

Availability of Opioid Analgesics In the World and Europe

With a special focus on:
Armenia, Republic of Moldova, Ukraine

I. ABOUT THE PAIN & POLICY STUDIES GROUP	1
II. INTRODUCTION: INTERPRETING INFORMATION IN THIS MONOGRAPH	2
III. GLOBAL CONSUMPTION TRENDS	
Graph 1. Morphine, pethidine, and oxycodone, 1980-2006, kilos.....	6
Graph 2. Fentanyl, 1980-2006, kilos	7
Graph 3. Morphine, 2006, mg per capita	8
Table 1. Morphine consumption: data in mg per capita.....	9
Graph 4. Pethidine, 2006, mg per capita.....	10
Table 2. Pethidine consumption: data in mg per capita	11
Graph 5. Oxycodone, 2006, mg per capita	12
Table 3. Oxycodone consumption: data in mg per capita.....	13
Graph 6. Fentanyl, 2006, mg per capita.....	14
Table 4. Fentanyl consumption: data in mg per capita	15
IV. EURO REGION CONSUMPTION, 2006, MG PER CAPITA	
Graph 7. Morphine.....	16
Graph 8. Pethidine	17
Graph 9. Oxycodone.....	18
Graph 10. Fentanyl.....	19
V. NATIONAL CONSUMPTION TRENDS, KILOS	
Graph 11. Armenia.....	20
Graph 12. Republic of Moldova	22
Graph 13. Ukraine.....	24
VI. TABLE 5. STATUS OF ADHERENCE TO CONVENTIONS, RECEIPT OF STATISTICS, AND ESTIMATES	26
VII. COMPETENT NATIONAL AUTHORITIES	27

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Of Opioid Analgesics for Pain and Palliative Care**

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I. ABOUT THE PAIN & POLICY STUDIES GROUP

The Pain & Policy Studies Group (PPSG) mission 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 WHO Guidelines for achieving balanced national opioids control policies, and individual country profiles on opioid availability are available on its website at www.painpolicy.wisc.edu. As a WHO Collaborating Center, PPSG evaluates national legislation, has provided technical assistance to governments and NGO’s in Africa, Asia, Europe, Latin America, has helped to design and sponsor 7 opioid availability strategy planning workshops for 38 countries, and has established a WHO Demonstration Project in Calicut, India. The PPSG has developed the International Pain Policy Fellowship and in May 2008 released an on-line course titled, *Increasing Patient Access to Pain Medicines around the World: A Framework to Improve National Policies that Govern Drug Distribution*. (https://painpolicy.bcg.wisc.edu/on-line_course/welcome.htm)

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; education of medical regulators; and a website with extensive pain policy resources including a full-text data base of federal and state pain policies (www.painpolicy.wisc.edu).

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II. INTRODUCTION: INTERPRETING INFORMATION IN THIS MONOGRAPH

Why are opioid consumption statistics important?

In 1986, the World Health Organization (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.¹ The WHO analgesic method has also been endorsed for relief of pain due to HIV/AIDS.² The 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.^{3,4} The workshop on opioid availability for palliative care in Chişinău, Republic of Moldova in October 2008 is a step in this direction.

Consumption statistics for opioids are one indicator of the capability of a country to treat moderate to severe pain, and can also be used prospectively to evaluate the outcomes of efforts to improve opioid availability. Although morphine is frequently used as a principal indicator because it is the most widely available opioid analgesic for moderate to severe pain, the consumption of other opioids such as oxycodone and fentanyl should also be considered. Other opioids such as tramadol and codeine are not included in this monograph because they are not capable of relieving severe pain. Consumption trends for pethidine are included in the monograph because, although pethidine is no longer recommended for chronic pain, it is still widely used. In addition, since pethidine and morphine are subject to the same legal controls, any country that uses pethidine should be able to use morphine.

¹ World Health Organization. *Cancer pain relief*. Geneva, Switzerland: World Health Organization; 1986.

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

³ World Health Assembly. Cancer Prevention and Control. WHA 58.22 Geneva, Switzerland: World Health Organization; 2005. http://www.who.int/gb/ebwha/pdf_files/WHA58-REC1/english/A58_2005_REC1-en.pdf

⁴ 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. Available at <http://www.un.org/docs/ecosoc/documents/2005/resolutions/Resolution%202005-25.pdf>.

Governments and the INCB are the source of national estimates and consumption statistics

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 addiction. Governments must provide INCB an ***annual estimate of the amounts of opioids*** that will be required to satisfy all medical and scientific needs. **Although INCB “confirms” the estimate as the amount authorized to be used in the country, the amount itself is determined by the government.** The INCB does not reduce government estimates to less than is needed. In fact, if unanticipated needs arise during the year, governments are encouraged to submit a supplementary request, which the INCB can confirm in a short amount of time.

Governments also report ***annual opioid consumption statistics*** to the INCB which compiles them into statistical reports.⁵ “Consumption” means the amount of the opioid distributed to the retail level in a country, i.e., to those institutions and programs that are authorized 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. INCB publications do not report consumption of a drug less than 500 grams. However, the PPSG obtains complete annual data from the INCB and publishes all amounts (including less than 500 grams) because there are many countries where small amounts are important and because any amount of morphine consumed demonstrates that the government has approved its use.

Global Consumption Trends

Graphs 1 and 2. Global consumption trends for morphine, pethidine, oxycodone and fentanyl 1980 – 2006, in kilos:

The consumption statistics in this monograph begin with the ‘big picture’ of the global trend for morphine, pethidine, oxycodone and fentanyl from 1980 to 2006 expressed in kilograms. 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 Ladder and as new opioid products became available more widely. 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. Historically, the consumption of pethidine initially exceeded that of morphine, but has slowly decreased as other opioids have become more widely used and as it has become less accepted for use with chronic pain due to accumulation of a toxic metabolite, norpethidine. The amount of oxycodone has increased significantly since the late 1990s with the introduction of new formulations. Although some countries use morphine mainly

⁵ International Narcotics Control Board. *Narcotic Drugs: Estimated World Requirements for 2008 - Statistics for 2006*. New York, NY: United Nations; 2008. Available at http://www.incb.org/incb/narcotic_drugs_2007.html.

for cancer pain, morphine may be used for other types of pain, including acute, post-operative, AIDS, and for pain related to other chronic non-cancer conditions. Many countries use opioids for other clinical indications, such as anesthesia or substitution treatment of drug dependence. Consequently, it should be noted that these consumption reports do not distinguish between these different uses.

Graphs 3 - 6. Global consumption of morphine, pethidine, oxycodone and fentanyl, 2006, mg per capita:

The next several graphs present consumption statistics in milligrams per capita (dividing the total amount of drug “consumed,” in kilograms, by the population of the country) to provide a population-based statistic that will allow meaningful comparisons between countries, within a single country over time, and in relation to the global mean. The consumption of opioids varies greatly from country to country. The vast majority of morphine is consumed in high-income countries which represent a small part of the world’s population. The remaining countries of the world consume comparatively little.

In a recent report, the INCB stated, “Global consumption of opioid analgesics for the treatment of moderate to severe pain...increased by more than two and one half times during the past decade. However, the increase in consumption occurred mainly in countries in Europe and North America. In 2006, for example, countries in those two regions together accounted for almost 96 per cent of global consumption of fentanyl, 89 per cent of global consumption of morphine and 97 per cent of global consumption of oxycodone.” (p. 19)⁶

Europe consumption, 2006, mg per capita

Graphs 7-10 present a regional picture of 2006 morphine, pethidine, oxycodone, and fentanyl consumption in the WHO Region for Europe (EURO) including the global and regional mean. The EURO regional mean exceeded the global mean for morphine, pethidine, and fentanyl in 2006.

National consumption trends

Graphs 11 through 13 present morphine, pethidine, oxycodone, and fentanyl consumption trends and data for Armenia, Republic of Moldova, and Ukraine who are participating in the October 2008 workshop for which this monograph is prepared. These data are expressed in kilograms to enable the country team members to see the exact consumption that was reported by their governments.

Status of adherence to conventions, receipt of statistics and estimates

Table 5 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 Armenia, Republic of Moldova, and Ukraine.

⁶ International Narcotics Control Board. *Report of the International Narcotics Control Board for 2007*. New York, NY: United Nations; 2008. Available at <http://www.incb.org/incb/en/annual-report-2007.html>.

From these data, it can be seen that all 3 governments are parties to the Single Convention, 1961, and as amended in 1972. Consumption statistics for 2006 and estimates for 2008 were received from all 3 countries.

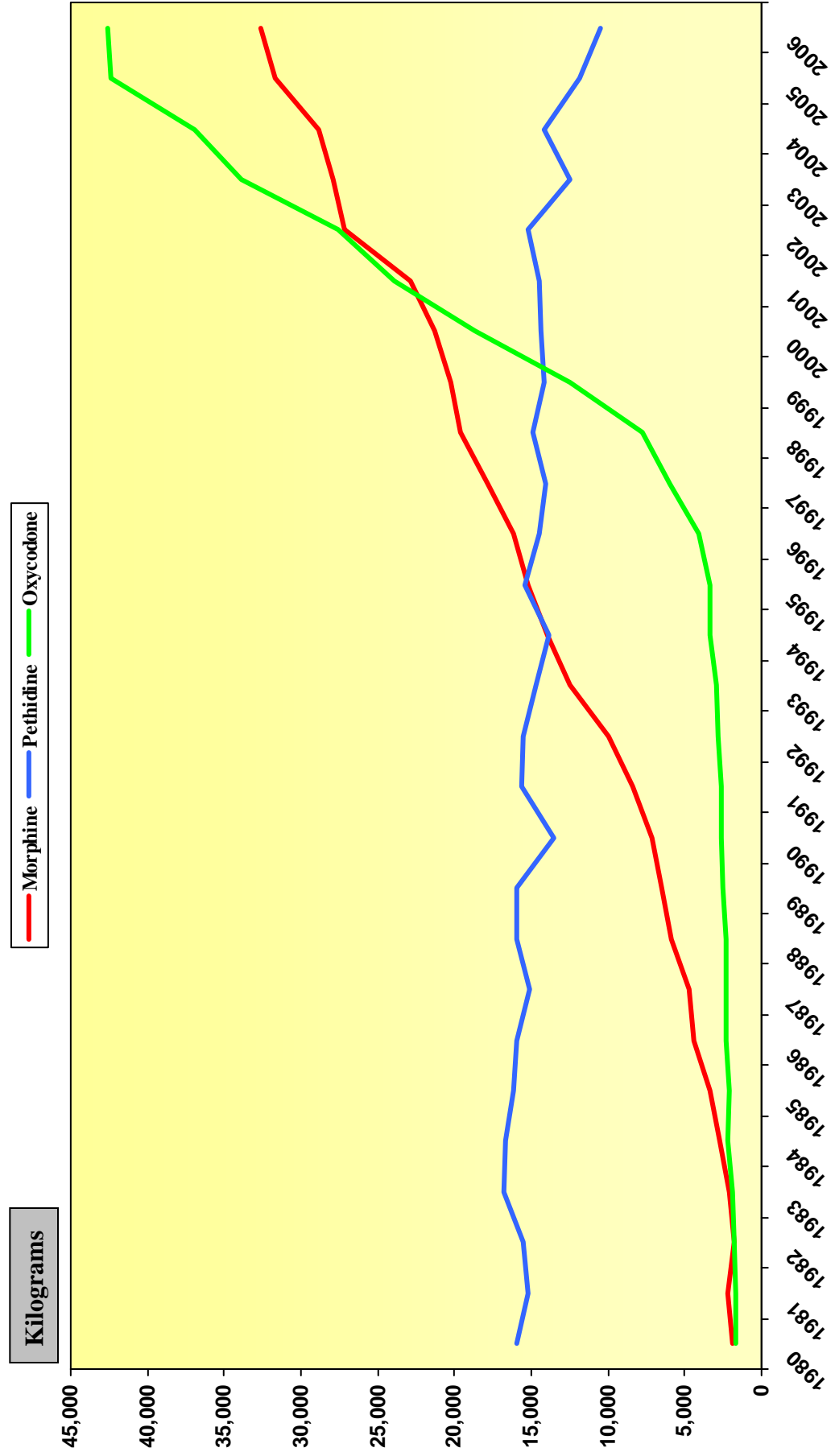
Competent national authorities

Each government that is party to the Single Convention designates an office that is responsible for carrying out drug availability obligations, including making estimates of next year's opioid requirements and reporting consumption statistics.⁷ These offices, often located in the Ministry of Health in the pharmaceutical department or in the national food or drug control agency, 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. They receive official communications from the INCB, including technical reports that encourage all governments to examine national policies and administrative procedures for barriers to opioid availability and to consult with health professionals in submitting realistic estimates. Sometimes these offices may lack personnel to administer these and other important responsibilities in the area of drug control and availability.

⁷ United Nations. *Competent National Authorities Under the International Drug Control Treaties, 2006*. New York, NY: United Nations; 2007.

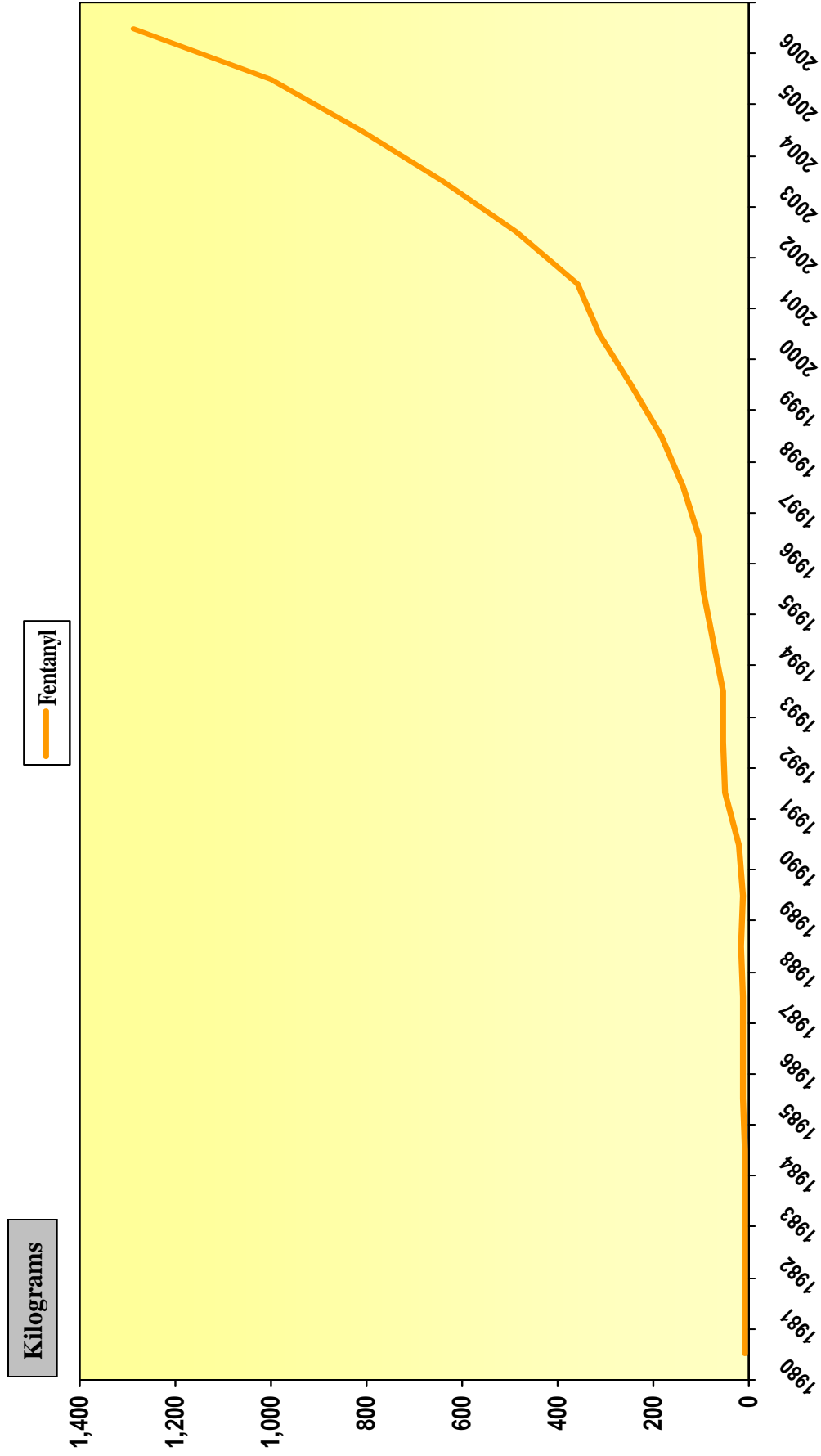
III. GLOBAL CONSUMPTION TRENDS

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



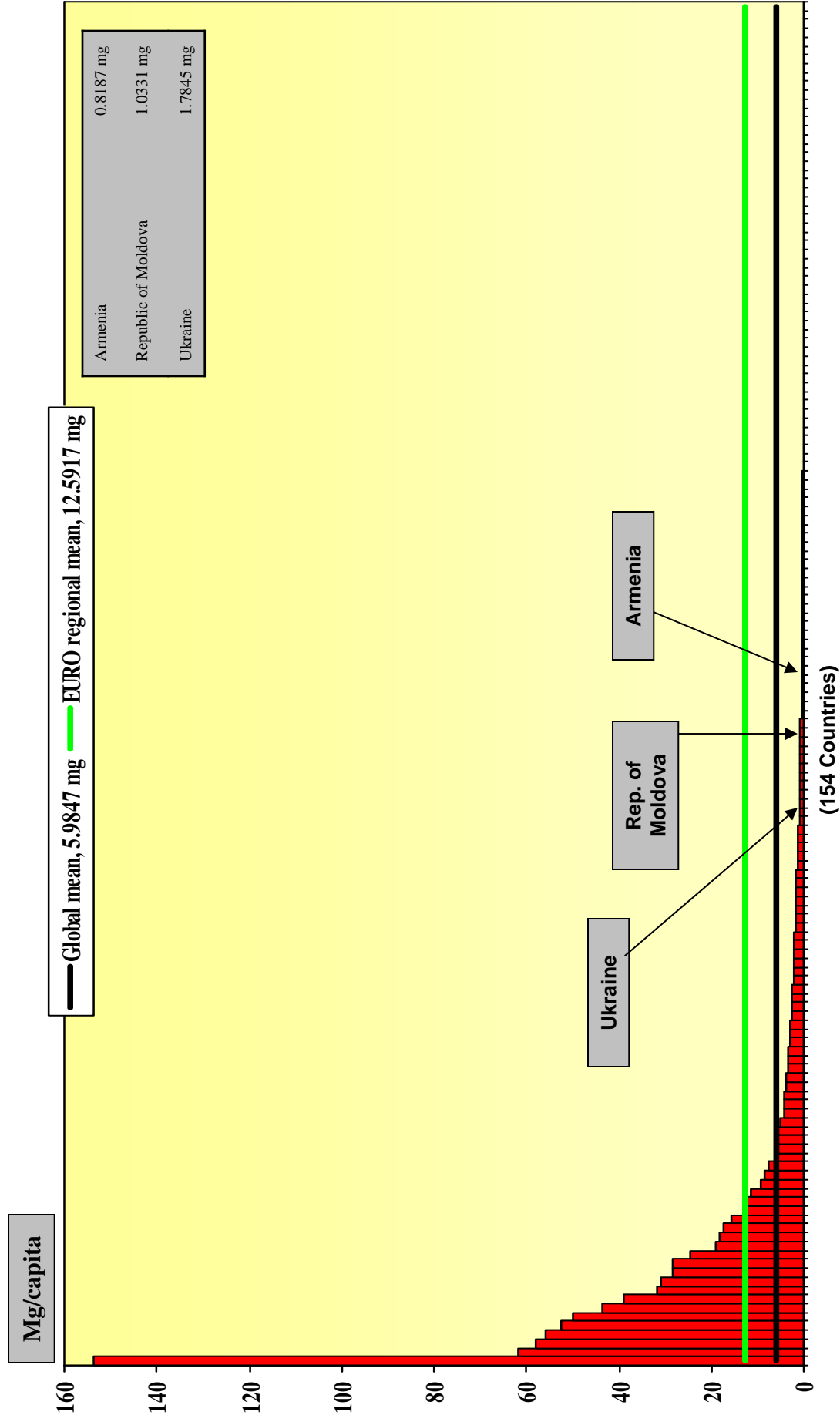
Source: International Narcotics Control Board
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

Graph 2. Global Consumption Fentanyl 1980-2006



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

Graph 3. Global Consumption of Morphine, 2006



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

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

Table 1

Global Morphine Consumption (mg/capita)

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

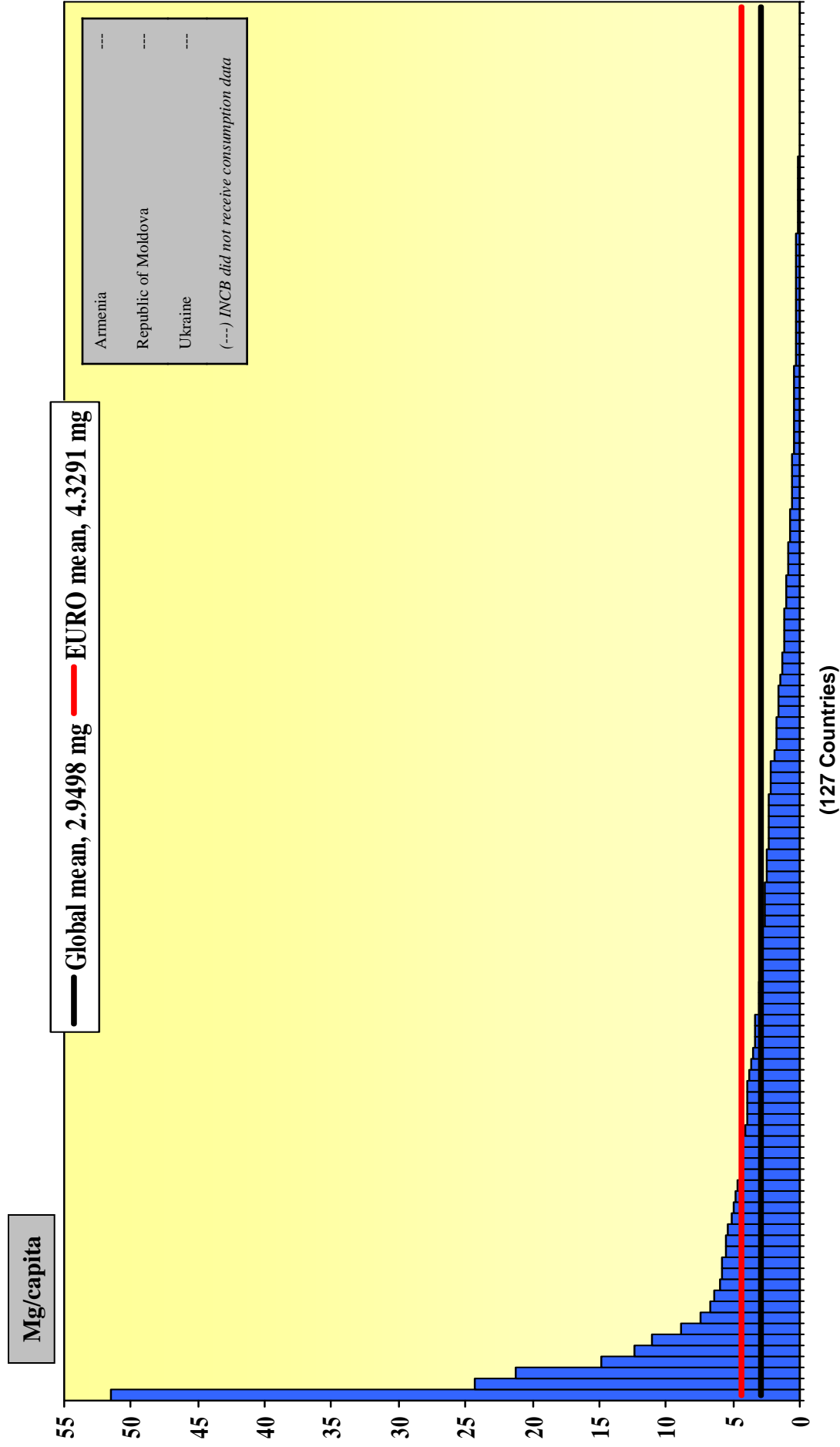
1	Austria*	153.5171	53	Saint Lucia	1.8050	105	Guyana	0.1486
2	Canada	62.0103	54	Ukraine	1.7845	106	Azerbaijan	0.1429
3	United States of America	57.8888	55	Croatia	1.6652	107	Serbia	0.1339
4	Denmark	55.7115	56	Singapore	1.4979	108	Kenya	0.1292
5	Australia	52.2852	57	St Vincent & the Grenadines	1.4300	109	Wallis & Futuna Islands	0.1248
6	New Zealand	49.8354	58	Cuba	1.3595	110	Ghana	0.0990
7	France	43.4565	59	Jamaica	1.1396	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	63	Republic of Moldova	1.0331	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	69	Armenia	0.8187	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	125	Nepal	0.0349
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	97	Guatemala	0.2713	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			
52	Georgia	1.8200	104	Viet Nam	0.1571			

*Austria uses morphine in treatment of drug dependence



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Graph 4. Global Consumption of Pethidine, 2006



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

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

Table 2

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	92	Guatemala	0.4538
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	55	Kenya	2.2760	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	102	Nepal	0.2500
18	Jamaica	4.9441	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						

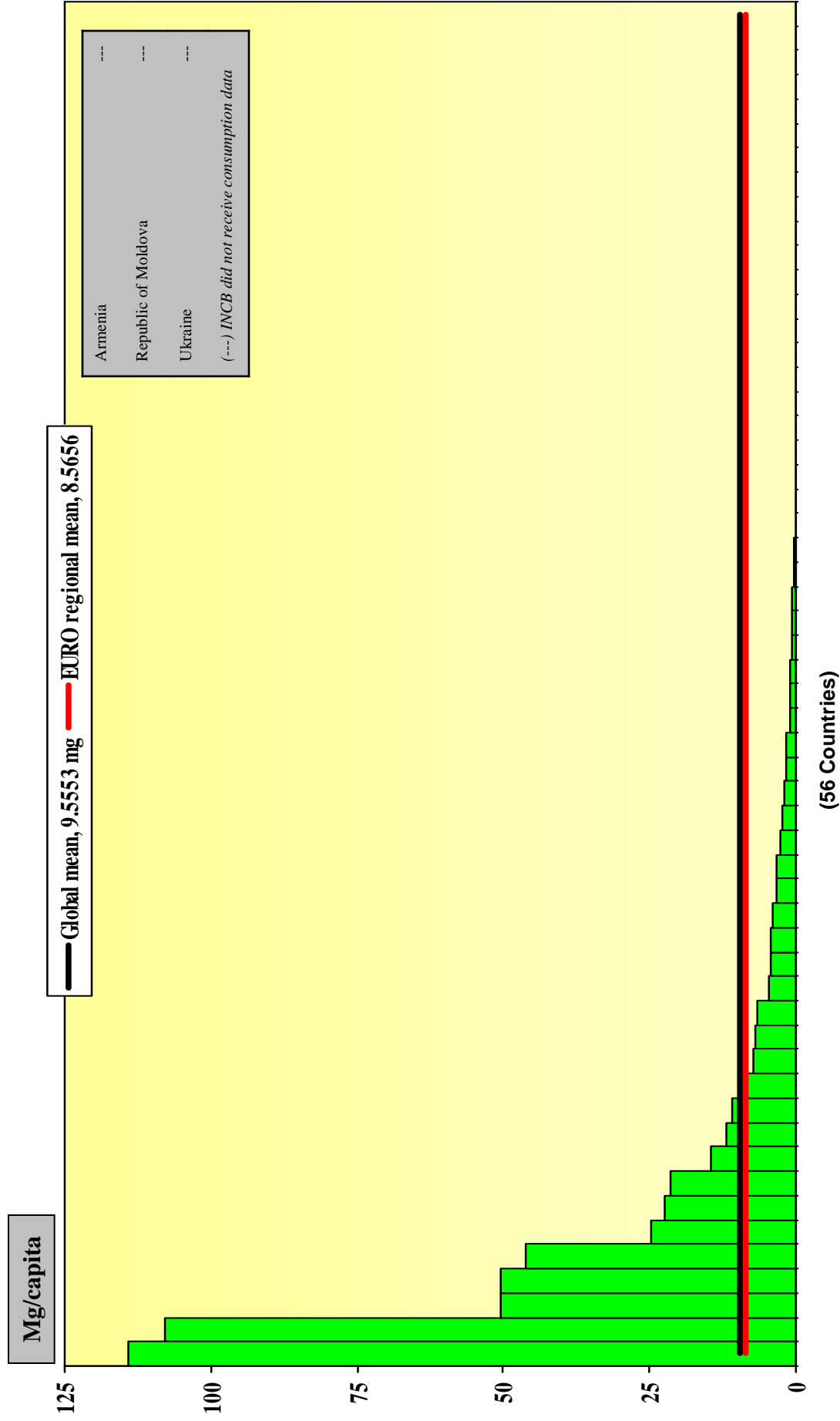


Pain & Policy Studies Group

WHO Collaborating Center for Policy and
Communications in Cancer Care

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Graph 5. Global Consumption of Oxycodone, 2006



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

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

Table 3

Global Oxycodone Consumption (mg/capita)

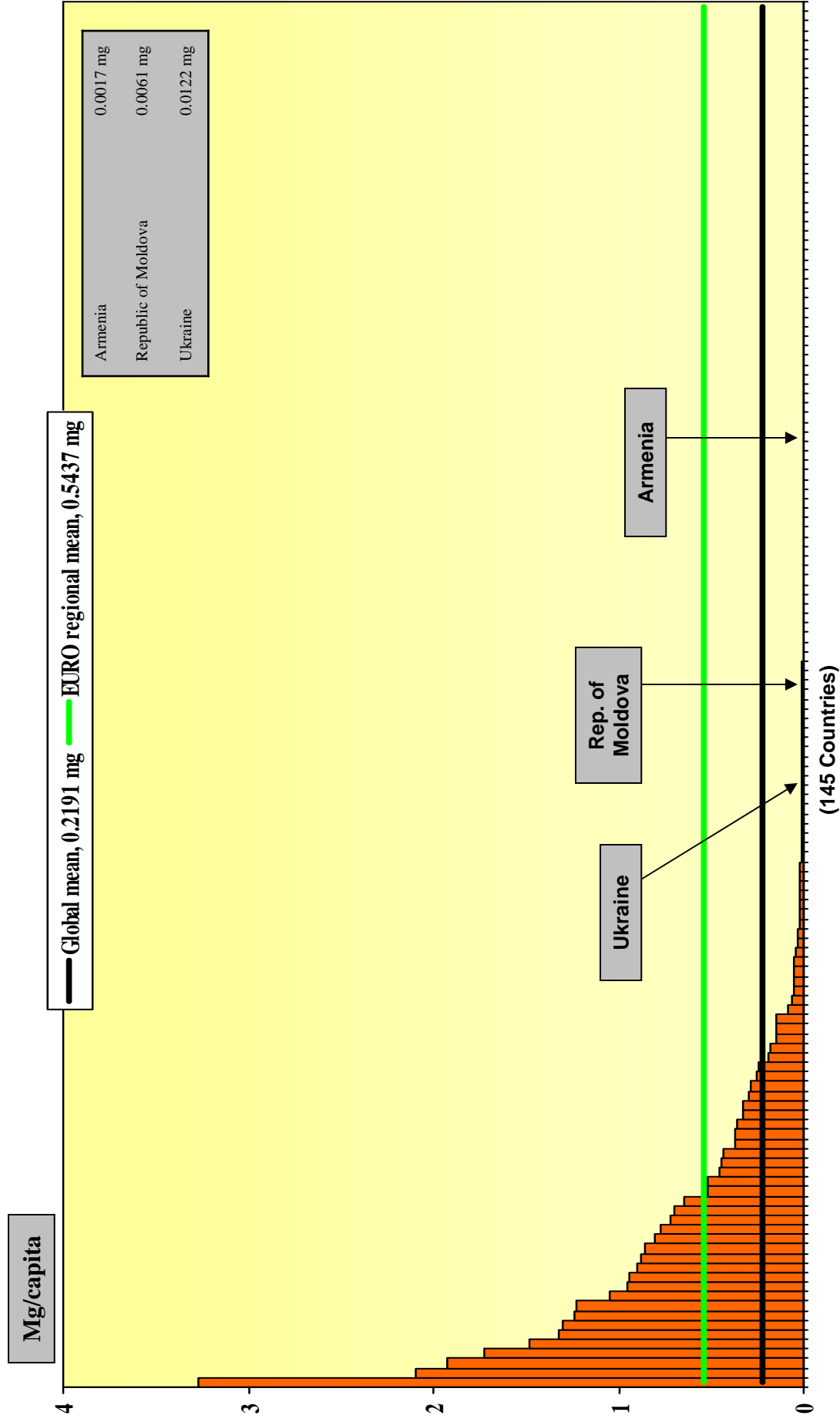
Note: Countries not listed did not report oxycodone consumption to the INCB for 2006

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	45	Guatemala	0.0406
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



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

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

Table 4

Global Fentanyl Consumption (mg/capita)

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

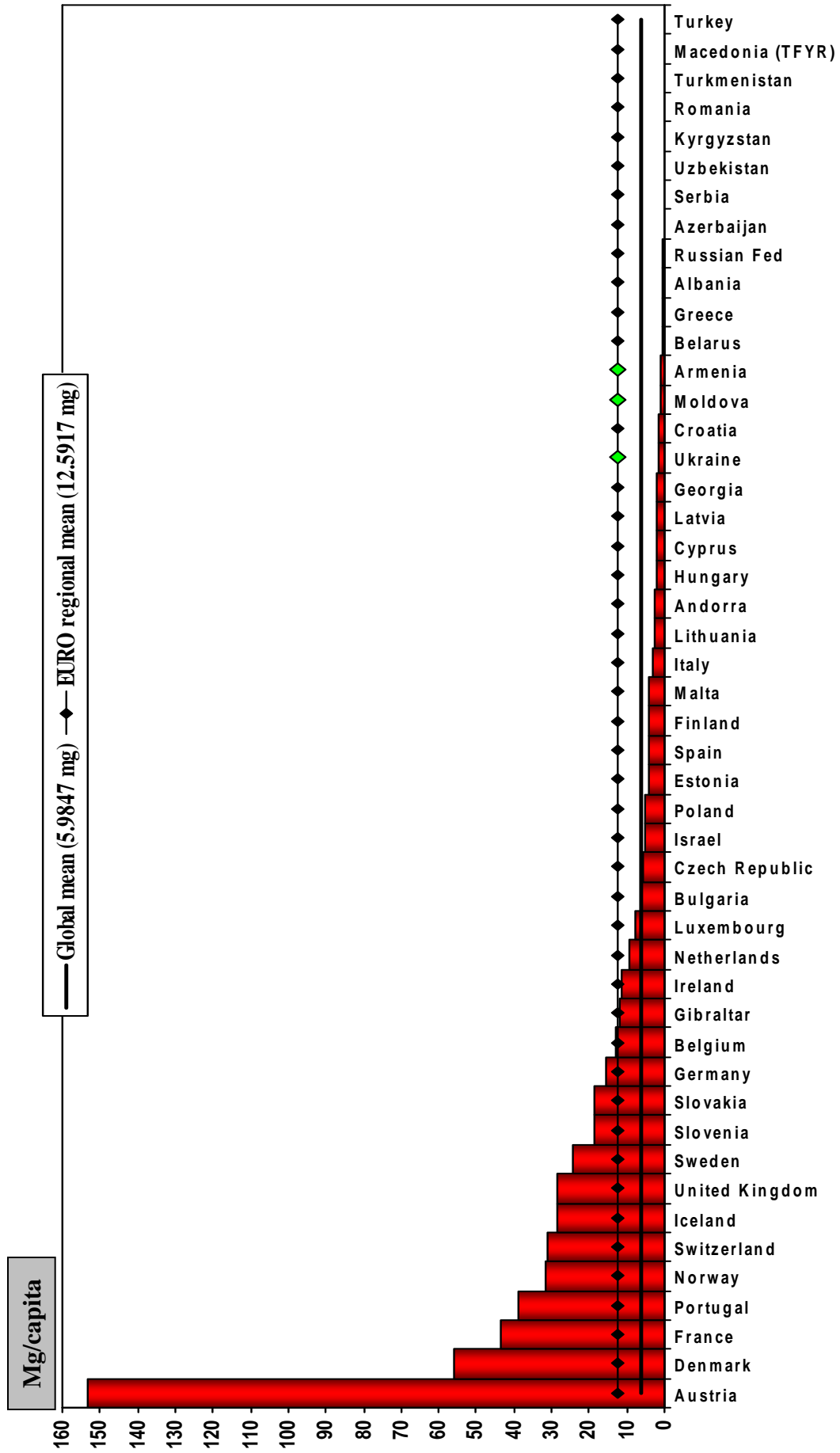
1	Germany	3.2731	50	Saudi Arabia	0.0234	98	Guatemala	0.0019
2	United States of America	2.0928	51	Qatar	0.0233	99	Kyrgyzstan	0.0019
3	Belgium	1.9263	52	Lebanon	0.0231	100	Dominican Republic	0.0018
4	Denmark	1.7241	53	Bahrain	0.0220	101 Armenia	0.0017	
5	Finland	1.4794	54	Cuba	0.0219	102	Cape Verde	0.0014
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	74 Republic of Moldova	0.0061	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	79	Georgia	0.0049	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	141	Kenya	0.00001
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	97	Jamaica	0.0020	145	Eritrea	0.0000002
49	Chile	0.0241						



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IV. EURO REGIONAL CONSUMPTION, 2006, MG PER CAPITA

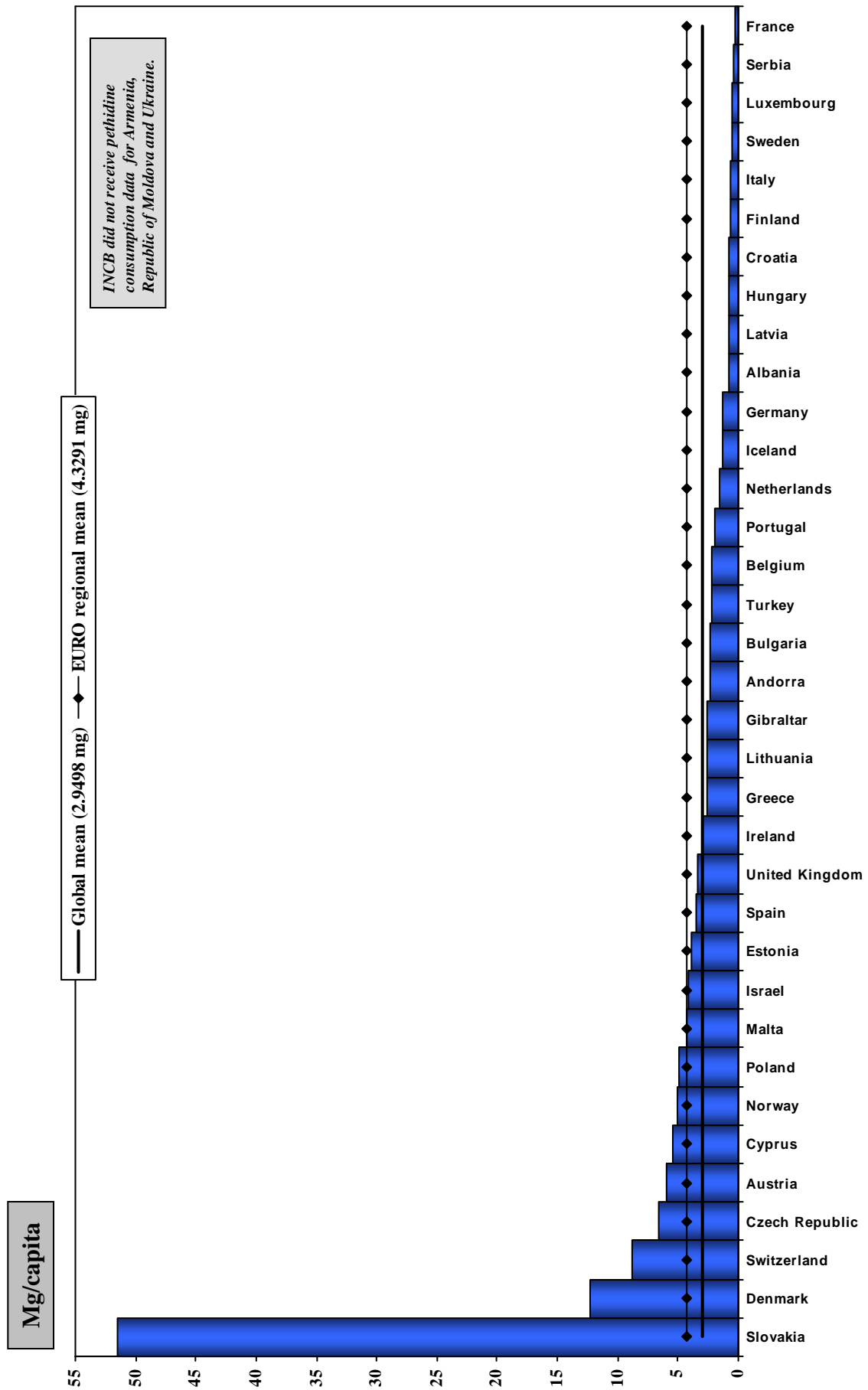
Graph 7. EURO Regional Consumption of Morphine, 2006



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

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

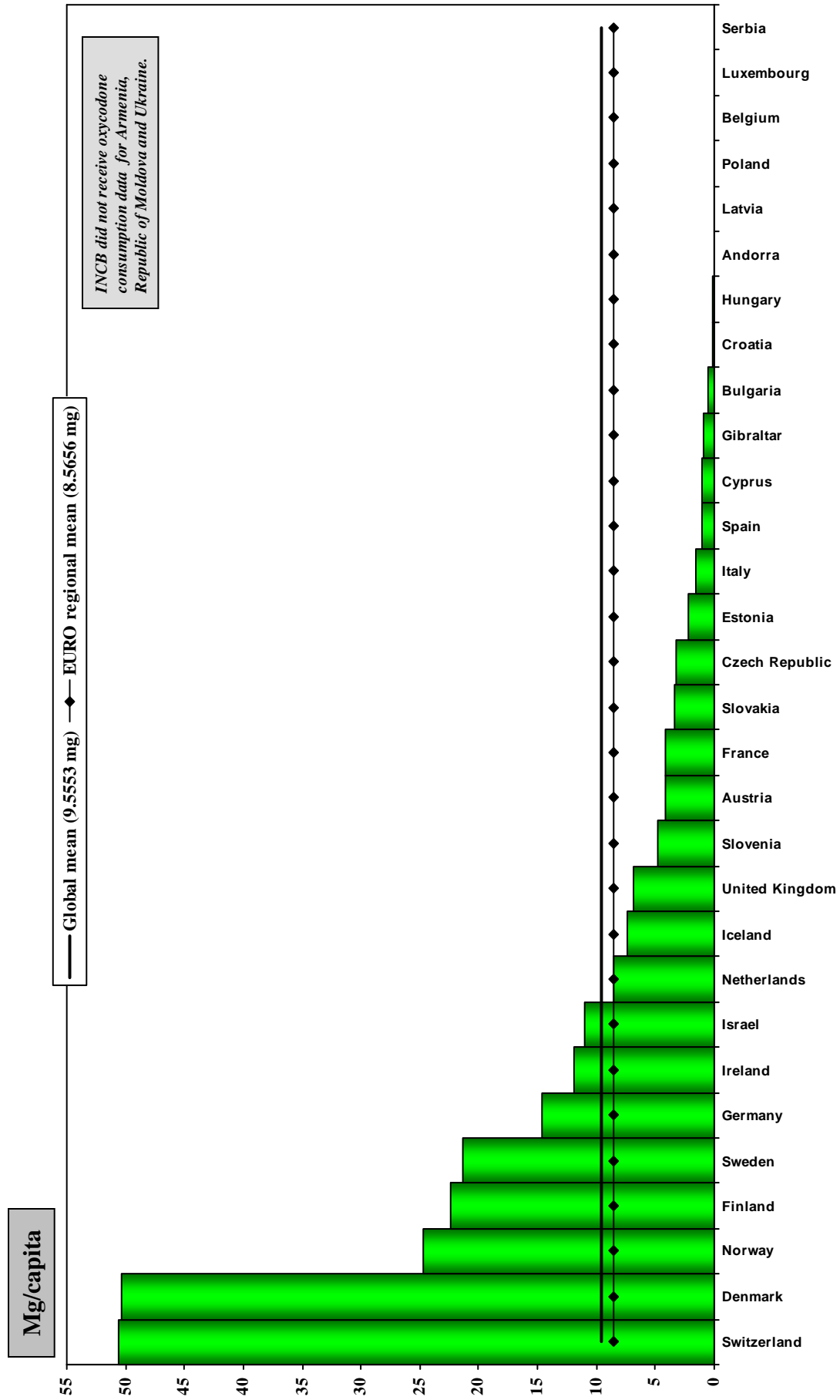
Graph 8. EURO Regional Consumption of Pethidine, 2006



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

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

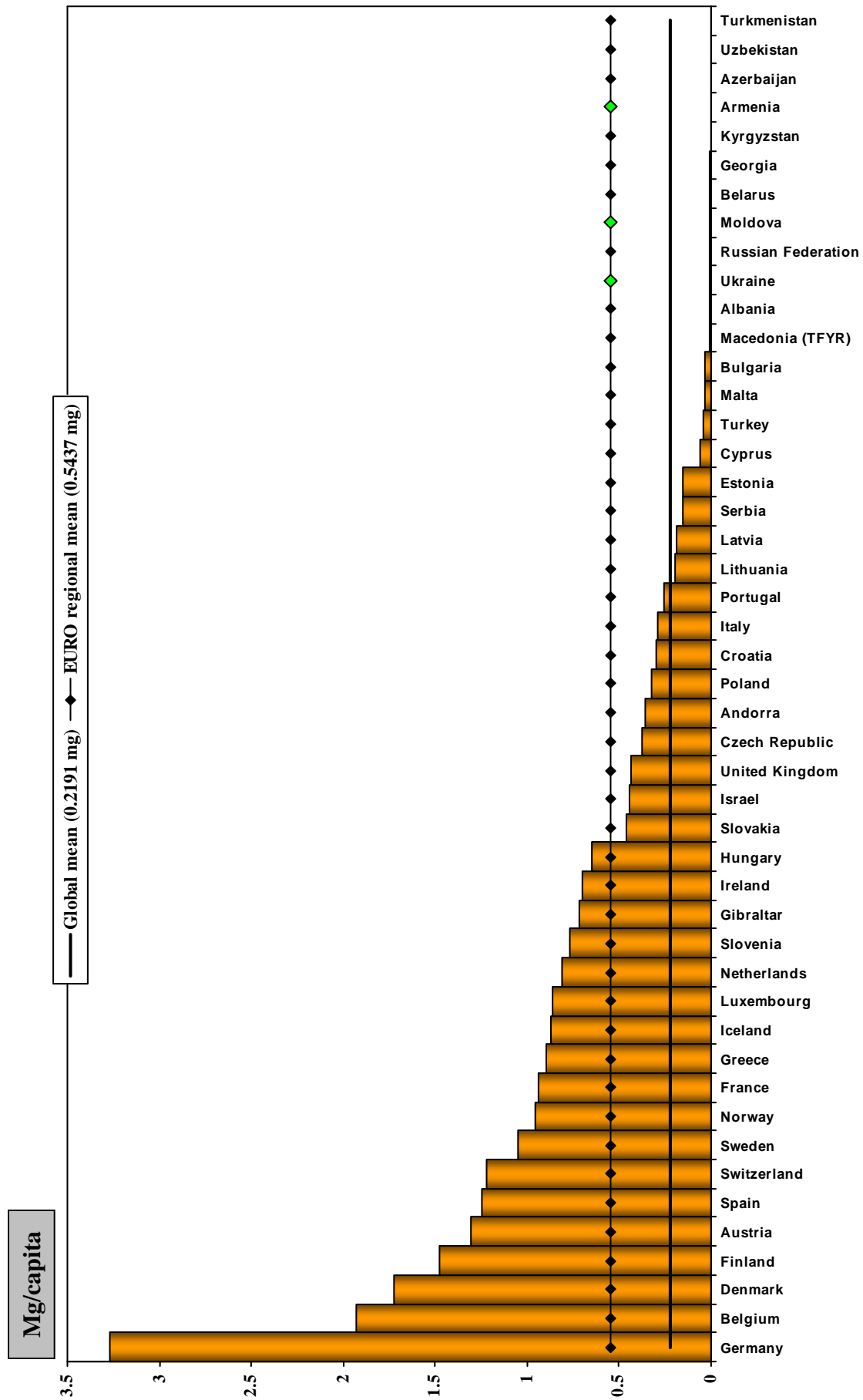
Graph 9. EURO Regional Consumption of Oxycodone, 2006



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

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

Graph 10. EURO Regional Consumption of Fentanyl, 2006



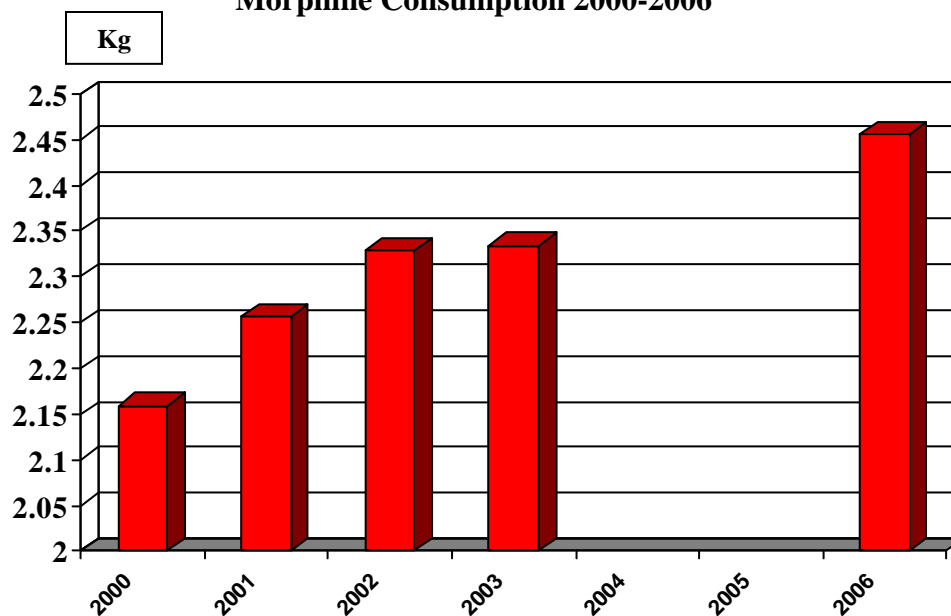
The means are calculated by adding the individual mg/capita statistics for all countries and then dividing by the number of countries.

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

V. NATIONAL CONSUMPTION TRENDS, KILOS

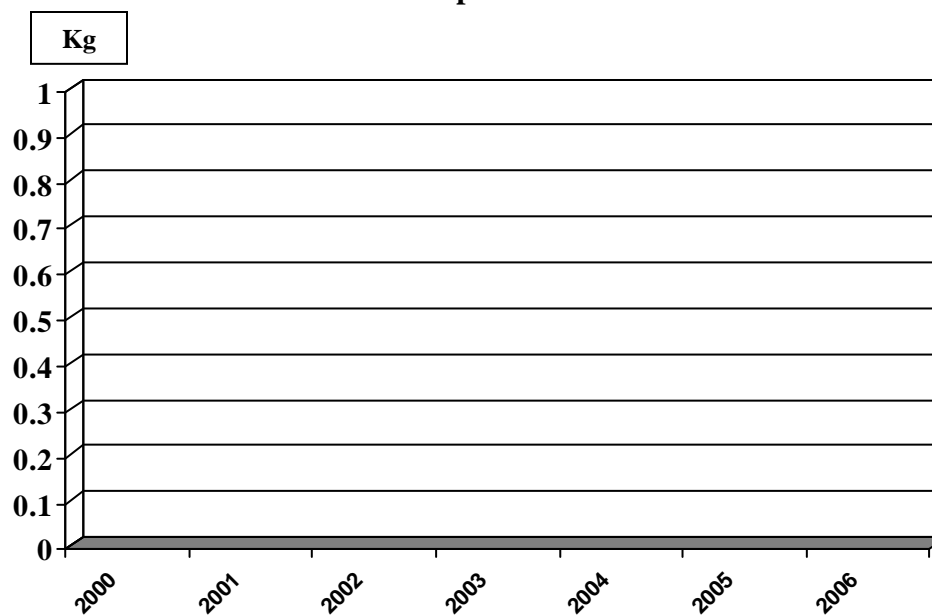
GRAPH 11. ARMENIA

Morphine Consumption 2000-2006



	2000	2001	2002	2003	2004	2005	2006
Morphine	2.159	2.257	2.329	2.334	?	?	2.456

Pethidine Consumption 2000-2006



	2000	2001	2002	2003	2004	2005	2006
Pethidine	?	?	?	?	?	?	?

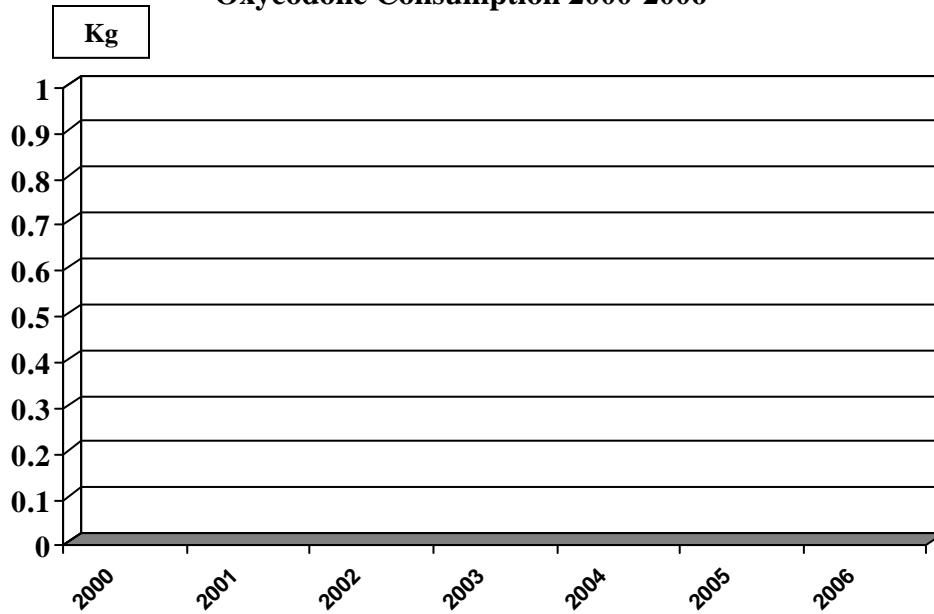
“?” indicates consumption statistics were not received

Source: International Narcotics Control Board

By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

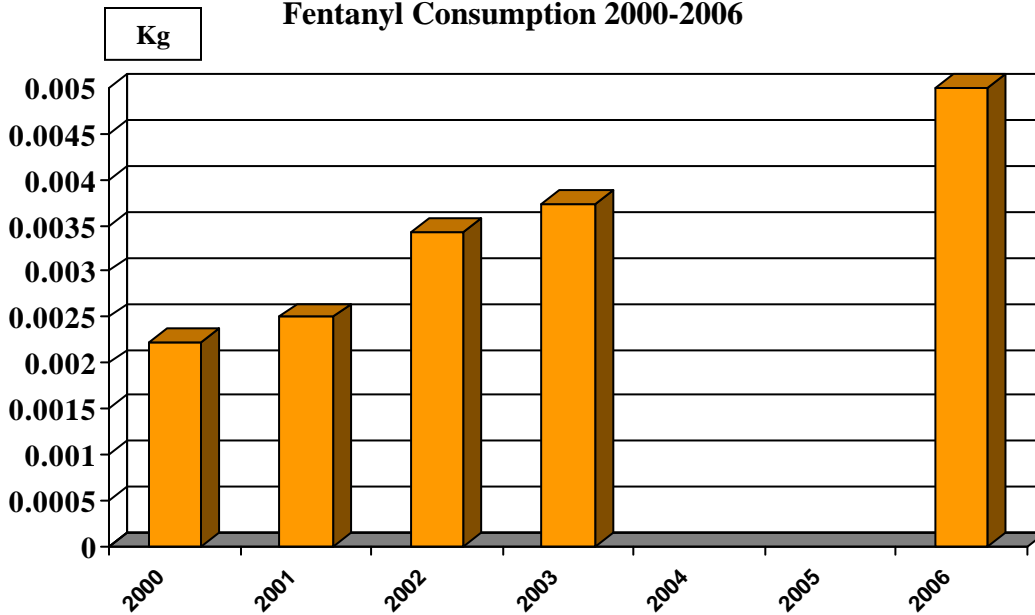
ARMENIA (CONTINUED)

Oxycodone Consumption 2000-2006



	2000	2001	2002	2003	2004	2005	2006
Oxycodone	?	?	?	?	?	?	?

Fentanyl Consumption 2000-2006



	2000	2001	2002	2003	2004	2005	2006
Fentanyl	0.002230	0.002500	0.003424	0.003735	?	?	0.005

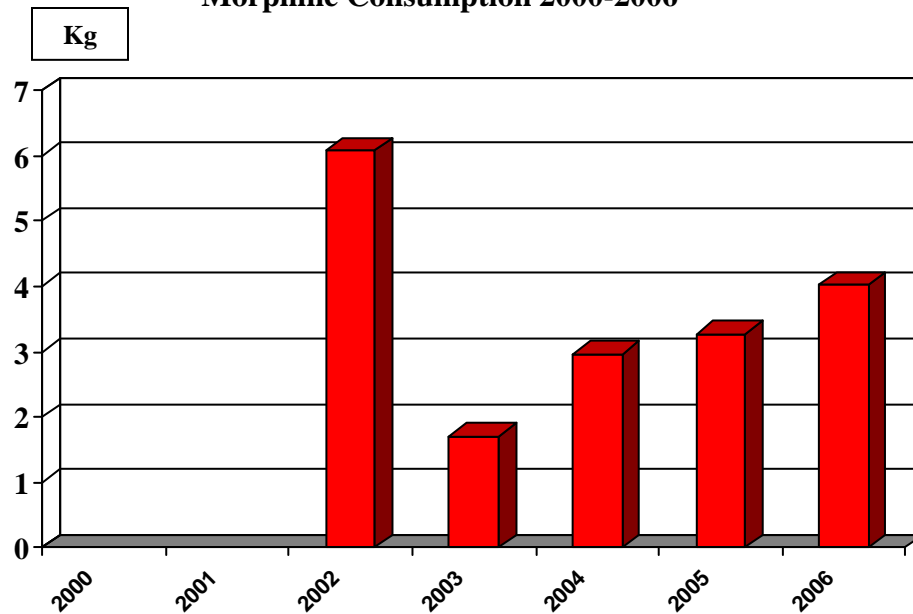
“?” indicates consumption statistics were not received

Source: International Narcotics Control Board

By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

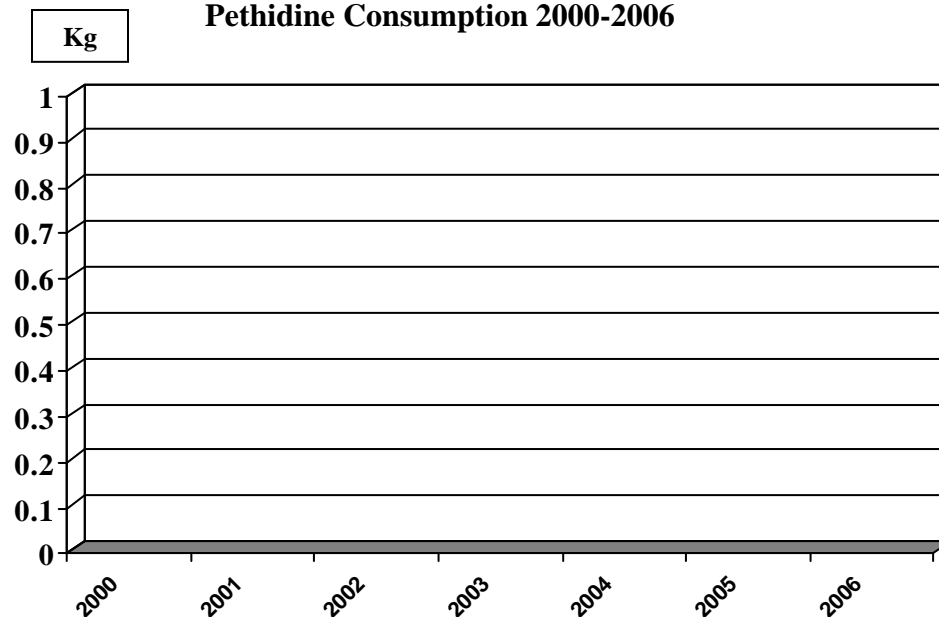
GRAPH 12. REPUBLIC OF MOLDOVA

Morphine Consumption 2000-2006



	2000	2001	2002	2003	2004	2005	2006
Morphine	?	?	6.078	1.711	2.967	3.265	4.029

Pethidine Consumption 2000-2006



	2000	2001	2002	2003	2004	2005	2006
Pethidine	?	?	?	?	?	?	?

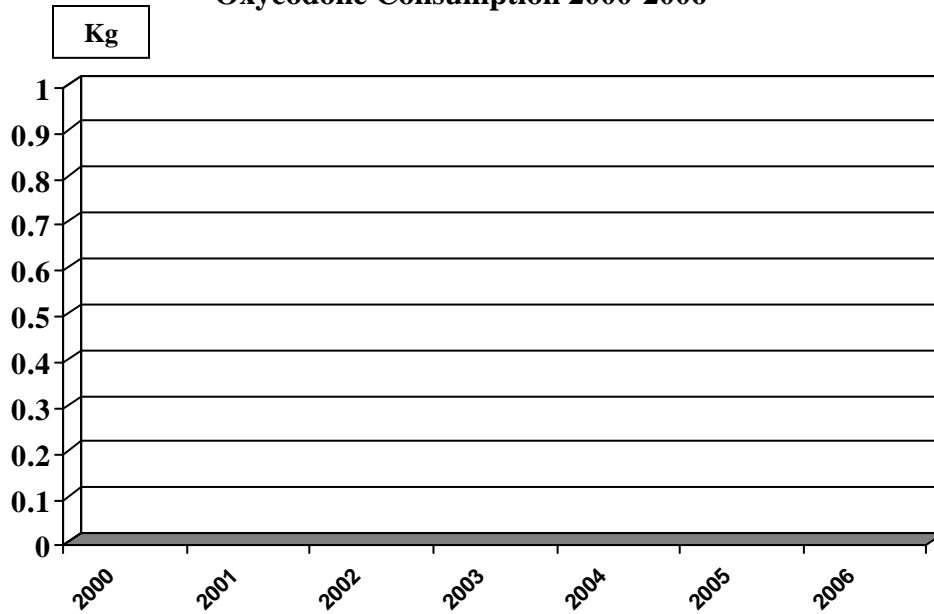
‘?’ indicates consumption statistics were not received

Source: International Narcotics Control Board

By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

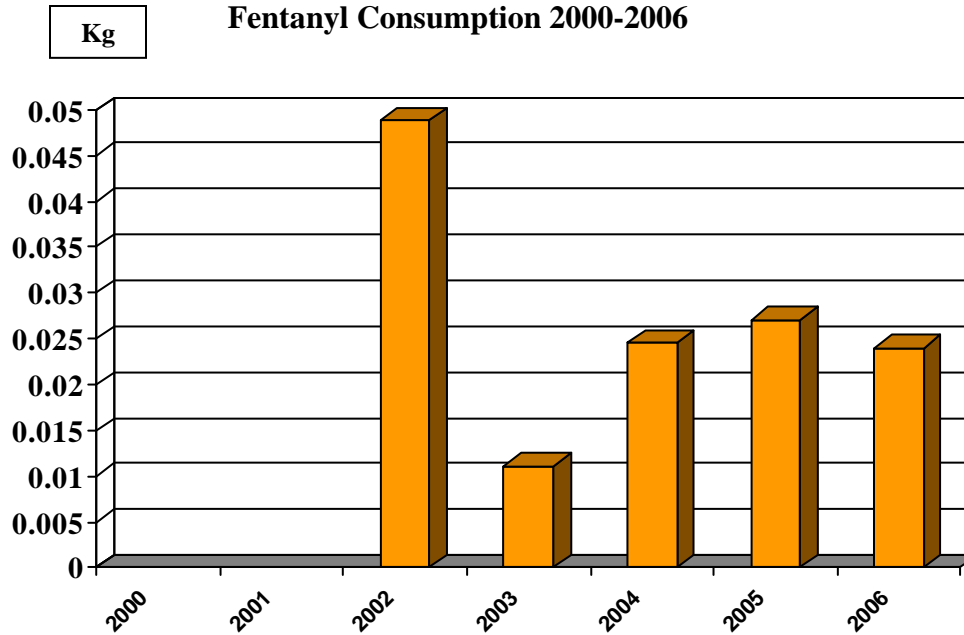
REPUBLIC OF MOLDOVA (CONTINUED)

Oxycodone Consumption 2000-2006



	2000	2001	2002	2003	2004	2005	2006
Oxycodone	?	?	?	?	?	?	?

Fentanyl Consumption 2000-2006



	2000	2001	2002	2003	2004	2005	2006
Fentanyl	?	?	0.048789	0.011078	0.024590	0.027065	0.024

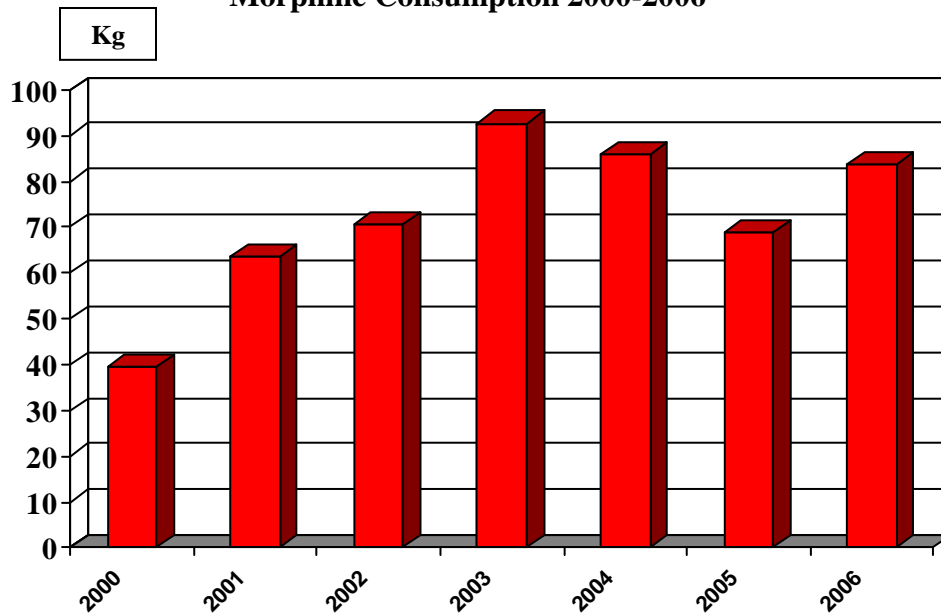
“?” indicates consumption statistics were not received

Source: International Narcotics Control Board

By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

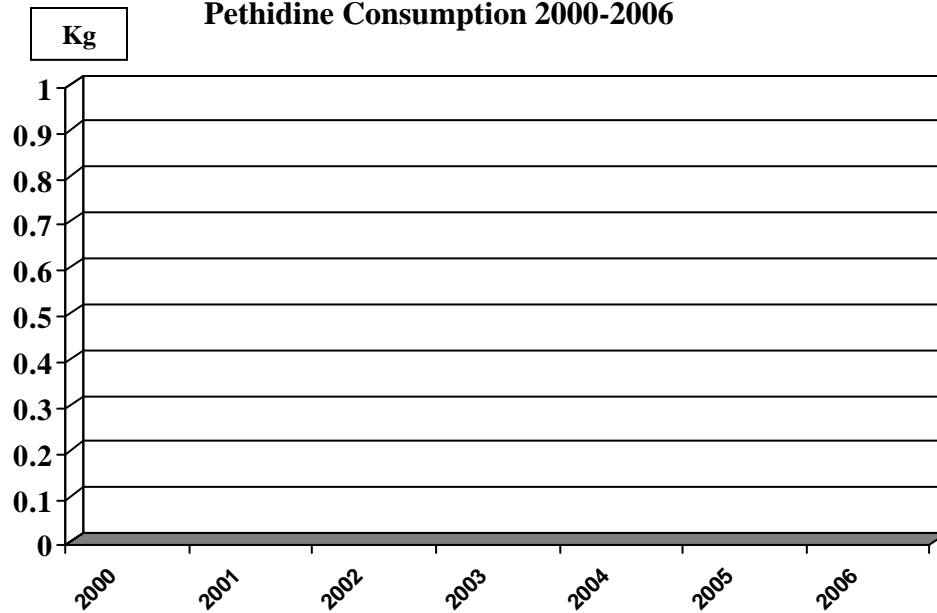
GRAPH 13. UKRAINE

Morphine Consumption 2000-2006



	2000	2001	2002	2003	2004	2005	2006
Morphine	39.441	63.645	70.693	92.667	85.755	68.741	83.694

Pethidine Consumption 2000-2006



	2000	2001	2002	2003	2004	2005	2006
Pethidine	?	?	?	?	?	?	?

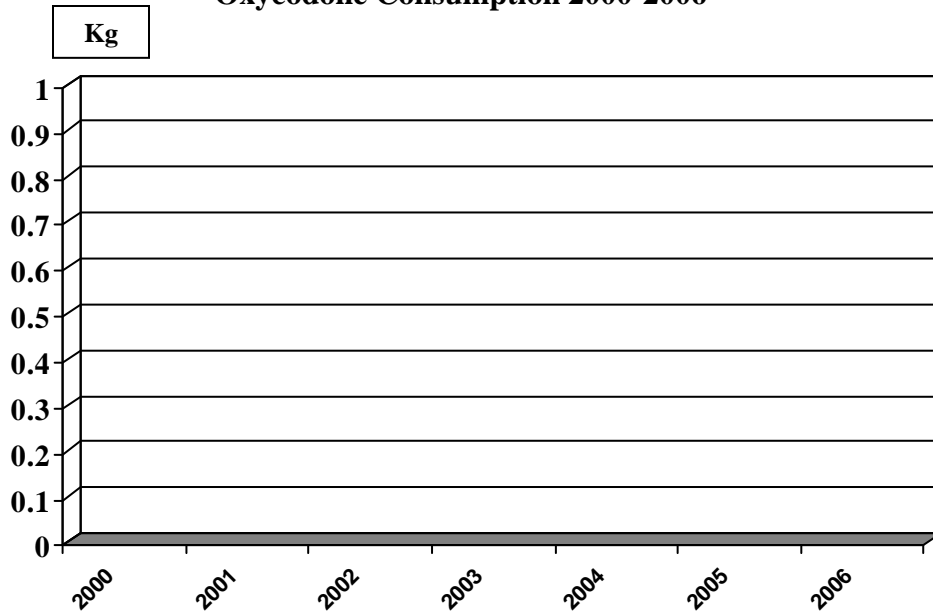
'?' indicates consumption statistics were not received

Source: International Narcotics Control Board

By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

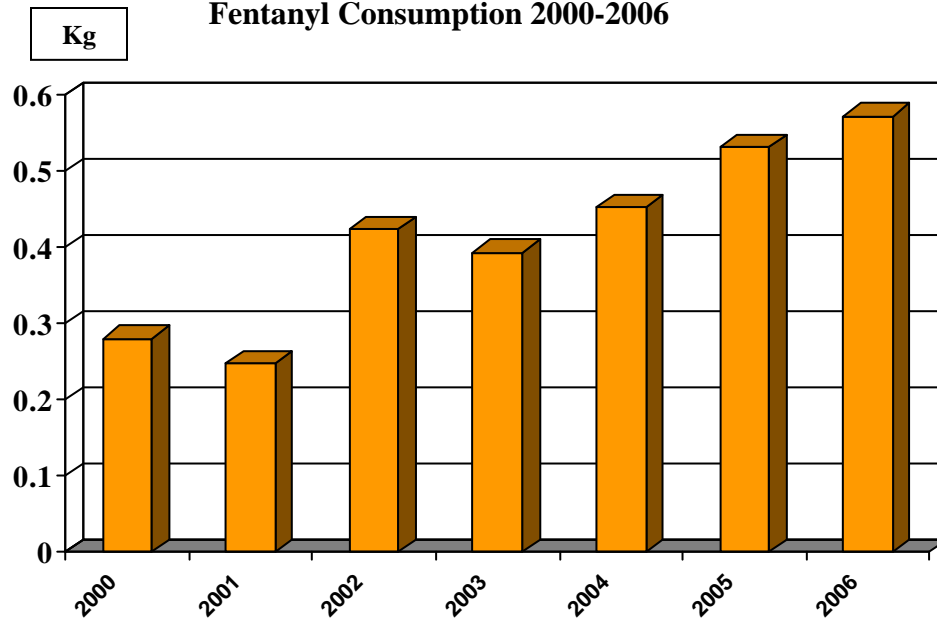
UKRAINE (CONTINUED)

Oxycodone Consumption 2000-2006



	2000	2001	2002	2003	2004	2005	2006
Oxycodone	?	?	?	?	?	?	?

Fentanyl Consumption 2000-2006



	2000	2001	2002	2003	2004	2005	2006
Fentanyl	0.28	0.247	0.423979	0.393426	0.453	0.530866	0.572

‘?’ indicates consumption statistics were not received

Source: International Narcotics Control Board

By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

**VI. TABLE 5. 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		
Armenia	●	●	●	●
Republic of Moldova	●	●	●	●
Ukraine	●	●	●	●

Presence of “●” indicates affirmative for treaty adherence and receipt of indicated data

Source: International Narcotics Control Board, Narcotic Drugs, Estimated World Requirements for 2008, Statistics for 2006
By: Pain & Policy Studies Group, University of Wisconsin/WHO Collaborating Center, 2008

VII. COMPETENT NATIONAL AUTHORITIES

Armenia

Head of Unit
Ministry of Health
Yerevan
Armenia
Phone: (374) 2-528872

Republic of Moldova

Standing Committee on Narcotic Drug Control
3a Costiujena str.
MD-2011 Chisinau
Moldova
Phone: (373) 2-293596
Fax: (373) 2-293596
Email: liv@moldova.md

Ukraine

Narcotics Control Committee
Ministry of Health
St. Ezhena Potye 14
252057 Kiev
Ukraine
Phone: (380) 44-2417273
Fax: (380) 44-2417273