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Session 1:
Pharmaceutical Products and Under-served Populations

Alan Lyles, Johns Hopkins School of Public Health

Overview of Course Sessions (1)

1. The global context of pharmaceutical products and underserved populations
2. International Policy and Legal framework
3. Drug manufacture, industrial pharmacy considerations, quality assurance and regulation
4. The Drug Management Cycle: Selection
5. Forecasting and Quantification
6. The Drug Management Cycle: Procurement
7. Drug Donations
8. The Drug Management Cycle: Distribution

Overview of Course Sessions (2)

9. The Drug Management Cycle: Use
10. Budgeting and Cost Control
11. Management Support Systems: Planning Cycle
12. Access to Essential Drugs
13. Pharmaceutical Care and Drug Utilization in an HIV/AIDS Clinic
14. Financing and Sustainability
15. Laboratory Exercise on Planning with an Emphasis on Budgets and Sensitivity Analysis
16. Student Presentations

“The right context is worth 50 IQ points.”

-Alan Kay, Inventor of Object Oriented Programming & Laptop Computer Visionary

World Drug Purchases: Retail Pharmacies

IMS Health –Retail Drug Monitor: 12 Months to Sept 2005*

	Sept 2005	Sept 2004	% Growth US$	% Growth Constant Exchange
Selected World	365,348	341,483	7%	5%
North America	192,649	182,200	6%	5%
• USA	180,994	172,182	5%	5%
• Canada	11,656	10,017	16%	7%
Europe	90,685	84,132	8%	3%
• Germany	27,055	24,281	11%	7%
• France	22,639	20,641	10%	5%
• Italy	14,619	14,249	3%	(2%)
• UK	15,408	15,083	2%	(1%)
• Spain	10,965	9,879	11%	6%

Source: IMS Health, Retail Drug Monitor Sept 2005 in US$ millions.
www.imshealth.com/vgn/images/portal/cit_40000873/53/63/76322469IMS%20Retail%20Drug%20Monitor%20September2005.pdf

World Drug Purchases: Retail Pharmacies

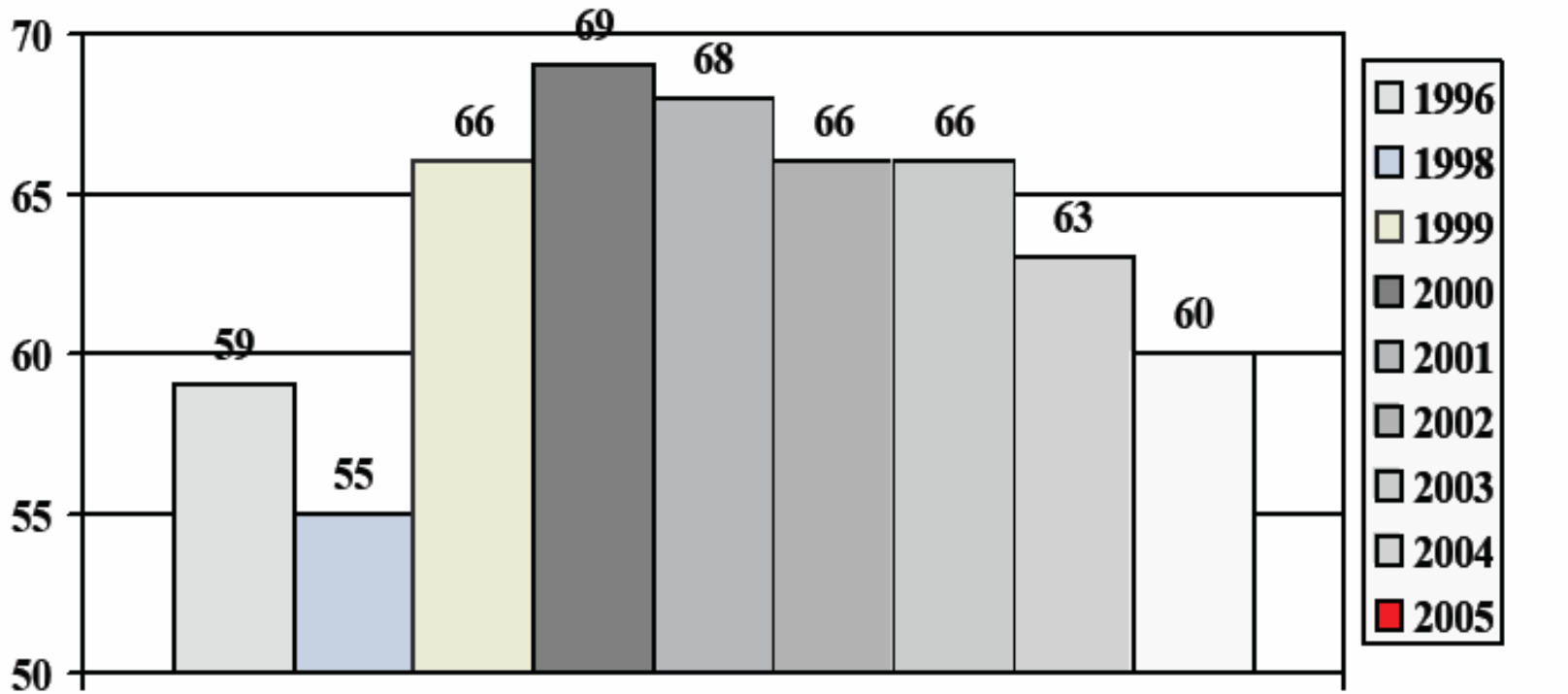
IMS Health –Retail Drug Monitor: 12 Months to Sept 2005*

	Sept 2005	Sept 2004	% Growth US$	% Growth Constant Exchange
Selected World	365,348	341,483	7%	5%
Japan*	60,820	57,122	6%	5%
Latin America†	15,524	13,935	20%	19%
• Mexico	7,184	6,338	13%	11%
• Brazil	6,369	4,844	31%	31%
• Argentina	1,971	1,752	13%	13%
Australia/NZ	5,670	5,094	11%	5%

*Including hospitals; †Leading three.

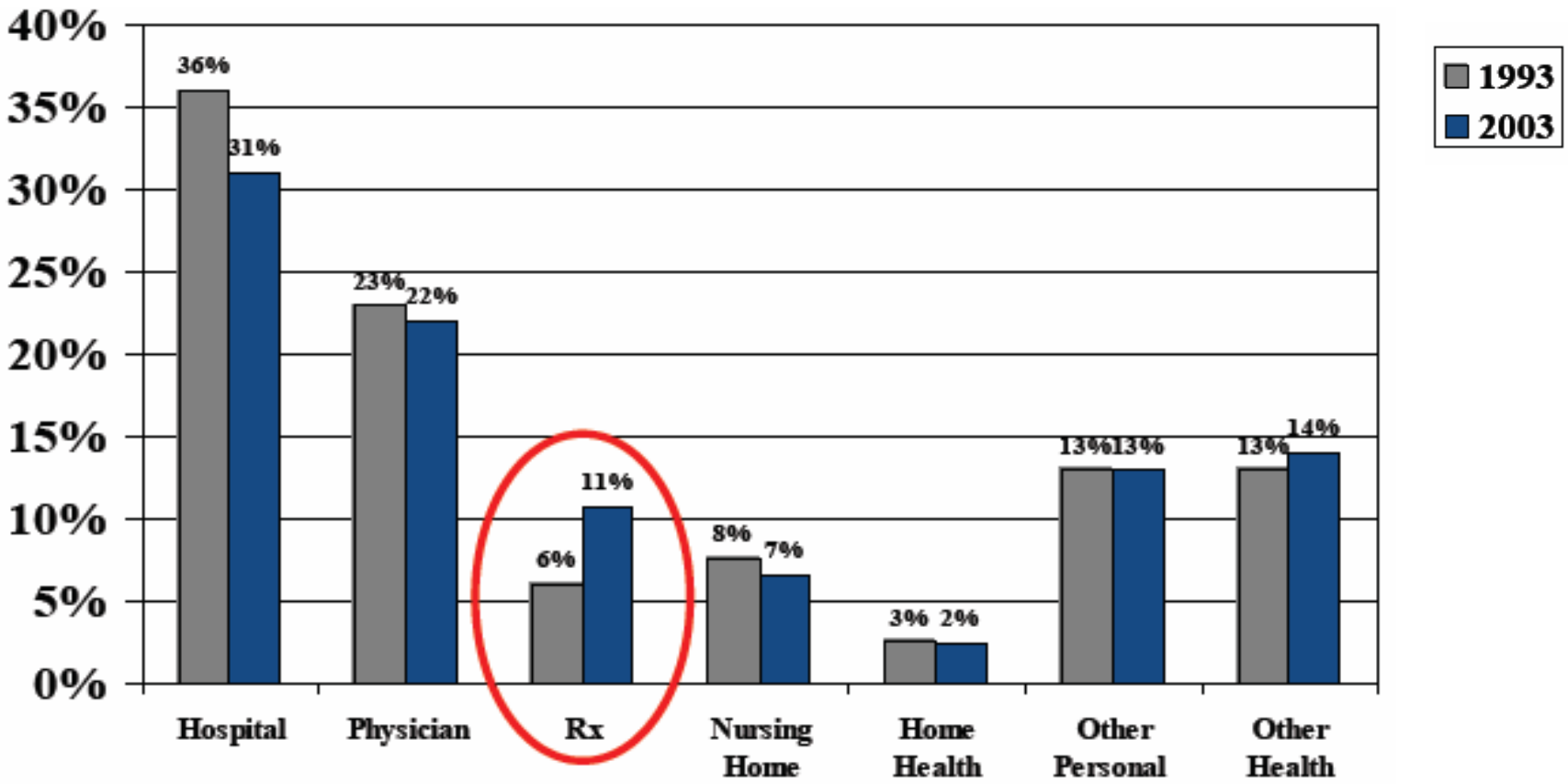
Source: IMS Health, Retail Drug Monitor Sept 2005 in US$ millions.
www.imshealth.com/vgn/images/portal/cit_40000873/53/63/76322469IMS%20Retail%20Drug%20Monitor%20September2005.pdf

Percent of All US Firms Offering Health Benefits:1996-2005



Adapted from Employer Health Benefits Survey 2005. Kaiser Family Foundation. http://www.kff.org/insurance/7315/sections/upload/7375.pdf.

OP Prescription Drugs as Percentage of US National Health Expenditures: 1993 v 2003



Adapted from: Smith C, et al. Health Spending Growth Slows in 2003. *Health Affairs* 2005;24(1):185-194. Exhibit 5.

Relative Contributions to Rising US Rx Expenditures: 1993-1997 vs 1997-2002

	1993-1997	1997-2002
Price	19%	25%
Rx Type	34%	34%
Utilization	47%	42%

Adapted from: Kaiser Family Foundation. Trends and Indicators, 2004 Update, Exhibit 1.17.

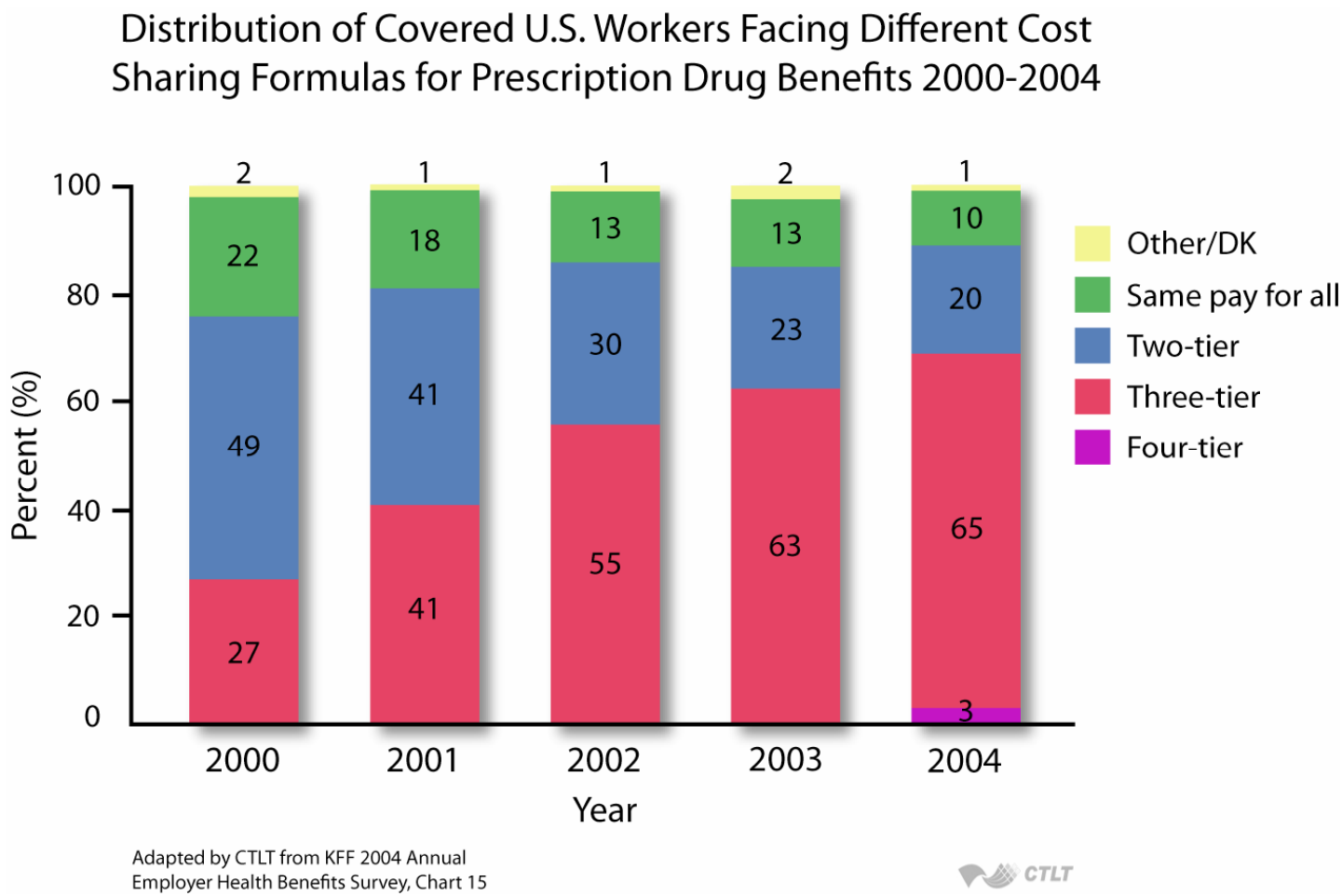
Access Barriers: Drugs Are Costly

- Major out-of-pocket expense
- Can represent as much as 20 percent of total national health expenditures, 60 percent of total recurrent health expenditures
- Drug expenditures are often second only to personnel salaries and benefits

Many Health Interventions Depend on Pharmaceuticals: Prevention & ACSCs

- Expanded Program on Immunization
- Integrated Management of Childhood Illness
- Directly Observed Treatment, Short-course
- Roll Back Malaria
- HIV prevention (social marketing of condoms)
- AIDS treatment and care

Coverage Distribution



US Non-compliance from Out-of-Pocket Costs*

			Out-Of-Pocket				Health Status	
Due to cost:	**Base: All Adults**	**Have Condition for Rx**	**$0-$100**	**$101-$250**	**$251-500**	**>$500**	**Excellent to Very Good**	**Fair to Poor**
Did not ask MD for an Rx	18%	23%	14%	37%	42%	42%	12%	33%
Did not fill an Rx	22%	30%	19%	50%	48%	44%	13%	41%
Used a lower dose to extend Rx	15%	21%	10%	35%	36%	41%	8%	29%
Used less than Rx'd	18%	25%	13%	45%	42%	46%	11%	37%

*Adapted from: Harris Interactive. Higher Out-of-Pocket Costs Cause Massive Non-Compliance in the Use of Prescription Drugs, and This Is Likely to Grow. Health Care News. 2002;2(22):2. http://www.harrisinteractive.com/

US Rx Compliance: Disease Specific Behaviors in the Past 12 Months

	Multiple Sclerosis	Hypertension	Depression
Not filled	15%	17%	30%
Delayed filling	24%	26%	41%
Taken in lower doses than prescribed	23%	14%	25%
Taken less often than prescribed	30%	29%	43%
Discontinued sooner than prescribed	15%	15%	30%

Adapted from: http://www.bcg.com/publications/files/TheHiddenEpidemic_Rpt_HCDec03.pdf

US Rx Compliance Behaviors & Gender:
How does female compliance affect household behaviors?

	Women	Men
Not filled	21%	15%
Delayed filling	30%	20%
Taken in lower doses than prescribed	15%	12%
Taken less often than prescribed	33%	26%
Discontinued sooner than prescribed	23%	18%

Adapted from: http://www.bcg.com/publications/files/TheHiddenEpidemic_Rpt_HCDec03.pdf

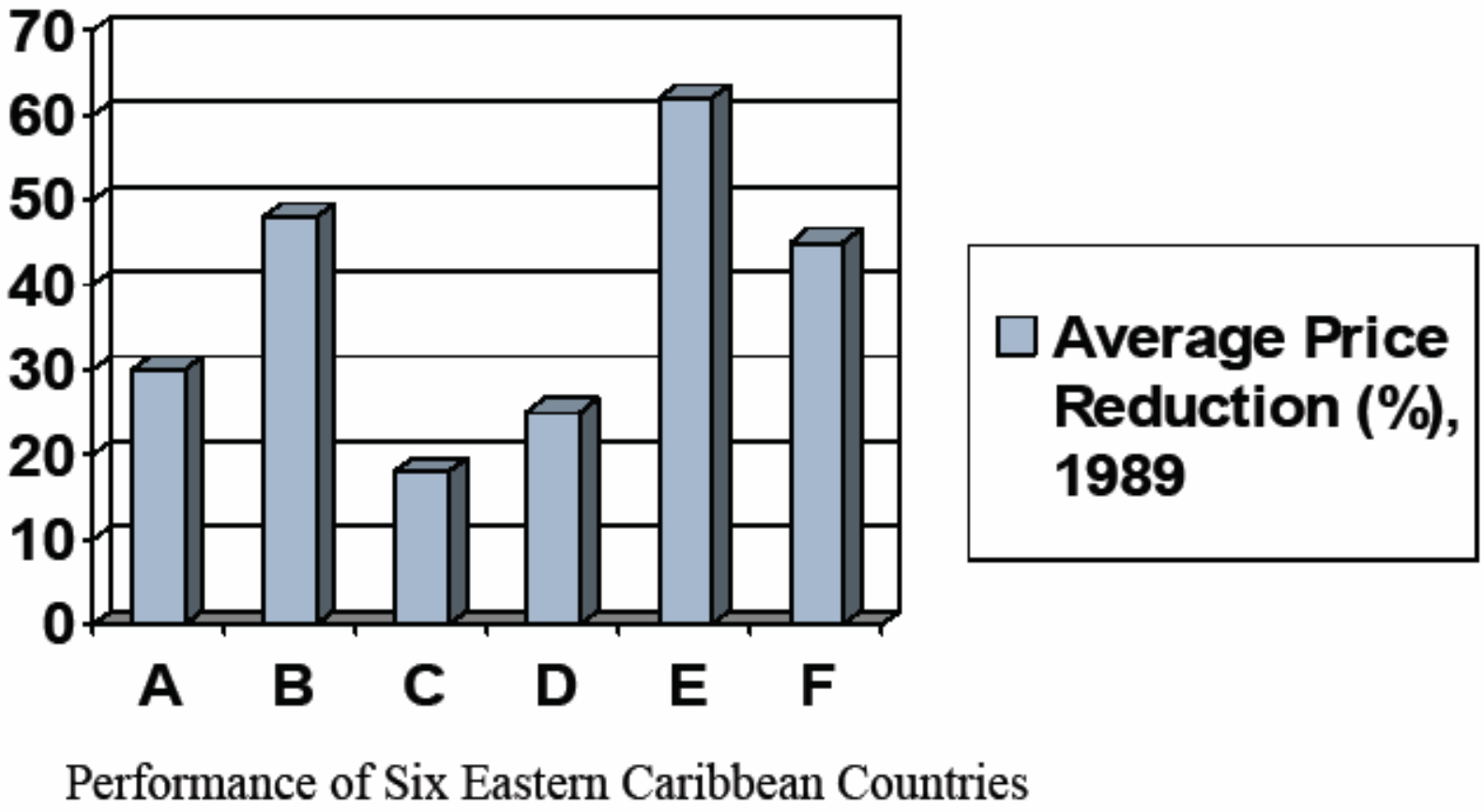
Drug coverage among Medicare beneficiaries with CHD/MI increases use of lifesaving drugs*

- Medicare beneficiaries with coronary heart disease
  - Statins recommended to lower cholesterol
  - Statins are costly
- 27.4 % with coverage used statins
- 4.1% without coverage used statins

What Is Known about Drug Management?

- Effective ambulatory Rx use can reduce morbidity and mortality
- Wise drug selection underlies all other improvements
- Effective management saves money and improves performance
- Rational drug use requires more than drug information
- Systematic assessment and monitoring are essential

Increased Efficiencies: Pooled Procurement



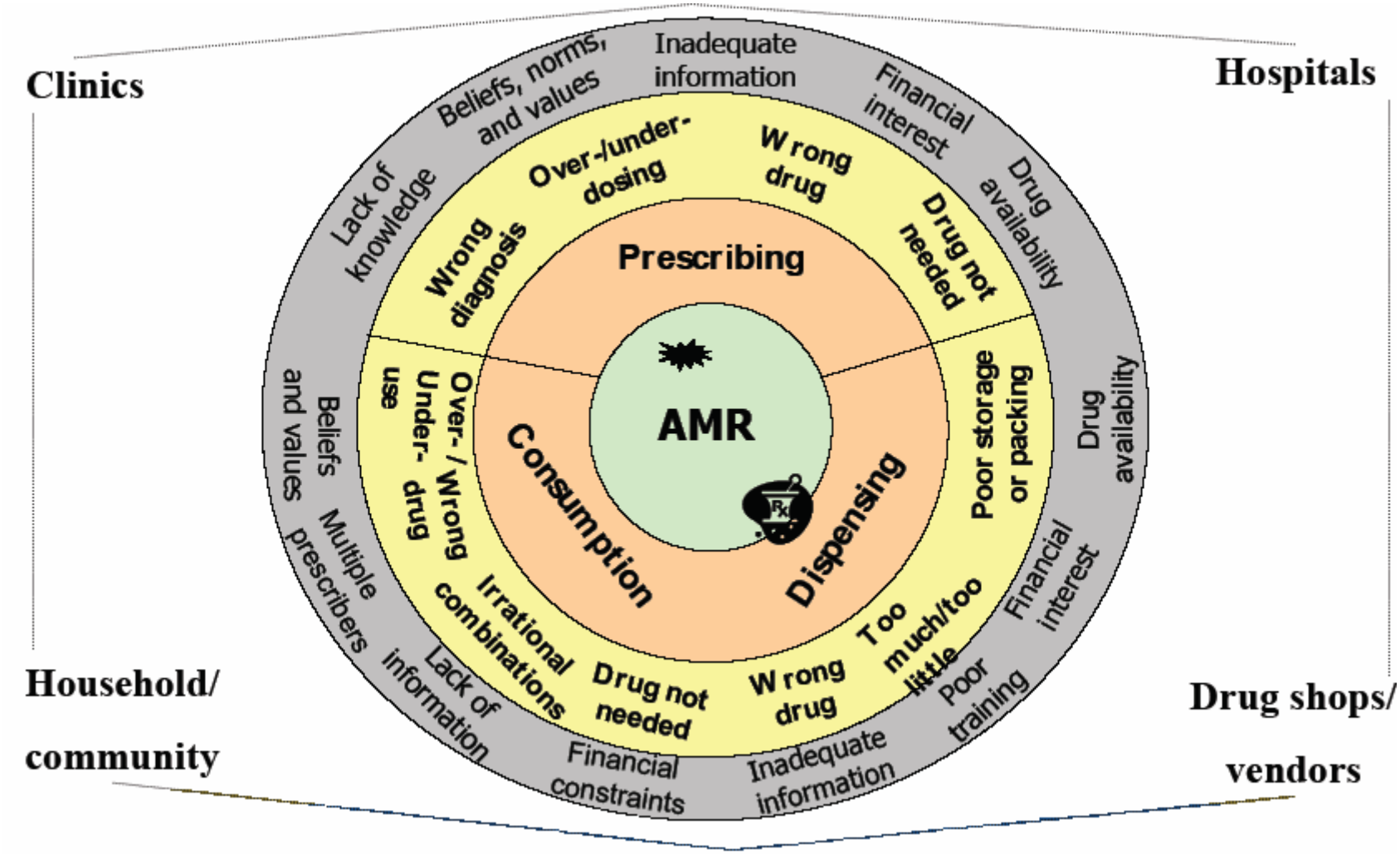
Performance of Six Eastern Caribbean Countries

Source: MSH: Management Sciences for Health. Used with permission.

Pharmaceutical Expenditures

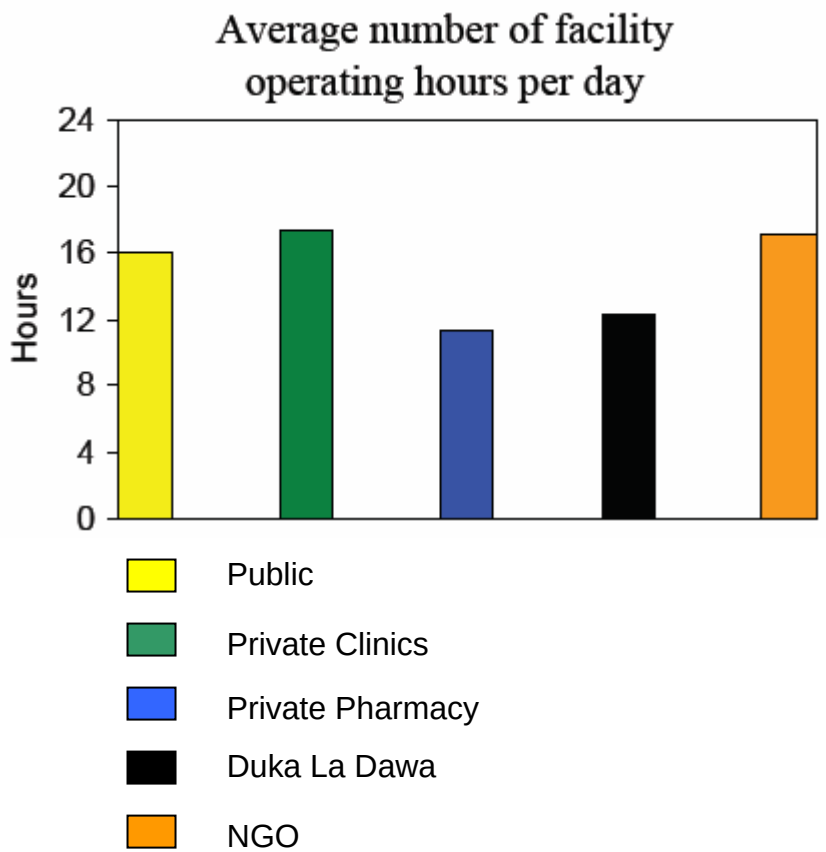
Region	Per Capita ($US/yr)	As % of GDP	Private Expenditures as % of Total
Africa	$8	0.86%	68%
Asia	$12	0.59%	76%
LA/C	$31	0.87%	75%
Developed Economies	$137	0.65%	33%

Understanding Medication Use



Source: MSH: Management Sciences for Health. Used with permission.

Geographic Accessibility: Tanzania



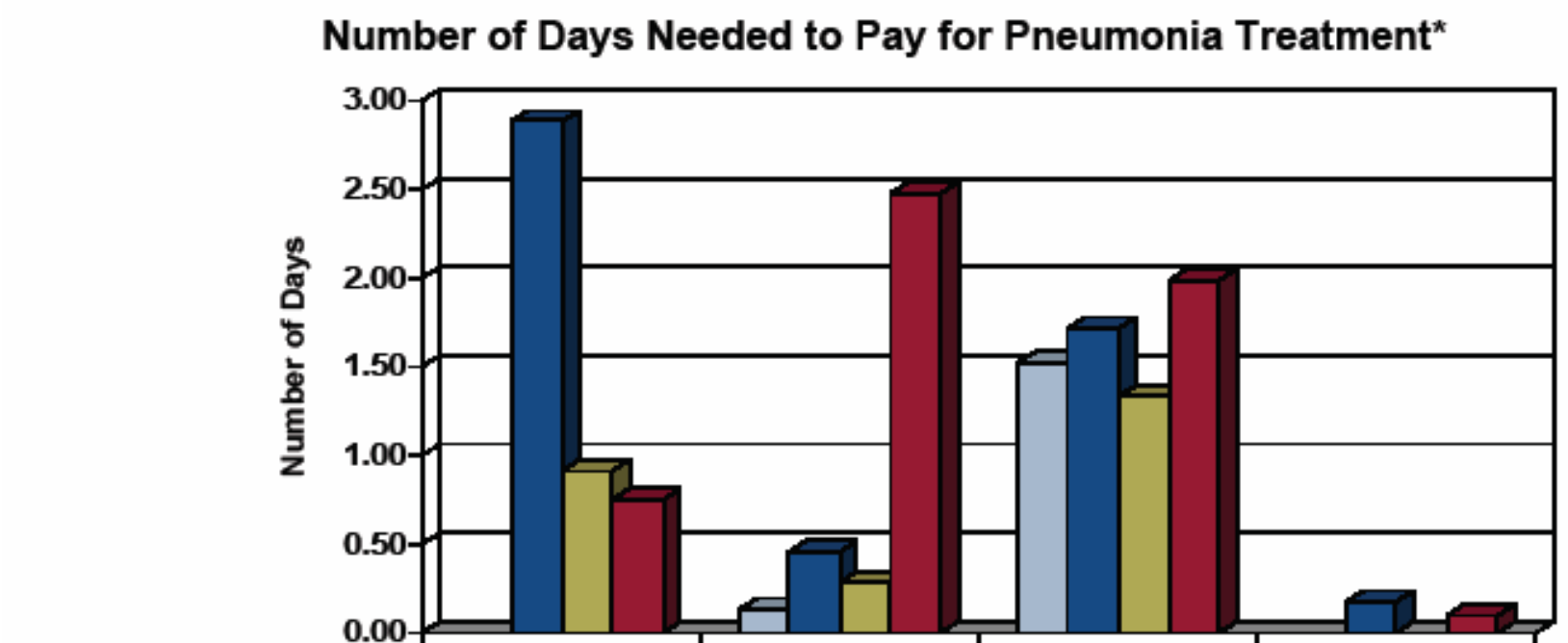
Distance to Health Facility

14% >10 km to public facility

6% >10 km to private drug retailer

Source: MSH: Management Sciences for Health. Used with permission.

Affordability:
Cambodia, El Salvador, Ghana, India

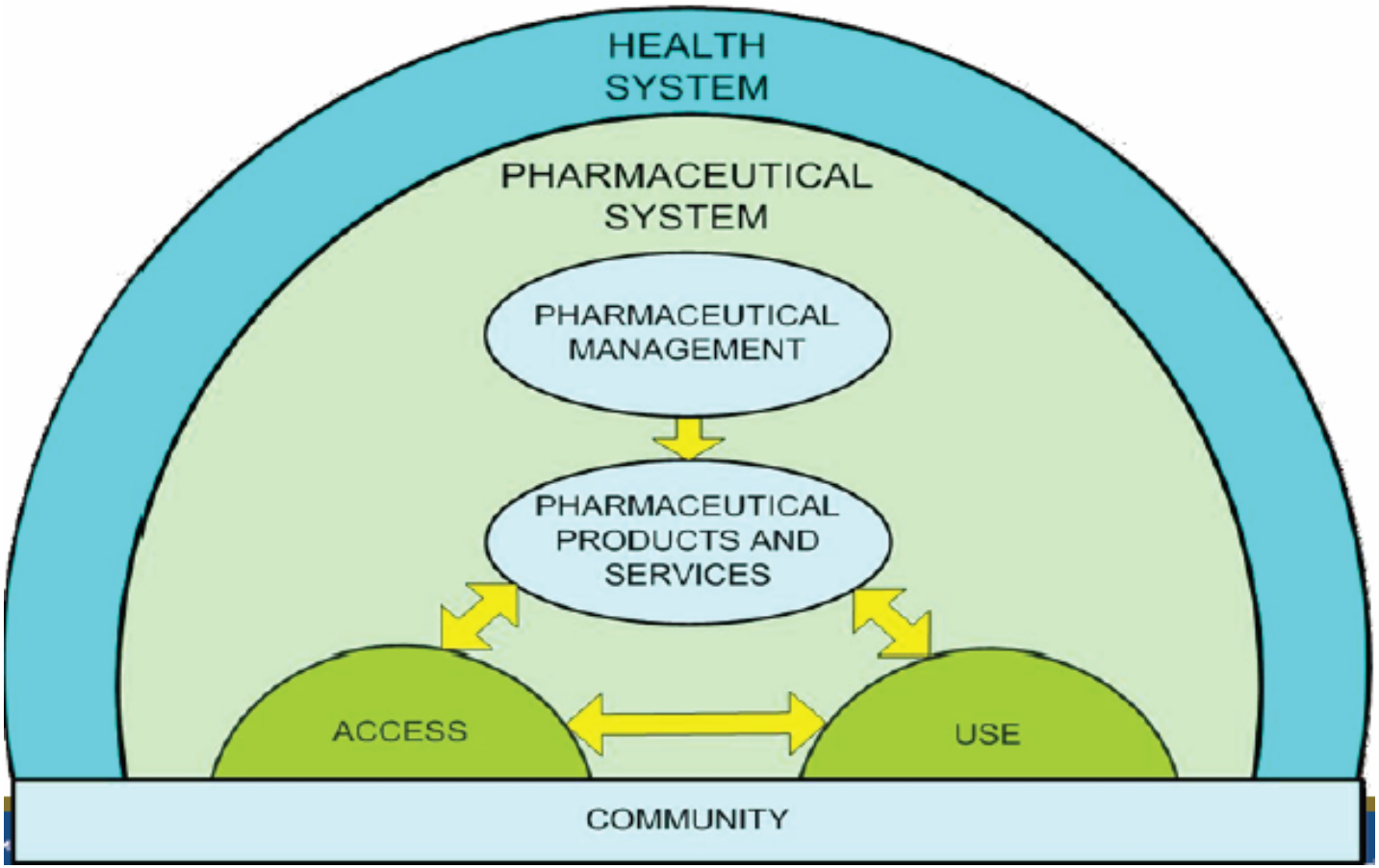


	Cambodia*	El Salvador*	Ghana**	India*
Public Facilities		0.13	1.52	
Private Facilities	2.89	0.45	1.72	0.17
NGO/Mission Facilities	0.91	0.28	1.33	
Private Pharmacies	0.75	2.48	1.99	0.09

*Child 1-5 years old, co-trimoxazole; **Adult, amoxicillin

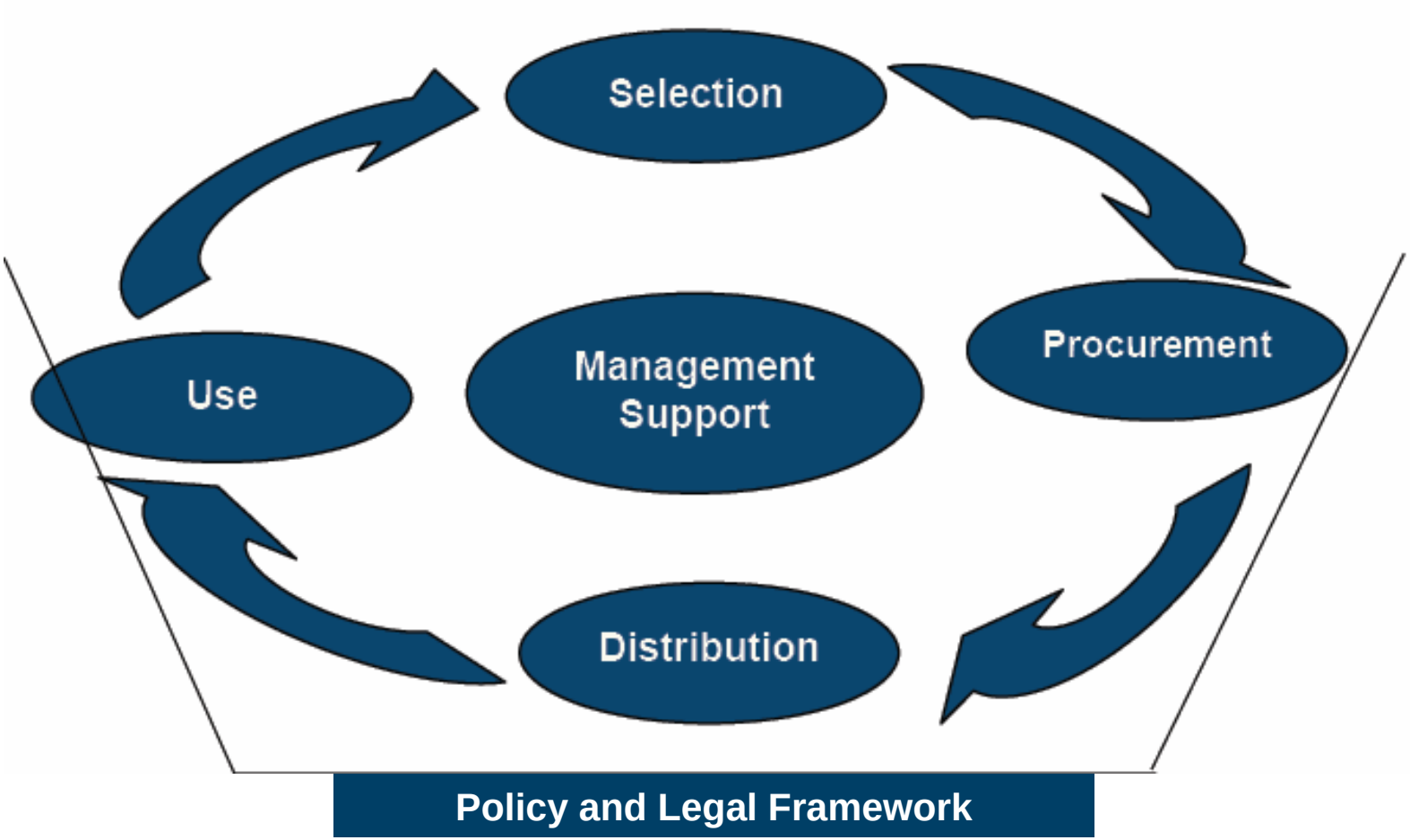
Source: MSH: Management Sciences for Health. Used with permission.

Pharmaceutical Management, Access, and Use of Medicines



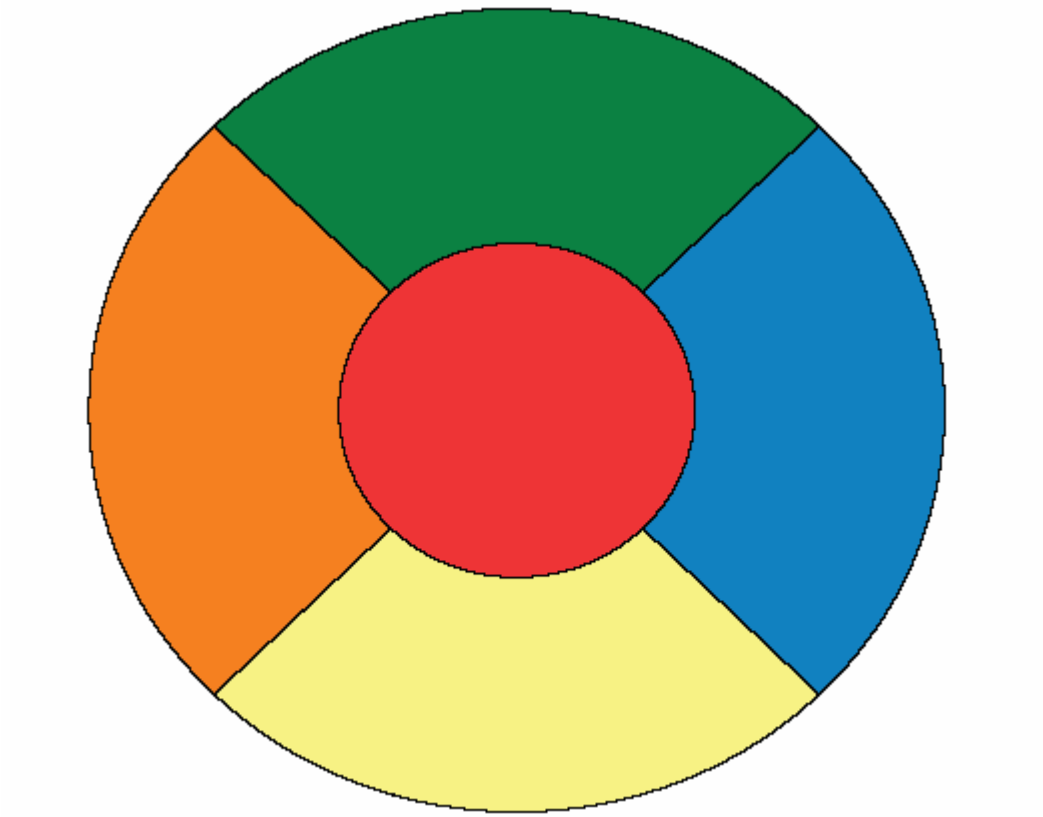
Source: MSH: Management Sciences for Health. Used with permission.

Pharmaceutical Management Cycle



Source: MSH: Management Sciences for Health. Used with permission.

Dimensions of Access & Potential Barriers

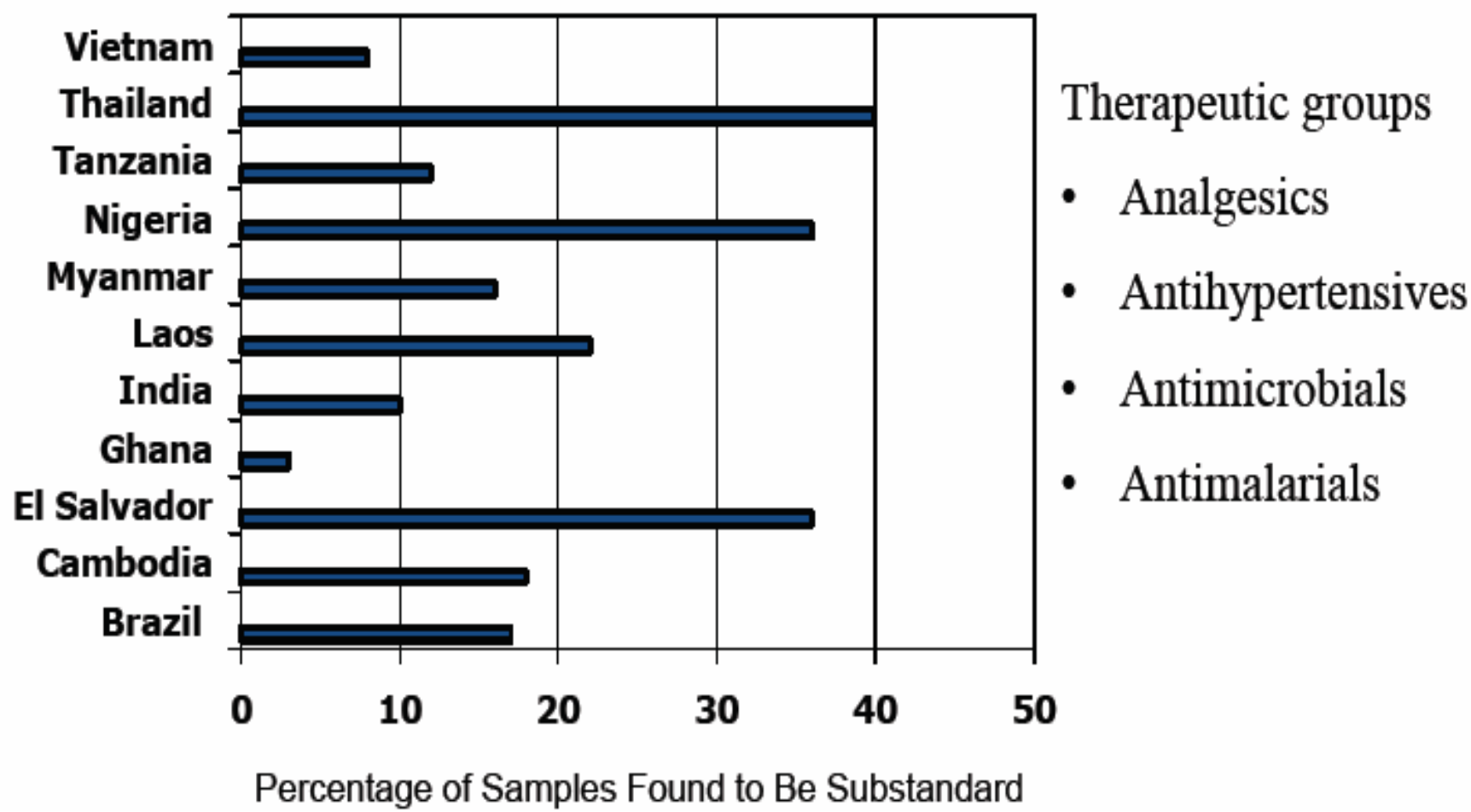


Essential Medicines Definition

Essential medicines are:

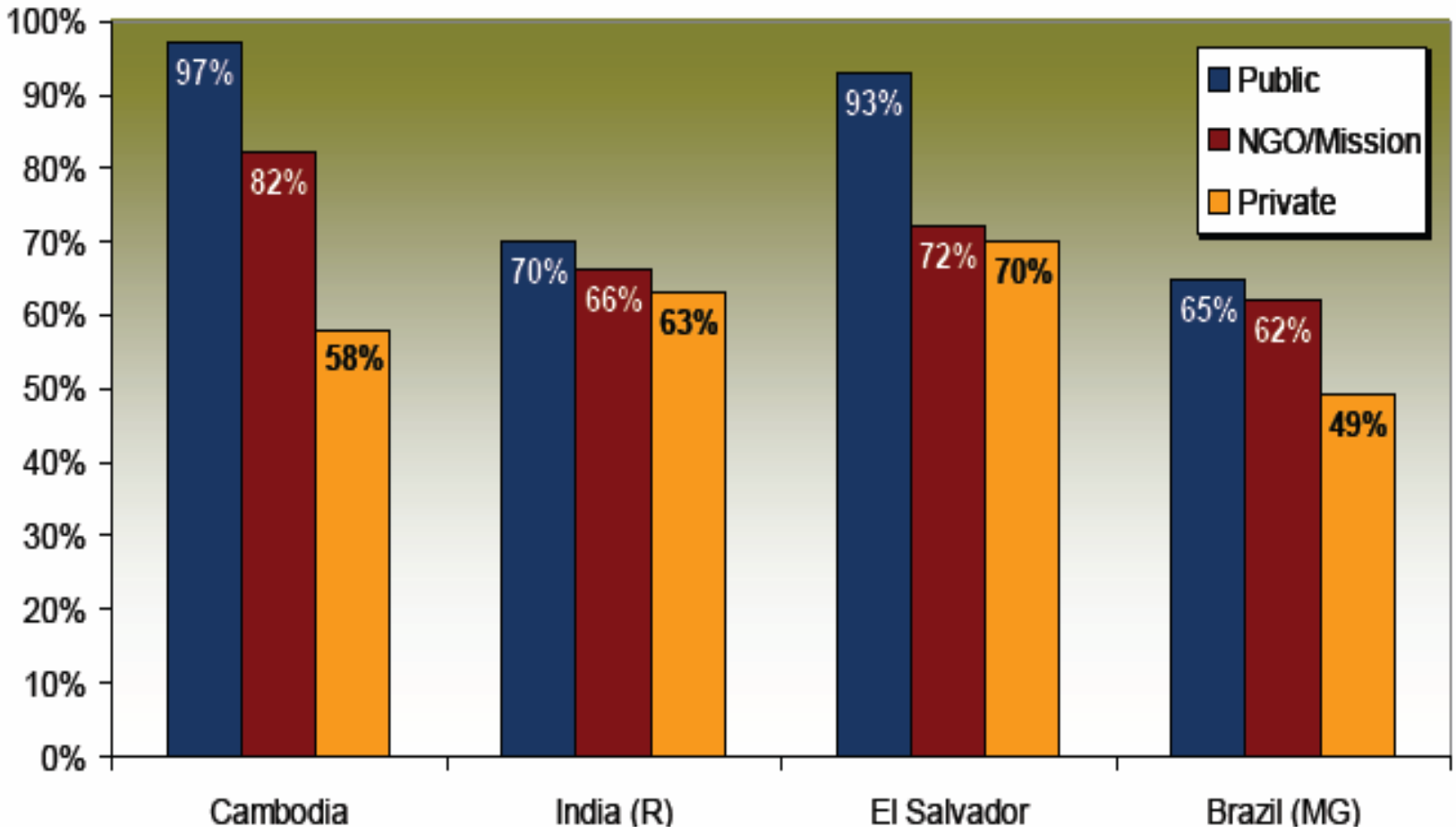
- those that satisfy the ***priority*** health care needs of the ***population***
- selected with due regard to ***public health relevance***, evidence on efficacy and safety, and ***comparative cost-effectiveness***
- intended to be available within the ***context of functioning health systems*** at all times in adequate amounts, in the appropriate dosage forms, with assured quality and adequate information, and at a cost that individuals and the community can ***afford***

Substandard Essential Medicines in Developing Countries



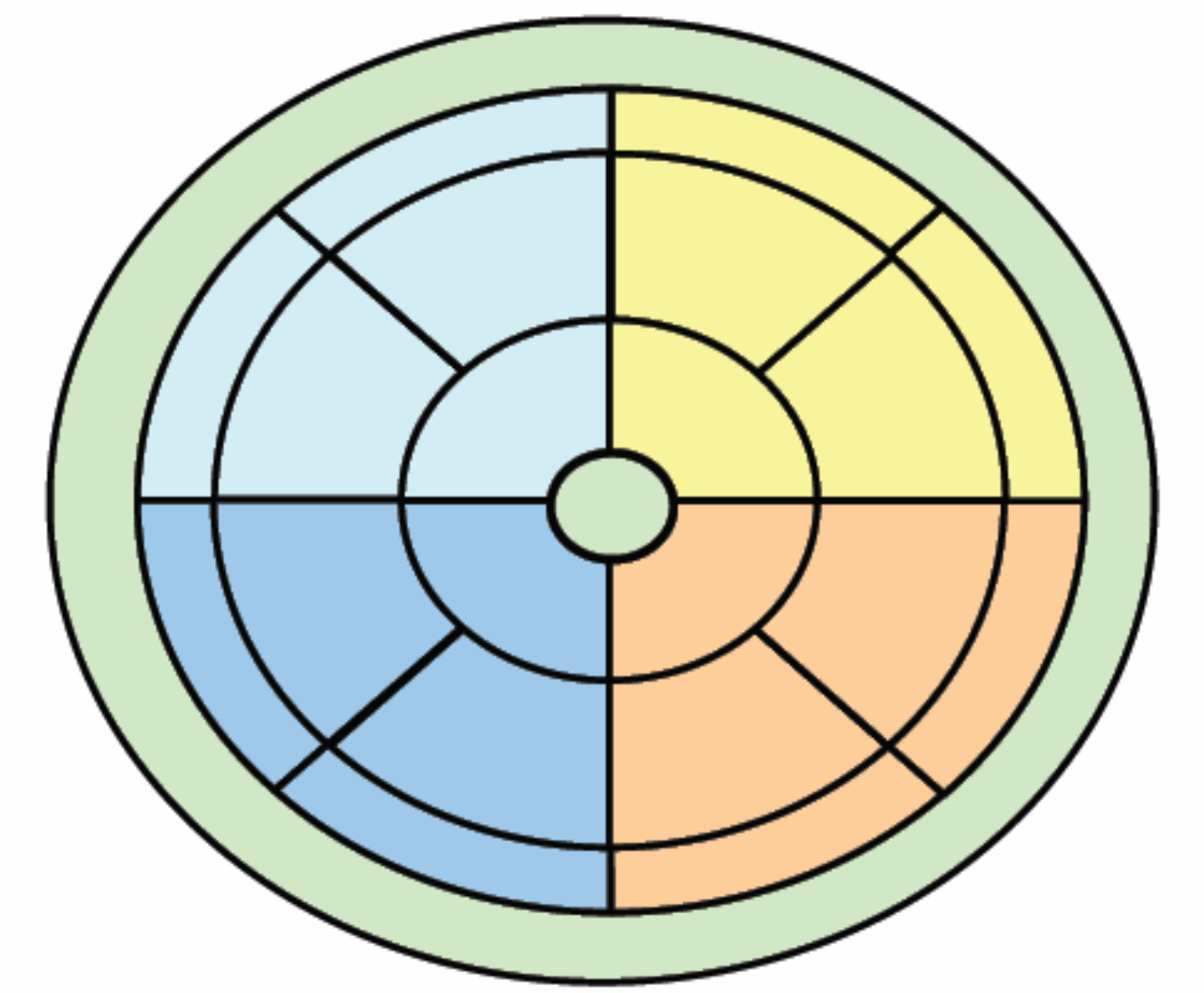
Source: MSH: Management Sciences for Health. Used with permission.

Percentage of Medicines Prescribed from Essential Medicines List, by Sector

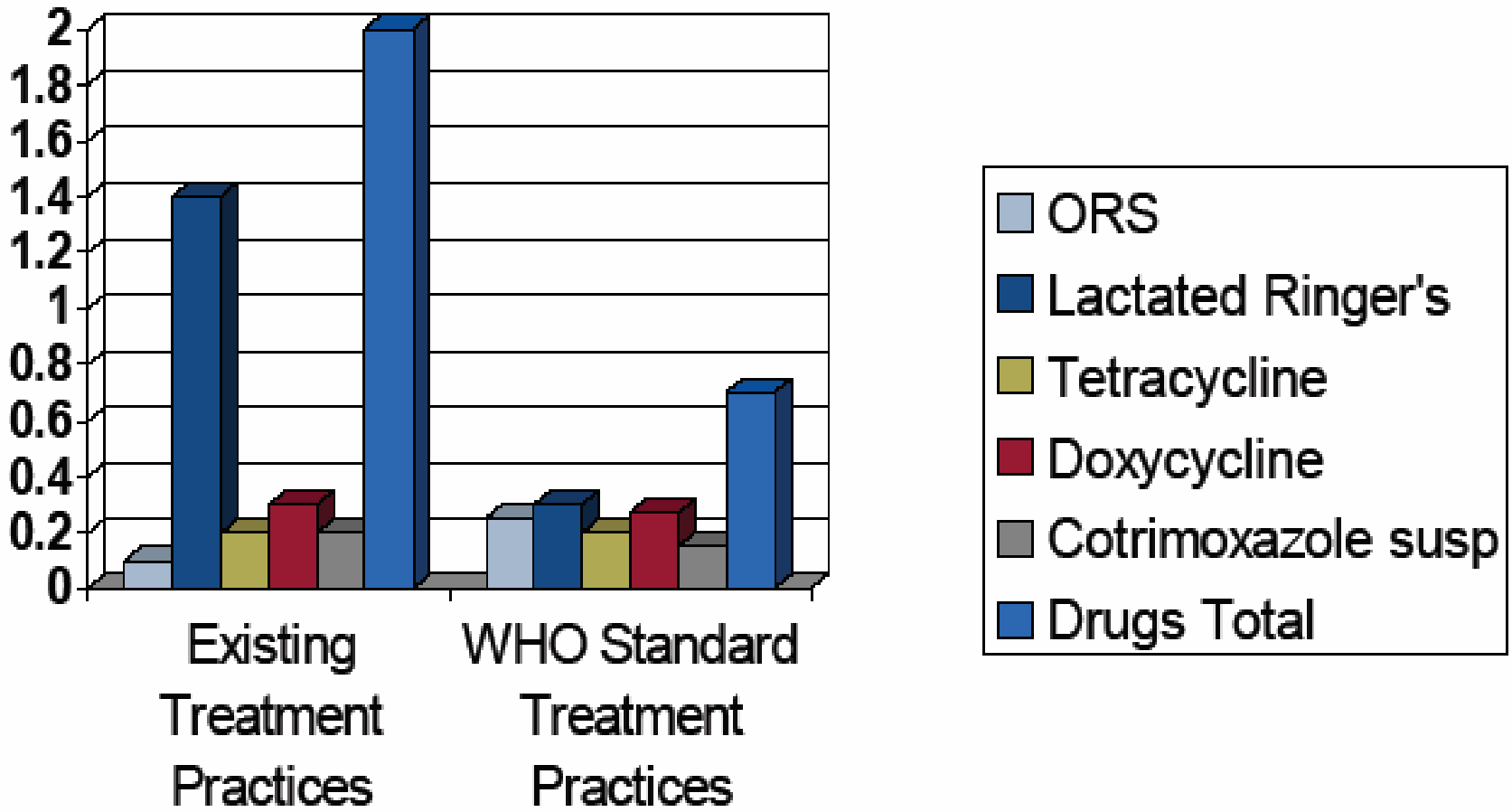


Source: MSH: Management Sciences for Health. Used with permission.

Understanding and Improving Access to Essential Medicines



Increased Efficiencies: STGs



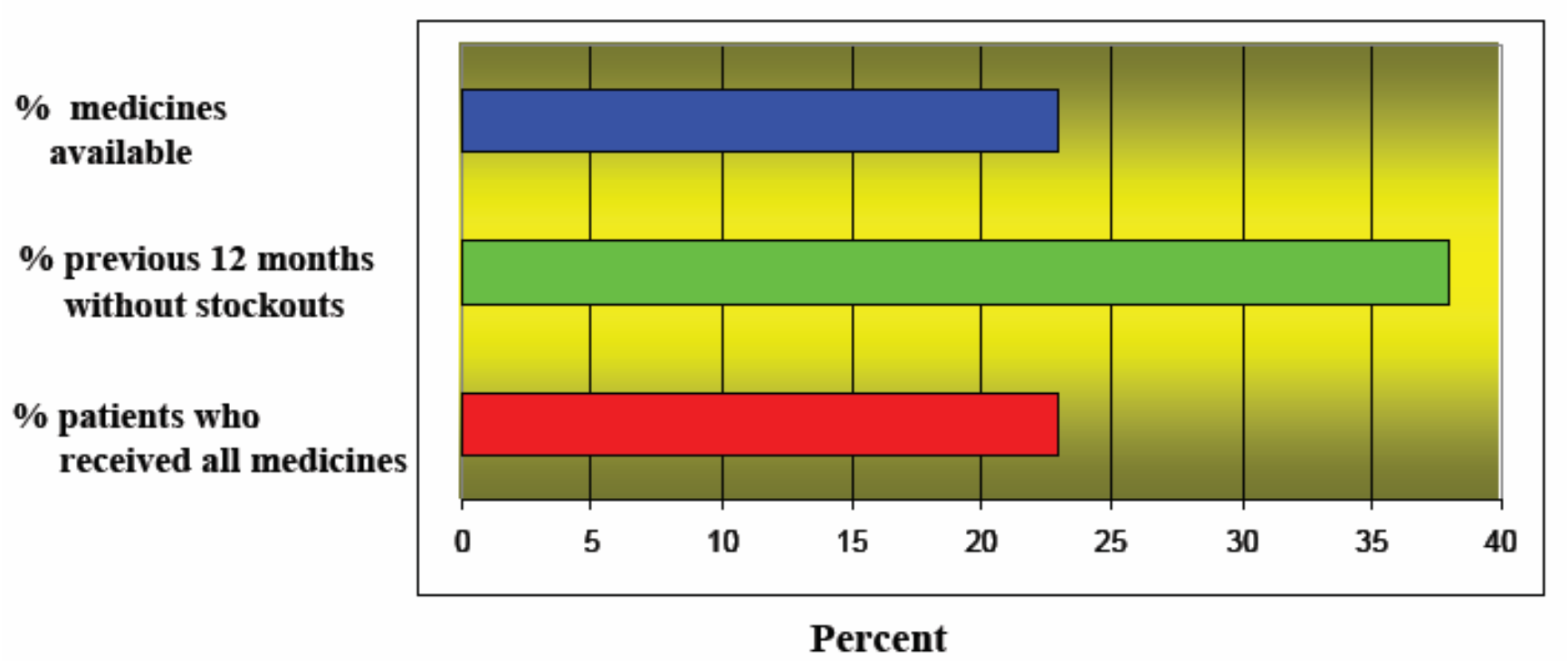
Total Annual drug costs in a Latin American country for treatments during a cholera epidemic, costs in millions of US$ (1991)

Source: MSH: Management Sciences for Health. Used with permission.

Challenges for Improved Public Drug Supply

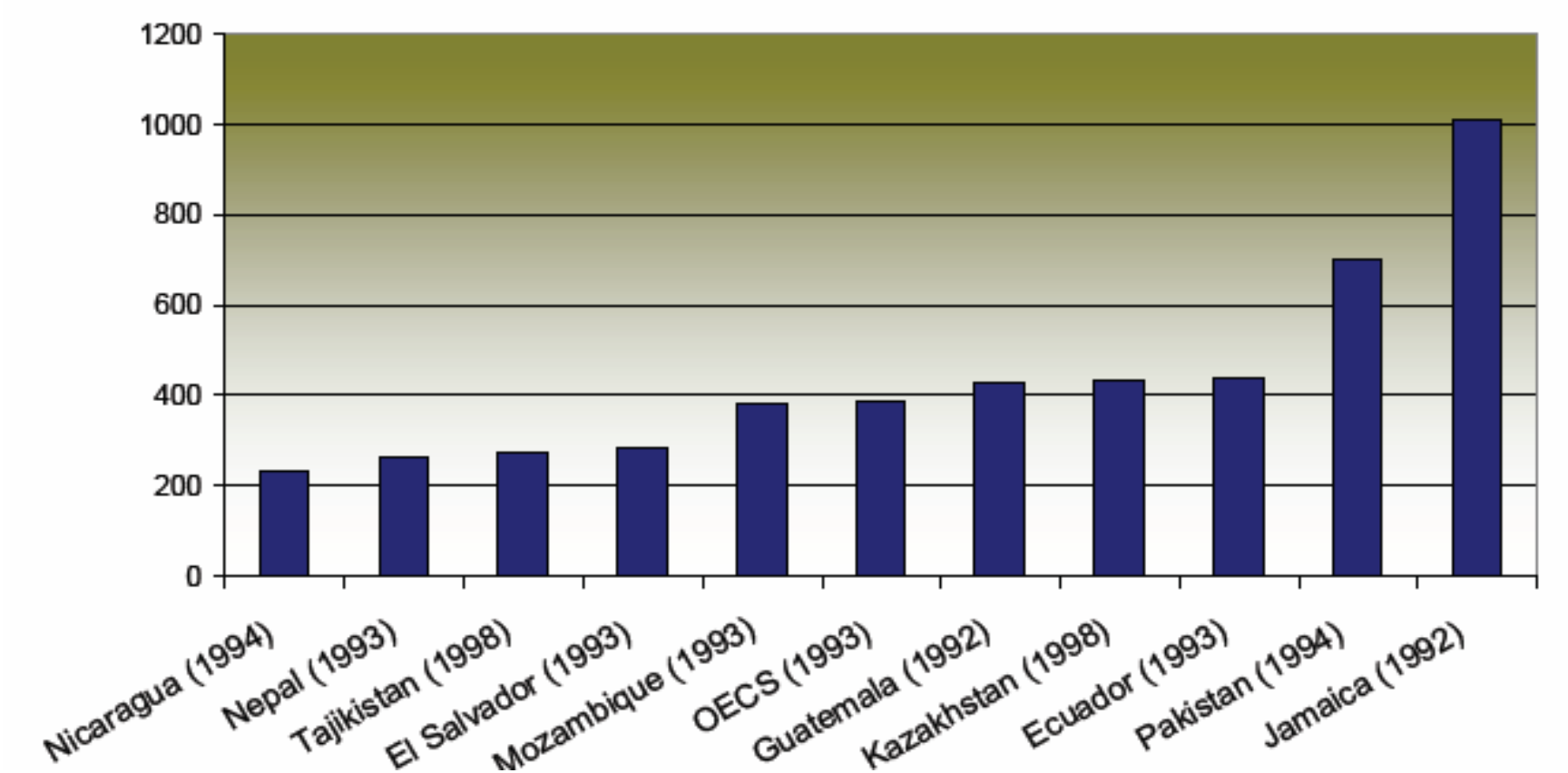
- Health reform, **equity**, and **financial sustainability**
- Efficiency
- Rational use
- Changing roles of public and private sectors

Essential Medicines
Availability & Dispensing in Dispensaries



Source: MSH: Management Sciences for Health. Used with permission.

Number of Medicines on National Essential Medicines Lists



Source: MSH: Management Sciences for Health. Used with permission.

Goals of a National Drug Policy

Health-Related

- Available essential drugs
- Improve attendance at health facilities
- Safe, affordable, and effective drugs
- Rational usePproper selection of drugs
- Efficient supply

Economic

- Lower cost of drugs
- Reduce foreign exchange
- Provide jobs
- Improve efficiency and cost-effectiveness

Development

- Human resource development
- Improve infrastructure
- National production of drugs

Components of a National Drug Policy

- Legislative Framework
- Choice of Drugs
- Supply
- Rational Use of Drugs
- Economic Strategies for Drugs
- Human Resources Development
- Monitoring and Evaluation
- Research
- Technical Cooperation Among Countries