



# WHO/HAI Project on Medicine Prices and Availability

**Review Series on  
Pharmaceutical Pricing Policies and Interventions**

**Working Paper 5: Sales Taxes on Medicines**





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**May 2011**

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## Abbreviations

EU	European Union
ITN	Insecticide treated bed-net
GDP	Gross Domestic Product
HAI	Health Action International
LMIC	Low- and middle-income countries
OTC	Over-the-counter
VAT	Value-added tax
WHO	World Health Organization



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## Foreword

### **WHO/HAI Project on Medicine Prices and Availability**

Since 2001, the World Health Organization (WHO) and Health Action International (HAI) have been working in partnership to collect reliable evidence on medicine prices, availability, affordability and price components in low- and middle-income countries. To date over 80 medicine price and availability surveys have been completed or are underway using the WHO/HAI methodology, with results publicly available on the HAI website ([www.haiweb.org/medicineprices](http://www.haiweb.org/medicineprices)). While this work continues to expand, the WHO/HAI project has evolved from supporting research to using the results to effect positive changes in related policies and interventions.

The results of the surveys confirm that substantial opportunities exist to increase availability, lower prices, and improve the affordability of medicines in all regions of the world and at all levels of economic development. However, it can be challenging to identify and prepare suitable lines of response.

At the request of national policy-makers, WHO/HAI and a group of international experts have developed guidance on various policies and interventions to increase medicine availability and make medicines more affordable, with a focus on low- and middle-income countries. This guidance takes the form of a series of in-depth reviews on pharmaceutical pricing policies (generics policies, external reference pricing, mark-up regulation, pharmacoeconomics and cost-plus pricing) and other related issues including the role of health insurance in the cost-effective use of medicines, encouraging competition, and sales taxes on medicines. The reviews are not meant to recommend one policy intervention over another, but rather provide guidance to policy-makers on the design and implementation of various policy approaches. For each review, a policy brief will be published that highlights key points from the review.

The results of the policy reviews show that relatively little has been published about the use of pharmaceutical pricing policies and interventions in low- and middle-income countries. Therefore, the review papers are published as working drafts, to be developed as more becomes known on the use of these interventions in low- and middle-income countries. We welcome information and comments that will strengthen these reviews (please forward them to Margaret Ewen, Health Action International email [marg@haiweb.org](mailto:marg@haiweb.org)).

WHO and HAI would like to thank the authors of the papers, the reviewers, and all the national contributors who provided information on the use of the interventions in their country. We are also grateful to the members of the Pricing Policy Working Group who have shaped this work.

We hope these papers will be a useful resource, and encourage national policy-makers to tackle the challenge of developing and implementing policies and strategies that ensure universal access to affordable medicines.

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## Executive summary

Domestic taxes can comprise a substantial proportion of the price people pay for medicines, and high prices are generally considered to be a principal barrier to access to needed care. Yet the role of domestic taxes and how they affect access to essential medicines has not previously been examined in detail, although recent work has examined the role of tariffs or taxes on international trade. This paper brings together information on domestic taxes as they affect medicines in countries at different income levels and asks questions about the health effects of these taxes. It then presents some evidence of the likely effects of a change in tax policy and how access to medicines would be affected.

Taxation plays an important role in economic growth and national development. Fiscal policy is one of the most powerful tools which governments have for achieving their overall social and economic objectives and a well-designed and progressive tax system is a vital underpinning for an equitable and effective national health care system. This paper does not thus take an adversarial “taxes or health” approach but rather “taxes *for* health” in which the role of taxes in influencing consumption levels of medicines and other commodities affecting health is explored, and in which access to medicines plays a fundamental role.

Important changes are occurring in the way tax systems are designed and implemented. The major shift in recent years is perhaps the widespread movement away from taxes on international trade and towards value-added taxation of goods and services. Evidence of these changes has been documented in several of the surveys of medicine prices undertaken using the WHO/HAI price measurement methodology. These surveys comprise the biggest single source of information about taxation of medicines in low- and middle-income countries (LMIC) since, unlike for taxes on international trade, no international database on domestic tax practice exists which allows medicine taxes to be extracted and compared.

Taxes on medicines in high income countries, with good networks of health insurance protection, range from zero to 25% and in a selection of LMICs, with much lower insurance protection against the costs of health care, were found to range from zero to 34%.

The effect of taxes on people’s access to medicines and the potential effect of removing or reducing taxes is an area which has most comprehensively been studied in the context of prescription charges and insurance arrangements in industrialized countries, but some studies in LMIC have also been identified. There is very little documentation on the effects of prices and price changes on the poorest households.

When considering the effect of medicine taxes on national revenues, official breakdowns of revenue by type of commodity are not routinely available, so estimates have been made in this paper using reported sales and prevailing tax levels. Though the percentage of public revenue raised from medicine taxes may appear small at around 1% of the total, the amount is significant enough for national treasuries to be resistant to special pleading from health lobbyists for preferential tax treatment for medicines. Nevertheless, some countries at both high- and low-income levels do manage to exempt some medicines from taxation and advocacy has achieved its objective in some contexts, such as Pakistan.

The efforts of public health lobbyists to raise taxes on goods and services which threaten people's health are of direct relevance to advocacy for special treatment for medicines tax. Indeed literature searches on "taxation" and "health" more frequently found studies relating to alcohol, tobacco, unhealthy diet, recreational drugs and road safety than to medicines. Well-developed bodies of analysis exist in each of these areas. For tobacco in particular, there is strong advocacy to governments in countries at all income levels to raise more revenue through taxation on public health and economic savings grounds. Such knowledge should strengthen the negotiating position of possible health advocates concerned with medicines. The case for "tax differently" is much stronger than the case for "tax less".

# 1. Introduction

Several of the studies supported by the WHO/HAI Project on Medicine Prices and Availability have established that taxes are often the third largest component, after the manufacturers' price and distribution mark-ups, in the chain of add-ons that leads to the final price paid by patients (*1*). Countries at all income levels raise taxes from the sales of medicine. Yet some countries, including low-income countries, specifically exempt medicines from all taxes. The price-responsiveness of demand for medicines has been measured in several settings and shown to be positive but less than one, meaning that an increase in price, other things being equal, will reduce demand and vice-versa. Some groups of people - the poor and the elderly - are more sensitive to price changes than others.

The following section (Section 2) outlines the search methods used to identify material related to tax and medicines. The paper then introduces some basic tax concepts and explains why value-added tax (VAT) is increasingly the tax of choice for public revenue raising (Section 3). Section 4 assembles available material on current tax practice as it relates to medicine. Section 5 examines evidence about peoples' price-responsiveness for health care in general and medicines in particular. Section 6 sets out the economic case for taxing medicines and presents some results from a simple method for estimating the volume of public revenue generated in this way. Section 7 sets out the case why at least some medicines for some people should not be taxed (or even charged for). Section 8 pulls together several strands in a growing set of arguments for orienting tax systems towards health and welfare-damaging goods and actions, and exempting essential medicines, with some estimates of the magnitude of potential revenue generation.



## 2. Methodology

A search for relevant literature was conducted on two topics:

- medicines or pharmaceuticals and taxation; and
- the relationship between price changes and the use of medicines or pharmaceuticals.

On the literature combining “tax” “ sales tax” or “vat” with “medicine” or “pharmaceuticals”, Google scholar, PubMed, IMF, World Bank and OECD databases, SCRIIP, IMS and other pharmaceutical industry sources were searched together with individual journals including the *NEJM*, *BMJ*, *Lancet*, and *WHO Bulletin*. Little material of direct relevance to this paper was found.

A PubMed search was undertaken using the following terms:

("pharmacy"[MeSH Terms] OR "pharmacy"[All Fields] OR "pharmaceutical"[All Fields] OR "dosage forms"[MeSH Terms] OR ("dosage"[All Fields] AND "forms"[All Fields]) OR "dosage forms"[All Fields]) AND ("commerce"[MeSH Terms] OR "commerce"[All Fields] OR "prices"[All Fields]) AND tax[All Fields]

It yielded only 19 articles. Most searches combining “tax” or a variant with “medicine” or a variant yielded information on articles concerned with food, tobacco, alcohol or the medical problems related to them.

The searches concerning price changes and access to medicines or health care were more productive. PubMed was searched with the following terms:

"prescriptions"[MeSH Terms] OR "prescriptions"[All Fields] OR "prescription"[All Fields]) AND ("fees and charges"[MeSH Terms] OR ("fees"[All Fields] AND "charges"[All Fields]) OR "fees and charges"[All Fields] OR "charges"[All Fields])

This yielded 1475 articles of which 356 were in free full text and 81 were review articles. About half of the total was medicine or medical condition-specific studies and the great majority were from the US and the UK. Individual country websites (e.g. national VAT information) and one or two US websites aimed at supporting exporters with commercial information in selected markets were useful additional sources of tax in relation to medicines information. The publications and survey reports on the HAI<sup>a</sup> website were the single most informative source of information about tax on medicines in low and middle income countries.

<sup>a</sup> <http://www.haiweb.org/medicineprices/>



### 3. Taxes: Why? And on what?

“Taxes are the price we pay for civilization.” This quotation, from the US Supreme Court Justice Oliver Wendell Holmes Jr. early last century, serves to underline the importance of taxes to society. A well-designed and progressive tax system can promote both economic growth and social justice. Indeed, the tax system can affect a country’s very autonomy: a recent position paper on Africa’s economies argues, “taxation is a precondition to Africa achieving greater economic independence” (2). The essential tasks of protecting and caring for the population and making sure that society and the economy operate efficiently and fairly cannot be done without financial resources in the hands of government.

Though often unpopular, taxes are widely acknowledged to be inevitable. The earliest forms of taxation were often brutal and arbitrary ways of extracting agricultural surplus from subsistence farmers, involving seizure of crops, livestock and property, and were aimed at enriching the powerful with little regard to the survival and well-being of the population. Today, governments use different types of revenue-raising devices and taxes on goods and services often play a key role in raising public revenue. However, there are many different ways of raising tax revenue, and each tax strategy will have different economic and social consequences.

#### 3.1 General principles of taxation

General principles for taxation were set down over 200 years ago by the economist Adam Smith (3), who defined four principles of taxation, and claimed them to be widely recognized among nations. The two major principles were firstly, that the subjects of every state ought to contribute towards the support of the government, as nearly as possible, in proportion to their respective abilities; that is, in proportion to the revenue which they respectively enjoy under the protection of the state. This is the principle of equity or fairness in taxation.

Smith’s second principle was that every tax ought to be contrived as both to take out and to keep out of the pockets of the people as little as possible over and above what it brings into the public treasury of the state. This is the principle of efficiency. These two major principles can still be used to analyze existing tax systems or to help in the design of an improved tax system.

Smith’s two other principles were more administrative in character, but they remain relevant to tax policy. They were that the tax which each individual is bound to pay ought to be certain, and not arbitrary. The time of payment, the manner of payment, the quantity to be paid, ought all to be clear and plain to the contributor, and to every other person. This is referred to as the principle of certainty. Finally, every tax ought to be levied at the time, or in the manner, in which it is most likely to be convenient for the contributor to pay it. This is the principle of convenience.

## 3.2 Direct and indirect taxes

Richer countries raise more tax, as a percentage of their gross domestic product, than poorer countries. Tax revenue from 1965 to 2007 averaged 36% of gross domestic product for the industrialized OECD countries (4). Recent tax data from selected low income countries shows much lower percentages: 8.5% in Bangladesh, 4.2% in Chad, 11% in Indonesia and 13% in India (5, 6).

There are two main categories of tax: direct tax, levied by governments on the income of individuals and corporations, and indirect taxes, added to the prices of goods and services and collected through the businesses that provide them. The *composition* of tax revenue also differs between richer and poorer countries. In the former, “direct” taxes on personal and corporate income or profit make a much larger contribution to the national purse. Together with social security taxes, direct taxes typically make up about two thirds of total government revenue in high-income countries. In low-income countries, on the other hand, “indirect” taxes, principally on international trade or on the purchase of goods and services, are the major sources of government revenue. This difference is largely because of the relative costliness of collecting payroll taxes in settings where there are lower levels of formal employment and because of the size of the informal sector in the economy as a whole.

Direct taxes have the advantage that they can be made more or less progressive, that is, related to income, and thus broadly equitable by ensuring that the better-off pay more than the poor.

Indirect taxes, such as taxes on medicines are charged on what people buy rather than falling directly on an individual’s earnings. These indirect taxes such as purchase tax, sales tax or VAT are regressive, which means they are inequitable, as the amount paid on a certain medicine is a percentage of its price and is the same for everyone, rich and poor. This means that a given medicine tax costs a larger share of a poor person’s income than of a rich person. This is thus in conflict with Adam Smith’s first principle of taxation. One way around the repressiveness of a tax system is to treat certain goods preferentially, at lower VAT rates, or zero-rating or exempting some goods and services from VAT entirely<sup>a</sup>.

In LMIC the capacity to identify and monitor income flows to individuals and corporations is often weaker, and sources of revenue are smaller and fewer, so the bulk of tax revenue comes instead from indirect taxes on trade and sales. Excise duties, sales tax and VAT are the most prominent of these, with VAT particularly favoured. VAT is normally paid by the consumer to the retailer, by the retailer to the wholesaler, and by the wholesaler to the government. One of the particular advantages of this type of tax for low and middle income countries is that it is “convenient” in Adam Smith’s taxonomy and indeed it relieves central government of a great deal of the responsibility for revenue collection.

Current thinking about suitable national tax structures for LMIC, recognizing that no single system will be suitable in all contexts, is that they should in general replace taxes on trade (tariffs) with domestic consumption taxes such as VAT, and maintain relatively high corporate income taxes (7). For the last two decades, countries have been encouraged to shift their tax systems away from taxes on international trade and towards VAT (8). Since the early 1990s, through the example of the European Union and the persuasion of the International Monetary Fund, VAT has effectively become the revenue-raising strategy of choice for LMIC. Many countries, including India, have made this important fiscal shift in what has been a worldwide

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<sup>a</sup> VAT exemption on medicines means that they are not included in suppliers’ or dispensers’ VAT accounts, and that no tax can be claimed back on them. Zero-rated VAT items are included in VAT accounts and VAT may be reclaimed on purchases related to sales of zero-rated items if it is paid higher up the supply chain.

trend. More recently, one influential economist, Bird, has argued that VAT works (though not perfectly) and, furthermore, that taxation can attempt to secure equity: “The role of the tax system is to take money away from the private sector in as efficient, equitable and administratively least costly fashion as possible” (9).

Indeed, Bird goes on to advise: “If a country needs or wants a general sales tax, it is well advised to have a VAT”. As experiences in richer countries shows, an ideal tax system includes more than the indirect tax of VAT, however, and land, property and income, both personal and corporate, are all complementary sources of government revenue which have supporting roles to play in low and middle income countries. He continues, “...many (developing and transitional economies) provide reduced VAT rates or exemptions for certain “basic” items such as some foods, passenger transport, medical services, and cooking fuel.” Thus, some leading international tax policy advisers recognize the importance of exemptions – such as for medical care – from tax schedules (9).

VAT is widely tending to replace sales tax as it relieves government of much of the responsibility for tax collection (done by businesses) and also allows relatively high indirect tax rates to be charged with a lower risk of evasion than with sales tax. India made large scale moves towards VAT beginning in 2004 and in many countries VAT is now the principal source of revenue for government<sup>a</sup>.

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<sup>a</sup> VAT is not without its own patterns of fraud and evasion: see details of “missing trader” fraud at [http://www.direct.gov.uk/en/MoneyTaxAndBenefits/Taxes/ContactOrDealWithHMRC/DG\\_10010579](http://www.direct.gov.uk/en/MoneyTaxAndBenefits/Taxes/ContactOrDealWithHMRC/DG_10010579)



## 4. Taxes on medicines: current practice

Many – but not all - governments collect taxes on medicines as part of general public revenue-raising. To date, there appears to have been little attempt to document the theory or practice of taxation in relation to medicines. Indeed most of the literature which relates to public health and taxation is concerned with imposing or increasing taxes on health-damaging consumption and behaviour. In this respect the WHO/HAI surveys and the supporting methods, publications and analysis constitute the biggest single evidence base on the taxation of medicines in LMIC.

### 4.1 High income countries

For European high- income countries, all using VAT systems, data on medicines taxes has been assembled for 2010 (10) and is summarized in Table 1.

Table 1. **Medicine taxes in Europe 2010**

Country	Standard VAT rate %	Medicine VAT rate %	Differential VAT rate for medicines %
Norway	25	25	
Sweden	25	25	0% prescription only medicines
Denmark	25	25	
Ireland	21	21.5	0% oral medicines
Bulgaria	20	20	
Germany	19	19	
UK	17.5	17.5 OTC	0% NHS products
Greece	23	11	
Latvia	21	10	
Italy	20	10	
Austria	20	10	
Slovak Rep	19	10	
Czech Rep	20	10	
Romania	24	9 prescription only	12% OTC products
Estonia	20	9	
Finland	23	9	
Slovenia	20	8.5	
Turkey	18	8	
Poland	22	7	
Belgium	21	6	

Netherlands	19	6	
Portugal	21	6	
Lithuania	21	5 reimbursables	21 OTC products
Hungary	25	5	
Spain	18	4	
Luxembourg	15	3	
Switzerland	7.6	2.4	
France	19.6	2.1 reimbursables	5.5 non-reimbursable
Malta	18	0	
Cyprus	15	0	15 diagnostic agents

Source: PPRI (10)

In some other high-income countries, medicines are tax-exempt (Australia, Japan, Korea), while the picture in the USA varies from state to state as Table 2 shows.

Table 2. Variations in US sales tax and medicine taxes, 2009

State	General Tax %	+max local surtax %	Prescription Medicine Tax %	Non-prescription Medicine Tax %
Alabama	4	10	Exempt	4
Alaska	0	7	0	0
Arizona	6.6	10.6	Exempt	6.6
Arkansas	6	6	Exempt	6
California	8.25	10.75	Exempt	8.25
Colorado	2.9	8	2.9	2.9
Connecticut	6	6	Exempt	Exempt
Delaware	0	0	0	0
District of Columbia	6	6	Exempt	Exempt
Florida	6	7.5	Exempt	6
Georgia	4	8%	4	4
Hawaii	4%	4.712	4	4
Idaho	6	6	6	6
Illinois	6.25	11.5	1%+	1%+
Indiana	7	9	Exempt	7
Iowa	6	7	Exempt	6
Kansas	5.3	8.65	5.3	5.3
Kentucky	6	6	Exempt	6
Louisiana	4	9	4	4
Maine	5	5	Exempt	5
Maryland	6	6	Exempt	6
Massachusetts	6.25	6.25	Exempt	6.25
Michigan	6	6	Exempt	6
Minnesota	6.875	7.5	Exempt	6.875
Mississippi	7	9	7	7
Missouri	4.225	9.241	4.2	4.2

Montana	0	3	0	0
Nebraska	5.5	7	5.5	5.5
Nevada	6.85	13	6.85	6.85
New Hampshire	0	0	0	0
New Jersey	7	7	Exempt	7
New Mexico	5.125	8.5625	5.125	5.125
New York	4	8.875	Exempt	Exempt
North Carolina	5.5	8.25	Exempt	5.5
North Dakota	5	5	5	5
Ohio	5.5	7.75	Exempt	5.5
Oklahoma	4.5	8.5	4.5	4.5
Oregon	0	0	0	0
Pennsylvania	6	8	Exempt	Exempt
Puerto Rico	5.5	7	Exempt	5.5
Rhode Island	7	7	Exempt	7
South Carolina	6	9	Exempt	6
South Dakota	4	6	4	4
Tennessee	7	9.75	7	7
Texas	6.25	8.25	Exempt	Exempt
Utah	4.75	8.35	4.75	4.75
Vermont	6	7	Exempt	Exempt
Virginia	4	5	Exempt	Exempt
Washington	6.5	9.5	Exempt	6.5
West Virginia	6	6	Exempt	6
Wisconsin	5	5.6	Exempt	5
Wyoming	4	7	4	4

Source: Wikipedia (11)

Unlike other industrialized countries, the USA does not have VAT but most states have a General Sales Tax.

What the above picture from high income countries shows is great variation in fiscal policy as it affects medicines. Some countries or states do not tax medicines at all, whether prescribed or over-the-counter (OTC). Others provide no exemption from existing (sometimes high e.g. 25%) standard rates of tax for both categories of medicine. Yet others tax prescription medicines at a lower rate than the standard rate while taxing OTC medicines at the standard rate. Some countries tax according to health insurance reimbursement practices, rewarding reimbursable medicines with a lower tax rate (France, Lithuania), whilst Sweden exempts prescribed medicines.

These wide differences in tax practice with respect to medicines do conceal one fundamental commonality to the high- income countries compared: health insurance protection. Most of the population of the countries identified in Tables 1 and 2 have health insurance, which covers at least a share of the cost of prescribed medicines and in some cases or for some segments of the population (young, old, poor) covers them in total. The existence of health insurance in a country such as Norway means that the government is able to both generate revenue from the dispensing of medicines and to protect the population against the consequence of higher medicine prices.

## 4.2 Low- and middle-income countries

The situation with regard to taxes on medicines in LMIC is both more complex and less systematically documented. It is more complicated because several levels of government sometimes levy taxes of different types on the same medicine. India, for example, has two national level taxes on most medicines: VAT at 5% and an education tax at 3%. In addition, state level governments impose sales taxes varying from 5% to 16% so the final impact of tax on retail price is between 13% and 24%. It is less systematically documented because domestic and international research providing comparisons of medicine prices or tax practices at this level of detail are rare.

Surveys using the WHO/HAI methodology to measure medicine prices and availability has revealed the many potential components in a medicine's final price. The WHO/HAI manual on measuring medicine prices and availability (12) lists the following components that are commonly found in the medicine price chain:

1. manufacturer selling price
2. insurance and freight charges
3. port and inspection charges
4. import duties
5. mark-ups, which may be by importers, wholesales and/or retail dispensers
6. taxes such as value added tax or sales tax, which may be local and national
7. dispensing fees

This review is concerned with component number 6 in the above list – taxes.

A tax is “a compulsory contribution to state revenue, levied by the government on workers' income and business profits, or added to the cost of some goods, services, and transactions”<sup>a</sup>. Taxes may be levied by different levels of government, and the inclusion of “compulsory” in the definition serves to remind that evasion is punishable by law.

Very little literature exists on the taxation of medicines but two pieces of work have laid the foundations in this area. Olcay and Laing's (13) important work on tariffs on pharmaceuticals also looked at domestic taxes. A 2003 European Commission Working Document had earlier examined trade duties and taxes in 57 LMICs (14). This study found that customs duties represented one third of the total taxes and duties applied to pharmaceutical products, and found rates of VAT varying from 0% to more than 20%. For the group of 17 least developed countries in their study, average VAT rates on pharmaceuticals were found to be 8.8%, average “other duties” were an additional 2.8% and average customs duty a mere 1.9% so concluding, “their average total rate of duties and taxes is around 14%”. The existence of a large international database (Trade Analysis Information System<sup>b</sup>) considerably aided the investigations into tariffs. Drawing largely on material in the HAI database on medicine prices (15) and incorporating some data from high-income countries, the present review brings together the first

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<sup>a</sup> [http://www.oxforddictionaries.com/view/entry/m\\_en\\_gb0846930#m\\_en\\_gb0846930](http://www.oxforddictionaries.com/view/entry/m_en_gb0846930#m_en_gb0846930)

<sup>b</sup> [http://r0.unctad.org/trains\\_new/index.shtml](http://r0.unctad.org/trains_new/index.shtml)

set of international comparative information on domestic tax practices as they relate to medicines.

Acknowledging the complexity of medicine prices, the WHO/HAI methodology also guides investigators into the examination of the individual component parts of the final retail price, as listed above. The total make-up of a medicine's price can differ dramatically from one medicine to another within the same country and, *a fortiori*, between countries. It can also vary between sectors within a country, product type (generic or originator brand) or whether the medicine is locally produced or imported. In some contexts the manufacturer's selling price (MSP) is the main component in the retail price (e.g. Kyrgyzstan, imported originator brand and generic); in others (e.g. Peru, imported generics) the MSP is a relatively minor component and mark-ups (wholesale and retail) account for more than half of the final price. The conclusions from studies of tariffs on medicines are, broadly, that tariffs are a small and falling share of the final price of medicines. Tariffs add less to medicine prices than taxes though they still contribute to the price the patient pays. After the MSP and mark-ups, domestic taxes such as VAT or sales tax are often the third largest component in the final price of a medicine (e.g. Armenia, Brazil, Mongolia, India, Peru and South Africa).

Table 3 shows just how variable local practice is in relation to taxation of medicines in LMIC. Where medicines are taxed, the range is from about 5% to about 34%. Not all medicines are taxed in all countries. Imports and locally made medicines are sometimes taxed differently e.g. Tunisia adds a 6% tax to locally produced medicines but not to imports. Medicines sold in the public and private sector are sometimes taxed differently. But for the countries in which medicine price component data has been collected, it is clear that governments are indeed a contributor to the price of medicine and thus a factor in restricting access to essential medicines.

Table 3. **Domestic tax rates (%) on medicines in selected low- and middle- income countries**

Country and Survey Year	VAT or sales tax %	Other taxes on medicines	Total domestic tax charges %
Armenia 2001 <sup>1</sup>	20		20
Bolivia 2008	13		13
Brazil 2001 <sup>2</sup>	18	6% state tax	24
Chad 2004		2% statistical tax (public and private sector) , 0.9% purchase verification tax (private sector)	2.9
China 2004/6	17	3% regional sales tax	20
Congo 2007	18*	1% community tax	19
Dem. Rep. of Congo 2007	0	17% turnover+other taxes	17
El Salvador 2006	13		13
Ghana 2004	15% VAT +NHIL**		15
India 2003/4	Was 6.5 – 9.8 sales tax, now 5% VAT on most medicines	5 -16% state excise duty 3% national education "cess"	13-24
Indonesia 2004	10		10

Jordan 2007	4% sales tax		4.0
Kyrgyzstan 2005	4% sales tax		4
Mali 2004		8% taxes and fees	8
Mongolia 2004	15	6% stamp duty and other fees	21
Morocco 2004	7 (some exemptions)		7
Nigeria 2004		“Multiple tax regimes” > 30% other fees	30
Peru 2005	12 (some exceptions)	19% GST +2% local tax, some exemptions	34
Philippines 2008	12		12
South Africa 2004	14		14
Tajikistan 2005	20	1-5% sales tax	21-25
Tunisia 2004	6 (locally manufactured meds)		6
Yemen 2006	5		5
<b>Average 23 countries</b>			<b>Approx. 14.8% Range 2.9 – 34%</b>

\* unclear if medicines exempt

\*\* National Health Insurance Levy

Sources:

HAI medicine price and availability database (15)

<sup>1</sup> Data from Levison, L and Laing, R. (1)

<sup>2</sup> Levison, L and Laing, R., op cit

Table 4 shows those countries where it was clear from WHO/HAI surveys that no VAT or sales taxes are charged on medicines. For two countries (Ecuador, Thailand) it was unclear from the survey results what taxes were imposed on medicines .

**Table 4. Countries reporting zero VAT and sales tax rates on medicines**

Country	Year	Comment
Colombia	2008	
Ethiopia	2004	All finished products (medicines) exempt from VAT
Kuwait	2004	4% customs duty removed in 2003
Malaysia	2004	no import duties or VAT
Nicaragua	2008	
Oman	2007	
Pakistan	2004	Sales tax rescinded in 2003, under review for reintroduction but history of non-compliance with price regulation
Tanzania	2004	From 2007 a 10% tax has been applied on most imported medicines
Uganda	2004	Banking, insurance and freight fees
Ukraine	2007	

Source: HAI medicine price and availability database (15)

Table 5 illustrates the relative magnitudes of tariffs and domestic taxes on medicines for selected countries using data from the study undertaken for the European Commission (14). This found slightly lower average rates of VAT, sales and other taxes on medicines in 17 least developed countries than the results from the WHO/HAI surveys, but it nevertheless showed how much higher these taxes were than the tariffs on medicines obtained in 2001.

**Table 5. Average rates of VAT and other taxes on medicines in selected low- and middle-income countries, 2001**

Country	Average customs tariff %	VAT or sales tax rate %	Other duties on medicines %
Algeria	5.2	17.7	2.5
Brazil	3.2	17.5	0
China	9.9	18.7	0
India	35	19.3	5.4
Mexico	8.3	16.2	0
South Africa	0.2	14.0	0
Nigeria	19.9	6.0	8.5
Average for 17 least developed countries	1.9	8.8	2.8

Source: European Commission (14)

In Peru both value added tax *and* a sales tax appear to have been levied on medicines. A wide range of levies or taxes, apart from VAT and sales tax, have been found to be applied to medicines taking the form of a variety of local charges e.g. community charge, municipal tax or provincial duties (Brazil, China and the Congo); pharmacy career fee (Sudan); research fund charges (Sri Lanka); stamp duty (Mongolia); industrial promotion fund fee (Dem. Rep. of Congo); statistics charge (Mali). In Tunisia, 6% VAT is charged only on locally produced medicines. In other cases, “transport” or “handling” fees have been such a large fixed percentage of medicines value at the point of handling that it would be reasonable to count at least some element of it as effectively a tax: Lebanon (customs commission of 11.5%); Nigeria (port charges, clearance and inspection fees totaling over 30% of declared value); Philippines (transport charges of 10%-20% on value). Some countries have taxed medicines to raise revenue for the military: Sudan and Sri Lanka have both in the past instituted a defense fund (tax) on medicines of 1% and 5% respectively. Both are now abolished.

Generalizing from the above data is difficult. It is clear from the preceding tables that many countries raise revenue through tax on medicines and that tax can be an important component of the retail price of medicine. However, practice in this respect varies widely even within individual large countries as shown by the US data. Countries at all income levels sometimes exempt medicines entirely from taxes. In some countries the complex patchwork of the tax situation on medicines reflects the unplanned evolution of the existing tax system overall, suggesting that prior to reviewing any particular tax an overhaul and simplification of the fiscal system is probably overdue.

As previously mentioned, health insurance makes a considerable difference to the level of protection against the incidence of medicine prices on household budgets. But coverage with insurance generally goes down as national income levels fall. So a given level of medicine tax

will have a bigger impact on people in a country with little social protection (e.g. China or India) than in Norway or Denmark, for example. A strong negative indicator of the level of social protection is the level of out-of-pocket spending.

Table 6 shows how much more health spending is from private household sources in low-income countries than in high-income countries: 58% in low-income countries compared with 40.6% in high-income. But the table's second column shows an even more dramatic difference. The great majority of private health spending in LMIC – 83.1% and 90.5% - is out-of-pocket as opposed to prepaid through some form of insurance whereas almost two thirds of private spending in high income countries is prepaid. So most people in poor countries have to pay for their health needs – often medicine - at the time they are sick. If they are unable to pay the necessary price, they go without care. It is precisely because price is a rationing mechanism that medicine prices matter.

**Table 6. Private health expenditures and country income levels, 2007**

<b>Country income level</b>	<b>Private expenditure on health as % of total</b>	<b>Out of pocket spending as % of total private spending</b>
Low-income	58.1	83.1
Lower-middle	57.6	90.5
Upper-middle	44.8	69.0
High-income	40.6	36.1

*Source:* World Health Organization 2010 (16)

## 5. To what extent do medicine taxes affect access to care?

A tax raises the price of a medicine. Normally, a higher price brings about a drop in the quantity purchased. If the drop is large, this is called an elastic or price-sensitive demand, and in these circumstances governments may actually lose revenue by increasing VAT or sales taxes. The opposite is inelastic demand, when people buy pretty much the same amount of a good whatever its price. Goods which are necessities often have relatively inelastic demand patterns. Studies supported by HAI and WHO have allowed some simple illustrations of the possible impact of tax removal on prices (17). Without the tax on imported omeprazole in private pharmacies in Mongolia, for instance, prices should fall from US\$ 5.91 to US\$ 4.85 for a 30 capsule pack. In the private sector of the Philippines, removal of VAT at 12% (see Table 3 above) would reduce the price of a pack of 10 generic co-trimoxazole tablets (480mg) from 14.90 pesos to 13.30 pesos. Such savings can be significant for poor people.

The price-responsiveness of the demand for health care in general and for medicines in particular has been examined in several studies in high-income settings and more recently in LMIC. Overall demand for health care has been shown to be fairly inelastic (18) which tends to confirm that, for most people, health care is a necessity rather than a discretionary purchase. However, people at different income levels may have different elasticities of demand for the same commodity or medicine. Several studies have suggested that poorer people, older people, and people seeking care for infants are more price-sensitive (19). Furthermore, medicines are not a single product. Prescription medicines and OTC medicines, “essential medicines” and “lifestyle” medicines, may show different demand reactions to a given price change. Demand response to a given price change also varies according to the condition for which the medicine is needed (20). Lower-income households rely more on over-the-counter (OTC) medicines than prescription medicines (21) and some research has shown that people shift from prescribed medicines to OTC medicines in the event of a price rise for the former (22).

Research on access to medicines in the USA has concentrated on the effect of insurance co-payment changes on medicines use, as these are effectively price changes to patients. A systematic review of studies (14) on increased patient price for prescription medicines in the USA showed that a 10% increase in patient prices led to a 2 to 6% drop in medicine use, and specifically:

- lower rates of treatment, poorer compliance and more frequent discontinuation of treatment;
- increased use of services for chronic conditions such as diabetes, congestive heart failure, lipid disorders and schizophrenia;
- fall in compliance as copayments rise and delays in chronically ill patients starting treatment

Research in the UK on the effects of prescription charge increases from 1979-82 confirmed a 7.5% fall in the per capita use of medicines in the population paying charges while access to medicines in the exempt group rose by 1%, thus confirming the deterrent effect of price (23).

A major review of the effect of prescription medicine charges in high income countries has examined 173 studies in 15 countries (24). It concludes: “International evidence consistently demonstrates that user charges are a regressive form of health-care finance, requiring the poor to pay more as a proportion of their income, than the rich...poorer people reduced their use of prescription drugs even when co-payment levels were very low.”

In LMIC the evidence about the price of care and access is more fragmentary and, according to one recent review, of poorer quality (25). Most of the available evidence is concerned with user fees in general rather than the price or price changes for medicine. In general the studies show abrupt changes following the introduction, abolition, increase or decrease of fees, but the methods and data do not support precise conclusions about magnitudes and differential effects among different population groups: “These findings broadly support the view that user fees present a barrier to access to curative health services for those groups that would be eligible to pay for them”.

Similar concerns have led to modelling work on the likely effect of price changes in insecticide treated bed-nets (ITNs) in several African countries in order to estimate the impact of tariff and tax reductions on malaria (26). The authors looked separately at how price changed following tax and tariff reductions, and then at how household demand responded. They found that for quite large reductions in tariffs and taxes and corresponding falls in price (tariffs and prices falling from 42% to zero for insecticide and from 40% to 5% for netting materials), purchasing rose by about 27%. In a study in Nigeria the same authors found that a 22% reduction in price led to an 11% increase in purchases (27). In all cases the authors concluded that more accurate predictions could not be made without country-specific information on market structure; that removal of tariff and taxes will not remove all access barriers for people in need, but that this is not a reason to delay the removal of these price impediments. More recently, the Assistant Minister for Public Health and Sanitation in Kenya has argued that his country’s removal of taxes and tariffs on malaria products has contributed to a 44% decline, between 2002 and 2009, in the rate of infant mortality and disease, and a halving of infant deaths from malaria in one endemic region (28). Indeed more than a decade ago, 40 African heads of state agreed to roll back import barriers on medicines and other commodities used to prevent and treat malaria.

Some parallels between ITNs and medicines exist: in both cases there are factors which may prevent a legislated price change (tax reduction) being passed on to the final consumer: the case of Peru is mentioned below. And the overall demand response in both cases appears inelastic. But there are differences. ITNs are a relatively expensive, occasional and *preventive* health care purchase, whilst medicines are purchased in the event of a felt need. And again, the prospects of different response elasticities in different age or income groups need to be considered.

From these studies it seems safe to conclude that imposing or eliminating a 25% tax on prescribed medicines will reduce aggregate or increase demand, perhaps by some 5%-15% if elasticities are linear and comparable to those in high income countries, but that any fall in demand following a tax rise will be sharper than this among the poorer households, for children, and those with chronic illnesses. Higher levels of morbidity – pain and discomfort – seem certain and higher mortality likely as consequences of higher prices.

National tax regimes change frequently so, in principle, it should be possible to document the consequences of defined changes on access to medicines. Apart from the general tendency to move away from sales tax and towards VAT, there have been other important alterations in tax rates, some of which have affected medicines. Kuwait removed its 4% customs duty on medicines in 2003. In Kyrgyzstan, VAT and regional sales tax on medicines were both reduced in 2004. In Peru, sales tax and VAT were waived for a range of cancer medicines and antiretrovirals in 2001, though little change in retail prices was observed to result. In Pakistan,

the 15% sales tax on medicines was removed following a successful consumer advocacy challenge (29). But the experience of at least one country - Peru (30) - has shown that removal of taxes does not necessarily mean lower prices to patients unless supporting regulation, for example, on retail mark-ups, is implemented. These “accompanying conditions” are of great importance in assuring the successful implementation of a policy change, though it should be born in mind that, from the viewpoint of economic theory, it is the *potential* for a welfare improvement which matters for a given change to be preferred, not its actualization. If the potential gainers from a policy change would be sufficiently better off to compensate the potential losers, then that change is an economically preferred state.



## 6. The economic case for taxing medicines

Medicines can generate big money – for governments, as well as for manufacturers, prescribers and dispensers. But they force patients to find big money to pay for them. The general rationale for taxing medicines is that of revenue-raising for the public purse, as with other services and commodities. Ministries of Finance do not like special cases, exemptions and earmarked taxes, as these reduce the amount of funds available to government, or their flexibility with the use of revenue. Spending on medicines adds up to a large business. Medicines account for about 15% of global health expenditure (31). Many countries spend somewhere between 1% and 2% of their gross domestic product on medicines (32). So, for national treasuries, a tax on medicines offers a large potential revenue source.

In addition, raising money on medicines is relatively easy, as record-keeping for prescribed medicines is relatively good: better, for instance than for say selling shoes or fruit. Furthermore, demand - at least for some groups of people and some medicines - is relatively inelastic, as people are often prepared to make considerable sacrifices to secure necessary medicines, thus demand may not drop dramatically as price rises (33). Finally, it can reasonably be argued that some non-essential medicines are not fundamentally different from ordinary commodities, e.g. lifestyle medicines for cosmetic effect, weight loss, or erectile dysfunction, and should thus be taxed similarly.

Governments can stand to lose substantial revenue if medicines taxes are cut. The European Commission in a partial estimate calculated that the average VAT amount collected on medicine imports from European Union (EU) countries by 57 LMIC was around US\$ 11.6 million<sup>a</sup> per country, with wide variations. For Brazil, the estimated VAT on medicine imports (from the EU) was US\$ 123 million; for China US\$ 103 million; for India US\$ 38.5 million plus US\$ 10.7 million other duties; for South Africa US\$ 50.5 million; and for Nigeria US\$ 23.5 million (VAT and other duties). The methods used in the next table, using total national medicine spending data, suggest much higher figures. Nevertheless the revenue sums are considerable.

Table 7 brings together estimates for nine countries of total pharmaceutical sales with the VAT or sales tax figures from Table 2 to give some magnitudes of national tax revenue from pharmaceuticals. Tax revenue from pharmaceutical sales is estimated using the prevailing national tax rates in Tables 2 and 3 and estimated total medicine sales. Data for total tax revenue and GDP are taken from World Bank Indicators, and tax on medicines as a percentage of total tax revenue is then calculated. The World Bank total tax revenue figure (column D) almost certainly underestimates total tax revenue as it is concerned only with “compulsory transfers to central government” and, as the data in tables 2 and 3 show, state, provincial or local government may also levy taxes on medicines. Thus the figures in column G will probably be overestimates for countries with important decentralized tax regimes such as China and the Philippines. Nevertheless, the results give some idea of the general magnitude of medicine taxes as a source of national tax revenue (ranging from 0.032% to 1.66% of total tax revenue as shown in Table 7, column G).

<sup>a</sup> Figures converted from Euro to US\$ at average exchange rate for 2001.

**Table 7. Estimates of tax revenue from medicine sales, selected countries**

<b>Country</b>	<b>A</b> <b>Pharma sales (year)</b> <b>US \$ million</b>	<b>B</b> <b>VAT or sales tax on medicines</b>	<b>C</b> <b>Tax revenue from pharma sales</b> <b>US \$ million</b>	<b>D</b> <b>Total tax revenue as % GDP</b>	<b>E</b> <b>GDP current</b> <b>US\$ billion</b>	<b>F</b> <b>total tax revenue US\$ billion</b>	<b>G</b> <b>Tax on medicines as % total tax revenue</b> <b>(C as % F)</b>
Bolivia	70 (1998)	13%	9.1	17	16.7	2.84	0.032
Brazil	3,900 (2002)	18%	702	16	1639	262.24	0.27
China	44,000 (2008)	17%	7480	9.9	4552	450.48	1.66
Jordan	397 (2009)	4%	15.9	18.3	17	3.11	0.051
Morocco	1,380 (2008)	7%	96.6	25.1	75	18.825	0.051
Peru	1,000 (2009)	12%	120	15.6	107.5	16.77	0.72
Philippines	2,580 (2009)	12%	309.6	14	144	20.16	1.54
South Africa	2,340 (2008)	14%	327.6	28.8	286	73.788	0.044
UK	28,400 (2009)	17.5	4970	28.5	2663	759	0.65

Tax revenue comprises most of a government's financial capability and in some countries approaches half of GDP (though the proportion is lower for lower income countries.) Thus the figures in column G represent a sizeable share of national GDP. Though the percentages in column G may be small, the amounts can be huge. The 1.66 per cent of China's total tax revenue which comes from medicines tax is greater than the total gross domestic product of Mongolia, Tajikistan, Zimbabwe or Nicaragua, for example. Thus taxes on medicine sales represent big money, and it is easy to understand the firm resistance of Ministries of Finance when challenged by health advocates to alleviate the plight of the sick by lowering or abolishing taxes on medicines (34).

## 7. What is the case against taxing medicines?

The case against taxing essential medicines, as distinct from cosmetic or lifestyle medicines or other non-essential medicines, is that they can contribute importantly to improved human capital, through reductions in pain and suffering and improvements in the quality of life and indeed to life expectancy. Such important welfare gains are widely recognized as entitlements or, inversely, as needs, and some economists have argued that goods which people can be said to “need”, such as education and health care should be available to all, regardless of their ability to pay, and not allocated through normal market mechanisms (35). Similarities between essential medicines and “public goods” are sometimes adduced, but this comparison is of only limited relevance.

Public goods are defined as goods whose consumption is non-rival and non-excludable, such as defence, or the services provided by a lighthouse. Left to a market solution, such goods would be underproduced or not produced at all, yet they benefit people without one person’s consumption reducing the amount available for others. The case for public subsidy is robust. Clearly, most medicines are readily “excludable” and very much for individual consumption, thus they do not have public goods qualities. However, some medicines, such as vaccines, or medicines which dramatically reduce infection rates, may have significant effects which benefit people other than those who directly consume them. These are known as externalities or external benefits. They are important in economics because there is a strong case for subsidizing their production and consumption. This would entail intervening in the market, typically by reducing price through subsidies to ensure that adequate amounts are consumed. But, again, it cannot convincingly be argued that most medicines create strong external benefits in consumption as their benefits are principally for the individual taking them.

An important argument against market mechanisms (including market price and thus taxes) for allocating medicines lies in the weakness of the consumers’ position in being able to determine his or her own needs, but this can be rectified to a large extent by the training, incentive-setting and regulation of the medical and pharmaceutical professions.

The principal argument against market price as a way of allocating essential medicines is that price is a rationing mechanism and it will allow large amounts of medically-defined need to remain unmet. The higher the price of a commodity, the less of it is consumed, particularly by the poor. Taxes add, often substantially, to price. But economic demand patterns are very different from the patterns of medically-defined need. To ensure an allocation of health care towards those in need, many national health systems have removed the price barrier to essential medicines (and often to other health services) by making them free at the point of use and paying for them out of general taxation or social insurance. But the great majority of the world’s population is unprotected by national health insurance schemes and has to pay for their medicines as they need them.

If there are strong arguments that access to essential medicines should be fully subsidized, the *a fortiori* taxes on these medicines are inappropriate. Adam Smith’s first principle of taxation was concerned with equity. Vertical equity means that richer people should pay more tax than poorer ones. This is the principle that relates to medicines tax. VAT sales tax and the other government

fees or levies which raise the price of medicine are fixed amounts (percentage taxes) based on the price of the medicine. 17% VAT on a 50 dinar medicine adds a fixed amount of 8.5 dinar. This is a greater percentage of a poor household's income than a rich one's. Thus the tax is inequitable or regressive. It seems quite possible that the 25% of medicine prices attributable to government taxes could result in 25% less consumption of medicines by the poorest.

Smith's second major principle related to efficiency. In some respects the economic efficiency argument is even more powerful argument against taxing essential medicines than the equity argument. Sick people need their medicine to help them get well, or to manage their pain or discomfort. Thus, acknowledging the notion of *human capital*, it is clear that denying or reducing access to needed medicines reduces the economic capability of people and thus their ability to produce and consume. Human capital has been defined as:

“Recognition that people in organisations and businesses are an important and essential asset who contribute to development and growth, in a similar way as physical assets such as machines and money. The collective attitudes, skills and abilities of people contribute to organisational performance and productivity. Any expenditure in training, development, health and support is an investment, not just an expense” (36).

Taxing the medicines which restore and maintain peoples' health is thus a tax on economic potential, contrary to both economic development objectives and to public health goals. And there is an important further argument against raising public revenue through taxes on essential medicine, and that is that public policy, including tax policy, should give priority to targeting the widespread external diseconomies of risky and unhealthy behaviour, rather than taxing directly health-promoting medicines. Although in its infancy, the economic analysis of “healthy taxation” regimes shows considerable potential for development and has direct implications for Ministries of Finance.

## 8. Healthier ways of raising public revenue

### 8.1 Taxing threats to public health

With the notion of human capital comes the recognition that health is a component of personal and national economic welfare. This, in turn, reinforces the importance of public health objectives in national development priorities. Fiscal policy can, and sometimes does, take health outcomes into account. Fiscal policy includes not only taxes, but also subsidies. Many people would argue that responsible fiscal policy in poor countries should make essential medicines available free of charge through full public subsidy, at least to large numbers of the poorest. Arguments about tax levels should not lose sight of this. Not only should things which promote public health objectives (such as access to essential medicines) be supported by tax policies, but things which damage human capital and public health objectives should be (and often are) discouraged by the tax system. The logic behind this position is recognized in the widespread existence of “sin taxes” on tobacco and alcohol. Other public health “bads” are now increasingly being brought into the picture by both pressure groups and by governments themselves. In some circumstances the funds raised from taxes on unhealthy consumption patterns and behaviour can easily compensate for revenue losses through the reduction or elimination of taxes on medicines, leaving both government and individuals better off.

In the following section some of the main threats to public health are considered as candidate alternatives to medicine taxes: tobacco, alcohol, and different types of unhealthy food. Lobbies of advocacy for each of these are already active in some countries and low income countries with high taxes on medicines could benefit from the linking of pressure to remove medicine taxes with that to raise taxes on tobacco, alcohol and sugared drinks. India seems to be a particularly good case in point.

In the context of India, the effect of the 5% VAT plus the other taxes currently charged on medicines reduces the consumption of essential medicines by raising their price. Total medicine sales in India in 2009 were reported to be US\$ 19 billion (37). On this basis, the tax from VAT alone would yield just under US\$ 1 billion - this would be the revenue loss to central government if VAT on medicines were to be waived. This sum could easily be compensated as set out in the following paragraph, by raising the tax on just one other, undertaxed good, which is unambiguously a public health “bad”, tobacco.

#### 8.1.1 Tobacco

Tobacco is a commodity for which imperfect consumer information and patterns of dependence lead to overconsumption, ill health and premature death. Too much is consumed. The market for tobacco (and indeed for other products which are threats to public health) is often further distorted by persuasive advertising. In turn, the overconsumption of health “bads” such as tobacco also lead to extra demands on the healthcare system, thus imposing costs on all citizens. Indeed, the same applies to alcohol and unhealthy food and drink (excessively fatty or salty or sugared foods). In India for example tobacco consumption reduces life expectancy by on average 6 to 10 years and results in 1 million avoidable deaths per year. In an attempt to regulate this market government levies an excise tax of 38% on tobacco purchases (which yields nearly 3% of total tax revenue in India).

Recent research has shown that India actually undertaxes its tobacco products by taxes not being adjusted for inflation, and there are calls for substantial increases (38). It has been estimated that doubling the tax on cigarettes, from 38% to 78% of retail price, would bring a potential US\$ 3.1 billion in additional revenue to government and, in addition to that, save 3.4 million lives. There would also be reduced costs to the health care system of those with tobacco-related illnesses. These effects are without changing the tax on bidis (the other main Indian tobacco commodity, of which there are estimated to be three times more smokers than cigarettes) or changing alcohol tax or tax on other health-damaging foods such as carbonated, sugary drinks. The US\$ 3.1 billion in extra taxes from cigarettes would allow the complete waiver of VAT on medicines and still allow a \$2 billion increase in government revenue!

Pursuing a more efficient market by raising taxes on commodities which reduce India's human and health capital, and lowering taxes on medicines, which promote and restore health capital, would thus save considerable sums of money and reduce demands on the healthcare system, while achieving a healthier population. Similarly persuasive economic arguments for raising tobacco taxes have also been made in the context of industrialized countries (39). A 10% increase in the real price of cigarettes reduces consumption by 3%-5% overall; the loss of livelihood by tobacco producers can be more than compensated for from the economic benefits of curbing tobacco consumption (40).

### 8.1.2 Alcohol

Alcohol is another cause of premature death and avoidable morbidity, consumption of which can be reduced by tax policy. A systematic review of 112 studies established that increasing the price of alcohol is an effective means to reduce drinking (41). Yet tax revenues from alcohol also appear not to keep pace with inflation or, indeed, in the case of the UK, with the rate of growth of tax revenues generally (42). Raising tax on alcohol consumption, like taxation on tobacco, not only generates revenue but also generates important reductions in avoidable mortality and morbidity, as well as reducing the direct costs of health care attributable to alcohol. The external dis-benefits of alcohol consumption are hard to exaggerate: total costs attributable to alcohol consumption have been estimated to be 26 times the revenue collected from tax on alcohol for the state of New Mexico in the USA (43), thus indicating that substantial tax increases are warranted.

### 8.1.3 Unhealthy food

Unhealthy diet has also been the subject of considerable concern in public health lobbies in high income countries. Romania was recently reported (44) to be introducing a tax on food products which are high in fat, sugar and salt because of public concern about growing obesity. The annual tax revenue from this "junk food" tax is estimated to be some US\$ 1.3 billion – funds which could be used to eliminate several times over the current 9% VAT on medicines which brings in a mere US\$ 200 million on current annual total medicines expenditure of about US\$ 2.2 billion. Furthermore, removal of taxes on medicines is likely to be a politically popular measure.

For the USA it is argued that a national tax of just 1% per ounce on sugar-sweetened beverages would generate at least US\$ 14.9 billion annually. As a measure of its relative importance, this sum is about 5% of total pharmaceuticals spending in the world's most expensive medicines market of some \$300 billion (45)

These examples point to the huge potential of making economic gains hand in hand with improvements in public health with well-designed fiscal policies. A simple principle would be: *governments should tax the things which make people ill, not the things which make them well.* Health advocates can thus argue for a shift in the burden of tax away from health-promoting

goods such as essential medicines and towards health-damaging substances, not a reduction in governments' total tax revenue. As has been noted, such tax shifts are likely to be politically popular and boost support for government: the entire population runs the risk of illness, but only a fraction smoke, drink alcohol, or over-indulge in unhealthy food.

Some countries have already taken steps which show that medicine taxes can be stopped or removed. In Pakistan, Tajikistan and Sudan strong advocacy has achieved tax reductions on medicines. Their experience is important and needs to be better documented through case-studies.



## 9. Conclusion

Taxes are necessary for governments to provide the structures and services which allow society and economy to function properly. Medicine taxes can be an important source of revenue. Yet governments have many options in the design of their fiscal policies, and these can often be better aligned with public health objectives, for greater consistency in national growth and development strategies.

Medicines are not a single economic entity but a spectrum of commodities which range from luxury consumption goods to life-saving goods with important public health externalities. Accordingly an optimal tax system would treat them differently. Many countries at all income levels currently raise taxes on some medicines, though some countries tax-exempt them all and others treat all medicines as any other goods and services. Yet other countries have tax concessions on some medicines.

Medicine tax can be an important component of the price patients pay for a medicine and in countries without well-developed health insurance systems this entails payment at the time of need. The WHO/HAI project on medicine prices has documented affordability issues elsewhere.

Much of the literature found in searching for information about medicine taxes turned out to be about taxes on health-damaging products or behaviour, from tobacco and alcohol to soft drinks and obesity. A growing lobby of advocates sees the link between healthy behaviour and taxes. Their potential support for the reduction or abolition of some of the taxes on medicines should not be underestimated. Using the principle that unhealthy products and behaviour should be taxed while health-promoting actions and goods should be tax-exempt or subsidized, makes economic, social and political sense. A step in this direction would be made by eliminating taxes – and possibly prices altogether - on essential medicines, and recouping the lost revenue by higher taxes on tobacco, alcohol, unhealthy diet items and risky behaviour.



## Glossary

### Tax-related terms

Direct tax	A tax charged directly by government to individuals, households and firms such as income tax, property tax, or corporation tax
Duty	Another term for tax, though usually applied to taxes which are charged on specific commodities or transactions and not on individuals, such as import duty or excise duty.
Goods and services tax (GST)	Another name for value added tax (Canada, Australia, New Zealand and other countries).
Indirect tax	A tax on goods or services collected by an intermediary such as a retailer or retail pharmacist, and then remitted to government. Not charged directly to the income of individuals, households and firms.
Progressive	A progressive tax is one whose rate increases as income levels rise, thus taking a larger proportion of income from wealthier people.
Reduced rate VAT	Applies when lower rates than the standard rate for VAT are charged for selected items, such as prescribed medicines in Romania or all medicines in Italy.
Regressive	A regressive tax is one whose rate falls as income levels increase, i.e. which takes a lower proportion of income from wealthier people.
Sales tax	A tax charged at the point of purchase for goods and services. Usually a percentage of the retail price. Usually collected by the seller from the buyer, and then remitted to government.
Tariff	A tax charged on imports or exports, thus a tax on international trade. As a general revenue source, more important to lower income economies than richer countries.
Tax	A compulsory fee or levy charged by government on income, goods or services of individuals or corporations.
Value added tax	A tax on the "value added" to a product or material, at each stage of manufacture or distribution. The "value added" to a product by a business is the sale price charged to its customer, minus the cost of materials and other taxable inputs. VAT collection and remittance to government occurs each time a business in the supply chain purchases products from another business or sells to the consumer.

VAT Exemption	A VAT exemption means that a good or service incurs no value added tax at any point in the distribution chain. Items exempt from VAT are not included in VAT accounts. Medical care provided by authorized providers in the UK is VAT exempt.
Zero-rated VAT	Goods or services eligible for VAT but charged at zero rate. These items do appear in VAT accounts. Zero-rating may apply to certain items or certain individuals. Dispensing of prescriptions by a registered pharmacist is zero-rated in the UK.

### Economic terms

Cross elasticity	Responsiveness of demand for one good to changes in the price of another, related good. For instance, if the price of prescribed medicines increases, demand for OTC substitutes may increase.
Externality	A side effect or spillover from economic activity which causes benefits (positive externality or “merit goods”) or harm (negative). Positive externalities include the reduction of risk of infection from vaccination or other public health programmes. Negative externalities include the environmental damage caused by burning fossil fuels.
Income elasticity	Responsiveness of demand for a commodity to a change in income. Normal goods have an income elasticity of between 0 and 1.
Price elasticity	Responsiveness of demand to a change in price: specifically, the percentage change in the quantity demanded in response to a one per cent change in price. A less than one per cent change in quantity demanded means that demand for the good is inelastic; more than one per cent means that it is elastic.
Public good	A commodity whose consumption is non-rival (i.e. one person’s consumption is not at the expense of another’s) and where exclusion is impossible to implement. National defence and free-to-air television are examples of near-perfect public goods. If public goods are to be produced, subsidies will be entailed. Food, clothing, cars, medicines, are all conventional private goods.

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