

Population (2013): **200,362,000**

NEED FOR PAIN RELIEF

| | Deaths (2012-2013) | Proportion with moderate/severe pain | Number of deaths with moderate/severe pain |
|--------|--------------------|--------------------------------------|--|
| Cancer | 224,694 | 80% | 179,755 |
| HIV | 16,000 | 50% | 8,000 |
| Total | 240,694 | | 187,755 |

*This is a minimum need and does not include need for pain relief due to traumatic injury, childbirth, myocardial infarction, or other indications that are not routinely collected.

*NR=No report

RECENT CONSUMPTION OF MEDICATIONS FOR PAIN RELIEF

| Opioid Analgesics | 2011 (kg) | 2012 (kg) | 2013 (kg) | Average (2011-2013) (kg) |
|---|----------------|----------------|----------------|--------------------------|
| Morphine | 182.9 | 222.4 | 909.6 | 438.3 |
| Pethidine | 275.1 | 392.7 | 354.2 | 340.7 |
| Oxycodone | 25.4 | 30.5 | 49.6 | 35.2 |
| Fentanyl | 9.5 | 11.4 | 12.3 | 11.0 |
| Hydromorphone | 2.9 | 7.3 | 3.1 | 4.4 |
| Methadone | 33.0 | 51.8 | 31.2 | 38.7 |
| Morphine Equivalent | 1,219.6 | 1,552.7 | 2,225.2 | 1,665.9 |
| Morphine Equivalent (excluding methadone) | 1,087.5 | 1,345.4 | 2,100.3 | 1,511.0 |

*Data are from reports of the International Narcotics Control Board

Deaths with moderate/severe pain: **187,755**

Morphine Equivalent (kg, avg 2011-2013): **1,665.9** Per capita (mg): **8.3** Per death in pain (mg): **8,873**
1,665.9 kg is enough to treat approximately **269,722** people

People dying of HIV or cancer with untreated moderate/severe pain: **0**

Coverage of deaths in pain with treatment: **100.0%**

Morphine needed to meet minimum demand from deaths due to HIV or cancer (kg): **1,160**

DRUG POLICY

Party to the 1961 Single Convention on Narcotic Drugs: **Yes**

Submitted report for morphine consumption to INCB for 2013: **Yes**

ADDITIONAL NOTES

METHODOLOGICAL NOTES

The number of deaths from cancer is taken from the International Agency for Research on Cancer's GLOBOCAN 2012 dataset (1). The number of deaths from HIV is taken from the WHO Global Health Observatory Data Repository for 2013 (2). For countries that are not included in the repository dataset for 2013, data are taken from the 2013 dataset or most recent data available, as documented in the Central Intelligence Agency (CIA) World Factbook (3).

Opioid consumption data are taken from a dataset distributed by the International Narcotics Control Board to accompany the report of narcotics consumption in 2013 (4). These data are provisional and subject to updates.

Morphine equivalent is a metric to standardize potency of opioids and allow combination and comparison of different medicinal opioids. It is calculated as:

$$\text{Mor Eq} = (1 * \text{morphine}) + (83.3 * \text{fentanyl}) + (5 * \text{hydromorphone}) + (1.33 * \text{oxycodone}) + (0.25 * \text{pethidine}) + (4 * \text{methadone})$$

Because of methadone's widespread use as opioid substitution therapy, non-methadone morphine equivalent is also used in some instances and is calculated as

$$\text{Non-meth Mor Eq} = (1 * \text{morphine}) + (83.3 * \text{fentanyl}) + (5 * \text{hydromorphone}) + (1.33 * \text{oxycodone}) + (0.25 * \text{pethidine})$$

Morphine equivalency ratios of the defined daily dose (oral dosing for all except fentanyl, which is trans-dermal) are described in the WHO Collaborating Centre for Drug Statistics Methodology (5).

It is assumed that 80% of cancer deaths and 50% of HIV deaths require morphine and that the average morphine required for each death in pain is 67.5 mg/day for 91.5 days (6).

It is assumed that all of the morphine is used for deaths in pain due to cancer or HIV. The number of untreated deaths in pain is calculated by subtracting the number of deaths in pain that could be treated with the total morphine equivalent in the country from

REFERENCES

1. International Agency for Research on Cancer. GLOBOCAN 2012: Estimated Cancer Incidence, Mortality and Prevalence Worldwide in 2012 [Internet]. 2015 [cited 2015 Oct 7]. Available from: <http://globocan.iarc.fr/Default.aspx>
2. World Health Organization. Global Health Observatory Data Repository [Internet]. 2015 [cited 2015 Oct 7]. Available from: <http://apps.who.int/gho/data/node.main.623?lang=en>
3. Central Intelligence Agency. The World Factbook [Internet]. 2015 [cited 2015 Oct 7]. Available from: <https://www.cia.gov/library/publications/the-world-factbook/>
4. International Narcotics Control Board. Dataset: Opioid consumption statistics 2009-2013. 2015.
5. WHO Collaborating Centre for Drug Statistics Methodology [Internet]. 2014 [cited 2014 May 12]. Available from: http://www.whocc.no/atc_ddd_index/
6. Foley KM, Wagner JL, Joranson DE, Gelband H. Pain Control for People with Cancer and AIDS. Disease Control Priorities in Developing Countries. 2nd ed. New York: Oxford University Press; 2006. p. 981–94.