

# **The Single Convention on Narcotic Drugs- Implementation in Seven Countries:**

**Armenia, Georgia, Guatemala,  
Jamaica, Kenya, Moldova, Nepal**

A MONOGRAPH PREPARED FOR:

## **International Pain Policy Fellowship Training**

Madison, Wisconsin, USA

16 - 20 June 2008

**University of Wisconsin Pain & Policy Studies Group**

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## I. ABOUT THE PAIN & POLICY STUDIES GROUP

The mission of the Pain & Policy Studies Group (PPSG) is to promote “balance” in international, national and state pain policies to ensure adequate availability of opioid analgesics for the relief of pain and suffering and their appropriate medical use for patient care while addressing diversion and abuse. The PPSG is part of the University of Wisconsin Paul P. Carbone Comprehensive Cancer Center within the School of Medicine and Public Health, and is designated the World Health Organization (WHO) Collaborating Center for Policy and Communications in Cancer Care. Much of the PPSG’s work, including its use of the WHO Guidelines, “Achieving Balance in National Opioids Control Policy,” is discussed later in this document, and is available on its website at [www.painpolicy.wisc.edu](http://www.painpolicy.wisc.edu). As a WHO Collaborating Center, the PPSG provides technical assistance to governments and NGOs in Africa, Asia, Europe, Latin America, and has established a WHO Demonstration Project in Calicut, India.

The PPSG also supports a global communications program to improve access to information about pain relief, palliative care, and pain policy, and publishes a WHO newsletter *Cancer Pain Release* (<http://www.whocancerpain.wisc.edu>).

In the USA, the PPSG supports a program of policy research, education and communications. This program includes: regular evaluation and grading of federal and state pain policies; model policy development; technical assistance; research and education of medical regulators; tracking trends in use and abuse of opioid analgesics and prescription monitoring programs; and a website with extensive pain policy resources including a full text data base of federal and state pain policies ([www.painpolicy.wisc.edu](http://www.painpolicy.wisc.edu)).

### **Citation:**

Pain & Policy Studies Group. *The Single Convention on Narcotic Drugs - Implementation in Seven Countries: Armenia, Georgia, Guatemala, Jamaica, Kenya, Moldova, Nepal*. University of Wisconsin Pain & Policy Studies Group/WHO Collaborating Center for Policy and Communications in Cancer Care; Madison, Wisconsin, USA. 2008. (Monograph)

## II. INTRODUCTION: INTERPRETING INFORMATION IN THIS MONOGRAPH

### A. Why are opioid consumption statistics important?

In 1986, the WHO concluded that most pain due to cancer could be relieved using a simple analgesic method and that every national government should institute a cancer pain relief programme.<sup>1</sup> The WHO analgesic method has also been endorsed for relief of pain due to HIV/AIDS.<sup>2</sup> The analgesic method depends on the availability of, and patient access to, medicines that can relieve severe pain, such as morphine and other opioids. Recognizing that opioids are controlled strictly as narcotic drugs because of a potential for abuse and drug dependence, WHO recommended that governments (a) evaluate their drug control policies and practices to ensure that patients receive the opioid medications that are necessary for pain relief, and (b) encourage health care workers to report to the appropriate authorities any instance in which oral opioids are not available for cancer patients.

*Indeed, the fact that opioids are narcotic drugs regulated by governments is why those interested in pain relief and palliative care for HIV/AIDS and cancer **must** learn about the drug regulatory system and prepare to work with governments.*

More recently, the World Health Assembly and the United Nations Economic and Social Council have become concerned about inadequate patient access to pain relief and have adopted resolutions aimed at improving the availability of essential opioid medications for pain relief, especially in low and middle income countries.<sup>3,4</sup>

Consumption statistics for opioids are one indicator of the capability of a country to treat moderate to severe pain. Opioid consumption statistics can also be used to evaluate the outcomes of efforts to improve opioid availability. Morphine is frequently used as a principal indicator because morphine is the most widely available opioid analgesic for moderate to severe pain. Fentanyl and oxycodone are included in this publication because they are appropriate to treat moderate to severe pain, and they have become increasingly available globally over the last decade. Consumption trends for pethidine are included in this monograph because (1) although pethidine is no longer recommended for chronic pain, it is still widely used; and (2) since pethidine is subject to the same legal controls as other strong opioids, its consumption is an indication that, from a legal standpoint, the country should be able to obtain other opioids for severe pain, such morphine, fentanyl or oxycodone. Finally, other opioids such as tramadol and codeine are not included because they are not capable of relieving severe pain.

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<sup>1</sup> World Health Organization. *Cancer pain relief*. Geneva, Switzerland: World Health Organization; 1986.

<sup>2</sup> World Health Organization HIV-AIDS. *Palliative Care*. Geneva, Switzerland: World Health Organization; 2004. <http://www.who.int/hiv/topics/palliative/PalliativeCare/en/index.html>

<sup>3</sup> World Health Assembly. Cancer Prevention and Control. WHA 58.22 Geneva, Switzerland: World Health Organization; 2005. [http://www.who.int/gb/ebwaha/pdf\\_files/WHA58-REC1/english/A58\\_2005\\_REC1-en.pdf](http://www.who.int/gb/ebwaha/pdf_files/WHA58-REC1/english/A58_2005_REC1-en.pdf) (page 92 of the pdf).

<sup>4</sup> United Nations Economic and Social Council. Treatment of pain using opioid analgesics; Resolution 2005-25. Report on the forty-eighth session of the Commission on Narcotic Drugs E/2005/28; 19 March 2004 and 7-11 March 2005; issued 22 July 2005. <http://www.un.org/docs/ecosoc/documents/2005/resolutions/Resolution%202005-25.pdf>

## **B. Governments are the source of required reports to the INCB**

The International Narcotics Control Board (INCB) is the international narcotic regulatory authority for the United Nations; it monitors national governments' implementation of the 1961 Single Convention on Narcotic Drugs. This treaty, to which most governments are party, governs the cultivation, movement and availability of narcotic drugs for medical purposes in the world. According to the Single Convention, narcotic drugs are indispensable for the treatment of pain and suffering, and governments should ensure their adequate availability for all medical and scientific purposes, while preventing diversion and abuse.

Governments must annually provide INCB an estimate of the amounts of opioids that will be required to satisfy all medical and scientific needs in the next year. Although INCB "confirms" the estimate as the amount authorized to be used in the country, the estimate itself is determined and submitted by the government. The INCB does not reduce governments' estimates to less than is needed. In fact, if unanticipated needs arise during the year, the INCB encourages governments to submit a supplemental request, which it can confirm in one week.

Governments also report prior year opioid consumption statistics to the INCB which compiles them into annual statistical reports.<sup>5</sup> "Consumption" refers to the amounts distributed to the retail level in a country, i.e., to those institutions and programs that are licensed to dispense to patients. Consumption is reported by anhydrous weight of the active drug, not including the salt; for example, the amount reported for morphine does not include the weight of the salt (sulfate or chloride), just the morphine base. Some countries do not report consumption statistics. In addition, INCB does not publish reports of consumption less than 0.5 kilogram. However, the PPSG obtains complete annual data from the INCB and makes them available because there are many countries where small amounts are important and because any amount of morphine consumed demonstrates that the government approved its use.

## **C. Competent national authorities**

Each government that is party to the Single Convention designates an office that is responsible for carrying out required functions, including making estimates and reporting consumption statistics.<sup>6</sup> Table 1 provides a list of the names and contact information for the National Competent Authority in the 7 Fellows' countries. These offices may be located in the Ministry of Health in the pharmaceutical department or in the national food or drug control agency. They are the principal national authority for ensuring that opioid analgesics are adequately available for medical and scientific purposes and for submitting the required documents to the INCB. These offices receive reports from the INCB, including technical reports that encourage all governments to examine national policies and administrative procedures for barriers and to consult with health professionals in formulating realistic estimates. However, sometimes these

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<sup>5</sup> International Narcotics Control Board. *Narcotic Drugs: Estimated World Requirements for 2008 - Statistics for 2006*. New York, NY: United Nations; 2008. [http://www.incb.org/incb/narcotic\\_drugs\\_2007.html](http://www.incb.org/incb/narcotic_drugs_2007.html)

<sup>6</sup> United Nations. *Competent national authorities under the international drug control treaties*, 2006. New York, NY: United Nations; 2007.

offices do not have adequate personnel to administer these and other important responsibilities in the area of drug control and availability.

#### **D. Status of adherence to conventions, receipt of statistics and estimates**

Table 2 presents information that the INCB compiles annually in an effort to inform the public about whether national governments are adhering to their obligations under the Single Convention. Information is provided for the 7 Fellows' countries.

From these data, it can be seen that all 7 governments are parties to the Single Convention, 1961, and as amended in 1972, and submitted all required reports for the most recent report.

### **III. OVERVIEW OF OPIOID CONSUMPTION: MORPHINE, FENTANYL, OXYCODONE, PETHIDINE**

#### **A. Global Consumption**

##### **Trend in kilograms**

Graphs 1 - 2 provide the global consumption trends for morphine, fentanyl, oxycodone and pethidine for 1980 – 2006, which presents the 'big picture' of the consumption of opioid analgesics. Prior to 1986, the consumption of morphine throughout the world was low and stable. After 1986, the total global consumption of morphine began to increase as some national governments and health professionals adopted the WHO analgesic method and as new opioid products became available more widely. The consumption of pethidine exceeded that of morphine, but has slowly declined as other opioids have become more widely used. Recently, there are indications that consumption of morphine is being offset in some countries by the advent of other opioid analgesics such as fentanyl, hydromorphone, methadone and oxycodone. Although some countries use morphine mainly for cancer pain, morphine may be used for other pain, including acute, post-operative, AIDS, and for chronic non-cancer conditions. In addition, some countries may use strong opioids including morphine and methadone for substitution treatment of drug dependence.

##### **2006, in milligrams per capita**

Graphs 3 - 6 present global 2006 consumption statistics in milligrams per capita (dividing the total amount of drug "consumed" in kilograms, by the population of the country) for morphine, fentanyl, oxycodone and pethidine. This provides a population-based statistic that allows for comparisons between countries and in relation to the global mean. The consumption of opioids varies greatly from country to country. Selected countries that reported statistics are highlighted. The vast majority of morphine is consumed in industrialized countries which represent a small part of the world's population. The remaining countries of the world (a number of developed countries and all of the developing countries) consume comparatively little.

In a recent report, the INCB stated, “The low consumption of opioid analgesics for the treatment of moderate to severe pain, especially in developing countries, continues to be a matter of great concern to the Board. Global consumption of morphine increased significantly throughout the 1990s; in the past 20 years, it rose almost 10-fold, from 3 tons in 1984 to about 28 tons in 2003. However, the bulk of that increase occurred in some, but not all, developed countries, which represent a small part of the world's population. In 2003, six countries together accounted for 79 per cent of global consumption of morphine. Developing countries, which represent about 80 per cent of the world's population, accounted for only about 6 per cent of global consumption of morphine.” (p. 25)<sup>7</sup>

## **B. Regional Consumption**

Graphs 7 - 30 present the WHO regional pictures of the consumption of morphine, fentanyl, oxycodone and pethidine in milligrams per capita for the AFRO, AMRO, EMRO, EURO, SEARO, and WPRO regions respectively.

## **C. National Consumption**

Graphs 31 - 58 present morphine, fentanyl, oxycodone, and pethidine consumption trends for the 7 Fellows' countries: Armenia, Georgia, Guatemala, Jamaica, Kenya, Moldova, and Nepal. These data are expressed in milligrams per capita. A value of “0” indicates that no report was received by the INCB for that year.

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<sup>7</sup> International Narcotics Control Board. *Report of the International Narcotics Control Board for 2004*. New York, NY: United Nations; 2005. [http://www.incb.org/pdf/e/ar/2004/incb\\_report\\_2004\\_full.pdf](http://www.incb.org/pdf/e/ar/2004/incb_report_2004_full.pdf)

## TABLE 1. COMPETENT NATIONAL AUTHORITIES

### ARMENIA

Head of Unit  
Ministry of Health  
Yerevan  
Armenia

Phone: (374) 2-528872

### GEORGIA

Drug Agency  
Ministry of Labour, Health and Social Affairs  
23, Al Kazbegi avenue  
0160 Tbilisi  
Georgia

Phone: (995) 32-39 92 15  
Fax: (995) 32-39 92 10  
E-mail: [tina@gda.ge](mailto:tina@gda.ge)

### GUATEMALA

Sección de Control de Sicotrópicos, Estupefacientes,  
Importaciones y Exportaciones  
Departamento de Regulación y Control de Productos  
Farmacéuticos y Afines  
Ministerio de Salud Pública  
3a.Calle final, 2-10, zona 15  
Valles de Vista Hermosa  
Ciudad de Guatemala  
Guatemala

Phone: (502) 23656255-60  
Fax: (502) 23656255-60  
Email: [seccionsicotropicosguate@yahoo.com](mailto:seccionsicotropicosguate@yahoo.com)

### JAMAICA

Chief Medical Officer  
Attn: Chief Dangerous Drugs Inspector  
Ministry of Health  
Standards and Regulation Division  
Pharmaceutical and Regulatory Affairs Dept.  
2-4 King Street  
Kingston  
Jamaica  
West Indies

Phone: (1876) 967-1100-3  
Fax: (1876) 967-1629

### KENYA

The Registrar  
Pharmacy and Poisons Board  
Ministry of Health  
P.O. Box 30016  
Nairobi  
Kenya

Phone: (254) 20-717077  
Fax: (254) 20-713750

### REPUBLIC OF MOLDOVA

Standing Committee on Narcotic Drug Control  
3a Costiujeni str.  
MD-2011 Chişinău  
Republic of Moldova

Phone: (373) 2-293596  
Fax: (373) 2-293596  
E-mail: [liv@moldova.md](mailto:liv@moldova.md)

### NEPAL

Department of Narcotics Control and Disaster  
Management (DNCDM)  
Ministry of Home Affairs  
Singh Durbar  
Kathmandu  
Nepal

Phone: (977) 1-4222883  
Fax: (977) 1-4222883

**TABLE 2. STATUS OF ADHERENCE TO CONVENTIONS,  
RECEIPT OF STATISTICS, AND ESTIMATES**

	Adherence		Consumption Statistics for 2006	Estimated requirements for 2008
	Single Convention 1961	As amended 1961/72		
<b>Armenia</b>	•	•	•	•
<b>Georgia</b>	•	•	•	•
<b>Guatemala</b>	•	•	•	•
<b>Jamaica</b>	•	•	•	•
<b>Kenya</b>	•	•	•	•
<b>Moldova</b>	•	•	•	•
<b>Nepal</b>	•	•	•	•

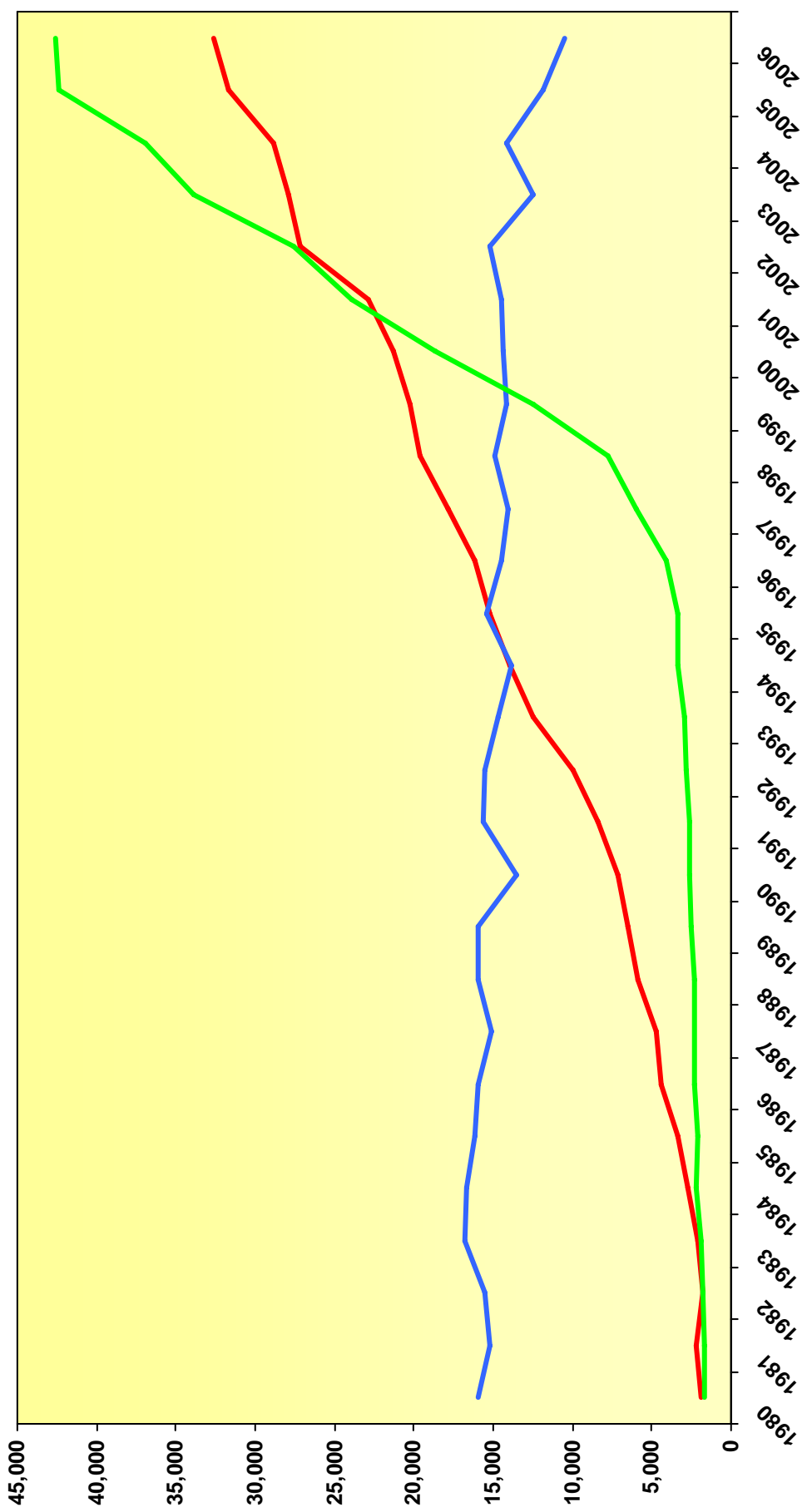
• = report received

VI. GLOBAL CONSUMPTION TRENDS

**Graph 1. Global Consumption of Morphine, Pethidine and Oxycodone  
1980-2006**

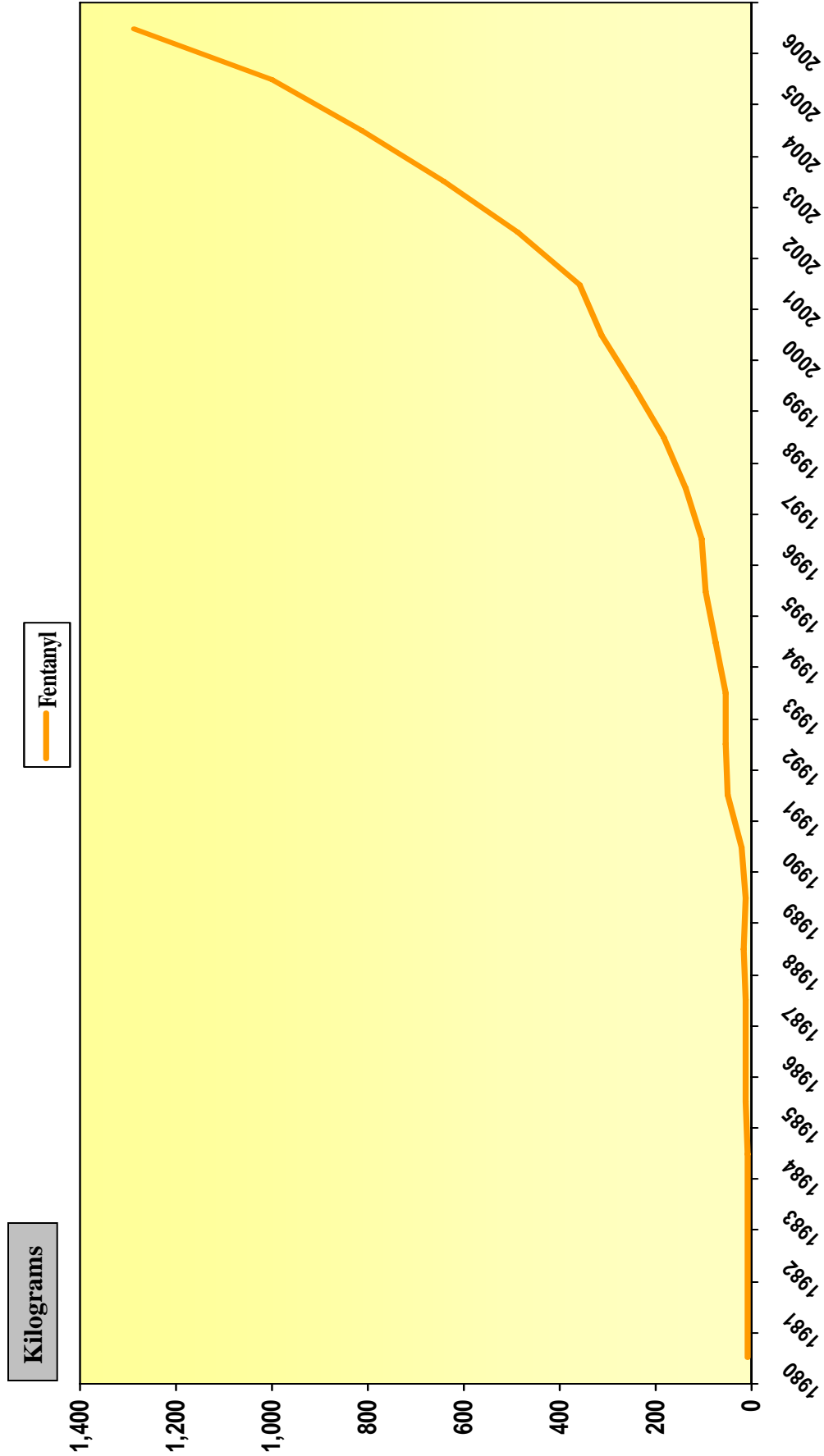
Kilograms

Morphine Pethidine Oxycodone



Source: International Narcotics Control Board  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

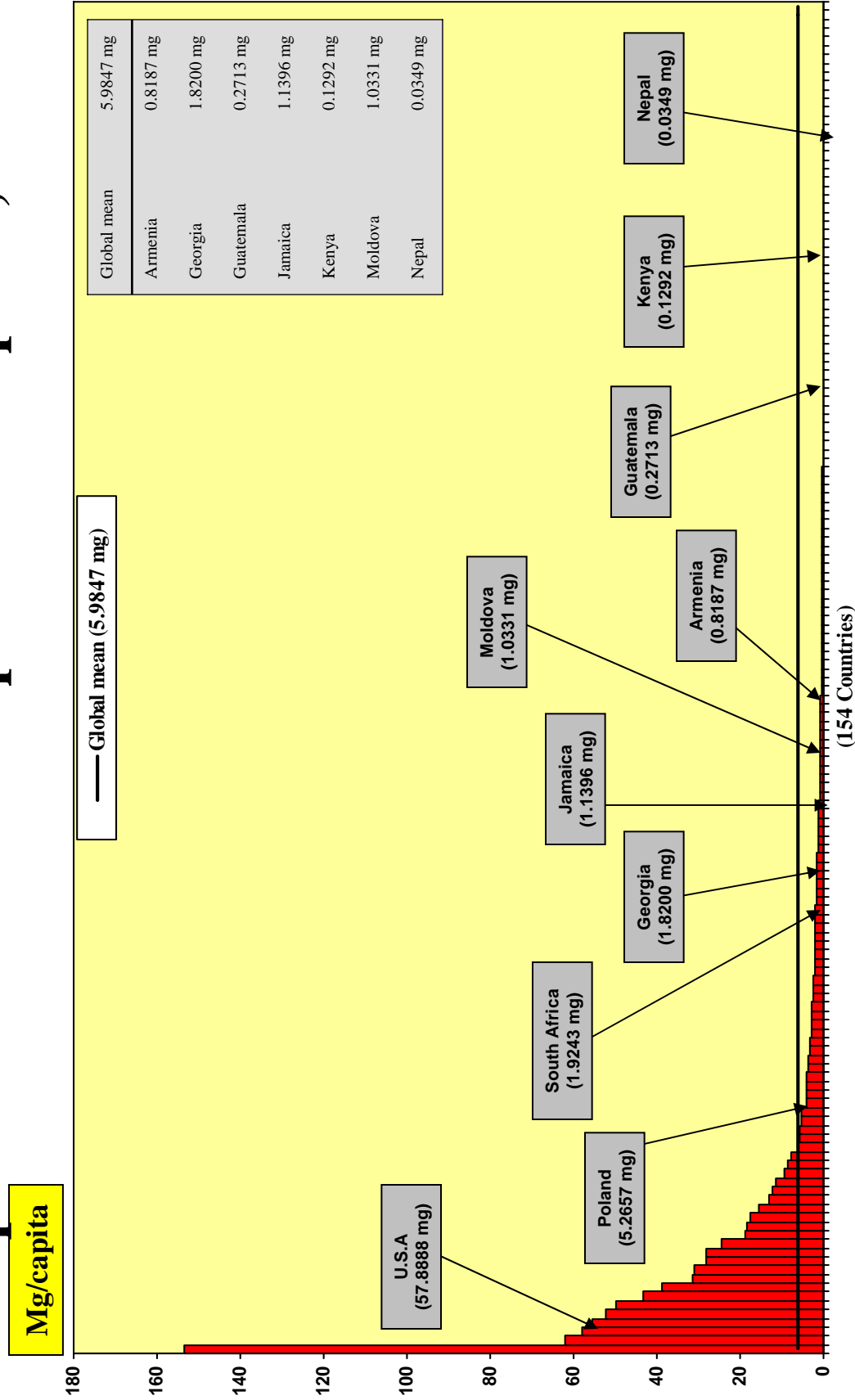
# Graph 2. Global Consumption Fentanyl 1980-2006



Source: International Narcotics Control Board  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

VII. Global Consumption, 2006

Graph 3. Global Consumption of Morphine, 2006



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

The global mean is calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.

# Table 3

## Global Morphine Consumption (mg/capita)

**Note: Countries not listed did not report morphine consumption to the INCB for 2006**

1	Austria*	153.5171	53	Saint Lucia	1.8050	105	Guyana	0.1486
2	Canada	62.0103	54	Ukraine	1.7845	106	Azerbaijan	0.1429
3	United States of America	57.8888	55	Croatia	1.6652	107	Serbia	0.1339
4	Denmark	55.7115	56	Singapore	1.4979	<b>108</b>	<b>Kenya</b>	<b>0.1292</b>
5	Australia	52.2852	57	St Vincent & the Grenadines	1.4300	109	Wallis & Futuna Islands	0.1248
6	New Zealand	49.8354	58	Cuba	1.3595	110	Ghana	0.0990
7	France	43.4565	<b>59</b>	<b>Jamaica</b>	<b>1.1396</b>	111	Uzbekistan	0.0953
8	Portugal	38.7767	60	Colombia	1.0943	112	Zambia	0.0952
9	Norway	31.5411	61	Jordan	1.0920	113	Kyrgyzstan	0.0912
10	Switzerland	30.9566	62	Bahrain	1.0471	114	Samoa	0.0900
11	Iceland	28.3267	<b>63</b>	<b>Republic of Moldova</b>	<b>1.0331</b>	115	Venezuela	0.0891
12	United Kingdom	28.2392	64	Malaysia	0.9960	116	Paraguay	0.0847
13	Sweden	24.5066	65	Brunei Darussalam	0.9375	117	Romania	0.0837
14	Slovenia	18.8655	66	Lebanon	0.9178	118	Turkmenistan	0.0773
15	Slovakia	18.4104	67	Mongolia	0.9169	119	Syrian Arab Republic	0.0735
16	Falkland Islands	17.5261	68	Namibia	0.8340	120	El Salvador	0.0627
17	Germany	15.4580	<b>69</b>	<b>Armenia</b>	<b>0.8187</b>	121	Macedonia (FYR)	0.0610
18	Belgium	13.1117	70	Dem. Peop. Rep. of Korea	0.7835	122	Algeria	0.0596
19	Gibraltar	12.1384	71	Thailand	0.7739	123	Cape Verde	0.0560
20	Ireland	11.5512	72	Marshall Islands	0.6620	124	Dominica	0.0500
21	Netherlands	9.2828	73	Argentina	0.6576	<b>125</b>	<b>Nepal</b>	<b>0.0349</b>
22	New Caledonia	8.6652	74	Suriname	0.6240	126	Myanmar	0.0343
23	Luxembourg	7.7120	75	Nicaragua	0.6124	127	Mozambique	0.0319
24	Bulgaria	6.1290	76	Dominican Republic	0.5729	128	Mauritania	0.0317
25	Czech Republic	5.7076	77	Belarus	0.5727	129	Turkey	0.0312
26	French Polynesia	5.5137	78	Oman	0.5696	130	Indonesia	0.0269
27	Israel	5.3707	79	Grenada	0.5100	131	Sudan	0.0230
28	Poland	5.2657	80	Greece	0.4763	132	Bangladesh	0.0196
29	Estonia	4.2615	81	Albania	0.4644	133	Haiti	0.0194
30	Spain	4.1723	82	Saudi Arabia	0.4500	134	Mali	0.0181
31	Finland	4.1669	83	Qatar	0.4463	135	Côte d'Ivoire	0.0175
32	Malta	4.0000	84	Panama	0.4394	136	Madagascar	0.0133
33	Chile	3.6228	85	Montserrat	0.4238	137	Rwanda	0.0109
34	Brazil	3.5188	86	Turks and Caicos Islands	0.4194	138	Egypt	0.0103
35	Japan	3.4054	87	Sri Lanka	0.4188	139	Sao Tome & Principe	0.0100
36	Saint Helena	3.3324	88	China	0.4171	140	Benin	0.0099
37	Hong Kong SAR	3.0083	89	Vanuatu	0.4100	141	Niger	0.0095
38	Italy	2.9275	90	United Arab Emirates	0.4032	142	Libyan Arab Jamahiriya	0.0088
39	Costa Rica	2.8367	91	Tonga	0.3800	143	Yemen	0.0082
40	Lithuania	2.6535	92	Nauru	0.3763	144	Pakistan	0.0075
41	Andorra	2.3924	93	Mauritius	0.3325	145	Congo	0.0039
42	Republic of Korea	2.3499	94	Russian Federation	0.3325	146	Angola	0.0030
43	Seychelles	2.3300	95	Uganda	0.3136	147	Burundi	0.0019
44	Hungary	2.1643	96	Mexico	0.2799	148	Eritrea	0.0018
45	Cyprus	2.0125	<b>97</b>	<b>Guatemala</b>	<b>0.2713</b>	149	Burkina Faso	0.0017
46	Micronesia (Fed. States of)	1.9444	98	Philippines	0.2351	150	Dem. Rep. of the Congo	0.0013
47	Latvia	1.9335	99	Kuwait	0.2326	151	Togo	0.0010
48	Macao	1.9288	100	Botswana	0.2306	152	Malawi	0.0005
49	South Africa	1.9243	101	Ecuador	0.2302	153	Lao Peop. Dem. Rep.	0.0004
50	Tunisia	1.8839	102	Republic of Palau	0.1905	154	Ethiopia	0.0002
51	Bahamas	1.8433	103	Morocco	0.1764			
<b>52</b>	<b>Georgia</b>	<b>1.8200</b>	104	Viet Nam	0.1571			

\*Austria uses morphine in treatment of drug dependence

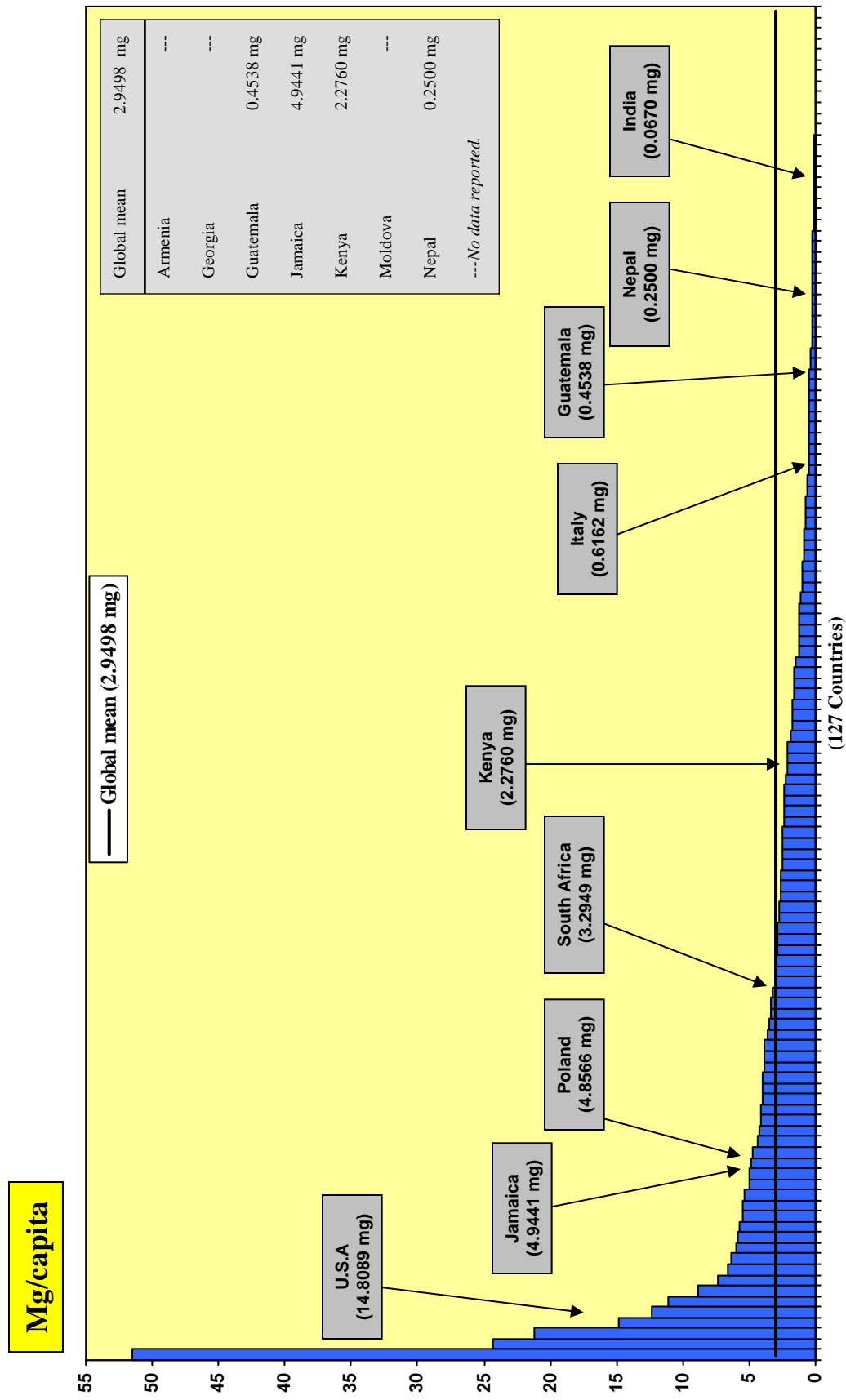


Pain & Policy Studies Group

WHO Collaborating Center for Policy and  
Communications in Cancer Care

University of Wisconsin Paul P. Carbone Comprehensive Cancer Center  
UW-School of Medicine and Public Health

# Graph 4. Global Consumption of Pethidine, 2006



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

The global mean is calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.

# Table 4

## Global Pethidine Consumption (mg/capita)

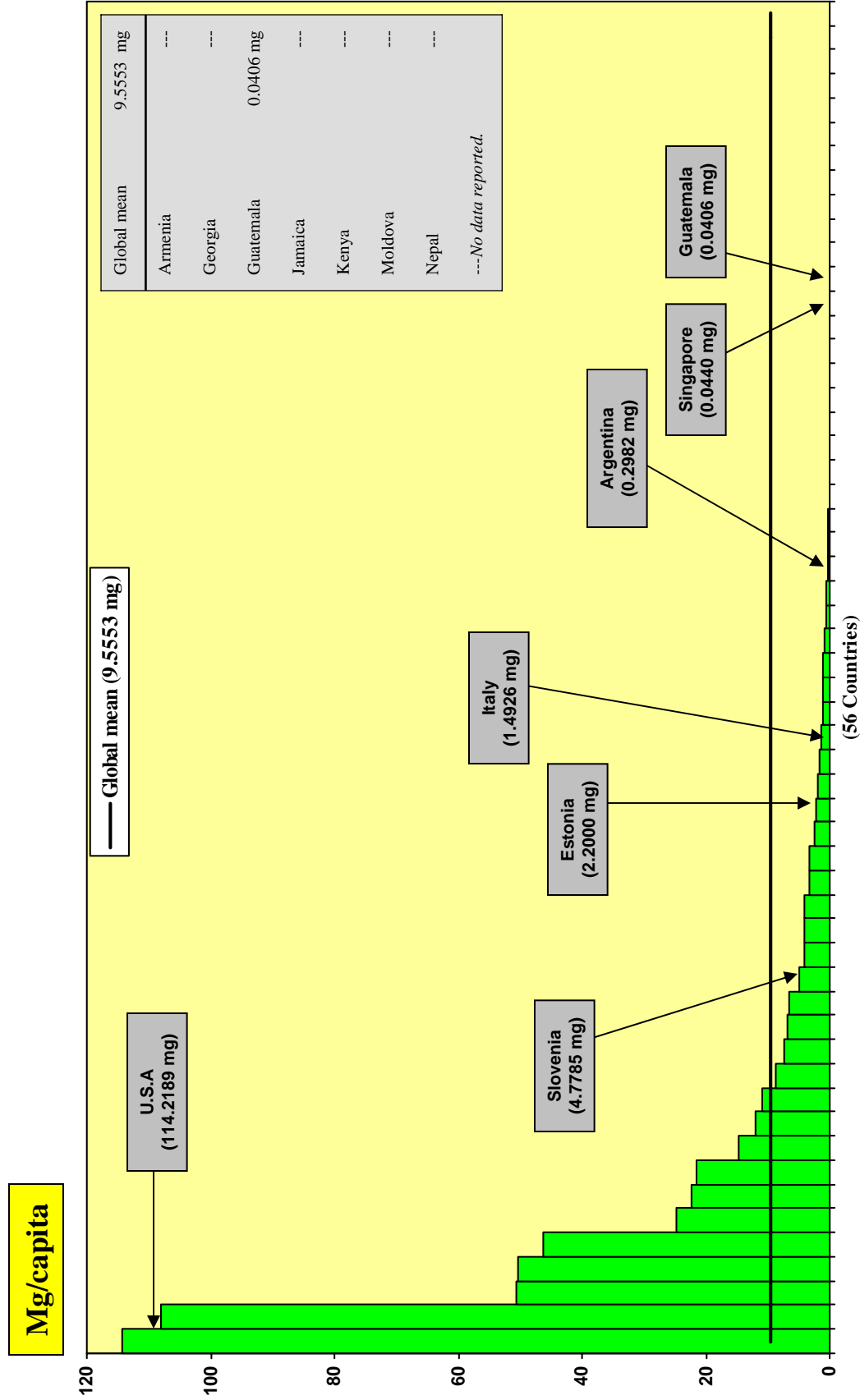
**Note: Countries not listed did not report pethidine consumption to the INCB for 2006**

1	Slovakia	51.4985	44	Greece	2.6315	86	Cape Verde	0.5100
2	Bahamas	24.3600	45	Lithuania	2.6091	87	Uganda	0.5026
3	Canada	21.2112	46	Brazil	2.6088	88	Tunisia	0.5007
4	United States of America	14.8089	47	Lebanon	2.5553	89	Chile	0.4874
5	Denmark	12.3141	48	Gibraltar	2.5423	90	Luxembourg	0.4820
6	New Zealand	11.0763	49	Saint Helena	2.5327	91	Costa Rica	0.4779
7	Switzerland	8.8581	50	Seychelles	2.4400	<b>92</b>	<b>Guatemala</b>	<b>0.4538</b>
8	Falkland Islands	7.4149	51	Tonga	2.4000	93	Japan	0.4430
9	Czech Republic	6.6324	52	Brunei Darussalam	2.3250	94	Viet Nam	0.3941
10	Bahrain	6.3686	53	Andorra	2.3165	95	Serbia	0.3415
11	Austria	5.9952	54	Bulgaria	2.3157	96	Vanuatu	0.3050
12	Mauritius	5.8533	<b>55</b>	<b>Kenya</b>	<b>2.2760</b>	97	Lao Peop. Dem. Rep.	0.2839
13	Australia	5.7985	56	Macao	2.1738	98	French Polynesia	0.2745
14	Grenada	5.4800	57	Turkey	2.1702	99	Argentina	0.2735
15	Cyprus	5.4625	58	Belgium	2.1460	100	Mozambique	0.2585
16	Guyana	5.3543	59	Portugal	1.8959	101	Sudan	0.2536
17	Norway	5.0307	60	Singapore	1.7293	<b>102</b>	<b>Nepal</b>	<b>0.2500</b>
<b>18</b>	<b>Jamaica</b>	<b>4.9441</b>	61	Samoa	1.7050	103	Suriname	0.2440
19	Poland	4.8566	62	Montserrat	1.6951	104	Indonesia	0.2420
20	Saint Lucia	4.7150	63	Iran (Islamic Republic of)	1.6630	105	Egypt	0.2390
21	Jordan	4.3896	64	Syrian Arab Republic	1.6449	106	France	0.2288
22	Malta	4.2500	65	Netherlands	1.5750	107	Togo	0.1839
23	Israel	4.1734	66	El Salvador	1.5063	108	Eritrea	0.1773
24	Libyan Arab Jamahiriya	4.1610	67	Iceland	1.3067	109	Haiti	0.1198
25	Botswana	4.0528	68	Germany	1.2599	110	Burundi	0.1151
26	Qatar	4.0000	69	Sri Lanka	1.2059	111	Benin	0.1118
27	Turks and Caicos Islands	4.0000	70	Micronesia (Fed. States of)	1.2037	112	Dominican Republic	0.0916
28	Estonia	3.9262	71	China	1.1928	113	Philippines	0.0783
29	Ghana	3.8667	72	Thailand	1.1626	114	India	0.0670
30	Kuwait	3.8389	73	Marshall Islands	0.9930	115	Pakistan	0.0633
31	Dominica	3.6200	74	Bangladesh	0.9785	116	Yemen	0.0495
32	Spain	3.5081	75	Panama	0.9688	117	Rwanda	0.0337
33	Malaysia	3.3723	76	United Arab Emirates	0.8780	118	Congo	0.0278
34	United Kingdom	3.3069	77	Albania	0.8325	119	Ethiopia	0.0236
35	South Africa	3.2949	78	Latvia	0.8252	120	Myanmar	0.0210
36	Republic of Palau	3.0476	79	Hungary	0.7895	121	Sao Tome and Principe	0.0200
37	Nauru	3.0105	80	Croatia	0.7583	122	Angola	0.0135
38	St Vincent and the Grenadines	3.0000	81	Zambia	0.7272	123	Dem. Rep. of the Congo	0.0123
39	Hong Kong SAR	2.9285	82	Finland	0.6198	124	Côte d'Ivoire	0.0119
40	Ireland	2.9232	83	Italy	0.6162	125	Niger	0.0114
41	Oman	2.8856	84	Namibia	0.5220	126	Paraguay	0.0017
42	Saudi Arabia	2.8055	85	Sweden	0.5213	127	Malawi	0.0011
43	Republic of Korea	2.7253						



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# Graph 5. Global Consumption of Oxycodone, 2006



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

The global mean is calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.

## Table 5

### Global Oxycodone Consumption (mg/capita)

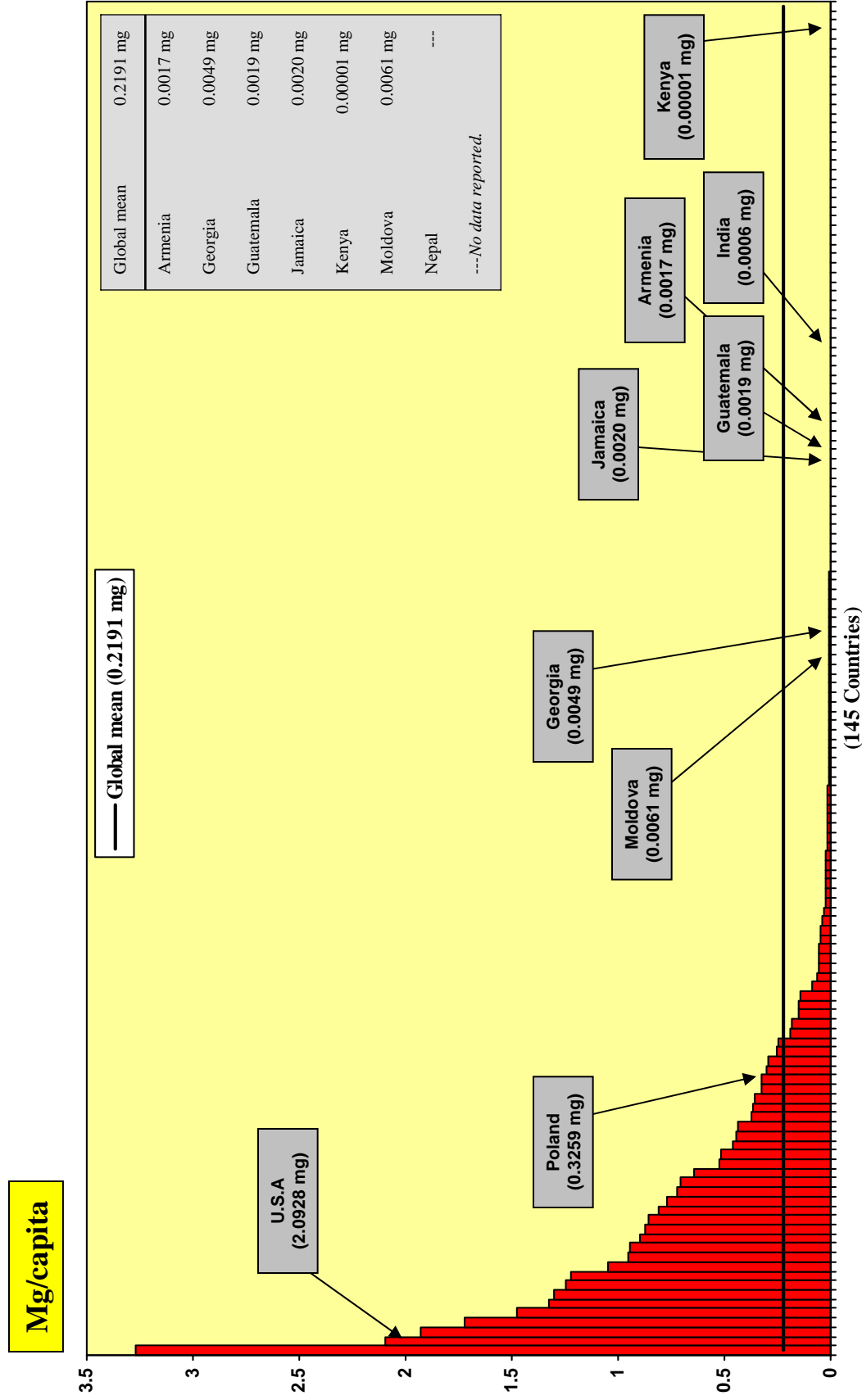
**Note: Countries not listed did not report oxycodone consumption to the INCB for 2006**

1	United States of America	114.2189	29	Gibraltar	0.9668
2	Canada	107.9465	30	Syrian Arab Republic	0.7143
3	Switzerland	50.6026	31	Colombia	0.5943
4	Denmark	50.3278	32	Bulgaria	0.5482
5	Australia	46.1237	33	Argentina	0.2982
6	Norway	24.6715	34	El Salvador	0.2448
7	Finland	22.3617	35	New Caledonia	0.1435
8	Sweden	21.4002	36	Croatia	0.1339
9	Germany	14.6435	37	Ecuador	0.1065
10	Ireland	11.8988	38	Hungary	0.0957
11	Israel	10.9421	39	Dominican Republic	0.0916
12	Netherlands	8.5920	40	Saudi Arabia	0.0851
13	Iceland	7.4133	41	Brazil	0.0812
14	United Kingdom	6.9045	42	Philippines	0.0750
15	New Zealand	6.5571	43	Chile	0.0616
16	Slovenia	4.7785	44	Singapore	0.0440
17	Austria	4.1881	<b>45</b>	<b>Guatemala</b>	<b>0.0406</b>
18	France	4.1662	46	Andorra	0.0253
19	Bahamas	4.0867	47	Latvia	0.0213
20	Slovakia	3.3002	48	Venezuela	0.0211
21	Czech Republic	3.2422	49	China	0.0182
22	Turks and Caicos Islands	2.5806	50	Poland	0.0176
23	Estonia	2.2000	51	Belgium	0.0157
24	Japan	1.8361	52	Mexico	0.0128
25	Republic of Korea	1.6807	53	Kuwait	0.0111
26	Italy	1.4926	54	Luxembourg	0.0100
27	Spain	1.0244	55	Vanuatu	0.0100
28	Cyprus	0.9813	56	Serbia	0.0016



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# Graph 6. Global Consumption of Fentanyl, 2006



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

The global mean is calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.

# Table 6

## Global Fentanyl Consumption (mg/capita)

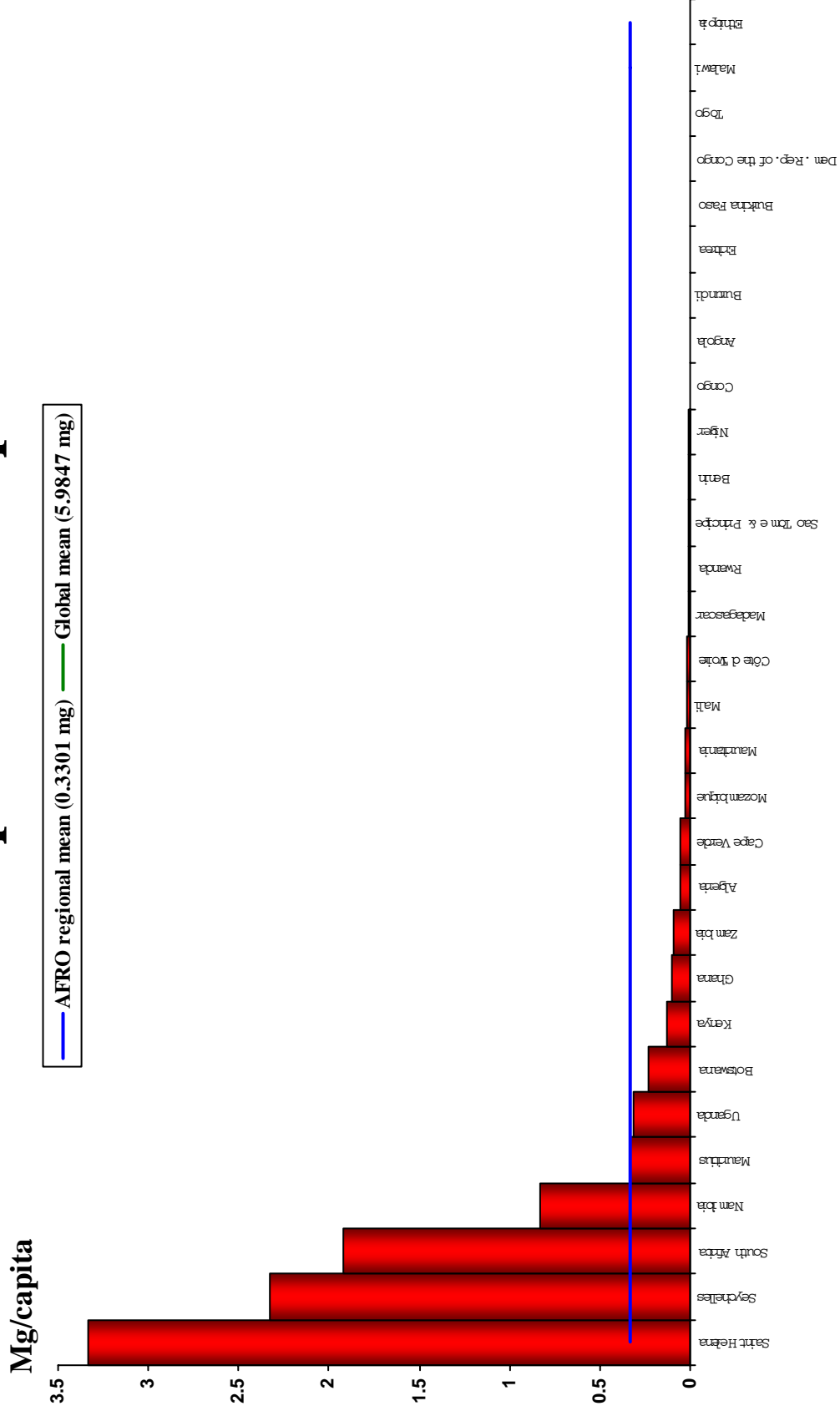
**Note: Countries not listed did not report fentanyl consumption to the INCB for 2006**

1	Germany	3.2731	50	Saudi Arabia	0.0234	<b>98</b>	<b>Guatemala</b>	<b>0.0019</b>
2	United States of America	2.0928	51	Qatar	0.0233	99	Kyrgyzstan	0.0019
3	Belgium	1.9263	52	Lebanon	0.0231	100	Dominican Republic	0.0018
4	Denmark	1.7241	53	Bahrain	0.0220	<b>101</b>	<b>Armenia</b>	<b>0.0017</b>
5	Finland	1.4794	54	Cuba	0.0219	102	Cape Verde	0.0014
6	Canada	1.3236	55	Panama	0.0186	103	Marshall Islands	0.0013
7	Austria	1.3039	56	Colombia	0.0136	104	Yemen	0.0011
8	Spain	1.2430	57	Tunisia	0.0128	105	Bahamas	0.0011
9	Switzerland	1.2246	58	Malaysia	0.0126	106	Mongolia	0.0010
10	Sweden	1.0488	59	Macedonia (FYR)	0.0123	107	Azerbaijan	0.0008
11	Norway	0.9558	60	Albania	0.0122	108	Grenada	0.0008
12	France	0.9406	61	Ukraine	0.0122	109	Congo	0.0007
13	Greece	0.8957	62	Costa Rica	0.0112	110	Tonga	0.0006
14	Iceland	0.8731	63	United Arab Emirates	0.0109	111	India	0.0006
15	Luxembourg	0.8580	64	Hong Kong SAR	0.0108	112	Sri Lanka	0.0006
16	Netherlands	0.8093	65	Argentina	0.0105	113	Philippines	0.0005
17	Slovenia	0.7676	66	Kuwait	0.0101	114	Uzbekistan	0.0005
18	Gibraltar	0.7200	67	Russian Federation	0.0100	115	Republic of Palau	0.0004
19	Ireland	0.7026	68	Venezuela	0.0098	116	Turkmenistan	0.0004
20	Hungary	0.6449	69	Ecuador	0.0091	117	Madagascar	0.0004
21	Falkland Islands	0.5224	70	Oman	0.0072	118	Samoa	0.0003
22	New Caledonia	0.5134	71	Libyan Arab Jamahiriya	0.0071	119	Mozambique	0.0003
23	Slovakia	0.4570	72	El Salvador	0.0070	120	Côte d'Ivoire	0.0003
24	Israel	0.4475	73	Egypt	0.0062	121	Benin	0.0003
25	United Kingdom	0.4355	<b>74</b>	<b>Republic of Moldova</b>	<b>0.0061</b>	122	Sao Tome and Principe	0.0003
26	Czech Republic	0.3755	75	Thailand	0.0054	123	Indonesia	0.0002
27	Australia	0.3687	76	Nicaragua	0.0053	124	Dominica	0.0002
28	Andorra	0.3552	77	Brunei Darussalam	0.0052	125	Niger	0.0002
29	Poland	0.3259	78	Belarus	0.0051	126	Micronesia (Fed. States of)	0.0002
30	Wallis and Futuna Islands	0.3228	<b>79</b>	<b>Georgia</b>	<b>0.0049</b>	127	Vanuatu	0.0002
31	Croatia	0.2982	80	Syrian Arab Republic	0.0049	128	Burkina Faso	0.0001
32	Italy	0.2901	81	Iran (Islamic Republic of)	0.0045	129	Zambia	0.0001
33	Portugal	0.2567	82	Mexico	0.0045	130	Lao Peop. Dem. Rep.	0.0001
34	French Polynesia	0.2429	83	Seychelles	0.0042	131	Bangladesh	0.0001
35	Lithuania	0.1942	84	China	0.0040	132	Haiti	0.0001
36	Latvia	0.1843	85	Algeria	0.0039	133	Burundi	0.0001
37	Serbia	0.1501	86	Suriname	0.0039	134	Malawi	0.0001
38	Estonia	0.1500	87	Saint Helena	0.0037	135	Nauru	0.0001
39	Japan	0.1455	88	Morocco	0.0030	136	Saint Lucia	0.0001
40	Republic of Korea	0.0891	89	Paraguay	0.0027	137	Togo	0.00003
41	Cyprus	0.0623	90	Viet Nam	0.0027	138	Sudan	0.00003
42	Singapore	0.0562	91	Mauritania	0.0027	139	Dem. Rep. of the Congo	0.00003
43	New Zealand	0.0542	92	Namibia	0.0026	140	Angola	0.00002
44	Jordan	0.0536	93	Turks and Caicos Islands	0.0022	<b>141</b>	<b>Kenya</b>	<b>0.00001</b>
45	Brazil	0.0477	94	Mauritius	0.0021	142	Macao	0.000011
46	Turkey	0.0464	95	South Africa	0.0021	143	Botswana	0.00001
47	Malta	0.0363	96	St Vincent and the Grenadines	0.0020	144	Ghana	0.000005
48	Bulgaria	0.0320	<b>97</b>	<b>Jamaica</b>	<b>0.0020</b>	145	Eritrea	0.0000002
49	Chile	0.0241						



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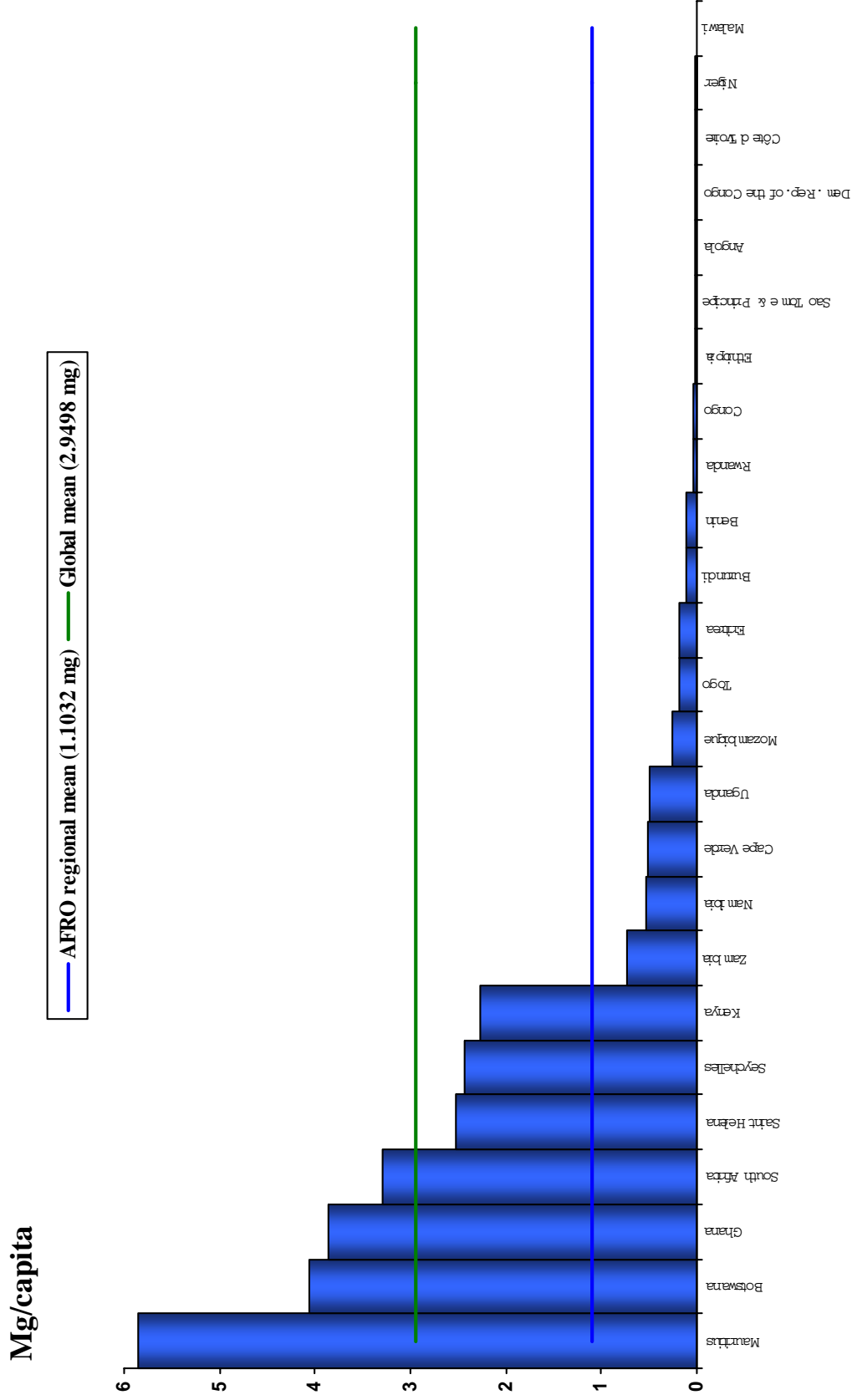
# Graph 7. AFRO Regional 2006 Morphine Consumption



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.

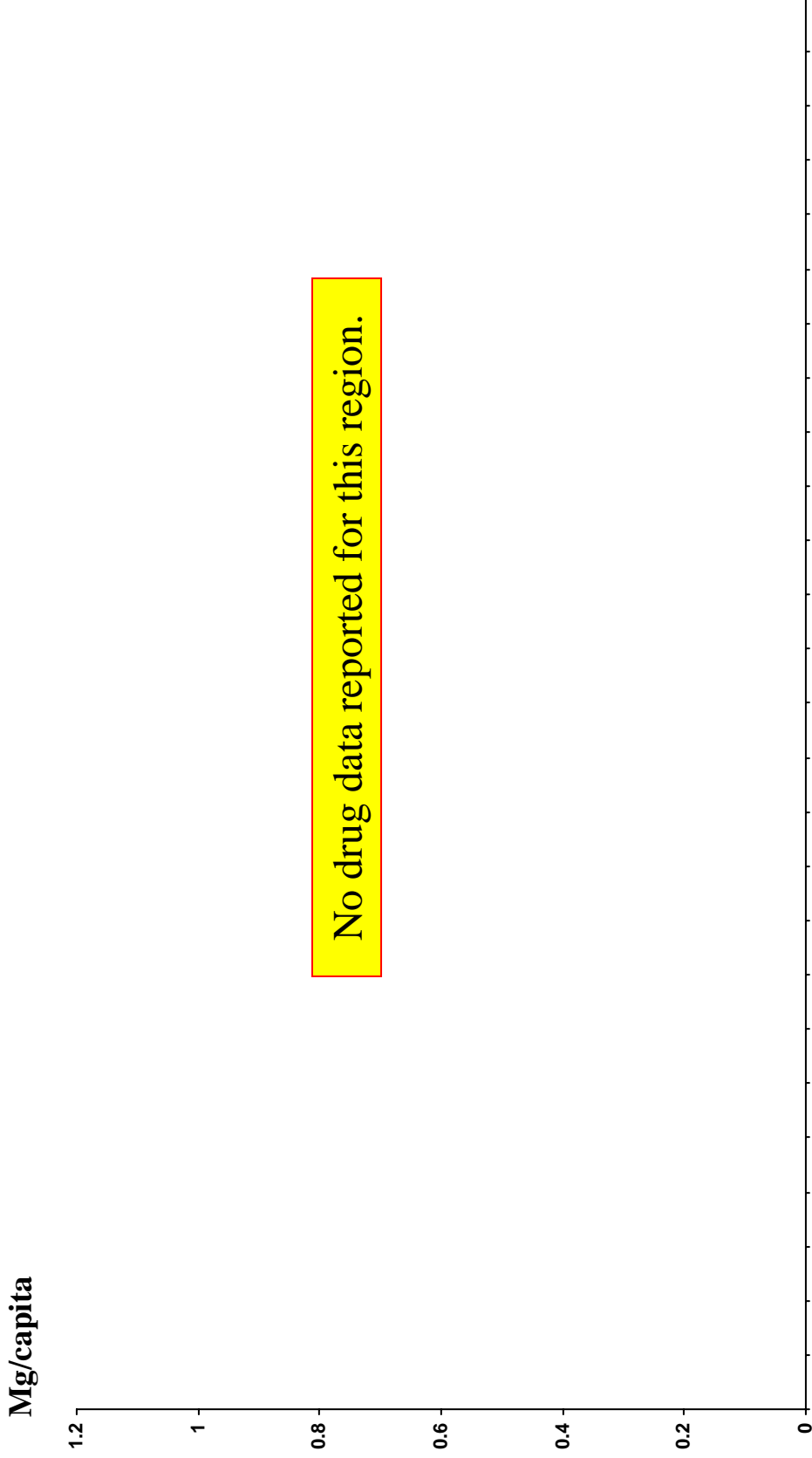
# Graph 8. AFRO Regional 2006 Pethidine Consumption



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

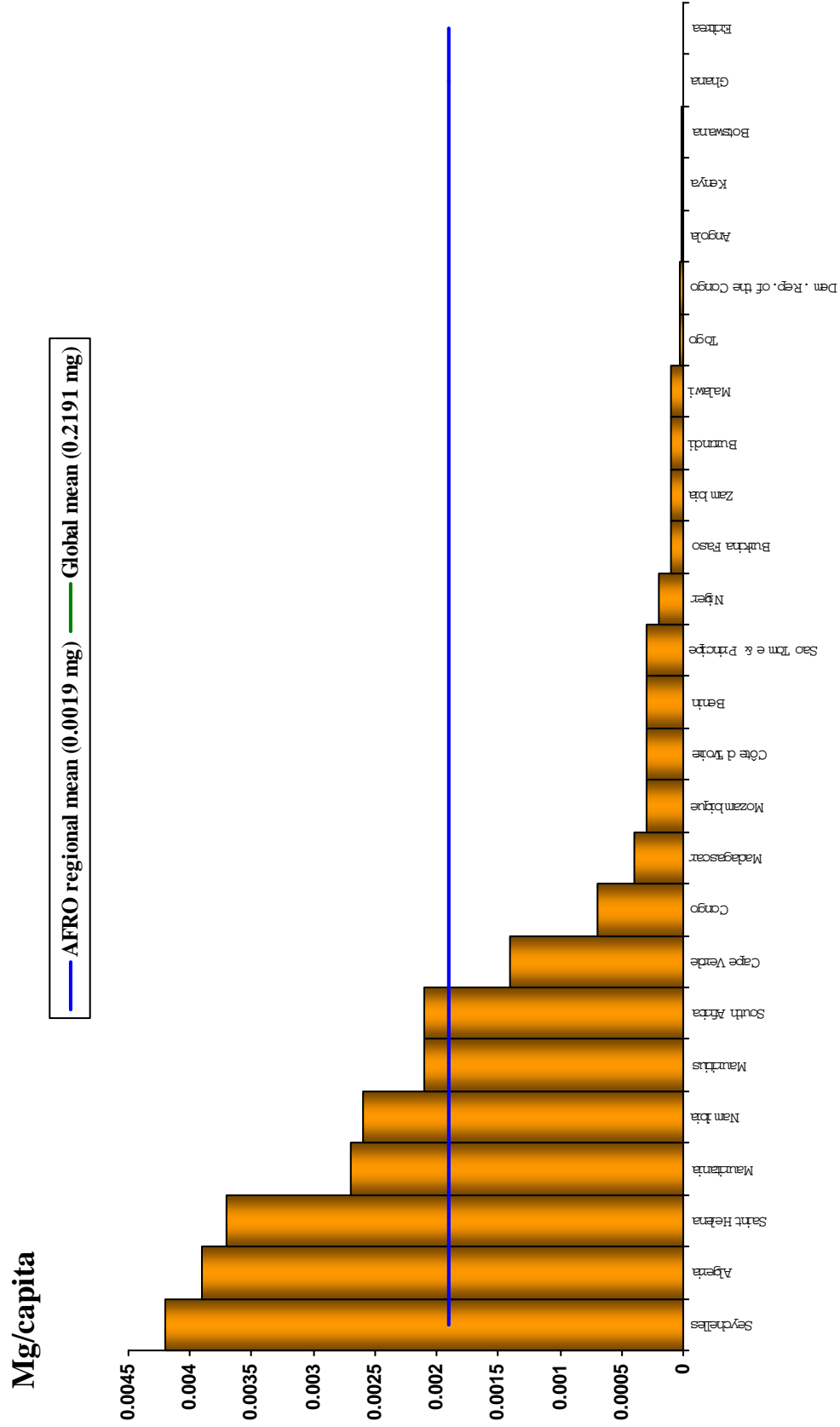
# Graph 9. AFRO Regional 2006 Oxycodone Consumption



Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

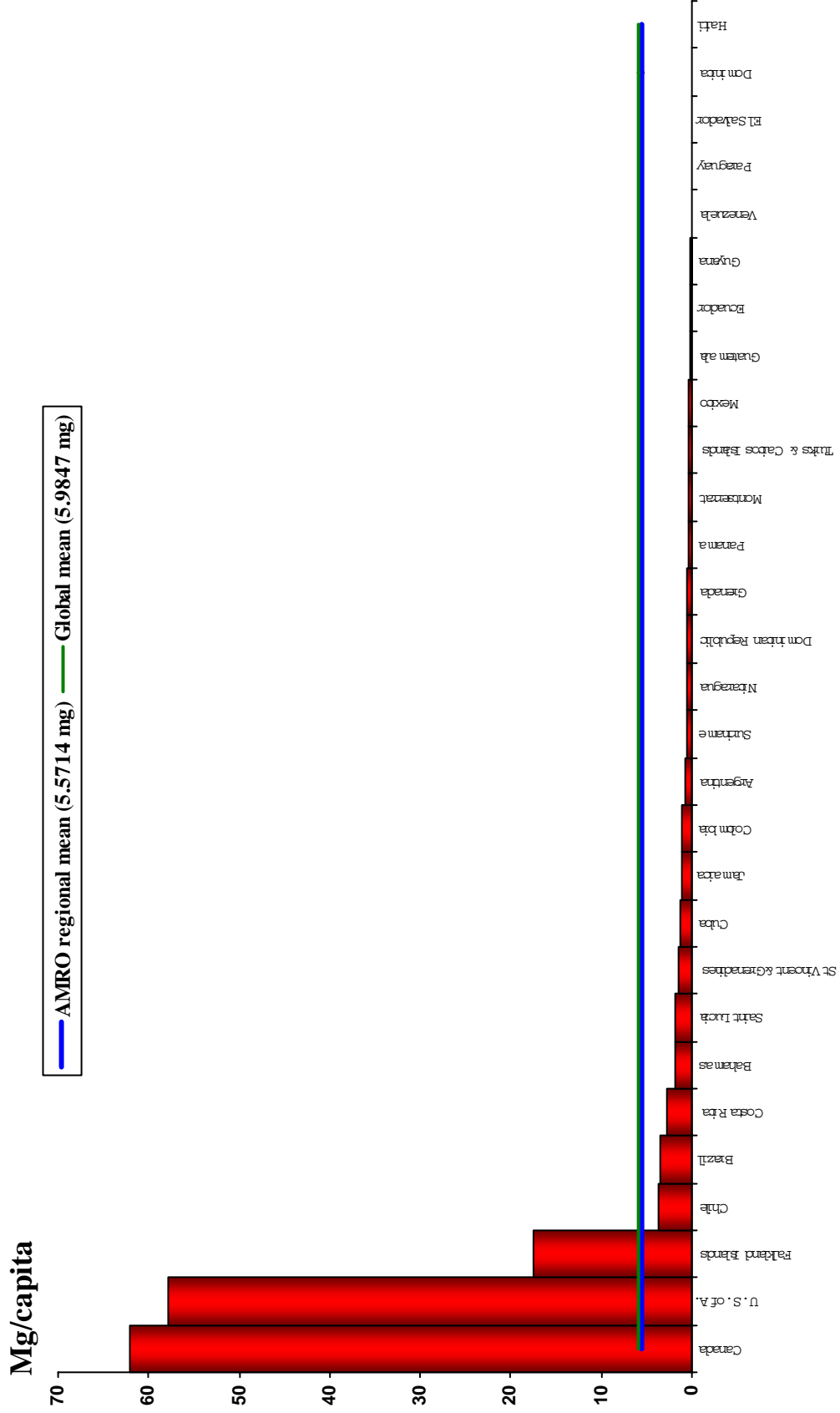
# Graph 10. AFRO Regional 2006 Fentanyl Consumption



Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

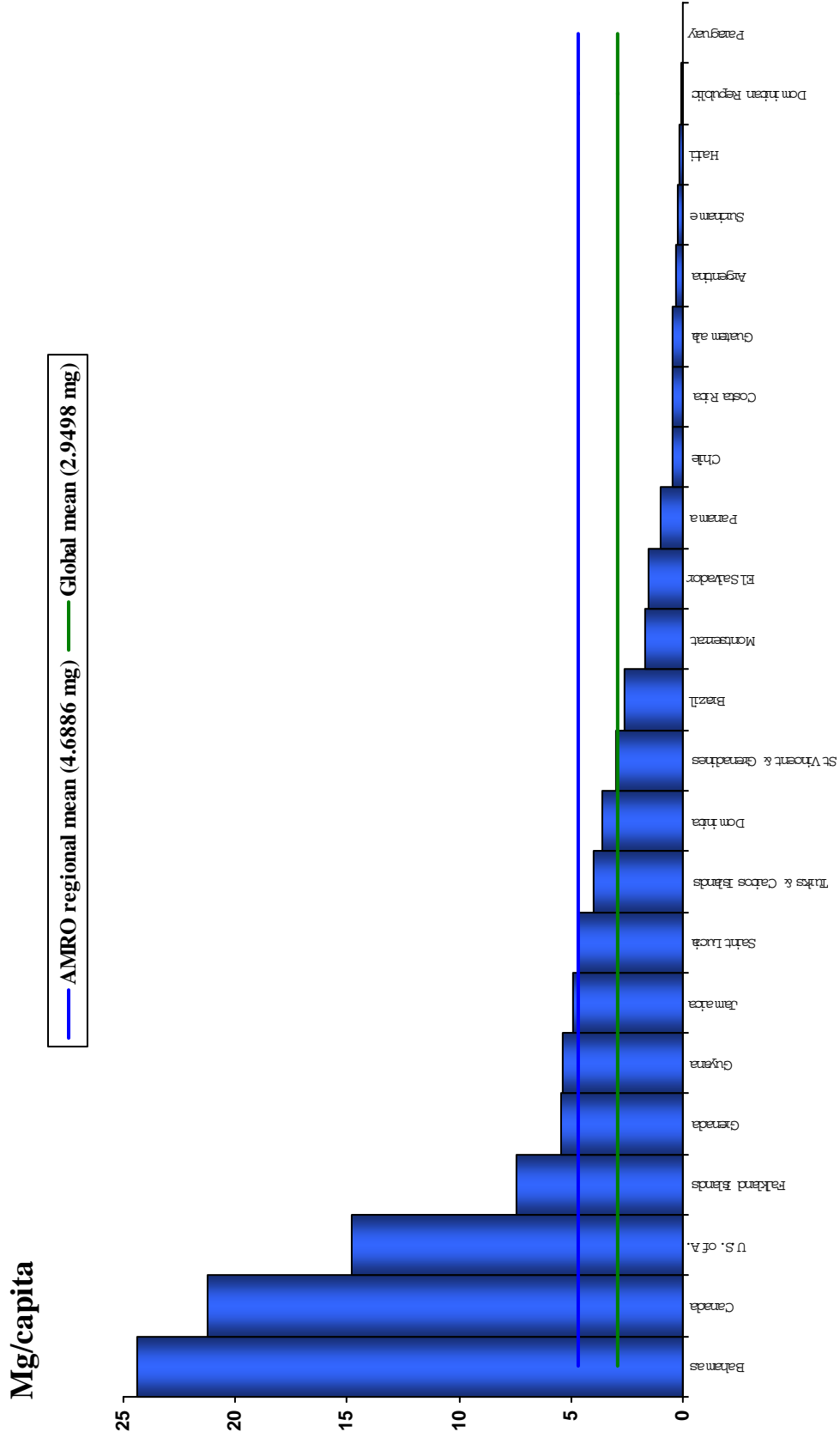
# Graph 11. AMRO Regional 2006 Morphine Consumption



Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.

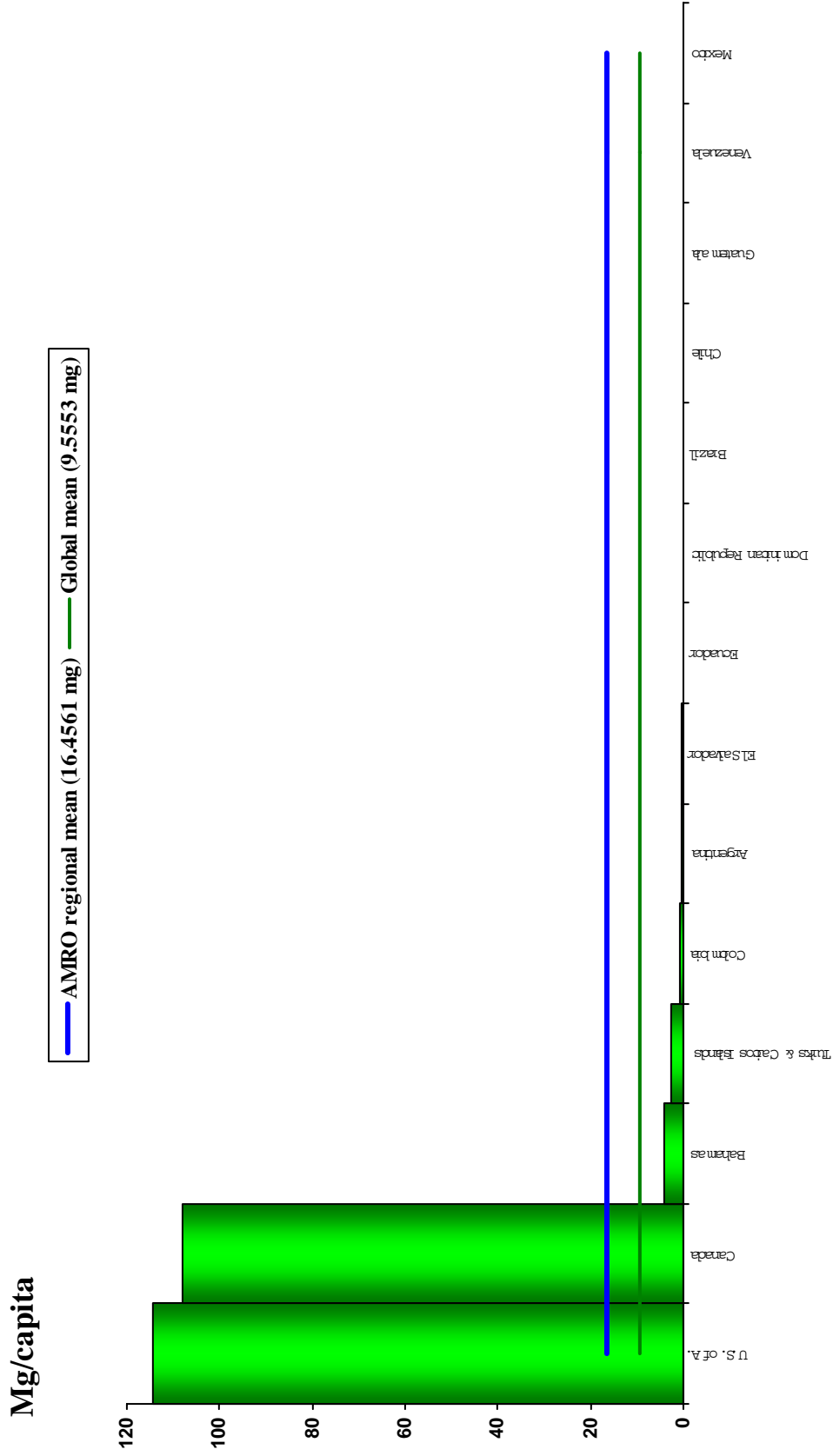
# Graph 12. AMRO Regional 2006 Pethidine Consumption



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

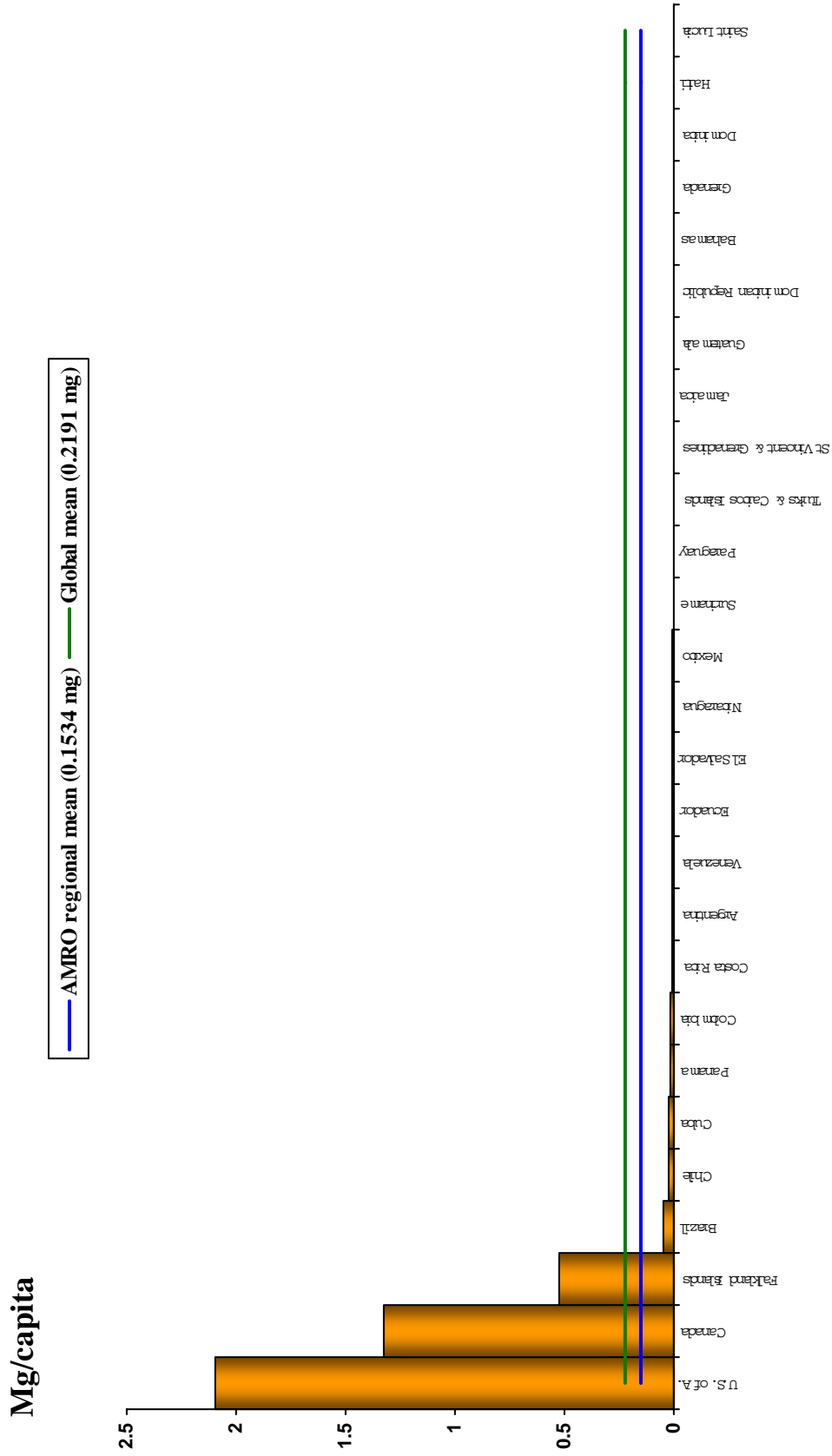
# Graph 13. AMRO Regional 2006 Oxycodone Consumption



Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

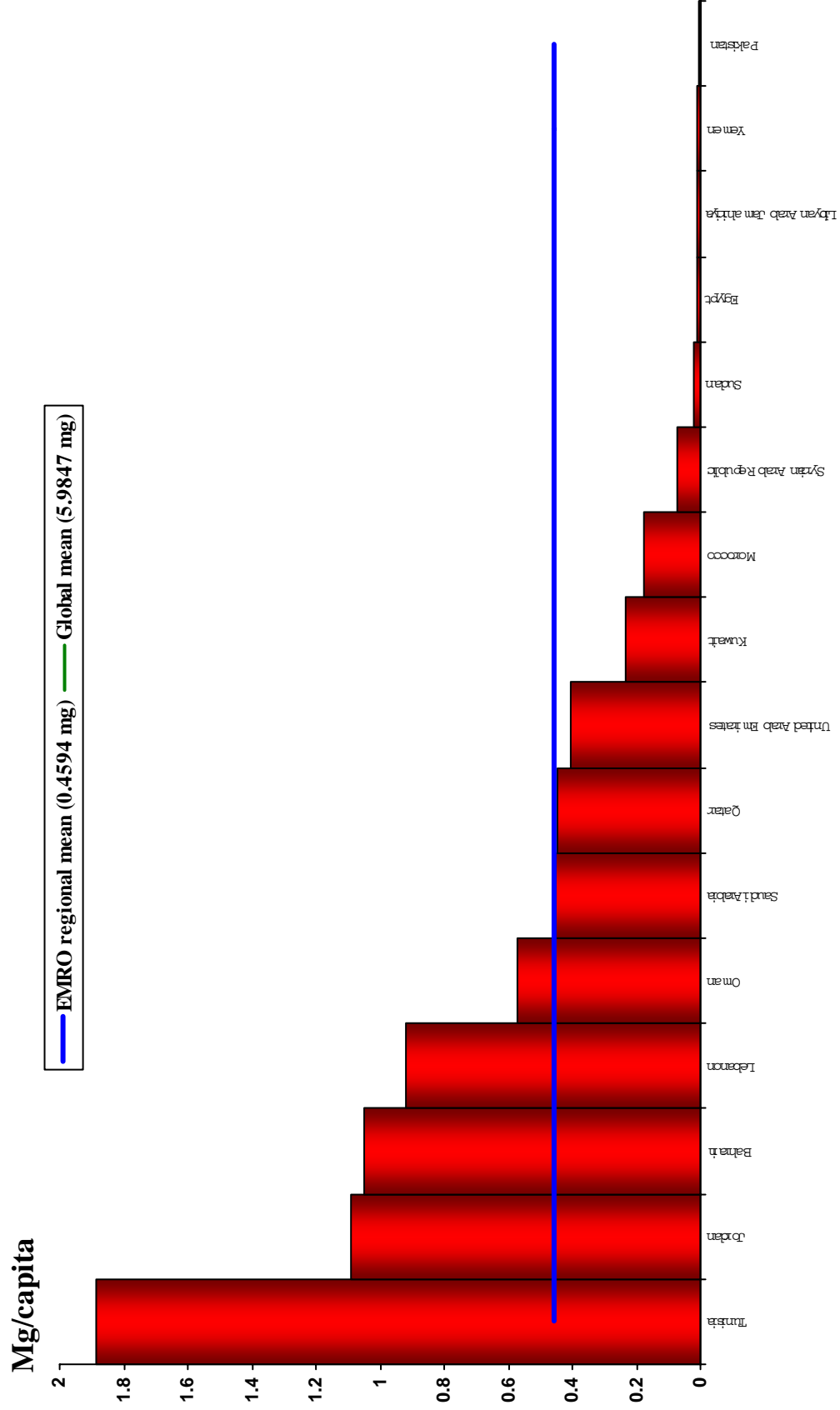
# Graph 14. AMRO Regional 2006 Fentanyl Consumption



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

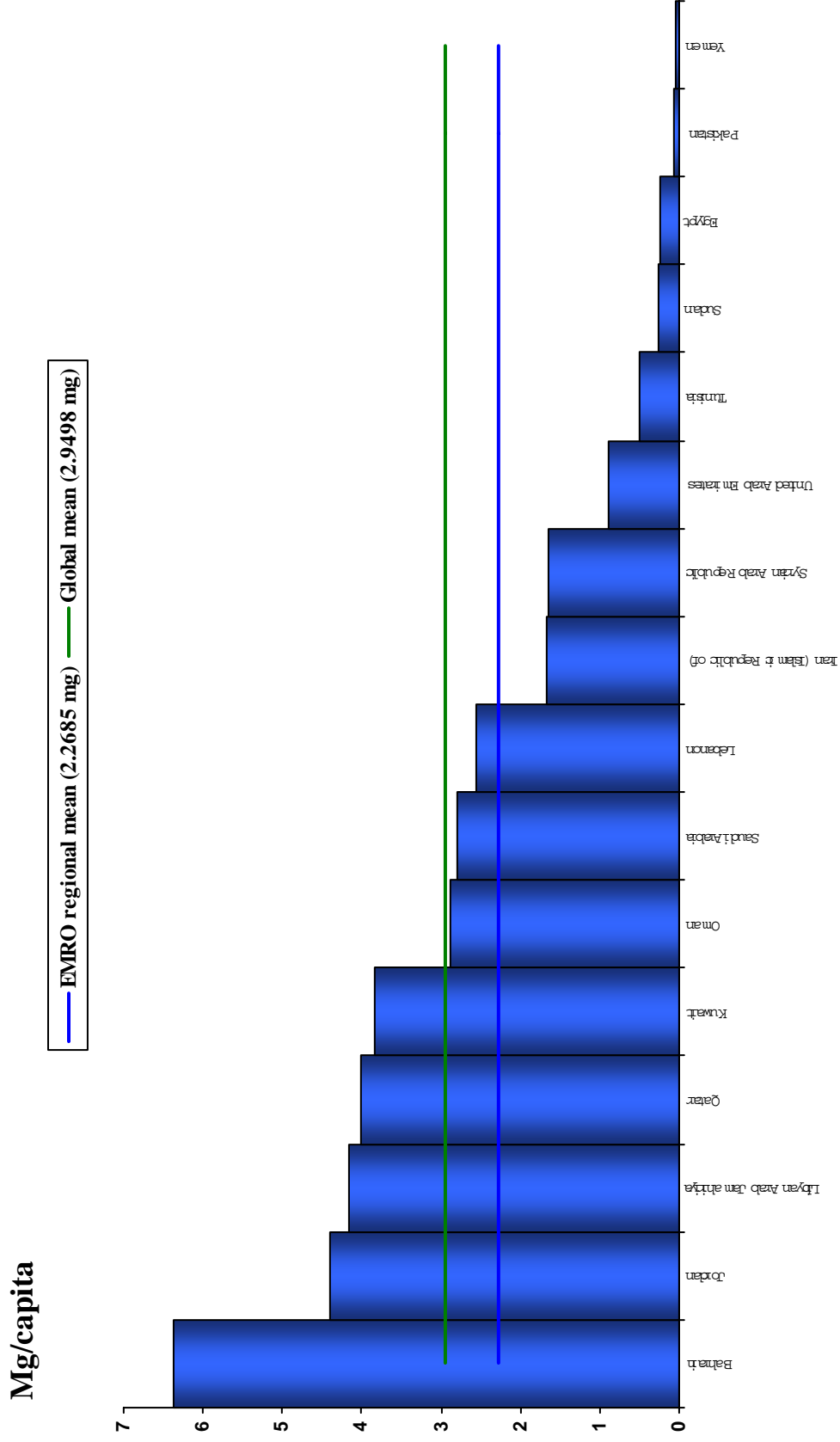
# Graph 15. EMRO Regional 2006 Morphine Consumption



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

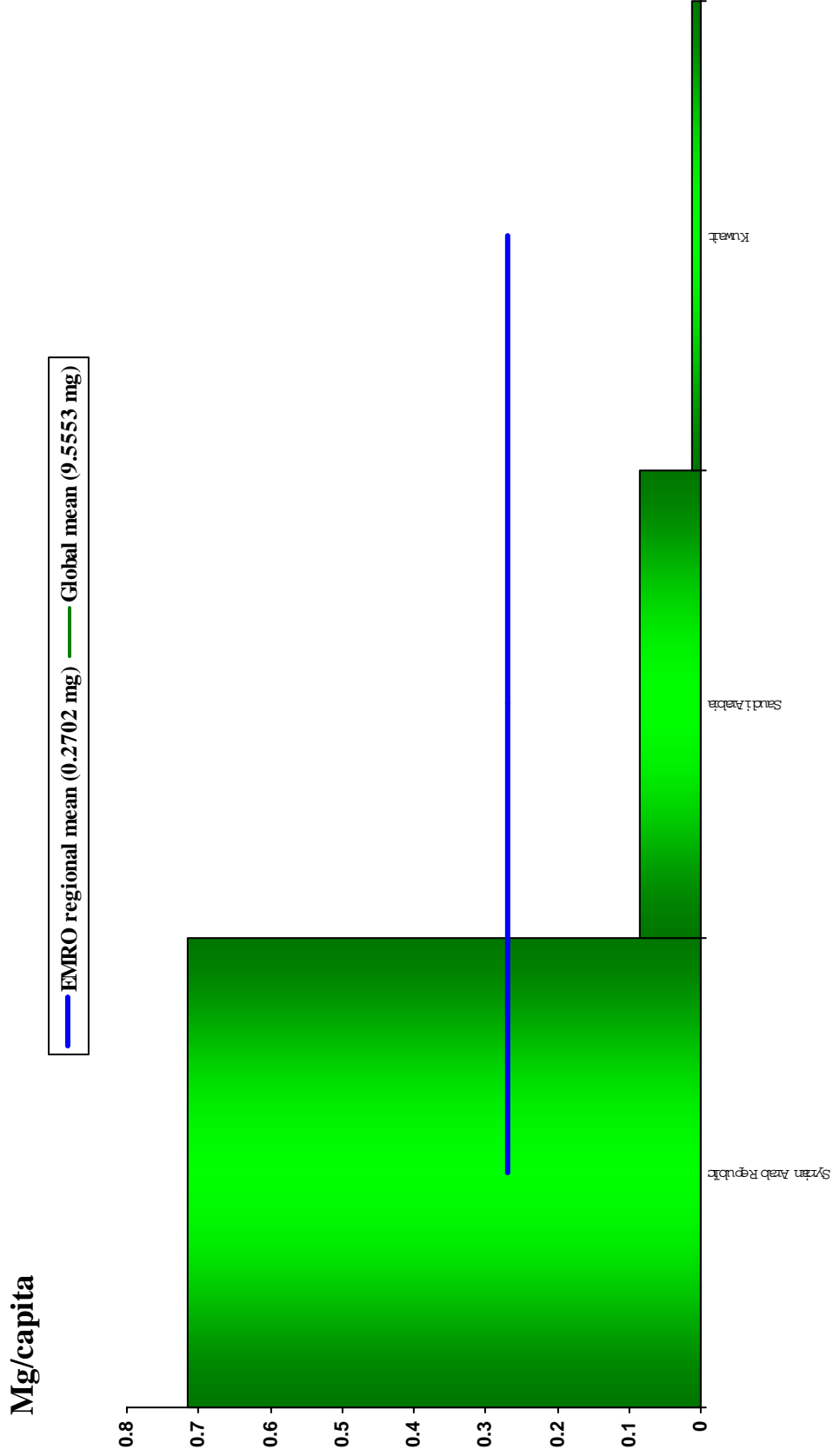
# Graph 16. EMRO Regional 2006 Pethidine Consumption



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

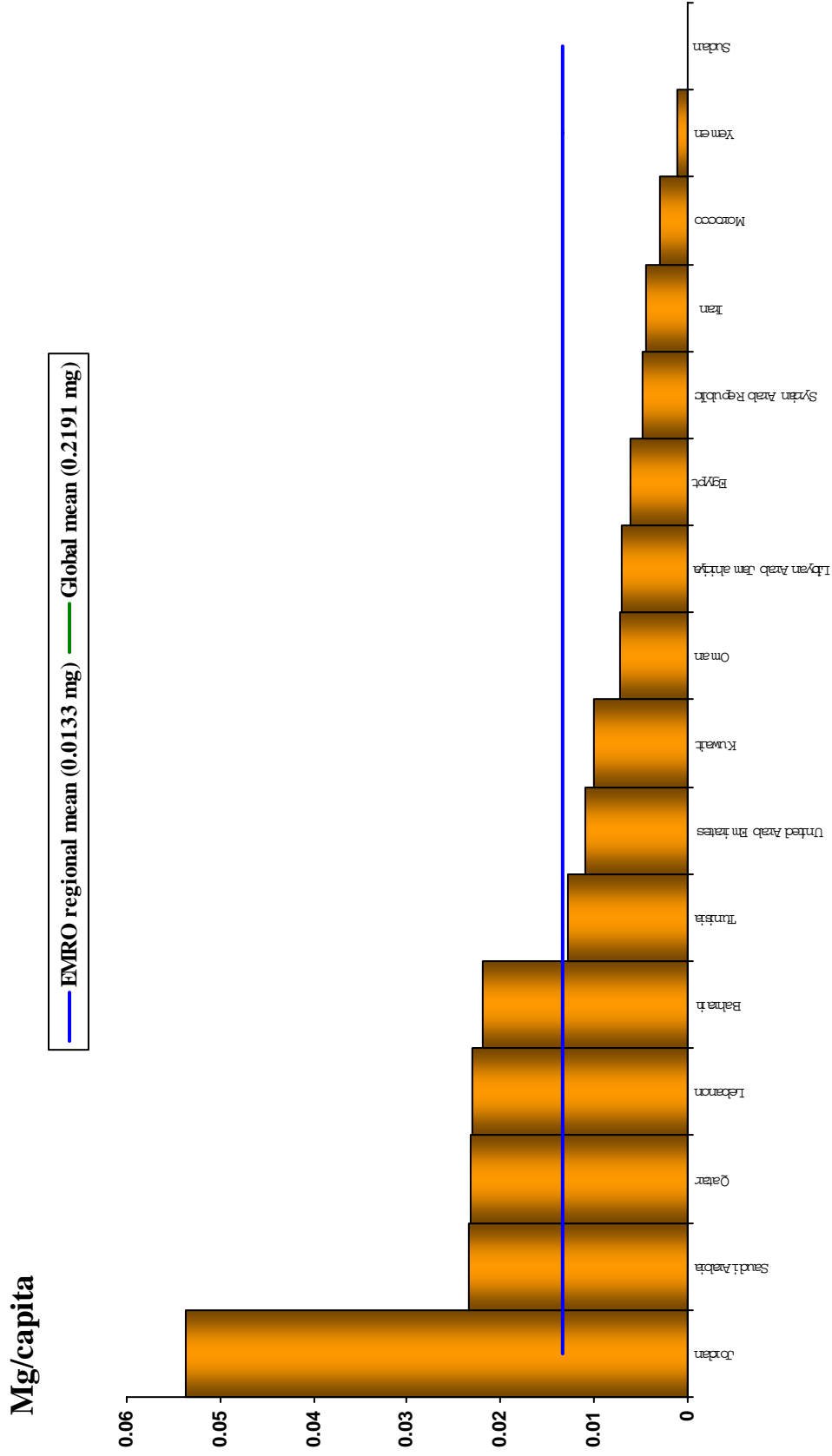
# Graph 17. EMRO Regional 2006 Oxycodone Consumption



Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.

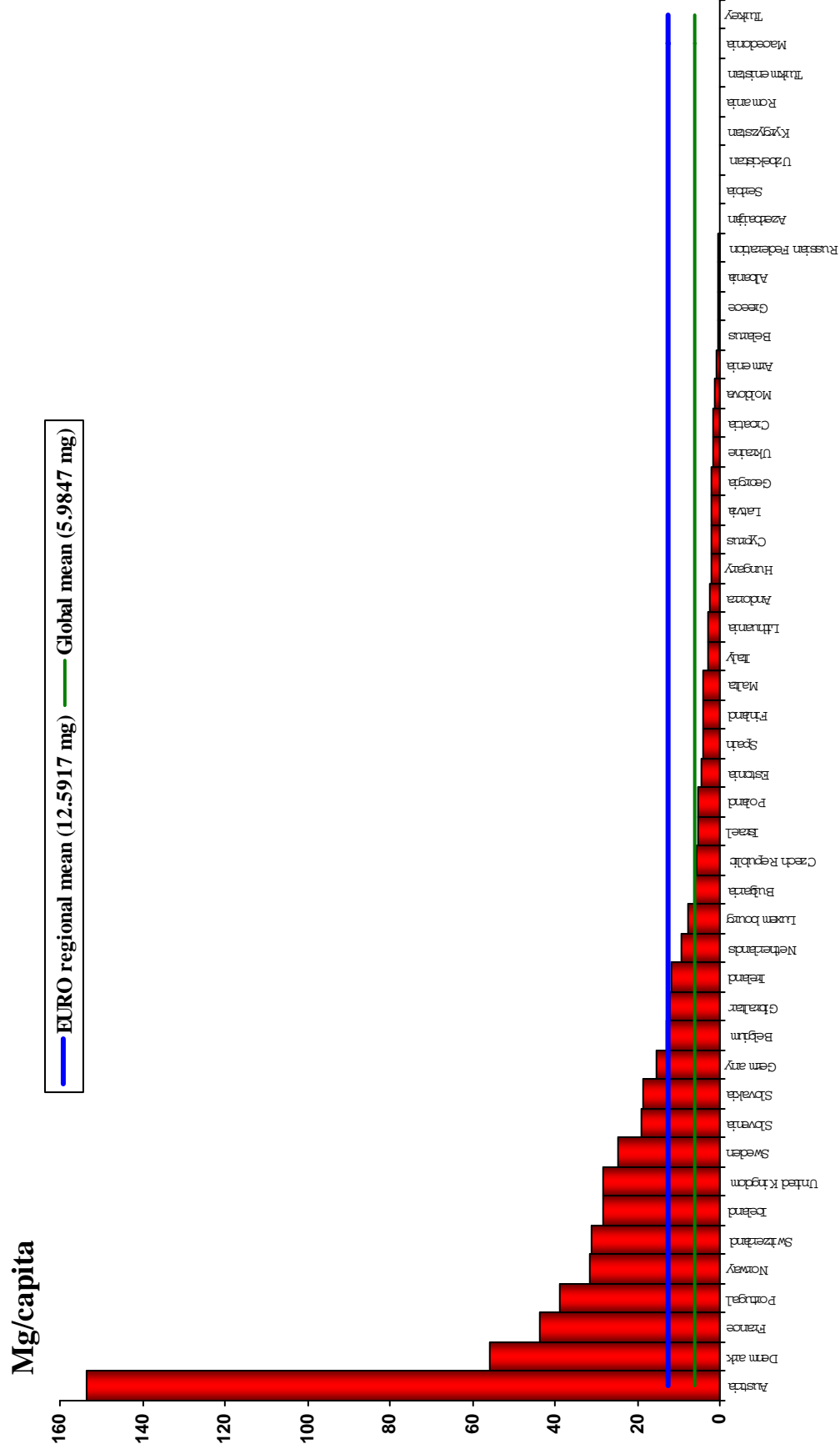
# Graph 18. EMRO Regional 2006 Fentanyl Consumption



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.

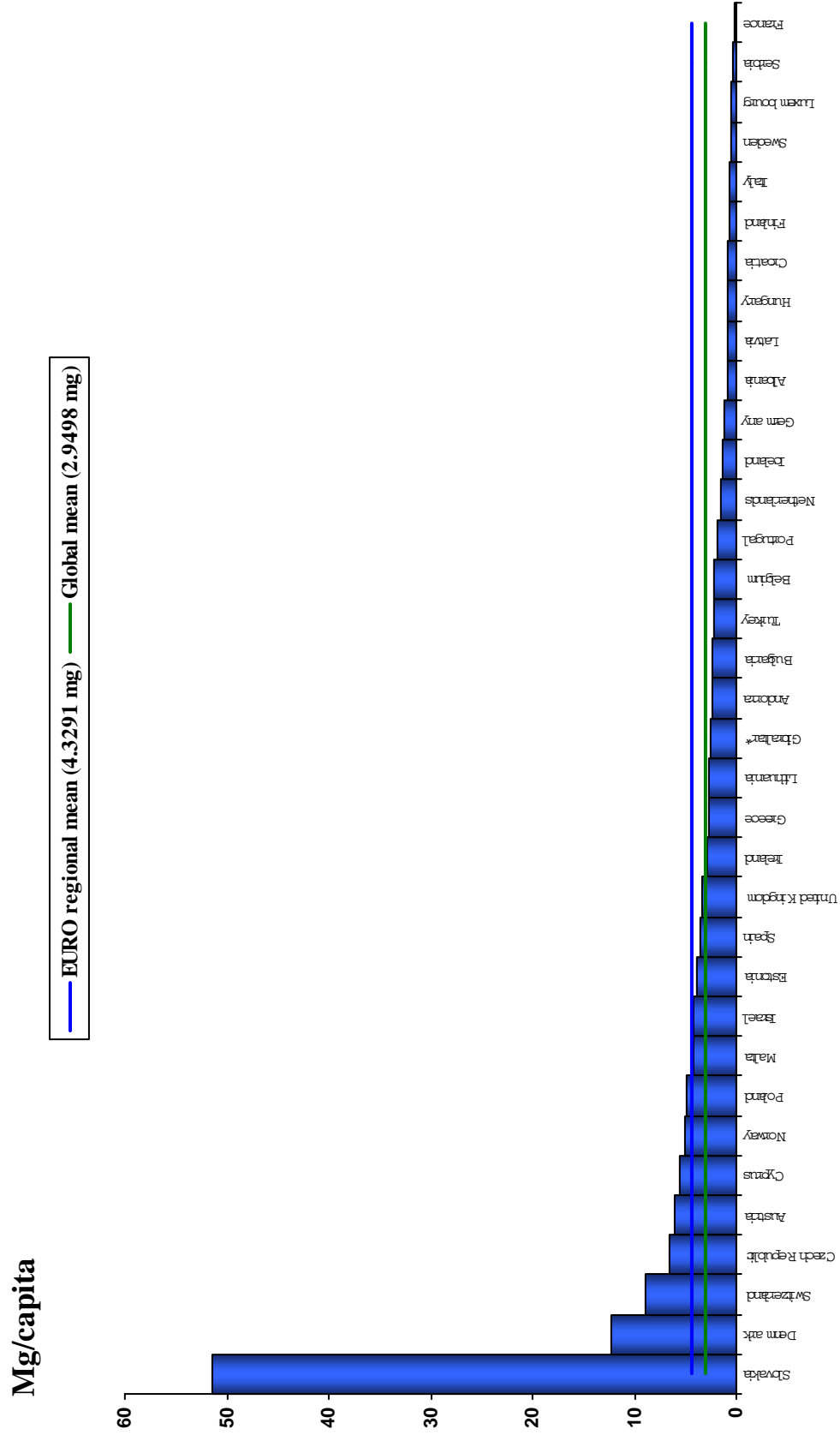
# Graph 19. EURO Regional 2006 Morphine Consumption



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

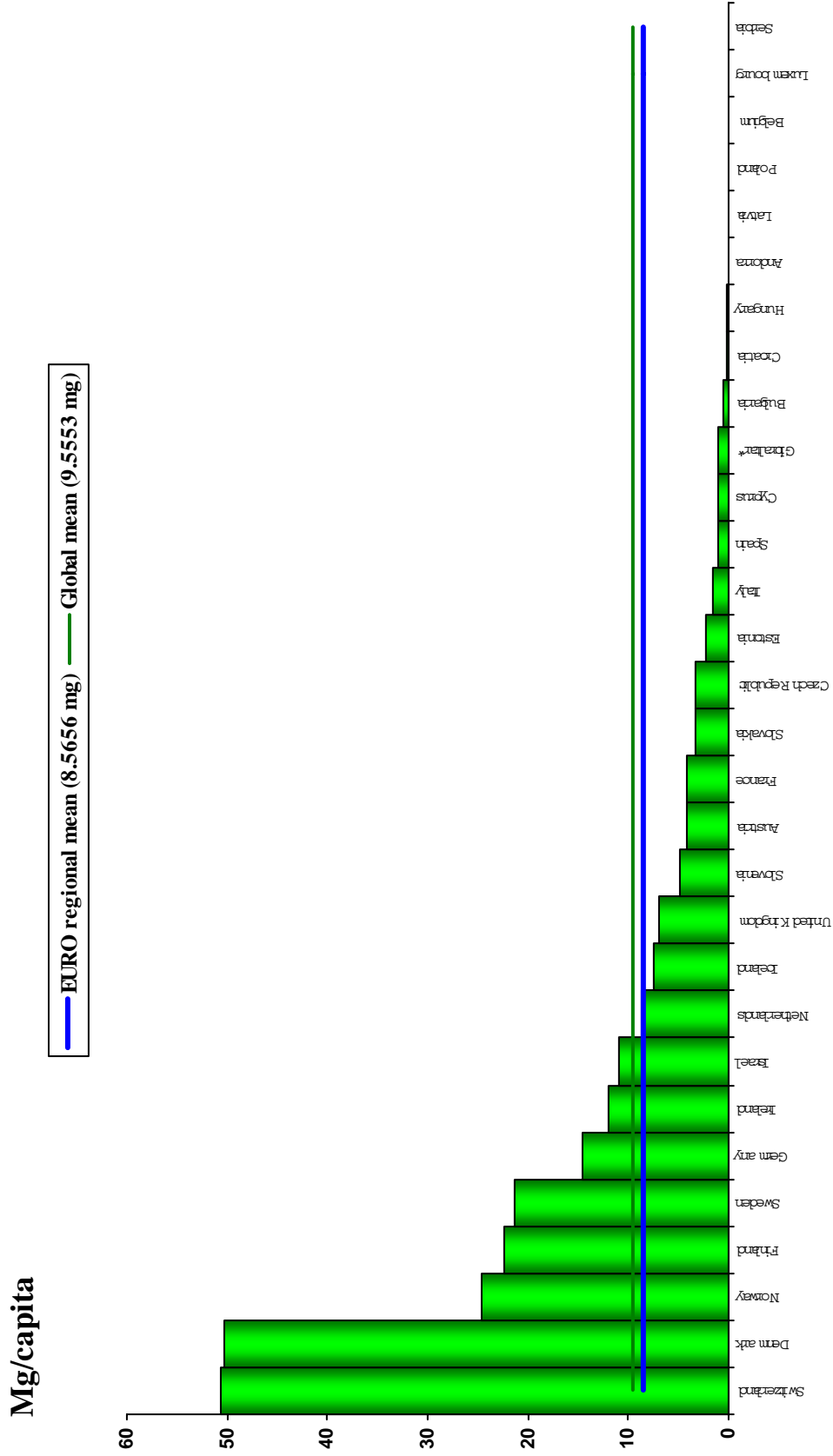
# Graph 20. EURO Regional 2006 Pethidine Consumption



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

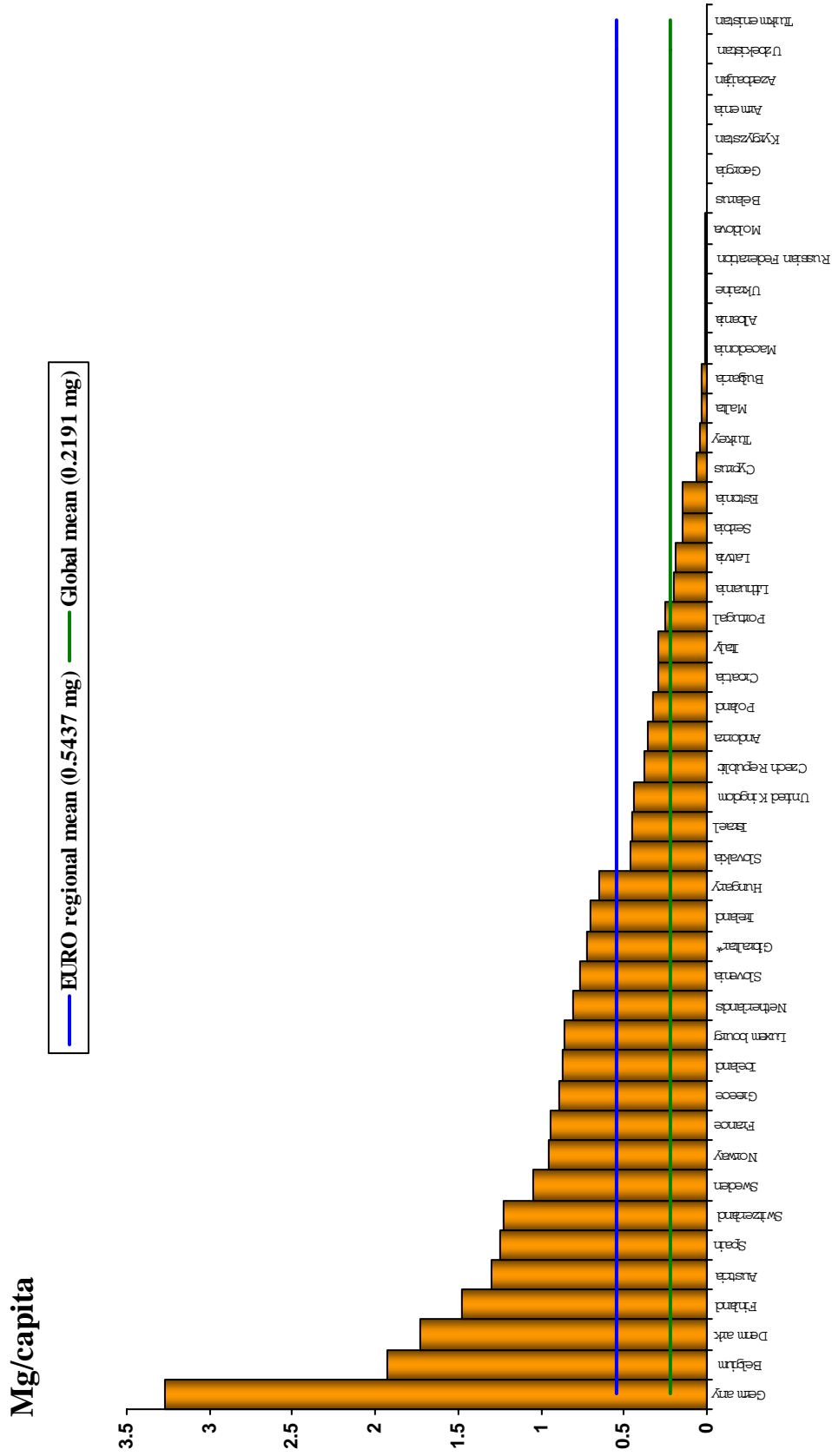
# Graph 21. EURO Regional 2006 Oxycodone Consumption



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

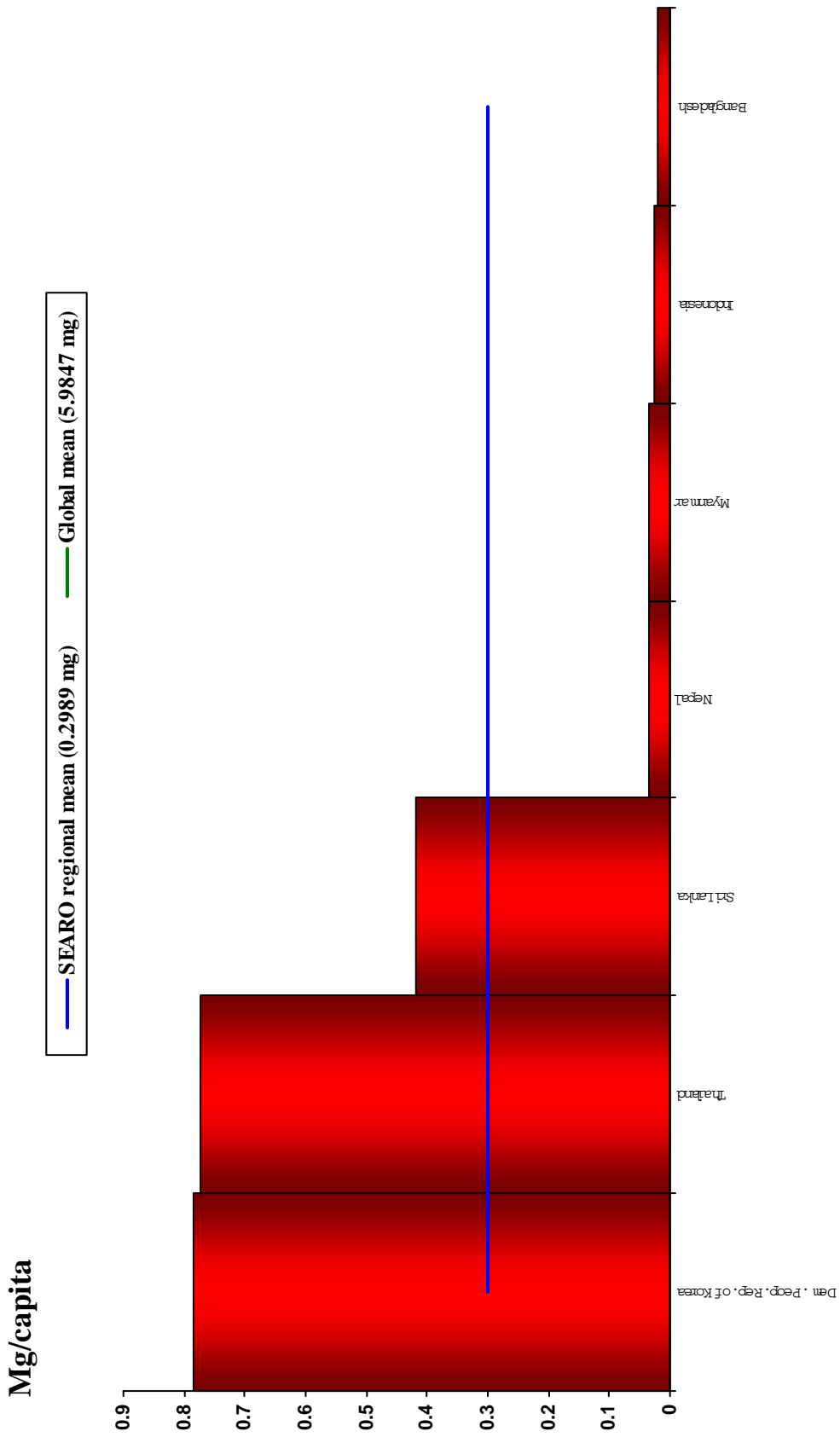
# Graph 22. EURO Regional 2006 Fentanyl Consumption



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

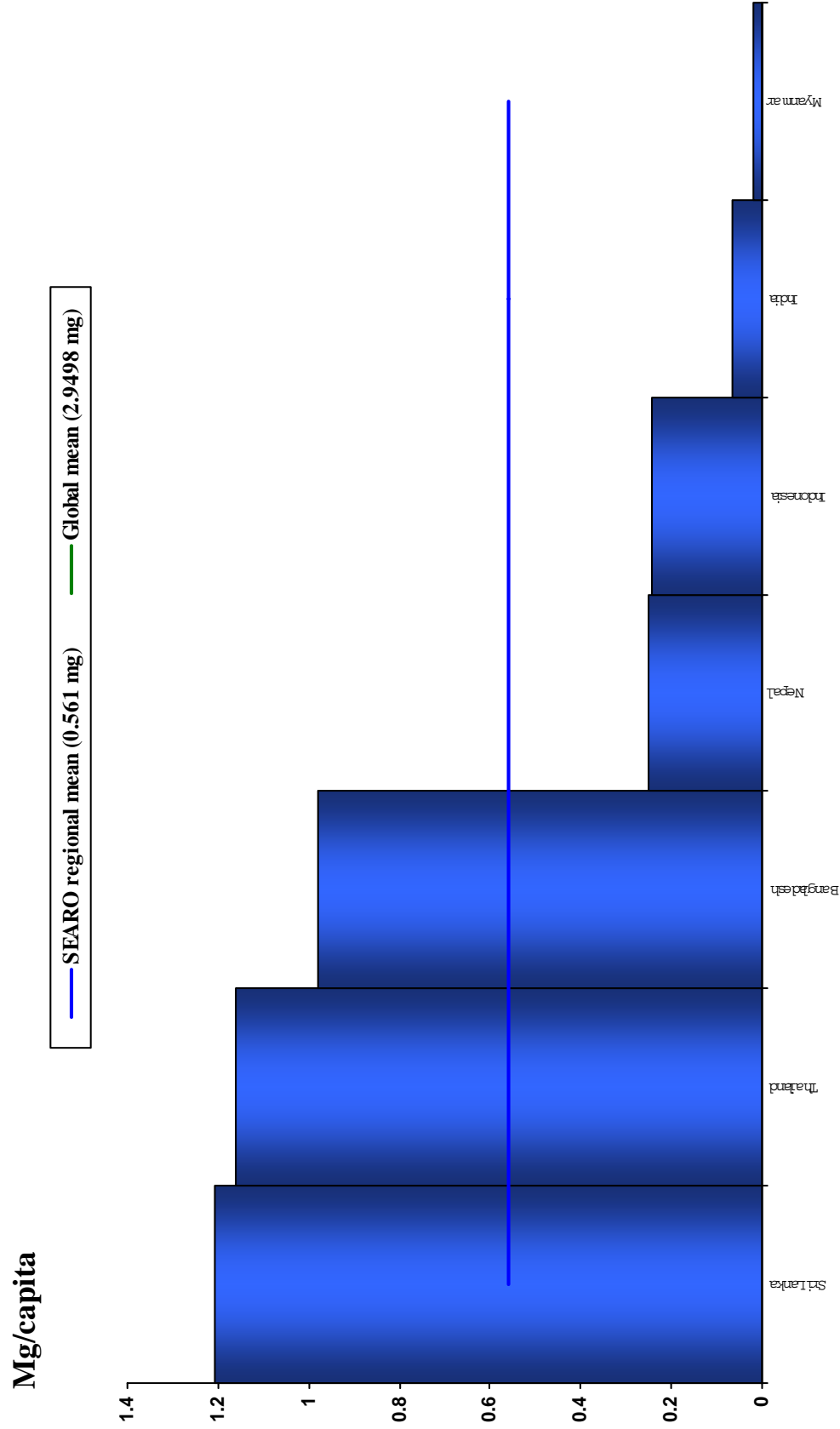
# Graph 23. SEARO Regional 2006 Morphine Consumption



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.

# Graph 24. SEARO Regional 2006 Pethidine Consumption

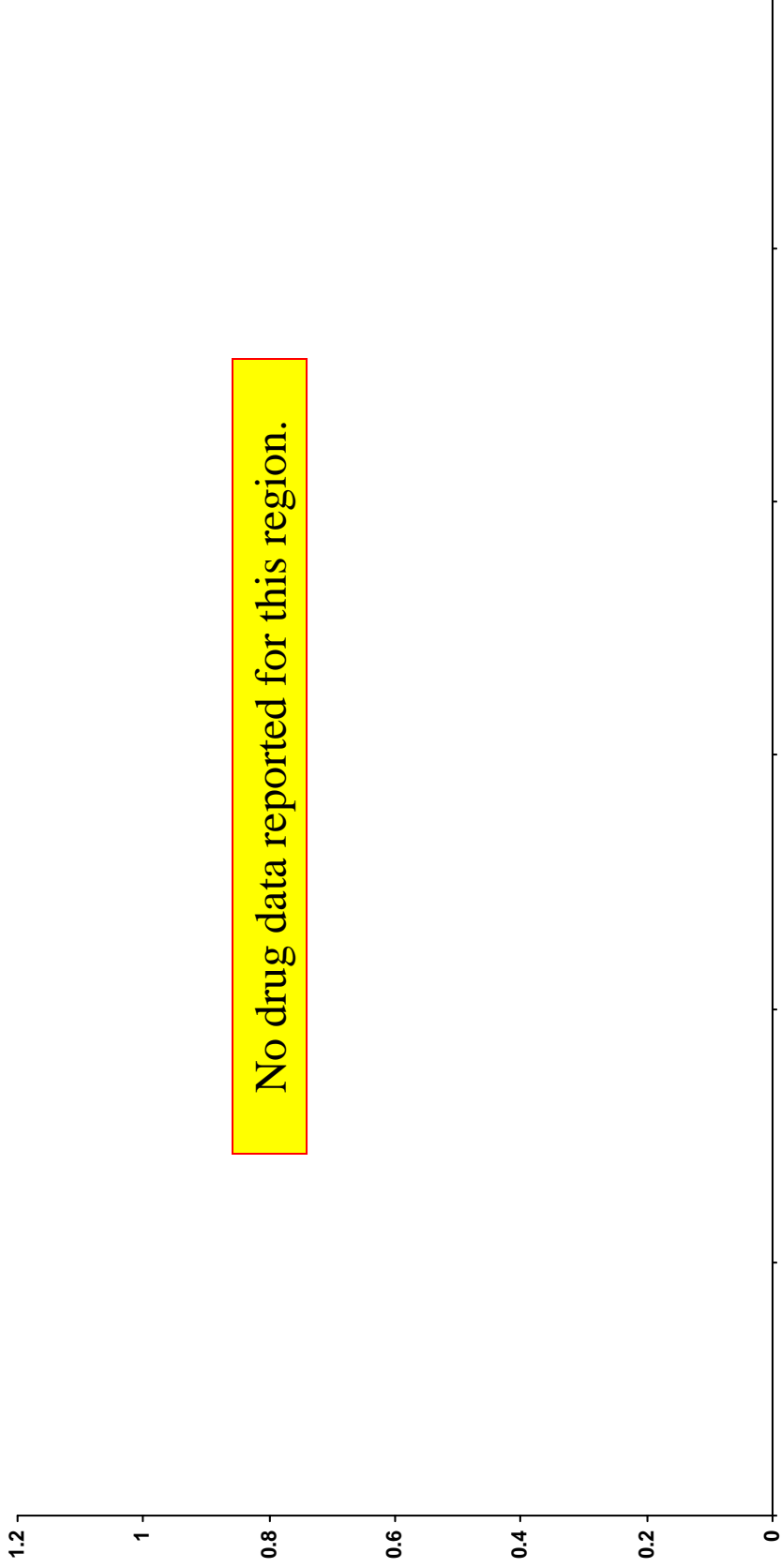


Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

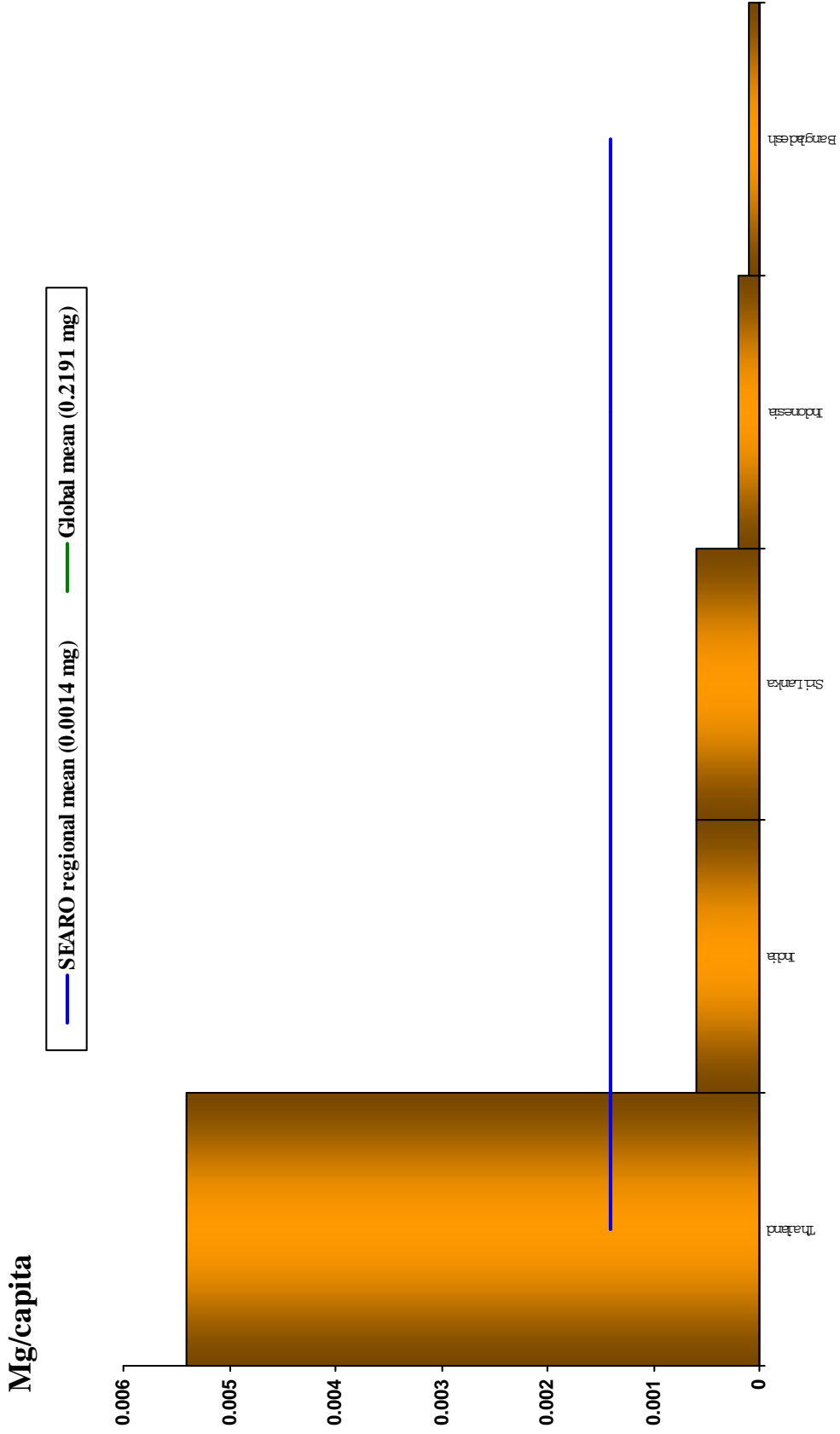
*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

# Graph 25. SEARO Regional 2006 Oxycodone Consumption

Mg/capita



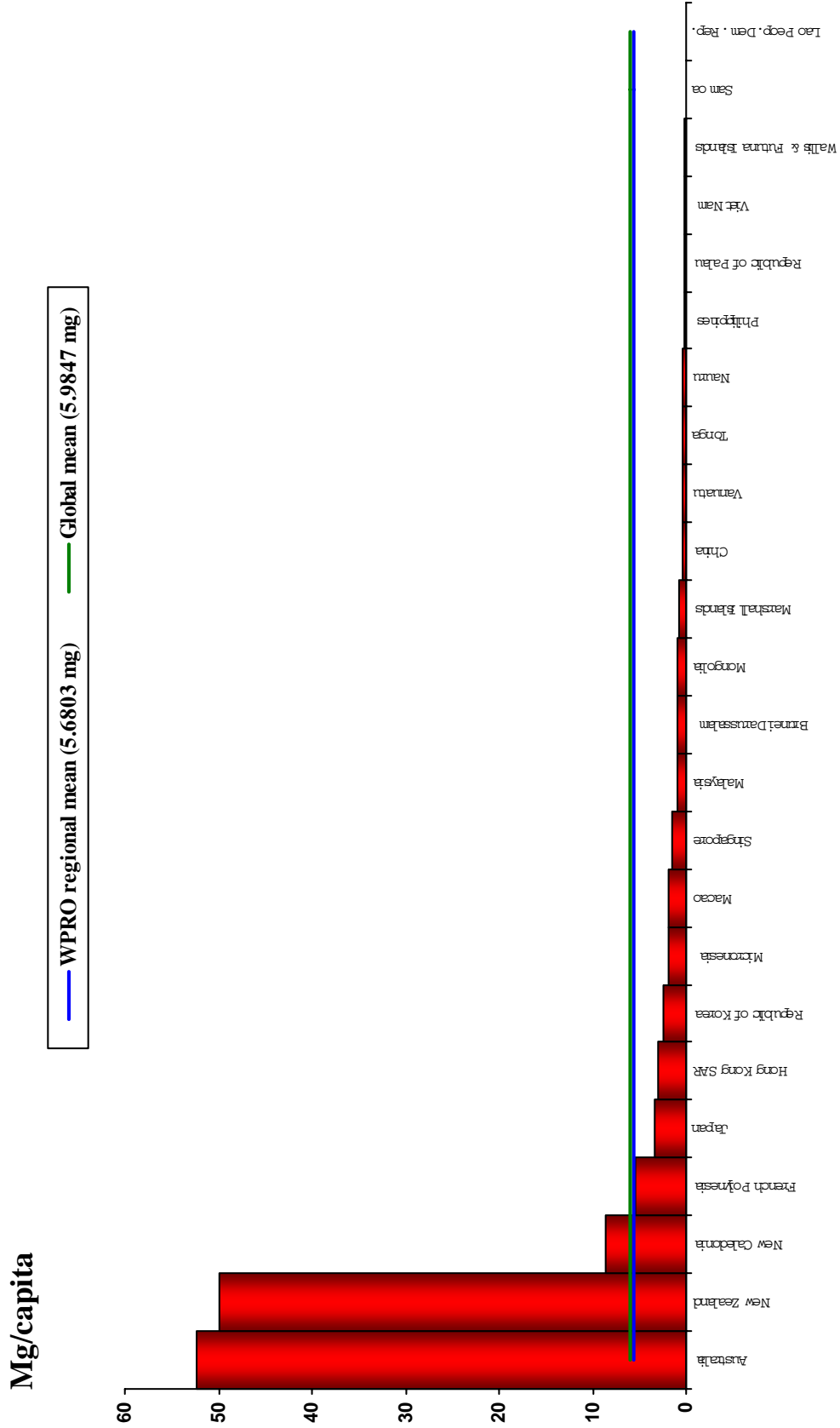
# Graph 26. SEARO Regional 2006 Fentanyl Consumption



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

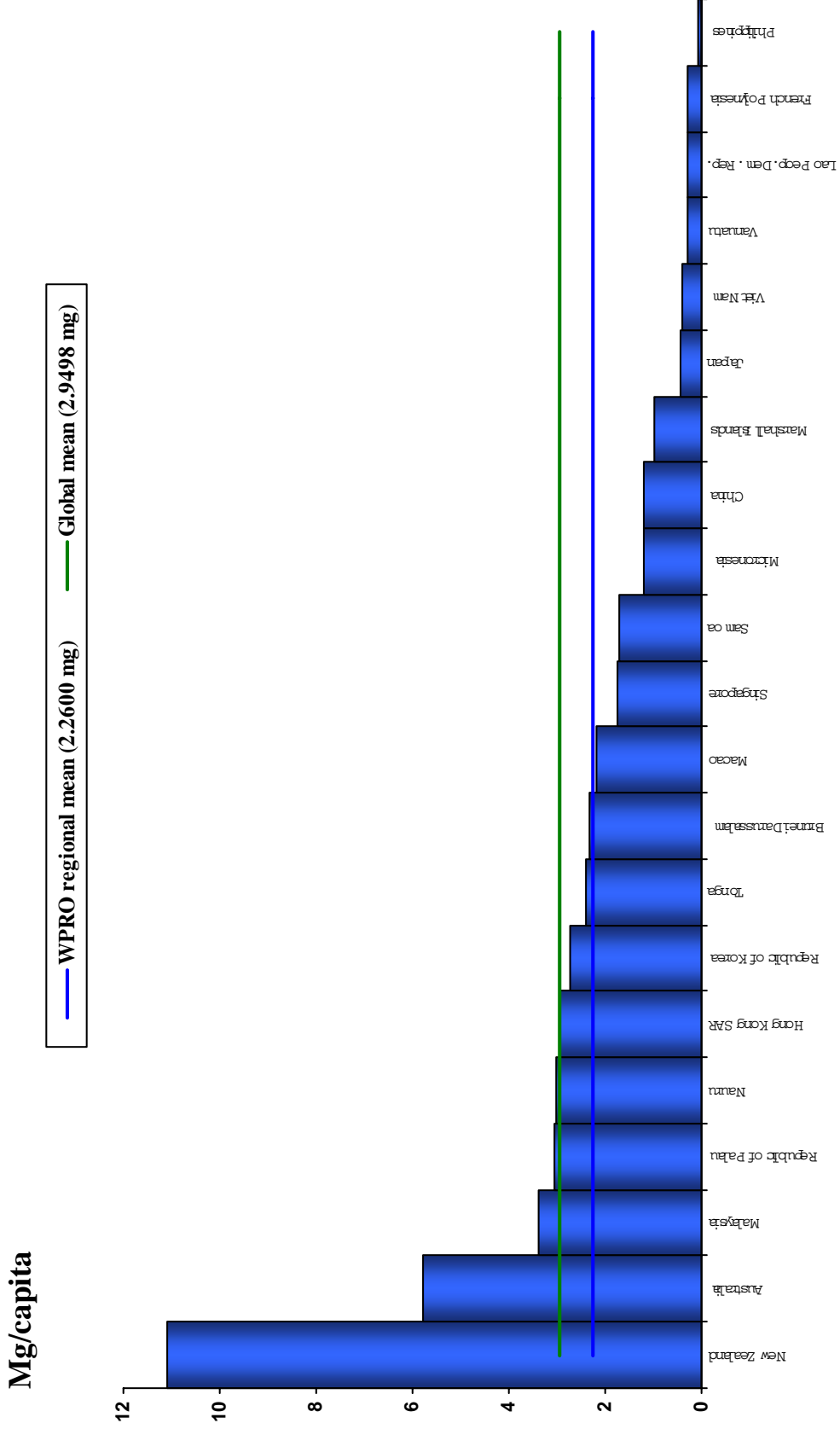
# Graph 27. WPRO Regional 2006 Morphine Consumption



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

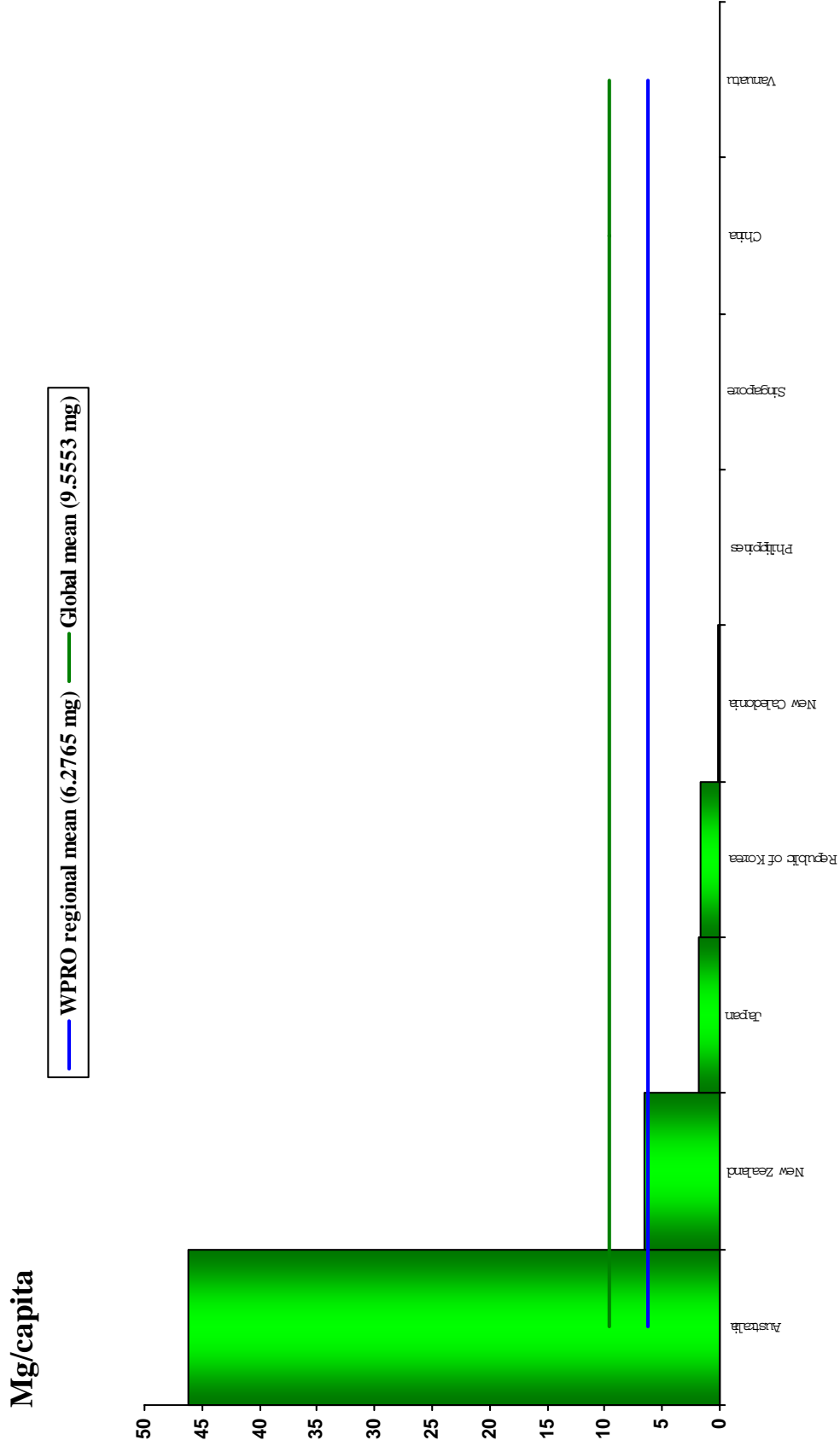
# Graph 28. WPRO Regional 2006 Pethidine Consumption



Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

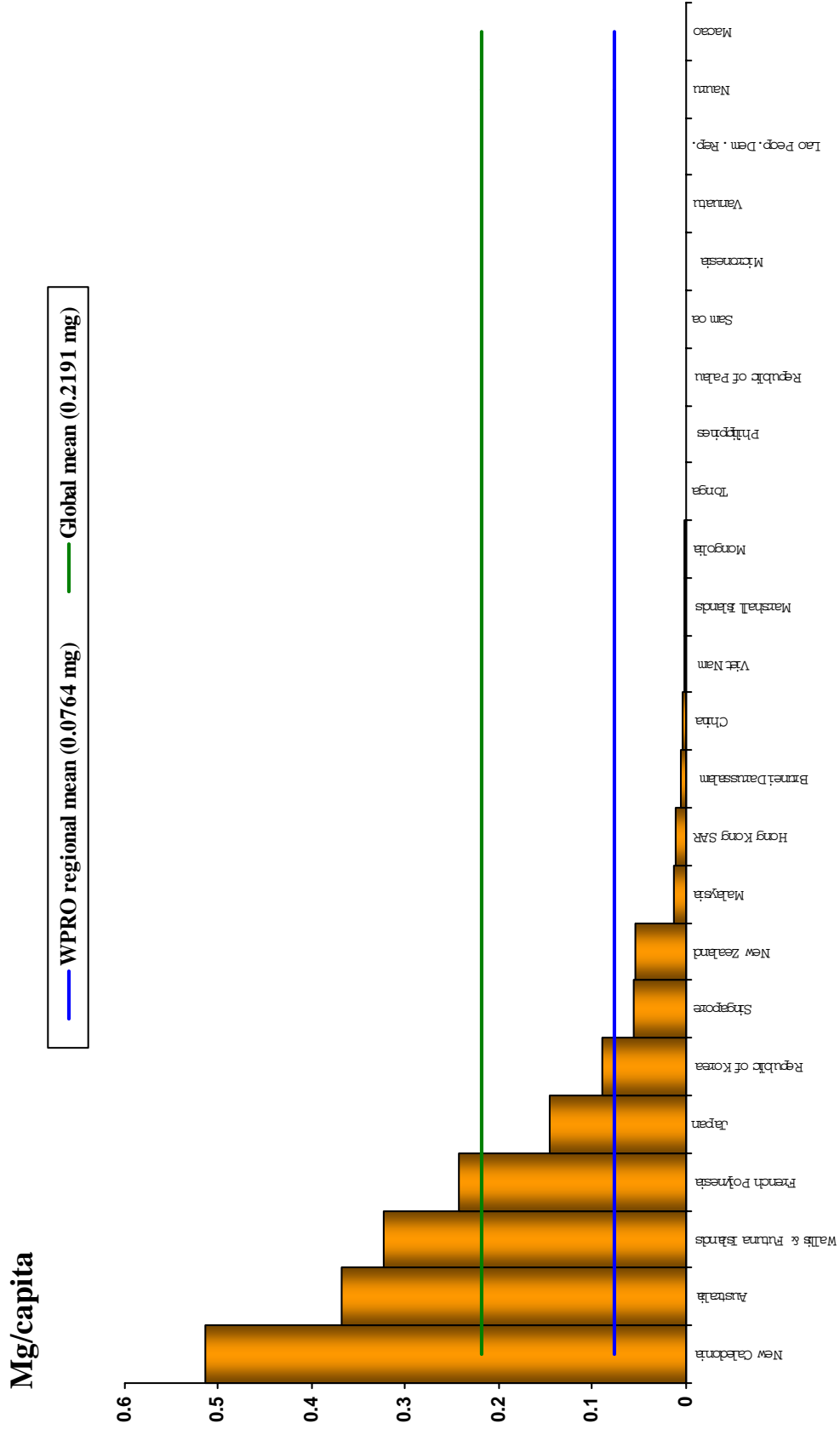
*The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.*

# Graph 29. WPRO Regional 2006 Oxycodone Consumption



Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008  
 The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.

# Graph 30. WPRO Regional 2006 Fentanyl Consumption

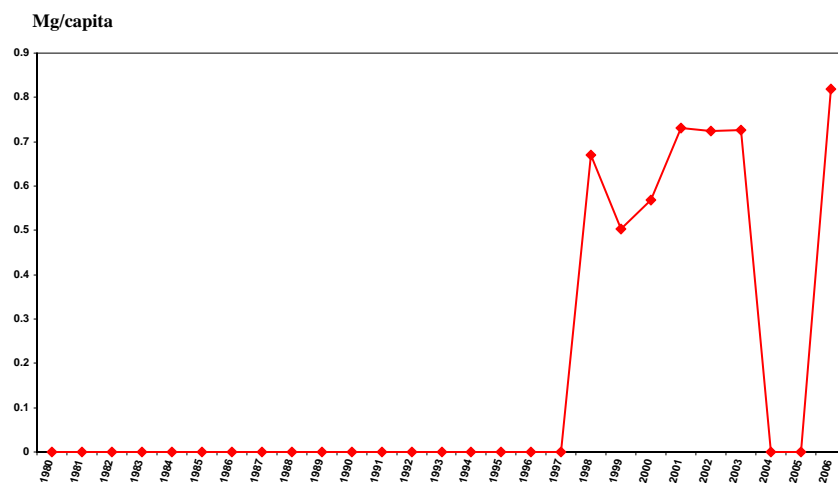


Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.

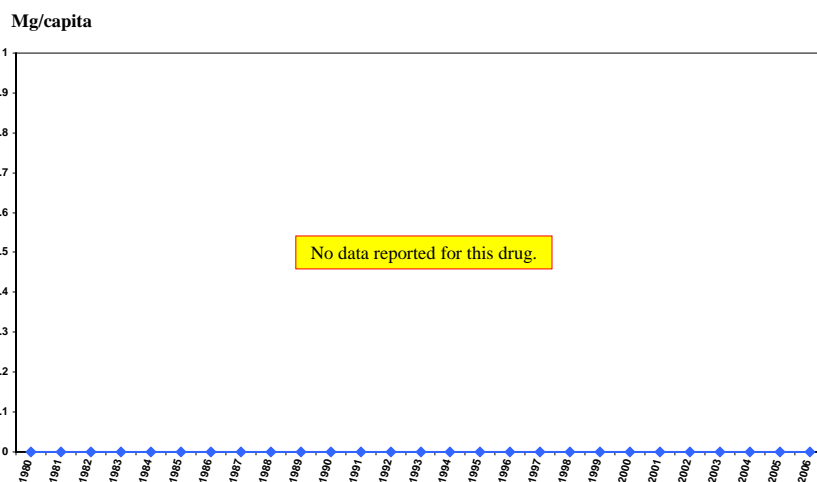
## IX. NATIONAL CONSUMPTION TRENDS, 2006

### Graph 31. Armenia Morphine Consumption 1980-2006



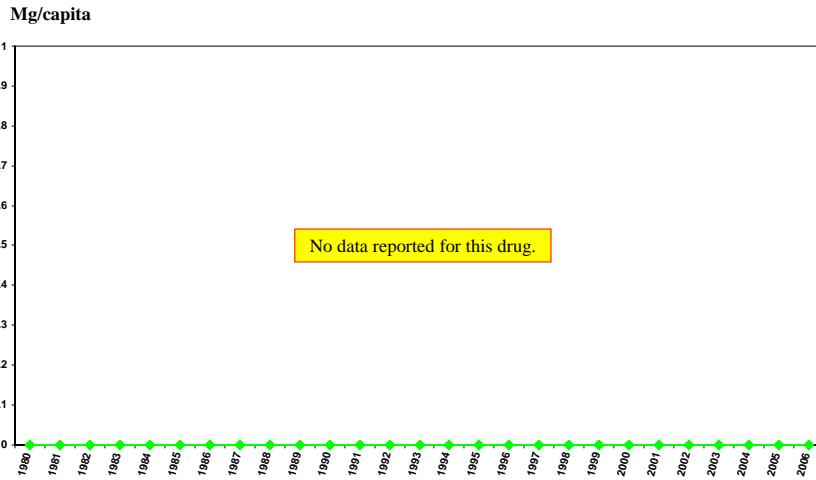
Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

### Graph 32. Armenia Pethidine Consumption 1980-2006



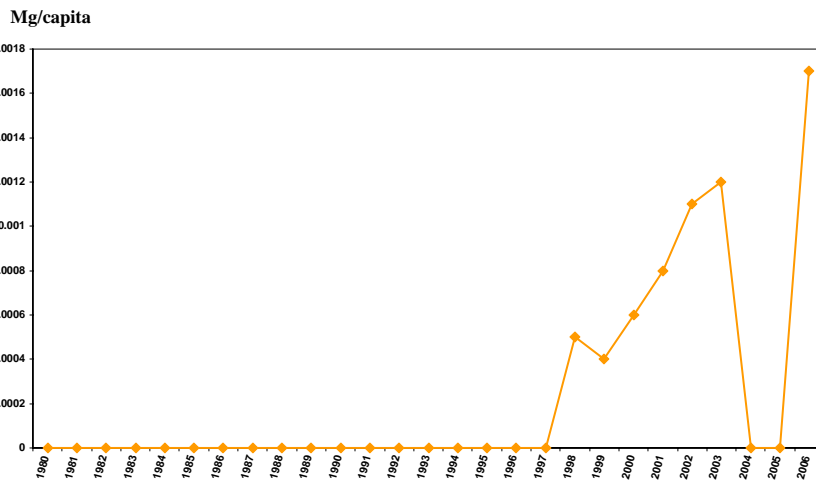
Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 33. Armenia**  
**Oxycodone Consumption**  
**1980-2006**



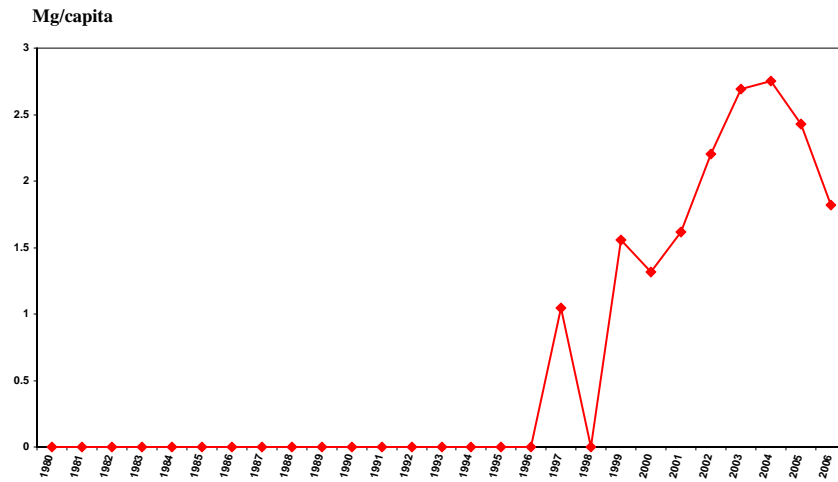
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 34. Armenia**  
**Fentanyl Consumption**  
**1980-2006**



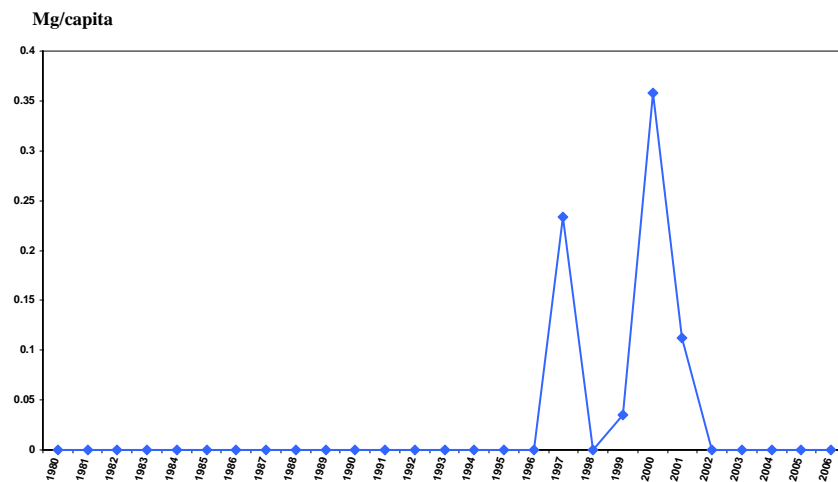
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 35. Georgia  
Morphine Consumption  
1980-2006**



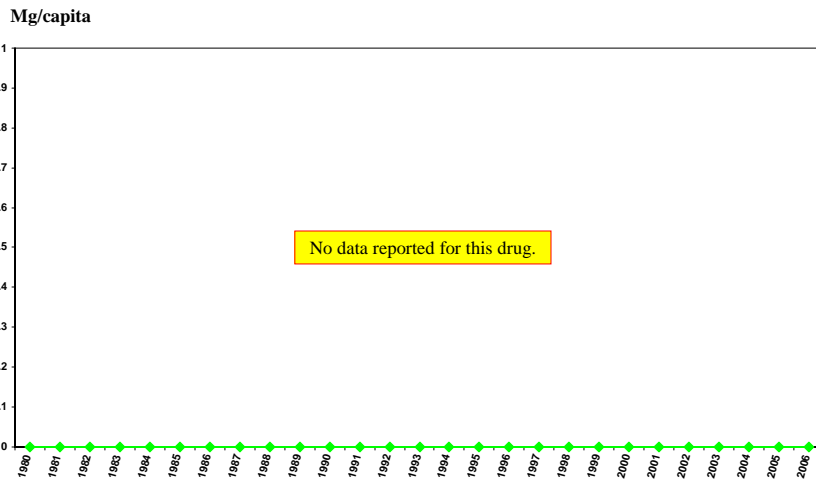
Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 36. Georgia  
Pethidine Consumption  
1980-2006**



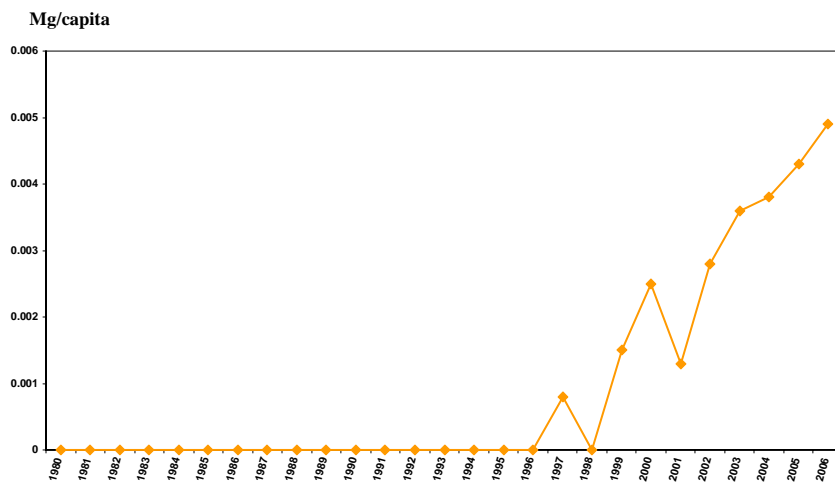
Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 37. Georgia  
Oxycodone Consumption  
1980-2006**



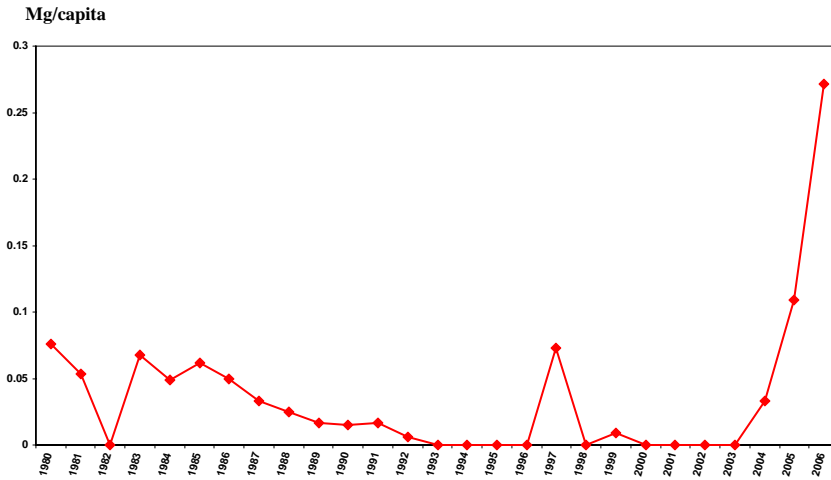
Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 38. Georgia  
Fentanyl Consumption  
1980-2006**



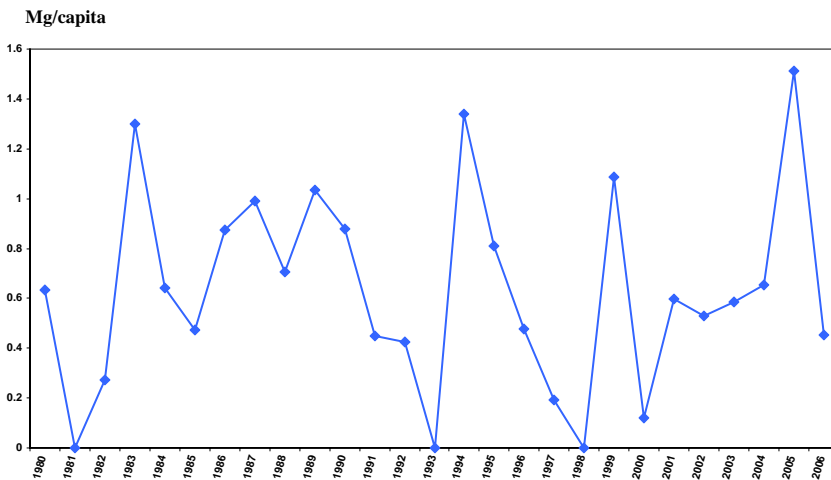
Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 39. Guatemala**  
**Morphine Consumption**  
**1980-2006**



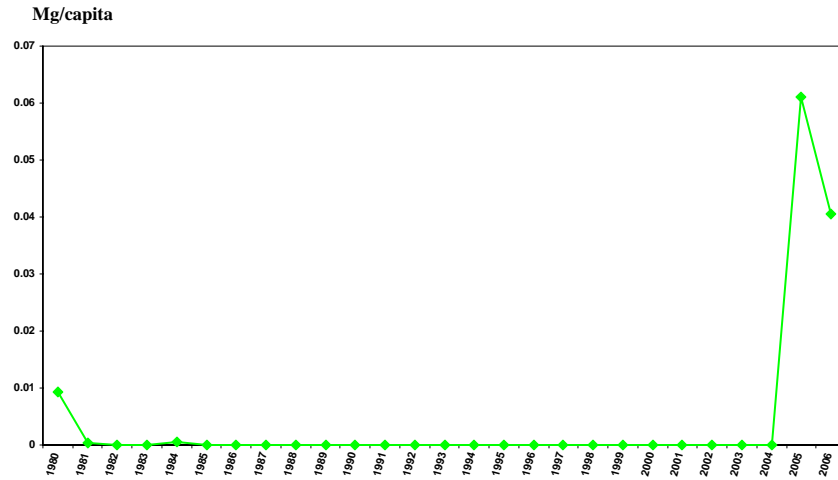
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 40. Guatemala**  
**Pethidine Consumption**  
**1980-2006**



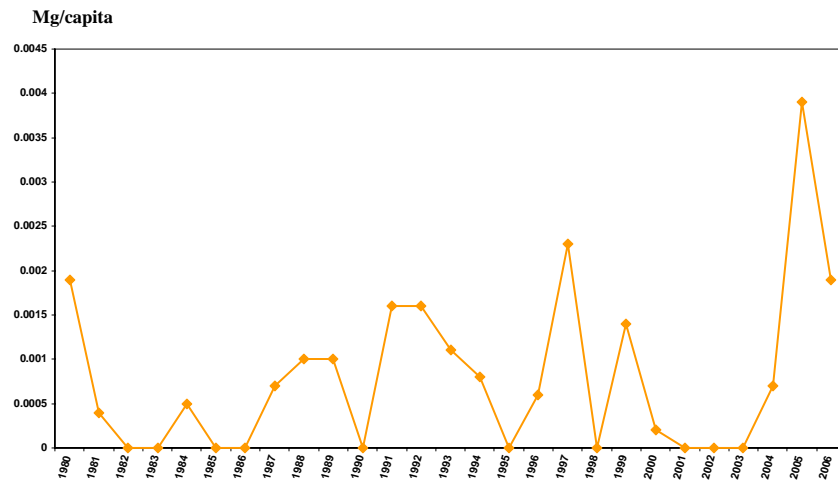
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 41. Guatemala**  
**Oxycodone Consumption**  
**1980-2006**



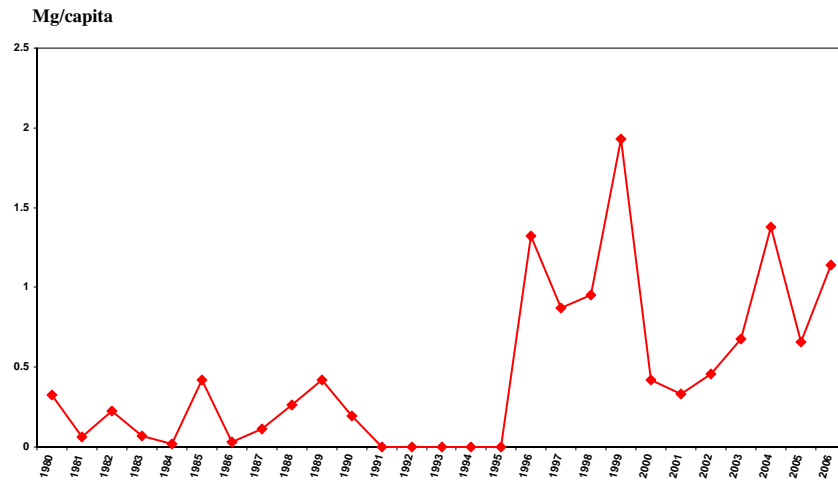
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 42. Guatemala**  
**Fentanyl Consumption**  
**1980-2006**



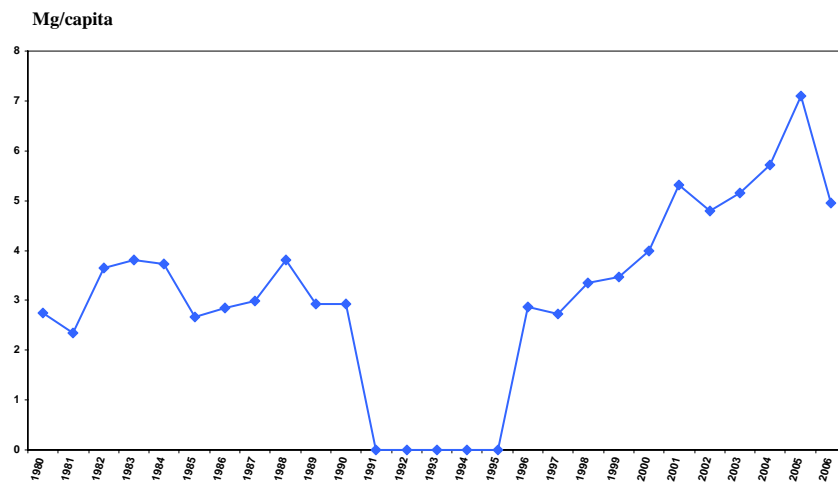
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 43. Jamaica**  
**Morphine Consumption**  
**1980-2006**



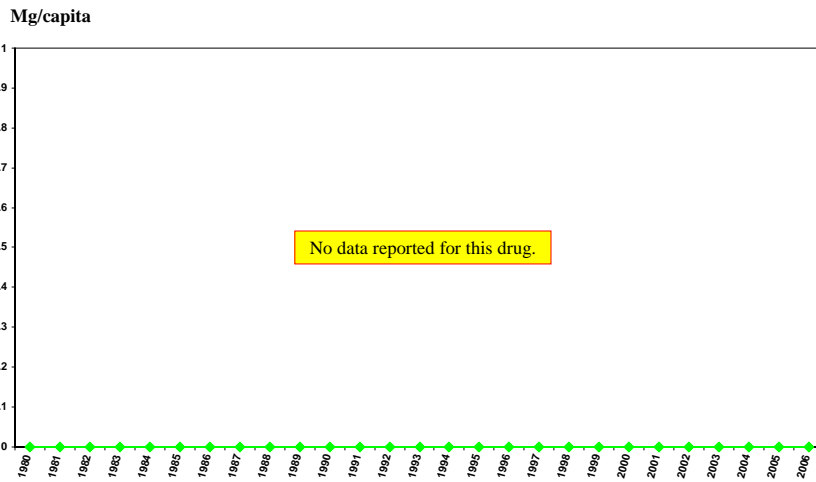
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 44. Jamaica**  
**Pethidine Consumption**  
**1980-2006**



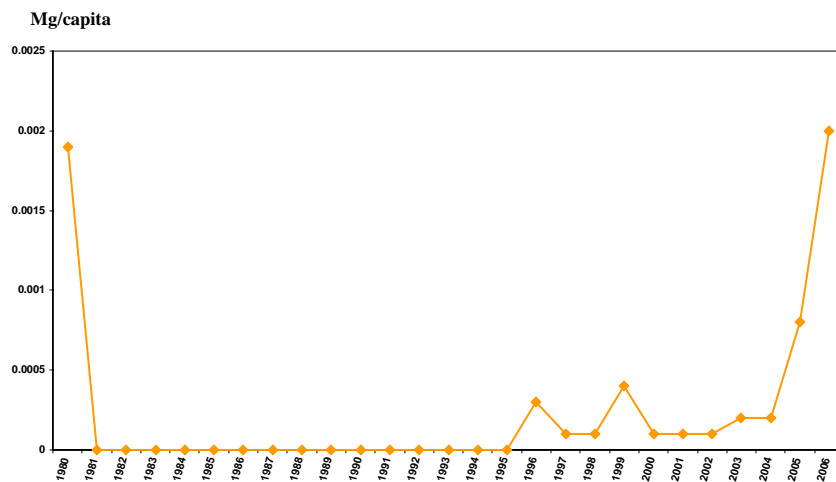
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 45. Jamaica**  
**Oxycodone Consumption**  
**1980-2006**



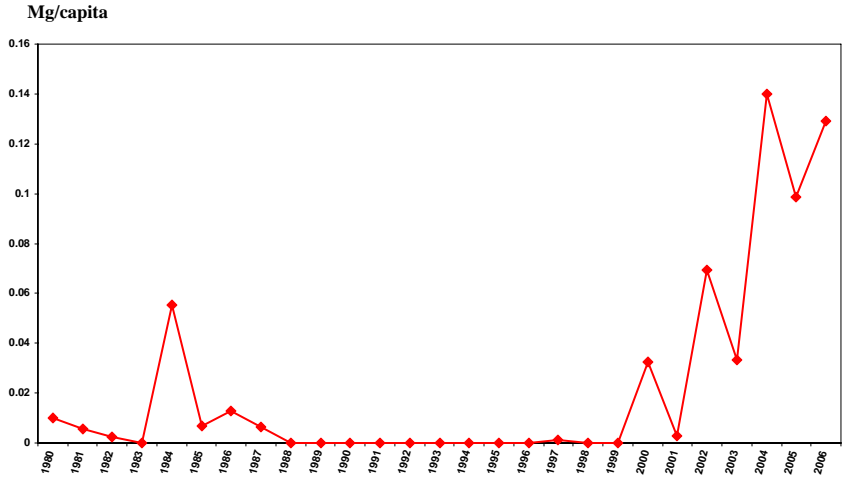
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 46. Jamaica**  
**Fentanyl Consumption**  
**1980-2006**



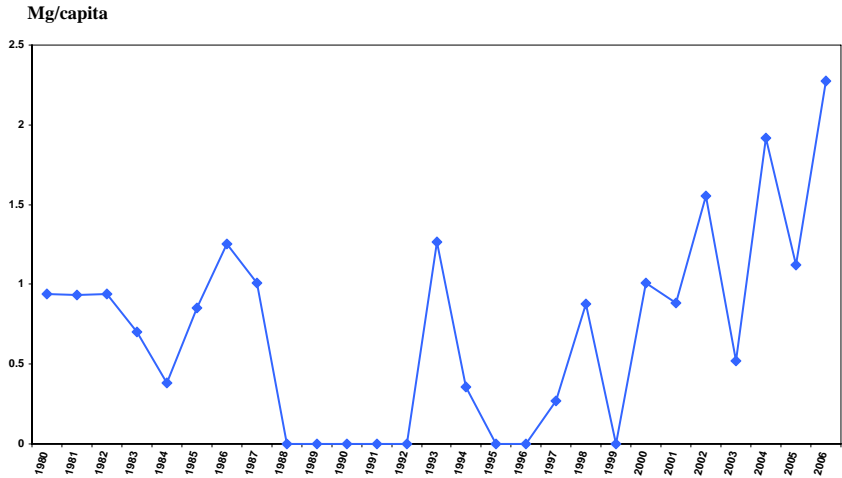
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 47. Kenya  
Morphine Consumption  
1980-2006**



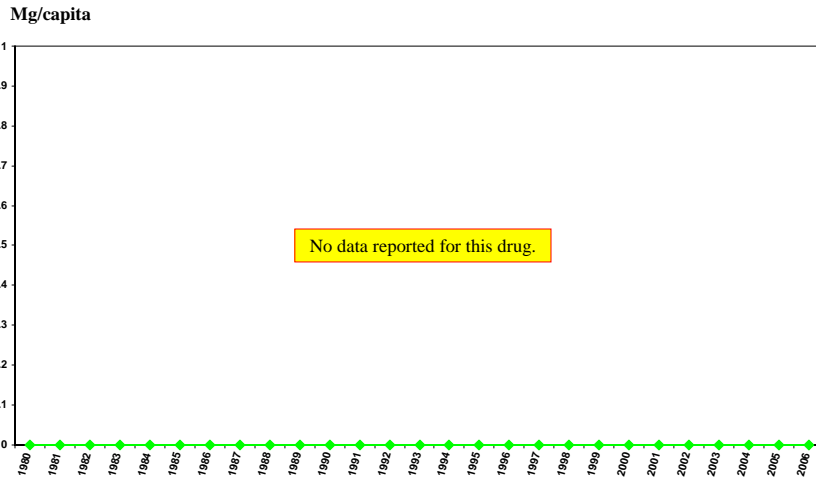
Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 48. Kenya  
Pethidine Consumption  
1980-2006**



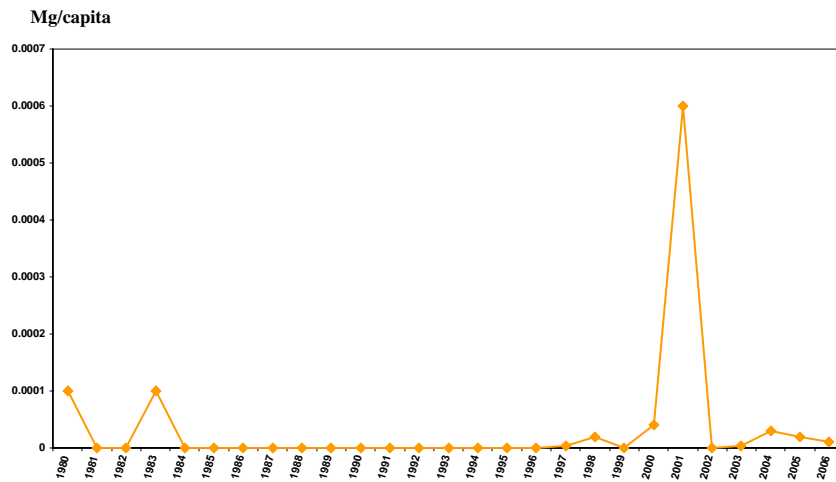
Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 49. Kenya  
Oxycodone Consumption  
1980-2006**



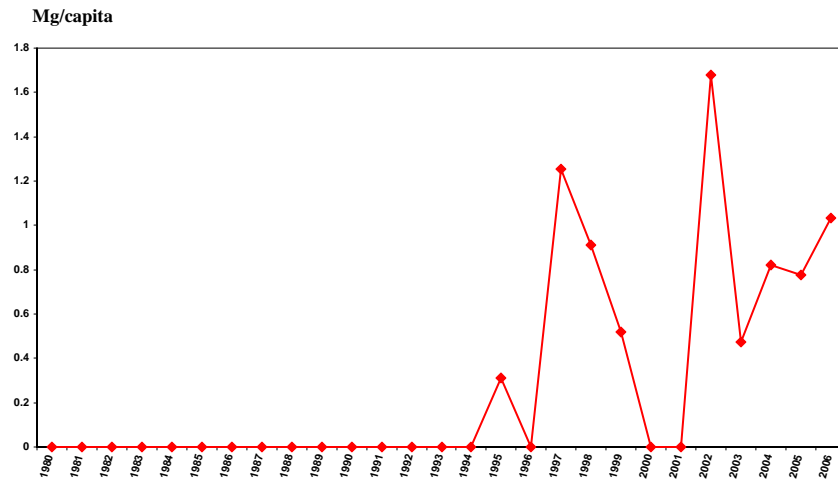
Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 50. Kenya  
Fentanyl Consumption  
1980-2006**



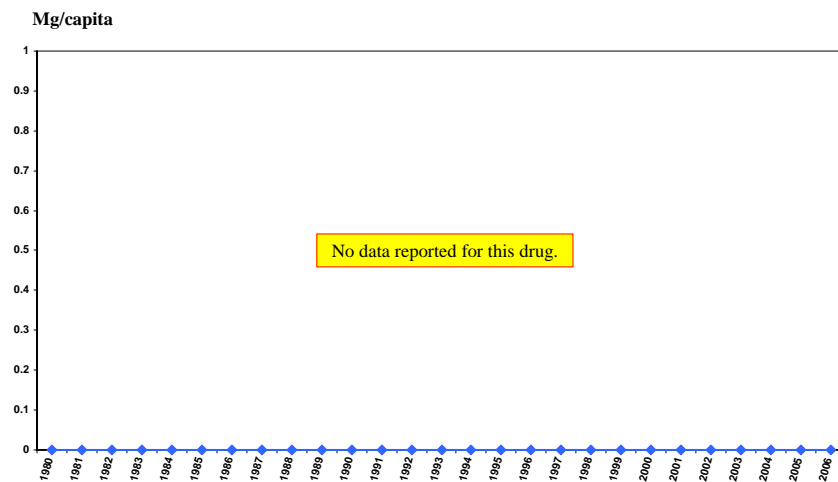
Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 51. Republic of Moldova**  
**Morphine Consumption**  
**1980-2006**



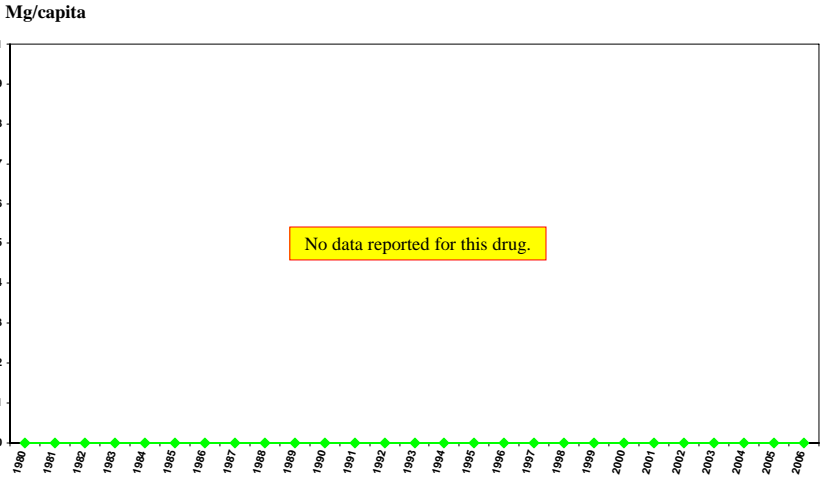
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 52. Republic of Moldova**  
**Pethidine Consumption**  
**1980-2006**



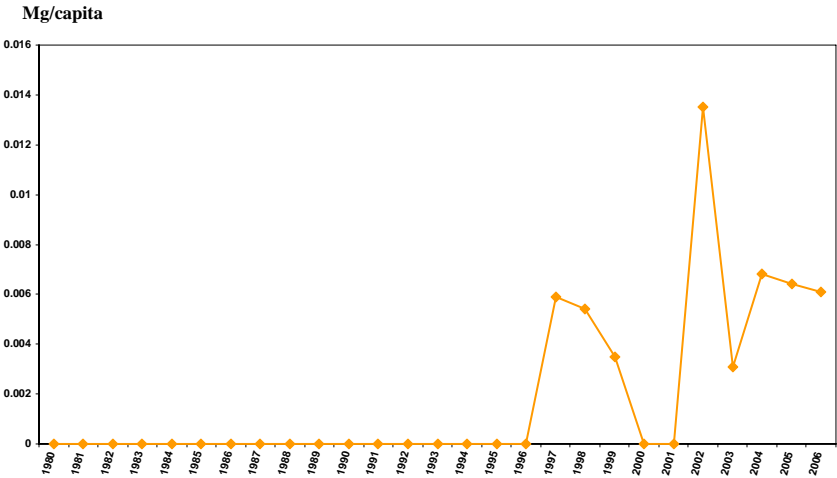
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 53. Republic of Moldova**  
**Oxycodone Consumption**  
**1980-2006**



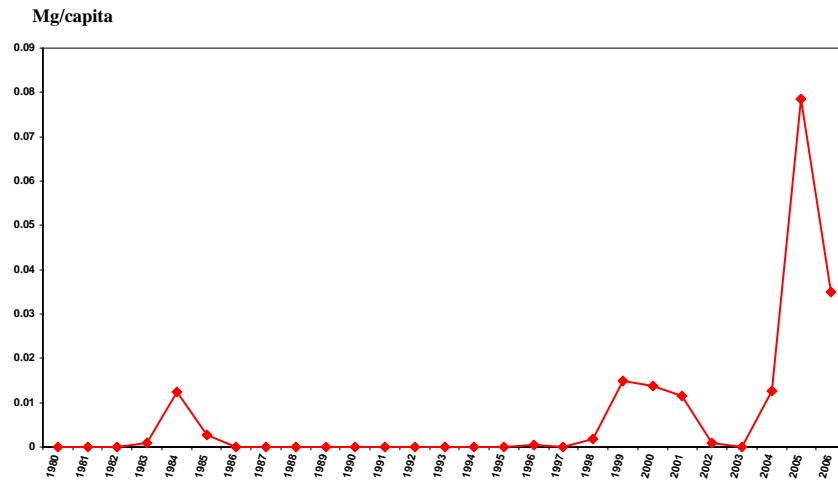
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 54. Republic of Moldova**  
**Fentanyl Consumption**  
**1980-2006**



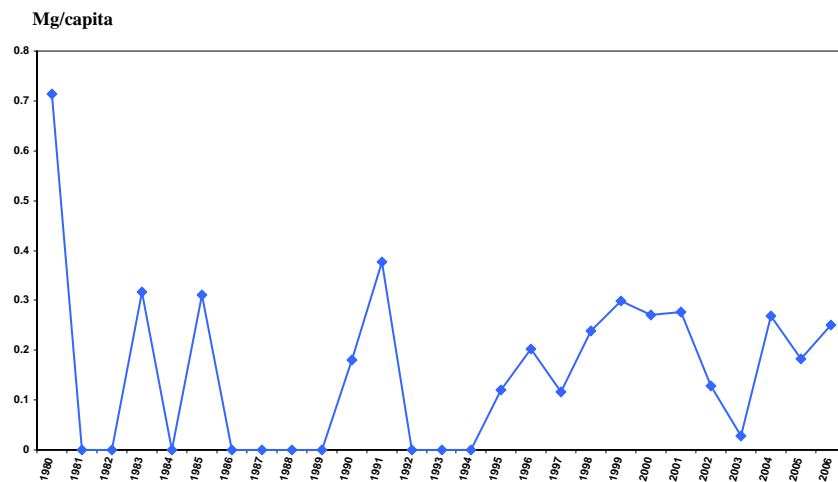
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 55. Nepal**  
**Morphine Consumption**  
**1980-2006**



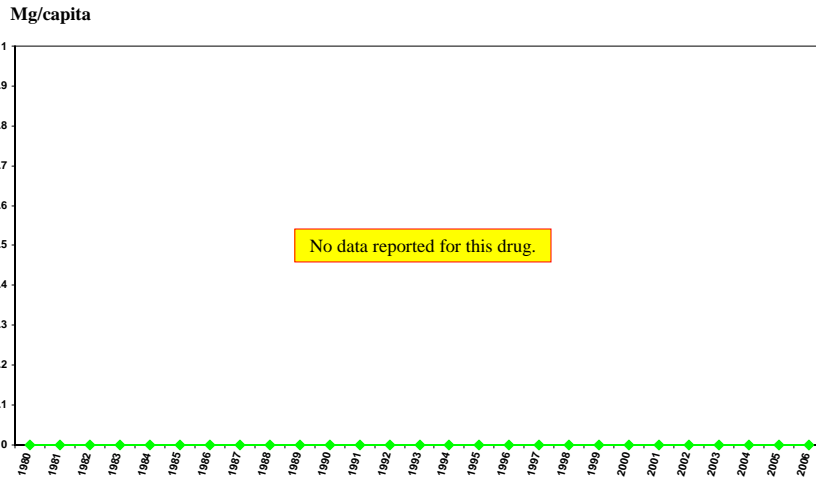
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**Graph 56. Nepal**  
**Pethidine Consumption**  
**1980-2006**



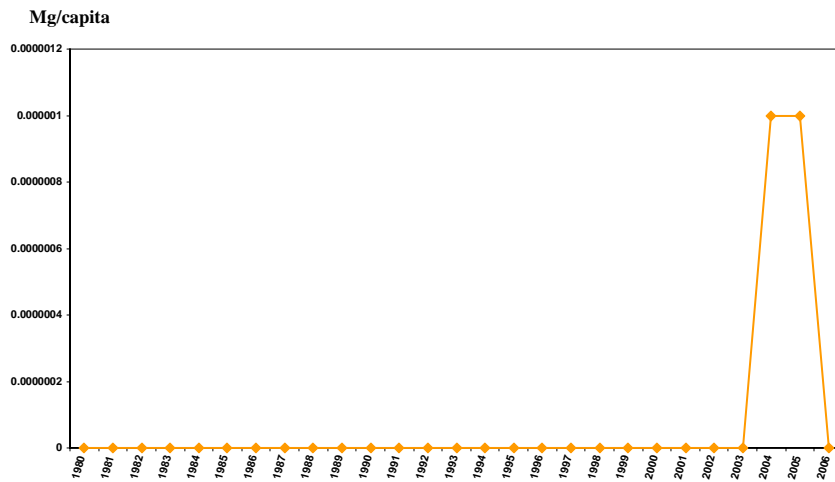
Sources: International Narcotics Control Board; United Nations population data  
 By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

### Graph 57. Nepal Oxycodone Consumption 1980-2006



Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

### Graph 58. Nepal Fentanyl Consumption 1980-2006



Sources: International Narcotics Control Board; United Nations population data  
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008