

CHAPTER TWO

A photograph showing a woman on the left wearing a patterned shawl, looking down. A healthcare worker on the right is wearing a white glove and examining her arm. The background shows a clinical setting with a patterned curtain.

# The Health Market



Rural East Africa illustrates both the challenges BOP households face in obtaining health care and the potential health market they represent. Access to public health care is often very limited. Even finding medicines to buy—especially ones that work—can be difficult. Spending on health care is low—only \$183 a year for a typical rural household in Uganda. Of that, half is spent on medicine, often without a doctor’s prescription; self-medication is common for BOP households.

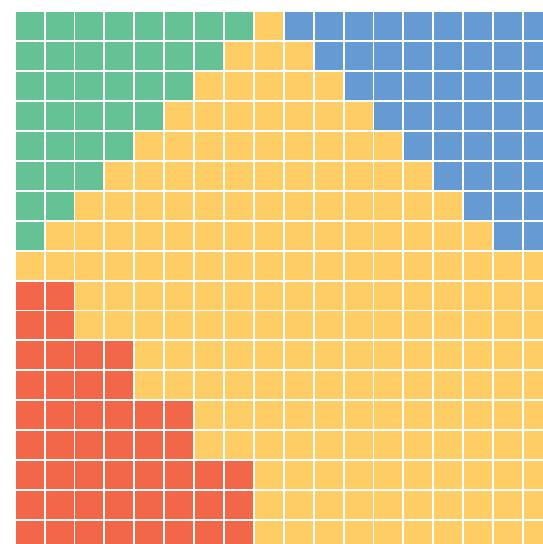
Despite the huge need for more effective distribution of medicines and other health-related consumer products—such as condoms, water filters, and antimalaria bed nets—such spending levels might not seem to suggest a promising market in which to launch a new franchise pharmacy business. Yet CFWshops Kenya is doing just that. Its 64 locally owned franchises charge prices averaging about US\$0.50 a treatment for the more than 150 pharmaceuticals they stock and last year served more than 400,000 customers—and they are profitable. CFWshops Kenya and other ventures, both new and well established, are demonstrating innovative approaches to the large and largely underserved BOP health market.

### How large is the market?

The measured BOP health market in Africa (12 countries), Asia (9), Eastern Europe (5), and Latin America and the Caribbean (9) is \$87.7 billion. This represents annual household health spending in the 35 countries for which standardized data exist and covers 2.1 billion of the world’s BOP population. The total BOP health market in these four regions, including all surveyed countries, is estimated to be \$158.4 billion, accounting for the spending of 3.96 billion people (see box 1.5 in chapter 1 for the estimation method).<sup>1</sup> Asia has by far the largest measured regional BOP health market—\$48.2 billion, reflecting a large BOP population (1.5 billion). The total BOP health market in Asia (including the Middle East) is estimated to be \$95.5 billion, accounting for the spending of 2.9 billion people. Latin America follows, with measured BOP health spending of \$20.1 billion by 276 million people and an estimated total BOP health market of \$24 billion (360 million people).

Eastern Europe’s measured BOP health market is \$11.2 billion, covering the spending of 124 million people, and the estimated total BOP market is \$20.9 billion

**BOP spending on health**  
\$158.4 billion



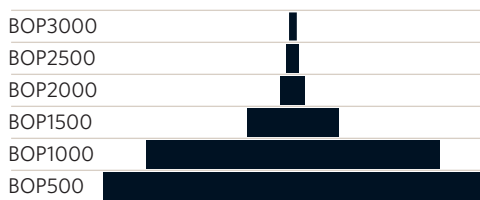
	\$ billions (PPP)
Africa	18.0
Asia	95.5
Eastern Europe	20.9
Latin America	24.0

Each square represents approximately \$500 million

In Asia the extremes are represented by Pakistan, Bangladesh, and Tajikistan, where the BOP constitutes more than 98% of the health market.

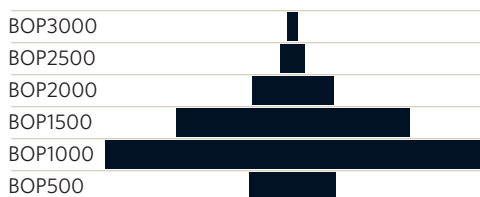
### Malawi

TOTAL HEALTH SPENDING BY INCOME SEGMENT



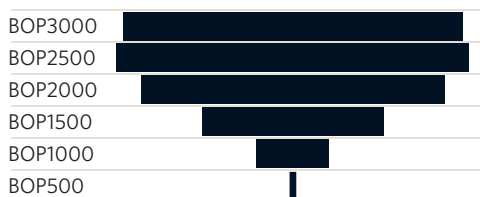
### Tajikistan

TOTAL HEALTH SPENDING BY INCOME SEGMENT



### Russia

TOTAL HEALTH SPENDING BY INCOME SEGMENT



(254 million people). Africa's measured BOP health market is \$8.1 billion, comprising the annual spending of 258 million people, and its estimated total BOP market is \$18.0 billion (486 million people).

The share of total household health spending that takes place in the BOP—and thus the relative importance of the BOP market—varies widely. In Asia the BOP dominates the market, with an 85% share. In other regions its share is far smaller: 54% in Africa, 45% in Eastern Europe, 38% in Latin America. In Eastern Europe and Latin America mid-market and high-income groups tend to dominate health markets, even though large majorities of the population in both regions are in the BOP. But Africa shows the greatest disparity between the BOP share of the total population (95%) and the BOP share of health spending (54%).

At the national level there is similarly wide disparity in the share of health spending that occurs in the BOP. In Asia the extremes are represented by Pakistan, Bangladesh, and Tajikistan, where the BOP constitutes more than 98% of the health market, and Thailand (with a substantial mid-market population), where the BOP accounts for only 44%. In Africa the extremes are Nigeria, where the BOP also accounts for 98% of the health market, and South Africa (with a market dominated by the 25% of its population that is wealthier), where BOP spending is a modest 9% of the total.

In Eastern Europe the extreme is represented by Kazakhstan with 77% of total health spending in the BOP and Macedonia, FYR (38%). In Latin America and the Caribbean the largest BOP shares of total health spending are in Jamaica (90%) and Peru (77%), and the smallest in Colombia (31%). Generally, the smaller the percentage of the population in the BOP, the greater the likelihood that wealthier population segments account for a disproportionate share of the health market.

### How is the market segmented?

Bottom-heavy BOP markets—where more than half of spending occurs in the bottom three of the six BOP income segments—predominate in Africa (9 of 12 countries) and Asia (8 of 9). Malawi and Tajikistan illustrate this pattern. In two of the larger countries, India and Indonesia, while still bottom-heavy, spending is concentrated more toward the middle of the BOP income spectrum, in BOP1000–2000. India, with \$35 billion in annual BOP health spending (85% of the national market), shows what this spending pattern looks like (case study 2.1). Generally in Africa and Asia the distribution of health spending across BOP income

## CASE STUDY 2.1 INDIA: A SUBSTANTIAL HEALTH MARKET IN THE MIDDLE OF THE BOP

In India spending on health by BOP households is concentrated in the BOP1000, BOP1500, and BOP2000 groups. Thus the Indian BOP health market, while bottom heavy, is not dominated by the very lowest income segment, as Malawi's is, for example. These three segments account for 76% of the BOP health market in India. They also account for 65% of the total health market and 78% of all households. Indeed, with 155 million households and \$26.6 billion in total annual health spending, this is a substantial market. Annual spending on health per household in these income segments averages \$111, \$183, and \$264.

Moving up-market does not dramatically change household health spending in India. Average health spending per household in the relatively small but much wealthier mid-market population segment (\$391) is only about twice that in the BOP (\$192).

groups closely matches the distribution of the population across these groups.

In Eastern Europe and Latin America all measured countries show a top-heavy BOP spending pattern, illustrated by Russia and Peru. Another example is Mexico, with \$4.1 billion in annual BOP health spending (38% of the national market; case study 2.2).

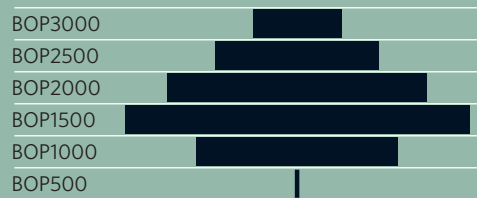
### What do households spend?

The products and services that households are willing to buy depend to some degree on income. Average household spending at different income levels is thus a useful guide to product design. But spending, especially for health care, also depends on access to services. If travel to a hospital or health clinic costs more in cash or lost wages than the service itself, anecdotal evidence suggests, price-sensitive BOP households may defer treatment until a condition is relatively serious.<sup>2</sup> In any event, the available health dollars might be larger if health care services were relatively available and travel costs could be avoided. Current levels of household spending on health should thus be regarded as establishing a lower bound for the willingness to pay.

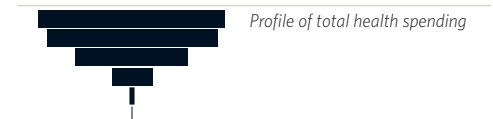
Average health spending by BOP households varies widely across countries. The difference depends in part on whether markets are top heavy or bottom heavy and may also reflect BOP access to public health services. But the variation can also reflect differences in the questions asked and the expenditures captured in national surveys. Both Indonesia and Pakistan have bottom-heavy health markets, for example, but their reported BOP health spending per household averages are very different: \$78 and \$197 (the extremes for measured countries in Asia).

A more meaningful characterization may be the regional median among average annual spending on health by BOP households. These figures are as follows: for Africa, \$154 (Nigeria) and \$168 (Gabon); for Asia, \$131 (Sri Lanka); for Eastern Europe, \$152 (Ukraine); and for Latin America, \$325 (Peru). In most countries measured, household health spending increases roughly in proportion to income through the BOP. In many countries, however, health spending increases disproportionately in the highest BOP income segments, BOP2500 and BOP3000—an indication of latent demand for health care in the BOP. For the countries

**India**  
TOTAL HEALTH SPENDING BY INCOME SEGMENT



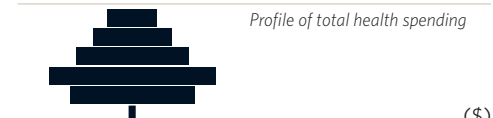
### Ukraine



HOUSEHOLD SPENDING BY INCOME SEGMENT	(\$)
BOP3000	182
BOP2500	161
BOP2000	135
BOP1500	104
BOP1000	70
BOP500	58

Average household spending on health  
**\$152**

### Sri Lanka



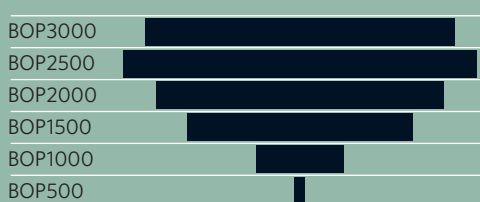
HOUSEHOLD SPENDING BY INCOME SEGMENT	(\$)
BOP3000	277
BOP2500	243
BOP2000	186
BOP1500	143
BOP1000	78
BOP500	29

Average household spending on health  
**\$131**

## CASE STUDY 2.2 MEXICO: A TYPICAL TOP-HEAVY BOP HEALTH MARKET

In Mexico BOP spending on health is concentrated in the top three BOP income segments—a typical top-heavy market pattern. These three segments account for 61% of BOP households (9.5 million) and 75% of the BOP health market (\$3 billion in annual spending)—but only 29% of the total health market in Mexico. Annual spending on health per household in these income segments averages \$235, \$359, and \$394. Moving up-market more than doubles average per household spending on health, from \$260 a year in the BOP to \$635 in the mid-market segment. Total mid-market health spending is about 60% larger than total BOP spending.

**Mexico**  
TOTAL HEALTH SPENDING BY INCOME SEGMENT



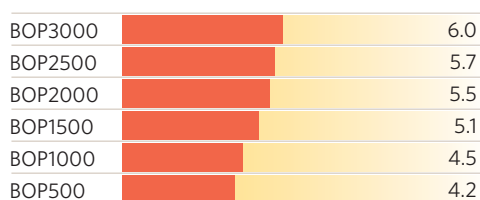
above, the ratio of average health spending per household in BOP3000 to that in BOP500 is 8:1 in Nigeria, 6:1 in Gabon, 9.5:1 in Sri Lanka, 3:1 in Ukraine, and 6:1 in Peru. Health care models that can tap higher income segments to cross-subsidize services to lower income segments—such as the Aravind Eye Care Hospitals in India—show much promise as a way to extend even expensive services such as surgery to the poorest parts of the BOP (case study 2.3).

As incomes rise still higher, per household health spending continues to increase—but only modestly compared with the increases in income, except in Africa. The ratio of average annual per household spending for health in the mid-market segment to that in the BOP is 1.5:1 in Russia, 2:1 in Colombia, 2:1 in India, and 3:1 in

Thailand—but reaches 11:1 in Nigeria and 14:1 in South Africa.

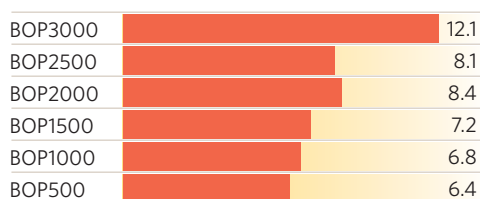
### Peru

SHARE OF HOUSEHOLD SPENDING ON HEALTH (%)



### Sierra Leone

SHARE OF HOUSEHOLD SPENDING ON HEALTH (%)



### Where is the market?

The relative sizes of urban and rural BOP health markets differ significantly across regions. In Asia the rural BOP health market is 2.4 times the size of the urban one, largely reflecting the distribution of the BOP population. Pakistan's BOP health market, for example, is 71% rural. Among measured Asian countries, only in Indonesia does BOP health spending in urban areas exceed that in rural areas. In Africa urban and rural BOP health markets are roughly comparable in size, even though rural areas generally account for a larger share of the BOP population. In Nigeria, for example, rural areas account for 52% of the BOP health market but have 22% more BOP households than urban areas. In Eastern Europe, in contrast, the urban BOP health market is 61% larger than the rural market. Russia's BOP health market is 61% urban. In Latin America the difference is far greater: the urban BOP health market is 3.5 times the size of the rural market. The urban share of the market is 85% in Brazil and 73% in Colombia.

The first response to illness in many BOP households, especially in the lower income segments that dominate bottom-heavy markets, tends to be self-medication.



Average health spending by BOP households is generally higher in urban than in rural areas—\$451 a year in urban areas of Guatemala, for example, but \$372 in rural areas.

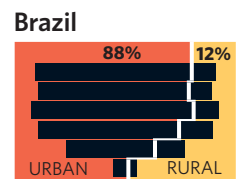
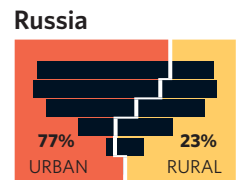
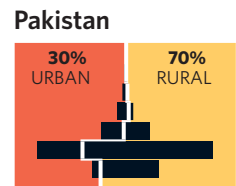
The BOP share of the total urban health market is smaller in every region than the BOP share of the rural market, because of the concentration of mid-market and high-income populations in urban areas.

### What does the BOP buy?

The first response to illness in many BOP households, especially in the lower income segments that dominate bottom-heavy markets, tends to be self-medication.<sup>3</sup> Pharmacies or other sources of medicines are thus often the front line of health care, especially in rural areas where access to clinics and hospitals may be limited. Supportive evidence for this comes from the surveys reported in this analysis: in nearly every measured country and in every BOP income segment pharmaceuticals account for more than half of all BOP health spending. As a result, the BOP often dominates national pharmaceutical markets, especially in Africa and Asia.

In Africa, except in Nigeria and South Africa, BOP households spend between 51% (Uganda) and 87% (Sierra Leone) of their health budget on pharmaceuticals. The percentage tends to be highest in the lower income segments and to decline slightly as incomes rise. In Latin America, except in Mexico, BOP households spend between 50% (Colombia) and 74% (Brazil) of their health budget on pharmaceuticals, again with higher percentages in lower income groups. The pattern is also found in most countries of Eastern Europe (69% in Russia) and in India (76%), though not in some other countries of Asia.

Total BOP health spending by income segment, urban and rural



### CASE STUDY 2.3 STREAMLINE HEALTH CARE: BRINGING AN “ASSEMBLY LINE” APPROACH TO CATARACT SURGERY

Henry Ford standardized and streamlined automobile production to lower the cost of his cars enough so that nearly everyone could afford one. Aravind Eye Care Hospitals in India has done the same for cataract surgery. The Aravind system relies on intensive specialization in every part of the work flow to generate efficiencies. A surgeon, for example, typically performs 150 cataract surgeries every week, six times the number common among Western specialists. To further lower costs, Aravind has created a sister organization, Aurolab, to manufacture intraocular lenses locally at prices one-fiftieth of U.S. prices, as well as the sutures and drugs used in surgery.

Aravind screens millions of people each year to identify those whose eyesight is threatened by cataracts and performs nearly 200,000 surgeries a year. An important part of its business model is multitiered pricing or cross-subsidization: fees from paying patients range from \$50 to \$330 per operation, including the hospital stay, but it performs 65% of its operations free of charge—for those, including patients from most BOP households, who can't afford to pay.

Through its fee income, Aravind is self-supporting and also generates enough profit to fund its gradual expansion. With a 30-year record of world-class care, the Aravind model demonstrates that affordable quality health care for the BOP is possible (Pralhad 2005).



## CASE STUDY 2.4 **FRANCHISING: A BUSINESS MODEL THAT DELIVERS AFFORDABLE HEALTH CARE WHERE IT'S NEEDED**

In recent years the franchise business model has proved to be a particularly suitable vehicle for delivering health services and products in both urban and rural low-income areas. A well-designed franchise structure has built-in quality control, bulk buying power, price subsidization, and expansion capabilities that can allow an enterprise to flourish in difficult BOP markets.

One example of this approach is CFWshops Kenya, with 64 financially self-sustaining franchise locations in urban, semirural, and rural areas, serving more than 400,000 patients a year. The franchises offer 150–250 government-approved health products and pharmaceuticals, priced at about US\$0.50 per treatment—affordable for low-income Kenyans. Each one is located no more than an hour's walk from its intended customer base.

Forty-two locations are owned by community health workers earning an average of US\$600–800 a year, and the other 22 by licensed nurses earning an average of US\$1,000–1,400. In comparison, the average nurse's salary in Kenya is US\$754. Clinics owned by nurses provide additional screening services and a broader range of medications, though all locations provide essential prevention and treatment products for malaria, diarrhea, amoebiasis (stomach worms) as well as mosquito nets and water treatment products.

CFWshops' headquarters, the franchisor, holds each franchise to strict standards of product quality and pricing through unannounced audits and the threat of closure. Franchise owners benefit from being part of the CFWshops system: they bear a trusted brand name, share marketing costs and best practices, and can sell drugs at prices lowered through collective bargaining and bulk buying (Fertig and Tzaras 2005).

Another successful franchise providing health products and services to the BOP is Janani, a nonprofit Indian organization using a private sector model. Janani applies a mix of techniques—subsidizing some products, generating large caseloads to obtain volume discounts, leveraging existing social and business networks, and using technology—to increase the efficiency of its operations. Its focus is on selling low-cost contraceptives through three channels—31,000 existing retail shops, a network of 40,000 rural health providers, and 520 clinics with resident doctors. In 2005 Janani sold 57.9 million condoms and 9.9 million cycles of oral contraceptives, protecting 1.6 million couples from unwanted pregnancies.<sup>4</sup>

Yet another is Mi Farmacita Nacional, a nationwide Mexican pharmacy chain that provides low-cost generics, purified water and powdered milk, consultations, and pre-operative services to low-income people. To supplement revenue, the independent franchises also provide such services as telephone and Internet.<sup>5</sup>

All these franchising operations create jobs and community-based health infrastructure and thus exemplify a strategy of **localizing value creation**.



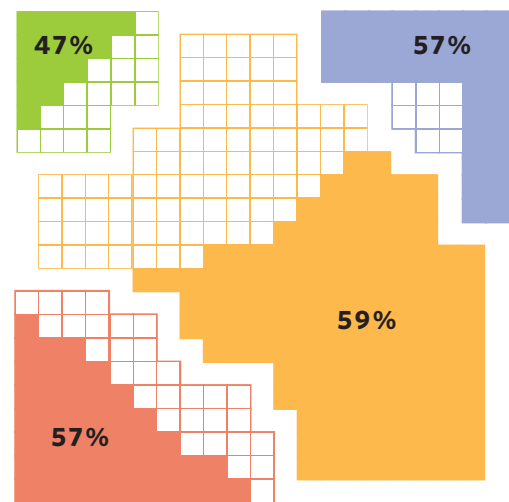
The heavy BOP spending on pharmaceuticals points to the importance of drug distribution systems—and of quality control, since fake drugs are a problem in many developing countries.

Data from measured countries illustrate the size of markets and household spending for pharmaceuticals:

- In Africa the BOP market for pharmaceuticals is \$3.9 billion—\$1.3 billion in Nigeria alone. Nigerian households in the lowest three BOP income groups, which account for 87% of the national health market, spend an average of \$47.99 a year on medicines.
- In Asia the BOP market for pharmaceuticals is \$30.8 billion—\$26.6 billion in India alone. The 155 million Indian households in the three income segments BOP1000–2000 spend an average of \$134 a year on pharmaceuticals.
- In Eastern Europe the BOP market for pharmaceuticals is \$9.2 billion—\$8.0 billion of it in Russia. Russian BOP households spend 87.1% of their health budget on pharmaceuticals, \$314 a year on average.
- In Latin America the BOP pharmaceutical market is \$12.9 billion. BOP households spend 64% of their health budget, or \$201 a year, on pharmaceuticals.

The heavy BOP spending on pharmaceuticals points to the importance of drug distribution systems—and of quality control, since fake drugs are a problem in many developing countries, especially in Africa. Franchise business models can add efficiency and quality control while enhancing drug distribution (case study 2.4).

**Pharmaceuticals share of BOP health market**  
\$56.7 billion



Pharmaceutical market	
\$ billions (PPP)	
Africa	3.9
Asia	30.8
Eastern Europe	9.2
Latin America	12.9

Each square represents approximately \$250 million

#### Endnotes

1. Reported household expenditures in a given country should be regarded as a minimum estimate of actual expenditures, because surveys may not have collected information on all types of health-related spending.
2. Participant comments at a BOP Circle meeting hosted by the World Resources Institute, Mexico City, October 19, 2006.
3. Interview with April Harding and Alex Preker, World Bank, Health Nutrition and Population. Washington, DC, May 2006.
4. Janani, "Welcome to Janani: Overview," <http://www.janani.org/overview.htm> (accessed January 31, 2007).
5. Mi Farmacita, "Beneficios," <http://www.tiendavirtual.ws/mifarmacita/contenido.cfm?cont=BENEFICIOS> (accessed January 31, 2007). Case study 2.4