affordability of Medicines*. Presentation. By WHO/EDM.
- Harvey, Philip D. 1994. *The Impact of Condom Prices on Sales in Social Marketing Programs*. New York: Studies in Family Planning, Population Council.
- His Majesty's Government of Nepal (HMG). 2002. *National List of Essential Drugs, Nepal*. 3rd Ed. Kathmandu, Nepal: His Majesty's Government, Ministry of Health, Department of Drug Administration.
- John Snow, Inc./DELIVER. 2003. *Guidelines for Implementing Computerized Logistics Management Information Systems*. Arlington, VA: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.
- Management Sciences for Health (MSH). 2004. *International Drug Price Indicator Guide*, 2004 Edition. Boston: MSH.
- Nepal Ministry of Health (MOH), New ERA, and ORC Macro. 2002. *Nepal Demographic and Health Survey, 2001*. Calverton, MD: Family Health Division, MOH; New ERA; and ORC Macro.
- Nepal Ministry of Health (MOH) et al. 2001.
- Nepal Ministry of Health (MOH). 2000. *Drug Financing*. Kathmandu, Nepal: MOH.
- Population Reference Bureau (PRB). 2004. *Data Finder: Nepal*. Available at <http://www.prb.org/datafind/datafinder5.htm> (accessed May 5, 2005).

- Rao, Raja. October 2004. *Ghana: Ability to Pay for Contraceptives*. Arlington, VA: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.
- Sarley, David, Hany Abdallah, Raja Rao, Jocelyn Azeez, Peter Gyimah, and Bertha Garshong. 2003. *Ghana: Pharmaceutical Pricing Study, Policy Analysis, and Recommendations*. Arlington, VA: John Snow, Inc./DELIVER, for the U.S. Agency for International Development.
- Stover, John et al. 1997. *Empirically Based Conversion Factors for Calculating Couple-Years of Protection*. N.p.: The EVALUTION Project. Carolina Population Center, Tulane University, and the Futures Group International.
- United Nations Population Fund (UNFPA) and World Health Organization (WHO). 2003. *Draft Discussion Document: Essential Drugs and other Commodities for Reproductive Health Services*. New York: UNFPA and Geneva: WHO.
- World Health Organization (WHO) and Health Action International (HAI). 2003. *Medicine Prices: A New Approach to Measurement*. Geneva: WHO Essential Drugs and Medicines Policy Department and HAI.
- World Health Organization (WHO). 2004. *Statistics by Country: Nepal*. Available at <http://www3.who.int/whosis/country/indicators.cfm?country=npl> (accessed May 16, 2005).

Annexes

Annex 1. Reproductive Health Medicines Tracer Commodities List

Generic Name	Dosage Form	Dose
Contraceptives		
Female Condom	Condom	Unit
Male Condom	Condom	52 mm Unit
Implant (subdermal)	Implant	Rod
Medroxyprogesterone Acetate	Vial	150 mg
IUD	IUD	Unit
Combined OC Pill Ethinylestradiol+norgestrel)	Cap/tab	.03/.3 mg
Combined OC Pill Ethinylestradiol + levonorgestrel)	Cap/tab	.03/.15 mg
OC Pill (Progestogen only)		
Levonorgestrel	Cap/tab	.03 mg
OC Pill (Progestogen only)		
Norgestrel	Cap/tab	.075 mg
Levonorgestrel	Cap/tab	.75 mg
STIs and HIV/AIDS		
Nevirapine	Cap/tab	200 mg
Nevirapine	Syrup	50 mg/5 ml
Benzathine Benzylpenicillin	Powder	2.4 MU
Benzathine Benzylpenicillin	Powder	1.2 MU
Co-trimoxazole	Cap/tab	400 mg/80 mg
Co-trimoxazole	Cap/tab	800/160 mg
Doxycycline	Cap/tab	100 mg
Metronidazole	Cap/tab	400 mg
Metronidazole	Bottle	500 mg/100 ml
Ampicillin	Vial	500 mg
Ampicillin	Vial	250 mg
Prenatal Care		
Tetanus Toxoid Vaccine	Vial	.5 ml
Ferrous Salt + Folic Acid	Cap/tab	200–500 mg/2–5 mg (folic) (60–65 mg iron)
Ferrous Salt + Folic Acid (additive)	Cap/tab	200–500 mg/2–5 mg (folic) (60–65 mg iron) with zinc, vitamin C
Ferrous Salt (Iron)	Cap/tab	200–300 mg (60–65 mg Iron)
Folic Acid	Cap/tab	5 mg
Sulfadoxine + Pyrimethamine	Cap/tab	500 mg/25 mg

Generic Name	Dosage Form	Dose
Obstetrical/Neonatal		
Oxytocin	Ampoule	5 IU/1 ml
Ergometrine	Injection	.2 mg/1 ml
Nifedipine	Cap/tab	10 mg
Methylergometrine	Ampoule	.2 mg/1 ml
Magnesium Sulfate	Injection	500 mg/8 ml

Annex 2. Medicine Price Data Collection Form

Medicine Price Data Collection Form

Health Facilities

Use one form for each health facility and pharmacy.

Date:_____ Region:_____

Name of town/village/district:_____ urban/rural (circle one)

Name of health facility/pharmacy (optional):_____

Health facility/pharmacy ID (mandatory):_____

Distance in km from nearest town (population >50 000):_____

Type of health facility:

- Public
- Private retail pharmacy
- Other (please specify):

Type of price in public and private not-for-profit sector:

- Procurement price
- Price the patient pays

Name of manager of the facility:_____

Name of person(s) who provided information on medicine prices and availability (if different):_____

Data collectors:_____

Verification (To be completed by the area supervisor at the end of the day):

Signed:_____

Date:_____

Pharmacy and Public Health Facility Qualitative Questions

1. What is your retail price margin (in percentage)? (In other words, what is the difference between the outlet's buying price and its selling price to the client?)

2. What are the qualifications of the dispenser?

3. What is the ownership status of the facility? (applies to pharmacies)

A	B	C	D	E	F	G	H	I
Generic Name, Dosage Form, Strength	Brand Name(s)	Manufacturer	Available (tick for yes)	Pack Size (recommended)	Pack Size (found)	Price of Pack (found)	Unit Price (4 digits)	Comments
Ampicillin 500 mg Vial (injection)				1			/vial	
<i>Lowest-Priced Generic Equivalent</i>				1			/vial	
Ampicillin 250 mg Vial (injection)				1			/vial	
<i>Lowest-Priced Generic Equivalent</i>				1			/vial	
Benzathine Benzylpenicillin Powder 2.4 MU				1			/pck	Powder for injection
<i>Lowest-Priced Generic Equivalent</i>				1			/pck	
Benzathine Benzylpenicillin Powder 1.2 MU				1			/pck	
<i>Lowest-Priced Generic Equivalent</i>				1			/pck	
Combined OC Pill (E+L) Cap/Tab .03/.15 mg				1			/tab	Ethinylestradiol + levonorgestrel
<i>Lowest-Priced Generic Equivalent</i>				1			/tab	
Combined OC Pill (E+N) Cap/ Tab .03/.03 mg				1			/tab	Ethinylestradiol + norgestrel
<i>Lowest-Priced Generic Equivalent</i>				1			/tab	
Condom (male) 52 mm				1			/pcs	
<i>Lowest-Priced Generic Equivalent</i>				1			/pcs	
Co-trimoxazole Cap/Tab 400/80 mg				1			/tab	
<i>Lowest-Priced Generic Equivalent</i>				1			/tab	

(continued)

A	B	C	D	E	F	G	H	I
Generic Name, Dosage Form, Strength	Brand	Manufacturer	Available (tick for yes)	Pack Size (recom- mended)	Pack Size (found)	Price of Pack (found)	Unit Price (4 digits)	Comments
Co-trimoxazole Cap/Tab 800/160 mg				1			/tab	
<i>Lowest-Priced Generic Equivalent</i>				1			/tab	
Doxycycline Cap/Tab 100/mg				1			/tab	
<i>Lowest-Priced Generic Equivalent</i>				1			/tab	
Ergometrine Ampule .2 mg/1 ml				1			/amp	
<i>Lowest-Priced Generic Equivalent</i>				1			/amp	
Methylergomet- rine Ampule .2 mg/1 ml				1			/amp	
<i>Lowest-Priced Generic Equivalent</i>							/amp	
Female Condom				1			/pcs	Likely will not find
<i>Lowest-Priced Generic Equivalent</i>				1			/pcs	
Ferrous Salt + Fo- lic Acid 200–500 mg/2–5 mg (60–65 mg iron)				1			/cap	Iron = 60–65 mg
<i>Lowest-Priced Generic Equivalent</i>				1			/cap	
Ferrous salt + Fo- lic Acid 200–500 mg/2–5 mg (60–65 mg iron) (additive)				1			/cap	Includes additives, e.g., zinc, vitamin C
<i>Lowest-Priced Generic Equivalent</i>				1			/cap	
Folic Acid 5 mg				1			/tab	
<i>Lowest-Priced Generic Equivalent</i>				1			/tab	

(continued)

A	B	C	D	E	F	G	H	I
Generic Name, Dosage Form, Strength	Brand Name(s)	Manufacturer	Available (tick for yes)	Pack Size (recommended)	Pack Size (found)	Price of Pack (found)	Unit Price (4 digits)	Comments
Implant (subdermal) Rod 36 mg	Norplant			1			/set	Public sector carries 6 rod device
<i>Lowest-Priced Generic Equivalent</i>				1			/set	
Iron 60 mg				1			/cap	
<i>Lowest-Priced Generic Equivalent</i>				1			/cap	
IUD				1			/pcs	Public sector carries copper T380A
<i>Lowest-Priced Generic Equivalent</i>				1			/pcs	
Levonorgestrel Cap/Tab .75 mg	Postinor	Gedeon Richter		1			/tab	
<i>Lowest-Priced Generic Equivalent</i>				1			/tab	
Magnesium Sulfate Vial 500 mg/8 ml				1			/vial	Determine unit size; dosage form is 8 ml ampule
<i>Lowest-Priced Generic Equivalent</i>				1			/vial	
Medroxyprogesterone Acetate 150 mg/ml	Depo-Provera	Upjohn		1			/vial	
<i>Lowest-Priced Generic Equivalent</i>				1			/vial	
Metronidazole Bottle 500 mg/100 ml				1			/bottle	Sold as bottle
<i>Lowest-Priced Generic Equivalent</i>				1			/vial	
Metronidazole Cap/Tab 400 mg				1			/tab	
<i>Lowest-Priced Generic Equivalent</i>				1			/tab	

(continued)

A	B	C	D	E	F	G	H	I
Generic Name, Dosage Form, Strength	Brand Name(s)	Manufacturer	Available (tick for yes)	Pack Size (recommended)	Pack Size (found)	Price of Pack (found)	Unit Price (4 digits)	Comments
Nevirapine Syrup 10 mg/ml	Vira- mune	Boehringer Ingelheim		1			/bottle	Determine bottle size used in country; likely will not find
<i>Lowest-Priced Generic Equivalent</i>				1			/bottle	
Nevirapine Cap/ Tab 200 mg	Vira- mune	Boehringer Ingelheim		1			/tab	Likely will not find
<i>Lowest-Priced Generic Equivalent</i>				1			/tab	
Nifedipine Cap/ Tab 10 mg				1			/tab	
<i>Lowest-Priced Generic Equivalent</i>				1			/tab	
OC Pill (Levo- norgestrel) Cap/ Tab .03 mg				1			/tab	PoP
<i>Lowest-Priced Generic Equivalent</i>				1			/tab	
OC Pill (Noges- trel) Cap/Tab .075 mg				1			/tab	PoP
<i>Lowest-Priced Generic Equivalent</i>				1			/tab	
Oxytocin Ampule 5 IU				1			/amp	
<i>Lowest-Priced Generic Equivalent</i>				1			/amp	
Sulfadoxine + Pyrimethamine Cap/Tab 500/25 mg	Fansidar	Roche		1			/cap	
<i>Lowest-Priced Generic Equivalent</i>				1			/cap	
Tetanus Toxoid Vaccine Vial .5 ml				1			/vial	
<i>Lowest-Priced Generic Equivalent</i>				1			/vial	

Annex 3. Facilities Surveyed

ID #	Facility Type	Region	District	Admin. Unit	City/Village	Sector
1	Procurement	Central	Kathmandu	Kathmandu	Kathmandu	Public
51	Procurement	Central	Kathmandu	Kathmandu	Kathmandu	Private
2	Procurement	Central	Kathmandu	Kathmandu	Kathmandu	Private
3	Procurement	Central	Kathmandu	Kathmandu	Kathmandu	Private
4	Procurement	Central	Kathmandu	Kathmandu	Kathmandu	NGO
5	Procurement	Central	Kathmandu	Kathmandu	Kathmandu	Private
54	Procurement	Eastern	Morang	Biratnagar	Biratnagar	NGO
6	Hospital	Central	Kathmandu	Kathmandu	Kathmandu	NGO
7	Pharmacy	Central	Kavre	Kathmandu	Kavre	Private
8	Hospital	Central	Lalitpur	Kathmandu	Kathmandu	NGO
9	Pharmacy	Central	Lalitpur	Kathmandu	Kathmandu	Private
10	Pharmacy	Central	Bhaktapur/ Kavre	Kathmandu	Kathmandu	Private
11	Hospital	Central	Bhaktapur	Kathmandu	Bhaktapur	Public
12	Pharmacy	Central	Kavre	Kathmandu	Banepa	Private
13	Health Post	Central	Kathmandu	Kathmandu	Thimi	Public
14	Pharmacy	Central	Bhaktapur	Kathmandu	Bhaktapur	Private
52	Pharmacy	Central	Kathmandu	Kathmandu	Thimi	Private
15	Nursing Home	Central	Lalitpur	Kathmandu	Kathmandu	Private
16	Hospital	Western	Kaski	Pokhara	Ramghat	Private
17	Hospital	Western	Kaski	Pokhara	Pritivichock	NGO
18	Hospital	Western	Danahu	Pokhara	Damauli	NGO
19	Pharmacy	Western	Parbat	Pokhara	Kusma	Private
20	Pharmacy	Western	Parbat	Pokhara	Kusma	Private
21	Pharmacy	Western	Tanahu	Pokhara	Damauli	Private
22	Pharmacy	Western	Kaski	Pokhara	Ramghat	Private
23	NGO	Western	Kaski	Pokhara	Ramghat	NGO
24	PHCC	Western	Kaski	Pokhara	Siswa	Public
25	Hospital	Western	Kaski	Pokhara	Pokhara	NGO
26	NGO Clinic	Western	Kaski	Pokhara	Upakar Marg	NGO
28	Pharmacy	Midwestern	Bardia	Nepalganj	Magaragadi	Private
29	Pharmacy	Midwestern	Bardia	Nepalganj	Bardia	Private
30	NGO	Midwestern	Bardia	Nepalganj	Bardia	NGO
31	Pharmacy	Midwestern	Bardia	Nepalganj	Bardia	Private
62	Pharmacy	Midwestern	Banke	Nepalganj	Nepalganj	Private
63	Pharmacy	Midwestern	Banke	Nepalganj	Nepalganj	Private
64	Pharmacy	Midwestern	Banke	Nepalganj	Nepalganj	Private
65	Pharmacy	Midwestern	Banke	Nepalganj	Nepalganj	Private
66	Pharmacy	Midwestern	Bardia	Nepalganj	Magaragadi	Private
67	Pharmacy	Midwestern	Bardia	Nepalganj	Magaragadi	Private
68	PHCC	Midwestern	Bardia	Nepalganj	Magaragadi	Public
69	NGO	Midwestern	Banke	Nepalganj	Kohlpur	NGO

(continued)

Annex 3. Facilities Surveyed (cont'd)

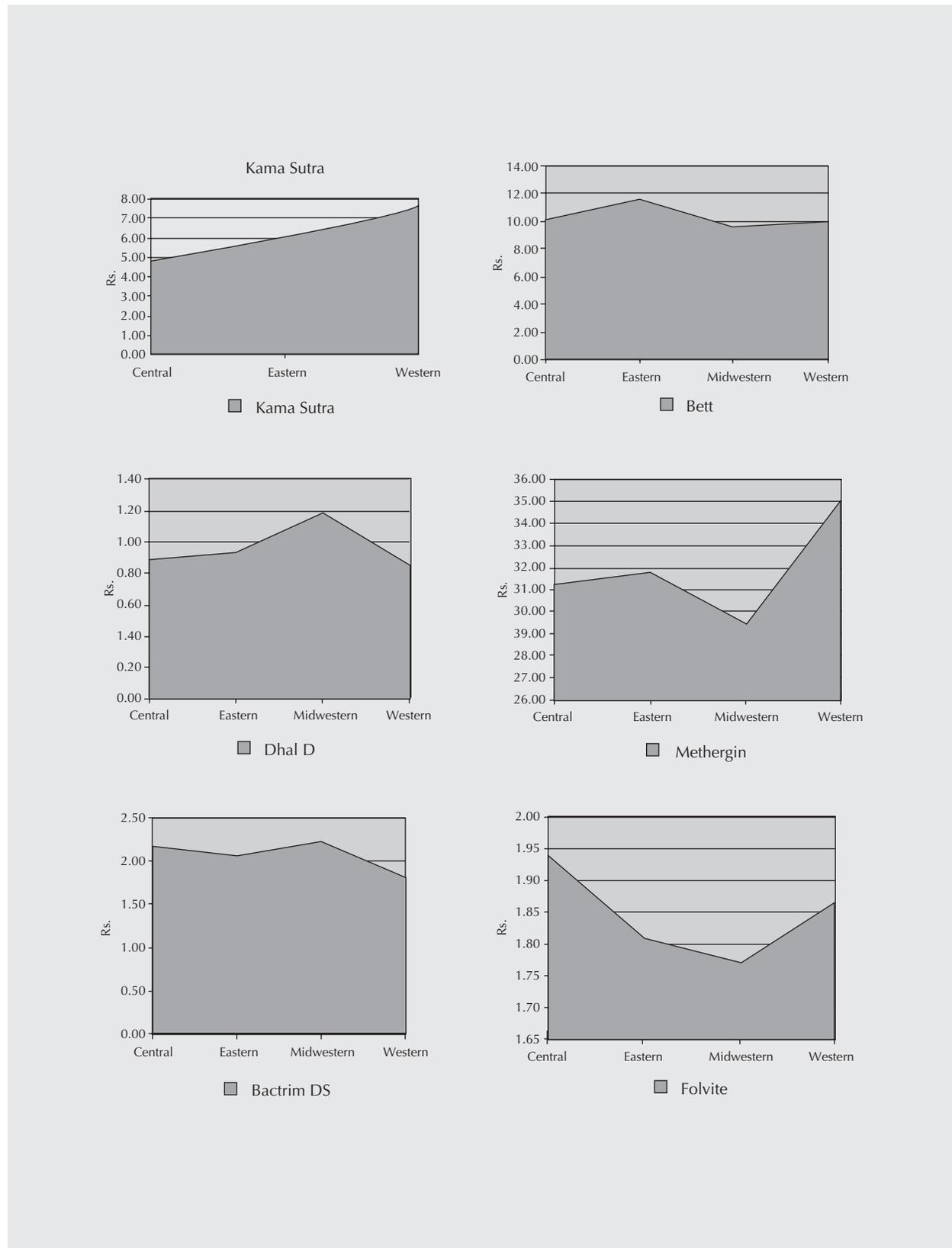
ID #	Facility Type	Region	District	Admin. Unit	City/Village	Sector
70	Pharmacy	Midwestern	Banke	Nepalganj	Kohlpur	Private
71	Pharmacy	Midwestern	Banke	Nepalganj	Kohlpur	Private
32	PHCC	Midwestern	Banke	Nepalganj	Nepalganj	Public
33	Pharmacy	Midwestern	Banke	Nepalganj	Nepalganj	Private
34	Hospital	Midwestern	Banke	Nepalganj	Nepalganj	Public
35	Pharmacy	Midwestern	Banke	Nepalganj	Nepalganj	Private
36	NGO	Midwestern	Banke	Nepalganj	Nepalganj	NGO
38	Pharmacy	Eastern	Morang	Biratnagar	Biratnagar	Private
39	Pharmacy	Eastern	Morang	Biratnagar	Rangeli	Private
40	Pharmacy	Eastern	Morang	Biratnagar	Biratnagar	Private
41	PHCC	Eastern	Morang	Biratnagar	Urlabari	Public
42	Pharmacy	Eastern	Morang	Biratnagar	Biratnagar	Private
43	Pharmacy	Eastern	Morang	Biratnagar	Rangeli	Private
44	NGO	Eastern	Morang	Biratnagar	Biratnagar	NGO
53	Pharmacy	Eastern	Sunsari	Biratnagar	Inaruwa	Private
45	Pharmacy	Eastern	Sunsari	Biratnagar	Dharan	Private
46	Pharmacy	Eastern	Solukhumbu	Biratnagar	Lukla	Private
47	Pharmacy	Eastern	Sunsari	Biratnagar	Duhabi	Private
48	Pharmacy	Eastern	Sunsari	Biratnagar	Dharan	Private
49	Sub Health Post	Eastern	Solukhumbu	Biratnagar	Lukla	Public
50	Hospital	Eastern	Solukhumbu	Biratnagar	Lukla	NGO
55	Pharmacy	Central	Rasuwa	Kathmandu	Dhunche	Private
56	Pharmacy	Central	Rasuwa	Kathmandu	Dhunche	Private
57	Pharmacy	Western	Mustang	Pokhara	Marpha	Private
58	NGO	Western	Mustang	Pokhara	Jomson	NGO
59	Hospital	Western	Mustang	Pokhara	Jomson	Public
60	Health Post	Western	Mustang	Pokhara	Marpha	Public
61	Health Post	Western	Mustang	Pokhara	Jomson	Public
72	Pharmacy	Eastern	Dhanakuta	Biratnagar	Hile	Private
73	Pharmacy	Eastern	Dhanakuta	Biratnagar	Hulak tol Dhanakuta	Private
74	Pharmacy	Eastern	Dhanakuta	Biratnagar	Hile	Private
75	Pharmacy	Eastern	Dhanakuta	Biratnagar	Hile	Private
76	NGO	Eastern	Dhanakuta	Biratnagar	Hulak tol Dhanakuta	NGO
77	Hospital	Eastern	Dhanakuta	Biratnagar	Dhanakuta	Public
78	PHC	Central	Parsa	Kathmandu	Pokhariya	Public
79	Health Post	Central	Parsa	Kathmandu	Shirsiya Village	Public
80	Health Post	Central	Bara	Kathmandu	Prasauni	Public
81	Pharmacy	Central	Parsa	Kathmandu	Pokhariya	Private
82	Pharmacy	Central	Bara	Kathmandu	Kalaiya Municipality	Private

(continued)

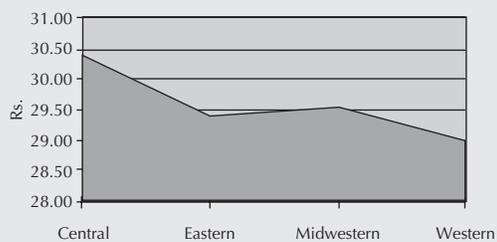
Annex 3. Facilities Surveyed (cont'd)

ID #	Facility Type	Region	District	Admin. Unit	City/Village	Sector
83	Pharmacy	Central	Bara	Kathmandu	Kalaiya Municipality	Private
84	Pharmacy	Central	Parsa	Kathmandu	Birganja Municipality	Private
85	Pharmacy	Central	Bara	Kathmandu	Kalaiya Municipality	Private
86	Sub-Health Post	Western	Rupandehi	Pokhara	C Ramnagar VDC	Public
87	Sub-Health Post	Western	Rupandehi	Pokhara	Chhipagadh VDC	Public
88	Pharmacy	Western	Rupandehi	Pokhara	Shankar Nagar	Private
89	Pharmacy	Western	Rupandehi	Pokhara	Siddhartha Nagar	Private
90	NGO	Western	Rupandehi	Pokhara	Siddhartha Nagar	NGO
91	Hospital	Western	Rupandehi	Pokhara	Siddhartha Nagar	Private
92	NGO	Eastern	Dhanakuta	Biratnagar	Dhanakuta	NGO
93	Pharmacy	Central	Parsa	Kathmandu	Birgunj	Private
94	Wholesaler	Central	Parsa	Kathmandu	Birgunj	Private
95	Wholesaler	Central	Parsa	Kathmandu	Birgunj	Private
96	Wholesaler	Central	Parsa	Kathmandu	Birgunj	Private
97	Wholesaler	Central	Parsa	Kathmandu	Birgunj	Private

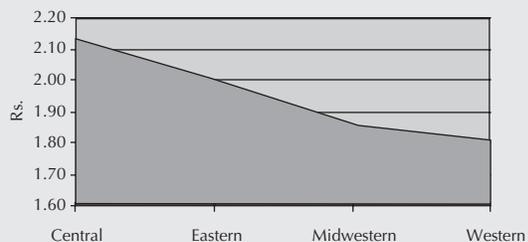
Annex 4. Comparison of Brand Prices by Region (private sector)



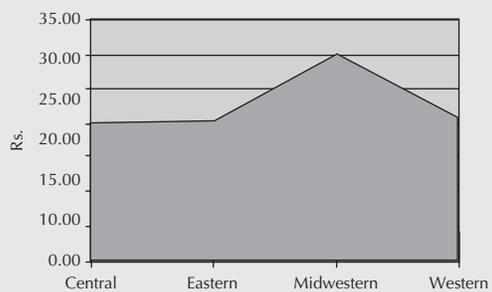
Annex 4. Comparison of Brand Prices by Region (private sector) (cont'd)



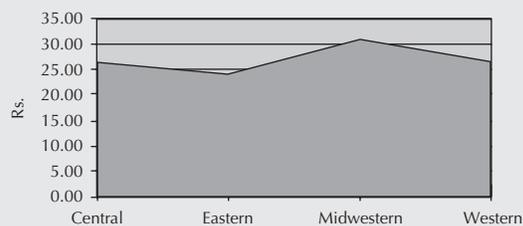
Aristocillin



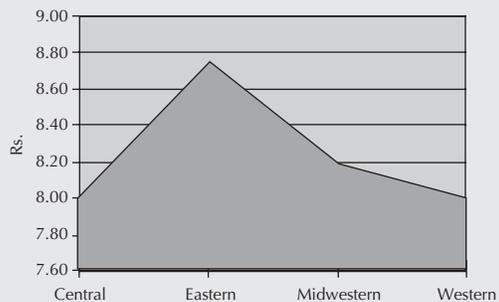
Ferrofolic



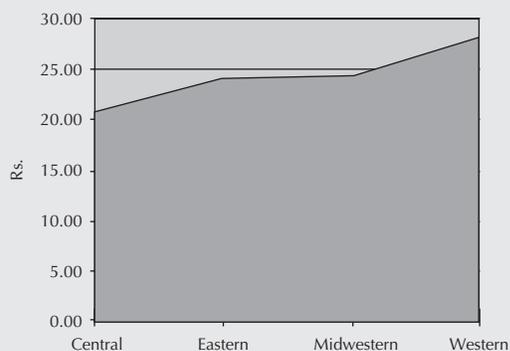
Penidure



Metronidazole



Sunaulo Gulaf



Syntocinon

Annex 5.1. Product Availability by Region and Sector (LPGs)

Central (%)

	Public	Private	NGO	Average
Ampicillin (250 mg)	0.0	21.4	0.0	7.1
Ampicillin (500 mg)	0.0	28.6	50.0	26.2
Benzathine Benzylpenicillin (1.2)	25.0	35.7	25.0	28.6
Benzathine Benzylpenicillin (2.4)	0.0	21.4	25.0	15.5
Female Condom	0.0	0.0	0.0	0.0
Male Condom	75.0	92.9	75.0	81.0
Co-trimoxazole 400/80	75.0	42.9	75.0	64.3
Co-trimoxazole 800/160	0.0	85.7	50.0	45.2
Doxycycline	50.0	100.0	100.0	83.3
Ergometrine Injection	0.0	0.0	0.0	0.0
Ferrous Salt + Folic Acid	0.0	35.7	25.0	20.2
Ferrous Salt + Folic Acid (additive)	0.0	14.3	50.0	21.4
Folic Acid	0.0	71.4	0.0	23.8
Implant (subdermal)	50.0	0.0	75.0	41.7
Iron	0.0	0.0	0.0	0.0
IUD	50.0	0.0	0.0	16.7
Levonorgestrel	0.0	0.0	0.0	0.0
Magnesium Sulfate	0.0	0.0	0.0	0.0
Medroxyprogesterone Acetate	75.0	35.7	0.0	36.9
Methylethergometrine	25.0	64.3	0.0	29.8
Metronidazole Bottle	0.0	78.6	75.0	51.2
Metronidazole Tablets	75.0	100.0	100.0	91.7
Nevirapine Syrup 100ml Bottle	0.0	0.0	0.0	0.0
Nevirapine Tablets	0.0	14.3	0.0	4.8
Nifedipine	0.0	42.9	25.0	22.6
OC Pill (E+L)	25.0	92.9	50.0	56.0
OC Pill (E+N)	50.0	78.6	50.0	59.5
OC Pill (Levonorgestrel)	25.0	28.6	25.0	26.2
OC Pill (Nogestrel)	0.0	7.1	0.0	2.4
Oxytocin	0.0	64.3	50.0	38.1
Sulphadoxine/Pyrimethamine	0.0	14.3	25.0	13.1
Tetanus Toxoid Vaccine	50.0	71.4	25.0	48.8

Annex 5.2. Product Availability by Region and Sector (LPGs)

Eastern (%)

	Public	Private	NGO	Average
Ampicillin (250 mg)	33.3	50.0	0.0	27.8
Ampicillin (500 mg)	0.0	57.1	33.3	30.2
Benzathine Benzylpenicillin (1.2)	33.3	78.6	33.3	48.4
Benzathine Benzylpenicillin (2.4)	0.0	14.3	0.0	4.8
Female Condom	0.0	0.0	0.0	0.0
Male Condom	100.0	92.9	66.7	86.5
Co-trimoxazole 400/80	66.7	71.4	0.0	46.0
Co-trimoxazole 800/160	33.3	71.4	33.3	46.0
Doxycycline	66.7	92.9	33.3	64.3
Ergometrine Injection	0.0	7.1	0.0	2.4
Ferrous Salt + Folic Acid	0.0	85.7	66.7	50.8
Ferrous Salt + Folic Acid (additive)	0.0	0.0	0.0	0.0
Folic Acid	0.0	78.6	33.3	37.3
Implant (subdermal)	50.0	0.0	0.0	16.7
Iron	0.0	7.1	0.0	2.4
IUD	50.0	0.0	0.0	16.7
Levonorgestrel	0.0	0.0	0.0	0.0
Magnesium Sulfate	0.0	0.0	0.0	0.0
Medroxyprogesterone Acetate	100.0	35.7	0.0	45.2
Methylergometrine	33.3	71.4	33.3	46.0
Metronidazole Bottle	66.7	71.4	0.0	46.0
Metronidazole Tablets	33.3	100.0	66.7	66.7
Nevirapine syrup 100 ml Bottle	0.0	0.0	0.0	0.0
Nevirapine Tablets	0.0	0.0	0.0	0.0
Nifedipine	0.0	71.4	0.0	23.8
OC Pill (E+L)	33.3	78.6	33.3	48.4
OC Pill (E+N)	66.7	78.6	33.3	59.5
OC Pill (Levonorgestrel)	33.3	0.0	0.0	11.1
OC Pill (Nogestrel)	0.0	0.0	0.0	0.0
Oxytocin	33.3	92.9	33.3	53.2
Sulphadoxine/Pyrimethamine	0.0	50.0	33.3	27.8
Tetanus Toxoid Vaccine	50.0	92.9	33.3	58.7

Annex 5.3. Product Availability by Region and Sector (LPGs)

Midwestern (%)

	Public	Private	NGO	Average
Ampicillin (250 mg)	0.0	26.7	33.3	20.0
Ampicillin (500 mg)	0.0	60.0	66.7	42.2
Benzathine Benzylpenicillin (1.2)	0.0	53.3	33.3	28.9
Benzathine Benzylpenicillin (2.4)	0.0	13.3	0.0	4.4
Female Condom	0.0	0.0	0.0	0.0
Male Condom	66.7	93.3	100.0	86.7
Co-trimoxazole 400/80	100.0	40.0	33.3	57.8
Co-trimoxazole 800/160	0.0	93.3	66.7	53.3
Doxycycline	50.0	73.3	66.7	63.3
Ergometrine Injection	0.0	0.0	0.0	0.0
Ferrous Salt + Folic Acid	0.0	33.3	66.7	33.3
Ferrous Salt + Folic Acid (additive)	0.0	40.0	33.3	24.4
Folic Acid	0.0	66.7	33.3	33.3
Implant (subdermal)	66.7	0.0	33.3	33.3
Iron	0.0	0.0	0.0	0.0
IUD	100.0	0.0	33.3	44.4
Levonorgestrel	0.0	0.0	0.0	0.0
Magnesium Sulfate	0.0	0.0	0.0	0.0
Medroxyprogesterone Acetate	66.7	13.3	33.3	37.8
Methylergometrine	50.0	60.0	33.3	47.8
Metronidazole Bottle	0.0	73.3	33.3	35.6
Metronidazole Tablets	50.0	86.7	66.7	67.8
Nevirapine Syrup 100 ml Bottle	0.0	0.0	0.0	0.0
Nevirapine tablets	0.0	0.0	0.0	0.0
Nifedipine	0.0	53.3	66.7	40.0
OC Pill (E+L)	0.0	80.0	33.3	37.8
OC Pill (E+N)	66.7	73.3	66.7	68.9
OC Pill (Levonorgestrel)	0.0	6.7	0.0	2.2
OC Pill (Nogestrel)	0.0	0.0	0.0	0.0
Oxytocin	50.0	80.0	66.7	65.6
Sulphadoxine/Pyrimethamine	0.0	26.7	33.3	20.0
Tetanus Toxoid Vaccine	33.3	66.7	100.0	66.7

Annex 5.4. Product Availability by Region and Sector (LPGs)

Western (%)

	Public	Private	NGO	Average
Ampicillin (250 mg)	0.0	55.6	14.3	23.3
Ampicillin (500 mg)	0.0	66.7	42.9	36.5
Benzathine Benzylpenicillin (1.2)	0.0	66.7	42.9	36.5
Benzathine Benzylpenicillin (2.4)	0.0	0.0	0.0	0.0
Female Condom	0.0	0.0	0.0	0.0
Male Condom	83.3	88.9	71.4	81.2
Co-trimoxazole 400/80	50.0	33.3	28.6	37.3
Co-trimoxazole 800/160	16.7	88.9	71.4	59.0
Doxycycline	33.3	88.9	100.0	74.1
Ergometrine Injection	0.0	0.0	0.0	0.0
Ferrous Salt + Folic Acid	0.0	22.2	0.0	7.4
Ferrous Salt + Folic Acid (additive)	0.0	77.8	42.9	40.2
Folic Acid	0.0	66.7	57.1	41.3
Implant (subdermal)	33.3	0.0	42.9	25.4
Iron	0.0	0.0	14.3	4.8
IUD	33.3	0.0	0.0	11.1
Levonorgestrel	0.0	0.0	14.3	4.8
Magnesium Sulfate	0.0	0.0	14.3	4.8
Medroxyprogesterone Acetate	100.0	22.2	28.6	50.3
Methylethergometrine	0.0	66.7	57.1	41.3
Metronidazole Bottle	0.0	55.6	85.7	47.1
Metronidazole Tablets	33.3	100.0	100.0	77.8
Nevirapine Syrup 100 ml Bottle	0.0	0.0	0.0	0.0
Nevirapine Tablets	0.0	11.1	14.3	8.5
Nifedipine	0.0	44.4	42.9	29.1
OC Pill (E+L)	16.7	22.2	42.9	27.2
OC Pill (E+N)	83.3	77.8	71.4	77.5
OC Pill (Levonorgestrel)	0.0	55.6	28.6	28.0
OC Pill (Nogestrel)	0.0	0.0	0.0	0.0
Oxytocin	16.7	66.7	71.4	51.6
Sulphadoxine/Pyrimethamine	0.0	11.1	42.9	18.0
Tetanus Toxoid Vaccine	33.3	55.6	57.1	48.7

Annex 6.1. Product Availability by Topography and Sector (LPGs)**Mountain (%)**

Drug Name	Public (n = 4)	Private (n = 4)	NGO (n = 2)	Mean
Ampicillin (250 mg)	0.0	0.0	0.0	0.0
Ampicillin (500 mg)	0.0	25.0	0.0	8.3
Benzathine Benzylpenicillin (1.2)	0.0	25.0	0.0	8.3
Benzathine Benzylpenicillin (2.4)	0.0	25.0	0.0	8.3
Female Condom	0.0	0.0	0.0	0.0
Male Condom	100.0	75.0	50.0	75.0
Co-trimoxazole 400/80	75.0	25.0	0.0	33.3
Co-trimoxazole 800/160	0.0	50.0	50.0	33.3
Doxycycline	75.0	75.0	50.0	66.7
Ergometrine Injection	0.0	0.0	0.0	0.0
Ferrous Salt + Folic Acid	50.0	25.0	0.0	25.0
Ferrous Salt + Folic Acid (additive)	0.0	0.0	0.0	0.0
Folic Acid	0.0	0.0	50.0	16.7
Implant (subdermal)	25.0	0.0	0.0	8.3
Iron	0.0	25.0	0.0	8.3
IUD	50.0	0.0	0.0	16.7
Levonorgestrel	0.0	0.0	0.0	0.0
Magnesium Sulfate	0.0	0.0	0.0	0.0
Medroxyprogesterone Acetate	100.0	0.0	0.0	33.3
Methylethergometrine	25.0	50.0	50.0	41.7
Metronidazole Bottle	50.0	100.0	50.0	66.7
Metronidazole Tablets	75.0	100.0	50.0	75.0
Nevirapine syrup 100ml Bottle	0.0	0.0	0.0	0.0
Nevirapine tablets	0.0	0.0	0.0	0.0
Nifedipine	0.0	25.0	50.0	25.0
OC Pill (E+N)	100.0	50.0	0.0	50.0
Oxytocin	75.0	75.0	0.0	50.0
Sulphadoxine/Pyrimethamine	0.0	0.0	0.0	0.0
Tetanus Toxoid Vaccine	25.0	25.0	0.0	16.7
Average	28.4	26.7	13.8	23.0

Annex 6.2. Product Availability by Topography and Sector (LPGs)

Hill (%)

Drug Name	Public (n = 4)	Private (n = 4)	NGO (n = 2)	Mean
Ampicillin (250 mg)	0.0	31.3	10.0	13.8
Ampicillin (500 mg)	0.0	50.0	60.0	36.7
Benzathine Benzylpenicillin (1.2)	33.3	50.0	30.0	37.8
Benzathine Benzylpenicillin (2.4)	0.0	18.8	10.0	9.6
Female Condom	0.0	6.3	0.0	2.1
Male Condom	66.7	93.8	70.0	76.8
Co-trimoxazole 400/80	100.0	56.3	40.0	65.4
Co-trimoxazole 800/160	33.3	81.3	50.0	54.9
Doxycycline	100.0	93.8	90.0	94.6
Ergometrine Injection	0.0	0.0	0.0	0.0
Ferrous Salt + Folic Acid	33.3	25.0	20.0	26.1
Ferrous Salt + Folic Acid (additive)	0.0	43.8	40.0	27.9
Folic Acid	0.0	68.8	30.0	32.9
Implant (subdermal)	66.7	0.0	60.0	42.2
Iron	0.0	0.0	10.0	3.3
IUD	66.7	0.0	0.0	22.2
Levonorgestrel	0.0	0.0	10.0	3.3
Magnesium Sulfate	0.0	0.0	10.0	3.3
Medroxyprogesterone Acetate	100.0	37.5	20.0	52.5
Methylethergometrine	33.3	56.3	30.0	39.9
Metronidazole Bottle	33.3	56.3	70.0	53.2
Metronidazole Tablets	33.3	100.0	100.0	77.8
Nevirapine Syrup 100ml Bottle	0.0	0.0	0.0	0.0
Nevirapine Tablets	0.0	0.0	10.0	3.3
Nifedipine	0.0	50.0	10.0	20.0
OC Pill (E+N)	66.7	81.3	60.0	69.3
Oxytocin	33.3	62.5	70.0	55.3
Sulphadoxine/Pyrimethamine	0.0	18.8	50.0	22.9
Tetanus Toxoid Vaccine	66.7	87.5	50.0	68.1
Average	29.9	40.3	34.8	35.0

Annex 6.3. Product Availability by Topography and Sector (LPGs)**Merai (%)**

Drug Name	Public (n = 4)	Private (n = 4)	NGO (n = 2)	Mean
Ampicillin (250 mg)	12.5	40.0	33.3	28.6
Ampicillin (500 mg)	0.0	53.3	50.0	34.4
Benzathine Benzylpenicillin (1.2)	12.5	63.3	66.7	47.5
Benzathine Benzylpenicillin (2.4)	0.0	6.7	0.0	2.2
Female Condom	0.0	0.0	0.0	0.0
Male Condom	87.5	93.3	83.3	88.1
Co-trimoxazole 400/80	87.5	43.3	50.0	60.3
Co-trimoxazole 800/160	12.5	90.0	83.3	61.9
Doxycycline	37.5	90.0	83.3	70.3
Ergometrine Injection	0.0	0.0	16.7	5.6
Ferrous Salt + Folic Acid	87.5	60.0	66.7	71.4
Ferrous Salt + Folic Acid (additive)	0.0	23.3	33.3	18.9
Folic Acid	0.0	80.0	50.0	43.3
Implant (subdermal)	37.5	0.0	16.7	18.1
Iron	0.0	0.0	0.0	0.0
IUD	50.0	0.0	16.7	22.2
Levonorgestrel	0.0	0.0	0.0	0.0
Magnesium Sulfate	0.0	0.0	0.0	0.0
Medroxyprogesterone Acetate	75.0	26.7	16.7	39.4
Methylethergometrine	50.0	70.0	50.0	56.7
Metronidazole Bottle	12.5	76.7	50.0	46.4
Metronidazole Tablets	75.0	93.3	83.3	83.9
Nevirapine Syrup 100ml Bottle	0.0	0.0	0.0	0.0
Nevirapine Tablets	0.0	10.0	0.0	3.3
Nifedipine	0.0	56.7	83.3	46.7
OC Pill (E+N)	75.0	76.7	66.7	72.8
Oxytocin	50.0	86.7	66.7	67.8
Sulphadoxine/Pyrimethamine	0.0	33.3	16.7	16.7
Tetanus Toxoid Vaccine	37.5	73.3	83.3	64.7
Average	27.6	43.0	40.2	36.9

