

## II. Narcotic drugs

4. Since the publication of the supplement to its annual report for 2015, the data on access to and availability of opioid analgesics for consumption have not changed noticeably. While the focus of the present report is on the progress that has been made in relation to the recommendations made in the supplement to the 2015 report and in the outcome document of the special session of the General Assembly on the world drug problem held in 2016, the report highlights some issues related to narcotic drugs that are important to consider when reviewing what action has been taken or still needs to be taken at the national and global levels.

5. In relation to narcotic drugs, specifically opioid analgesics, recent data and analysis highlight the following issues:

(a) Despite a global increase in the availability of opioid analgesics, disparity and imbalance in access to them remain evident;

(b) The increase in the use of expensive synthetic opioids (which is connected to overconsumption and overdose crisis in some countries) has not been matched by an increase in the use of affordable morphine;

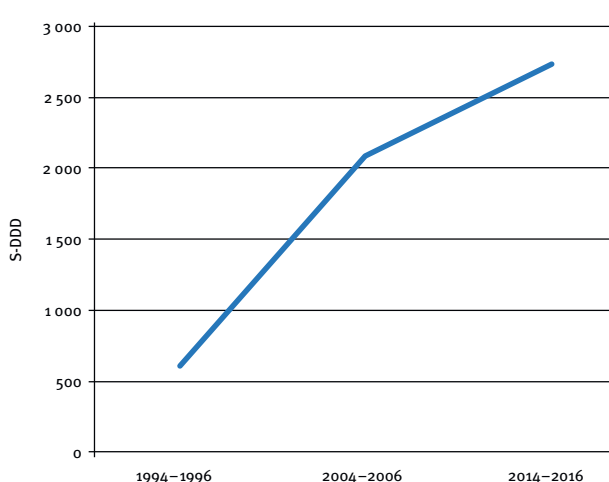
(c) Most of the morphine available is not utilized by pharmaceutical companies to prepare morphine preparations for palliative care; this reduces the overall amount that could be available for palliative care, which has a negative effect on the capacity of health services to treat pain, in particular in low- and middle-income countries<sup>6</sup> that cannot afford synthetic opioids.

### Unbalanced increase in availability for consumption

6. The data on the global availability of opioid analgesics show a steep increase from an average of 602 S-DDD in the period 1994–1996 to an average of 2,735 S-DDD in the

period 2014–2016 (figure II). However, the distribution of the availability for consumption provides a different perspective and shows that the increase in availability for consumption is concentrated in high-income countries. Over the years there has been some progress. Map 1 illustrates the changes in the patterns of availability for consumption of opioid analgesics since 1994. Availability of opioid analgesics for consumption increased in high-income countries, reaching a relatively high level per capita in some of them. However, despite some small improvements, availability for consumption has decreased and remains very inadequate in most countries in Africa and is inadequate in most countries in Asia, Central and South America, the Caribbean and Eastern Europe.

**Figure II. Global availability of opioid analgesics for consumption, defined daily doses for statistical purposes per million inhabitants per day (1994–1996, 2004–2006 and 2014–2016)**

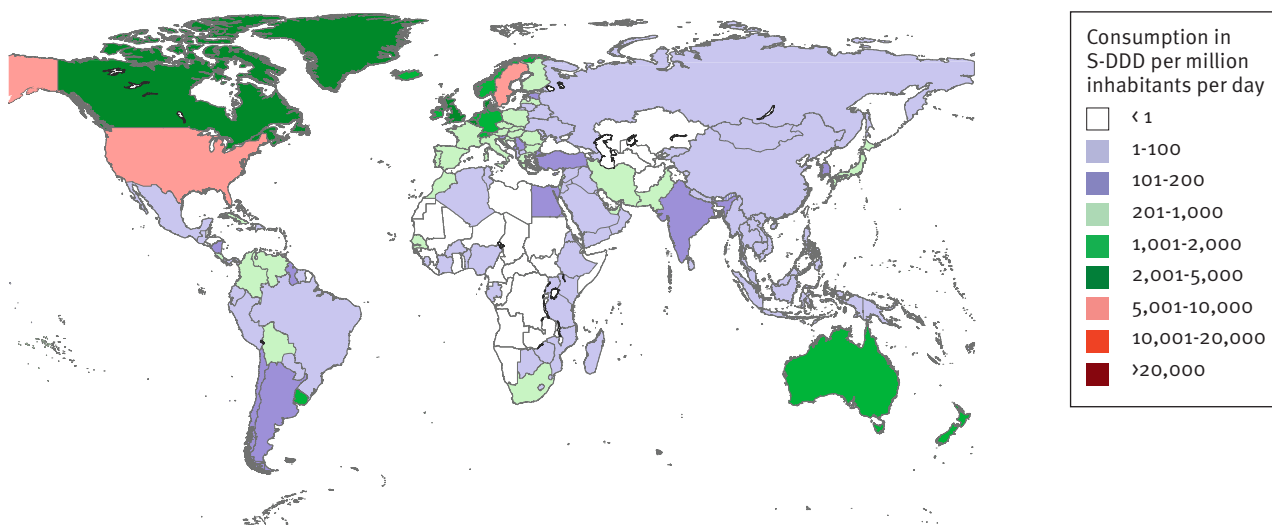


Note: S-DDD per million inhabitants per day, by total world population.

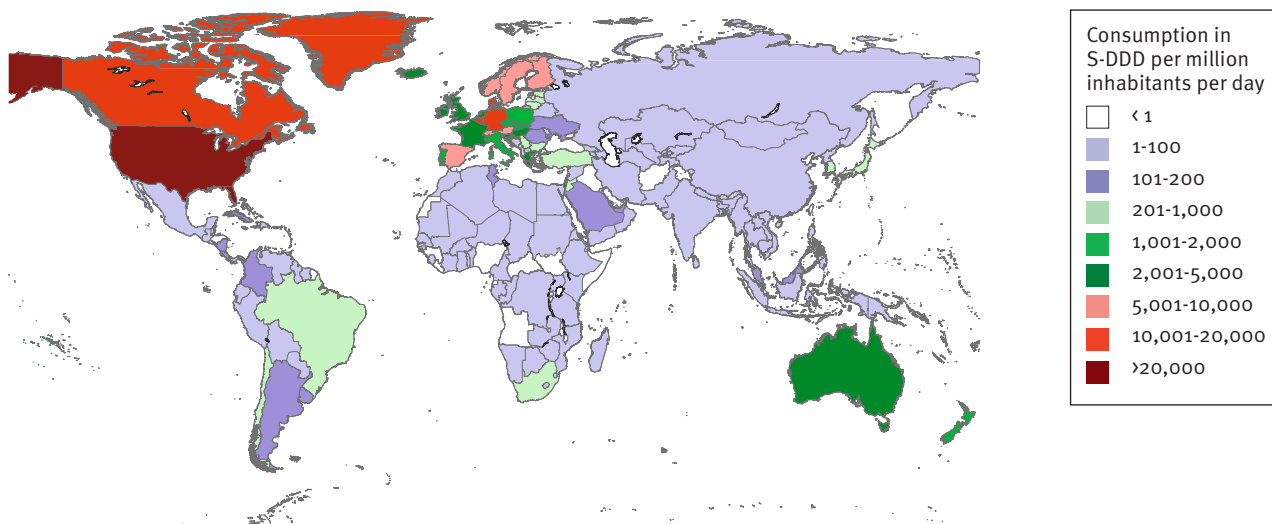
<sup>6</sup>The classification of countries on the basis of income used throughout the present publication is from the World Bank (see World Bank, “World Bank Country and Lending Groups”, 1 August 2018).

**Map 1. Availability of opioids for consumption for pain management  
(1994–1996, 2004–2006, 2014–2016 averages)**

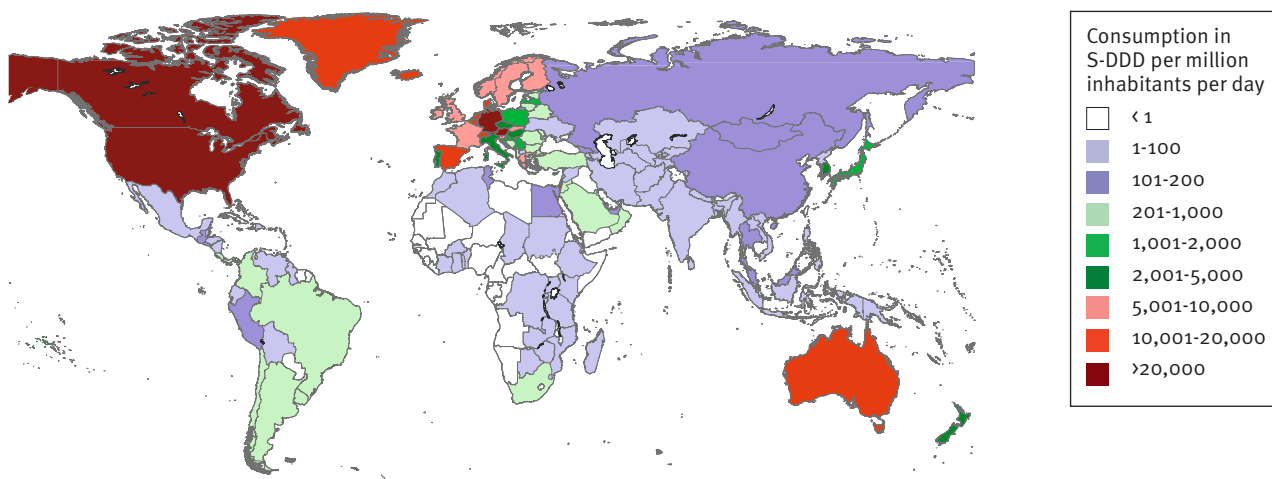
Availability of opioids for pain management, 1994–1996



Availability of opioids for pain management, 2004–2006



Availability of opioids for pain management, 2014–2016



The boundaries and names shown and the designations used on these maps do not imply official endorsement or acceptance by the United Nations. The final boundary between the Sudan and South Sudan has not yet been determined. The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

7. The reality of the global divide in access to opioid analgesics is shown in map 2 below, in which the data on the availability of opioid analgesics for consumption as reported by competent national authorities to INCB are measured against the estimated amount needed for the health conditions most associated with serious health-related suffering (an indicator developed by the Lancet Commission on Palliative Care and Pain Relief on the basis of existing health data and statistics).<sup>7</sup>

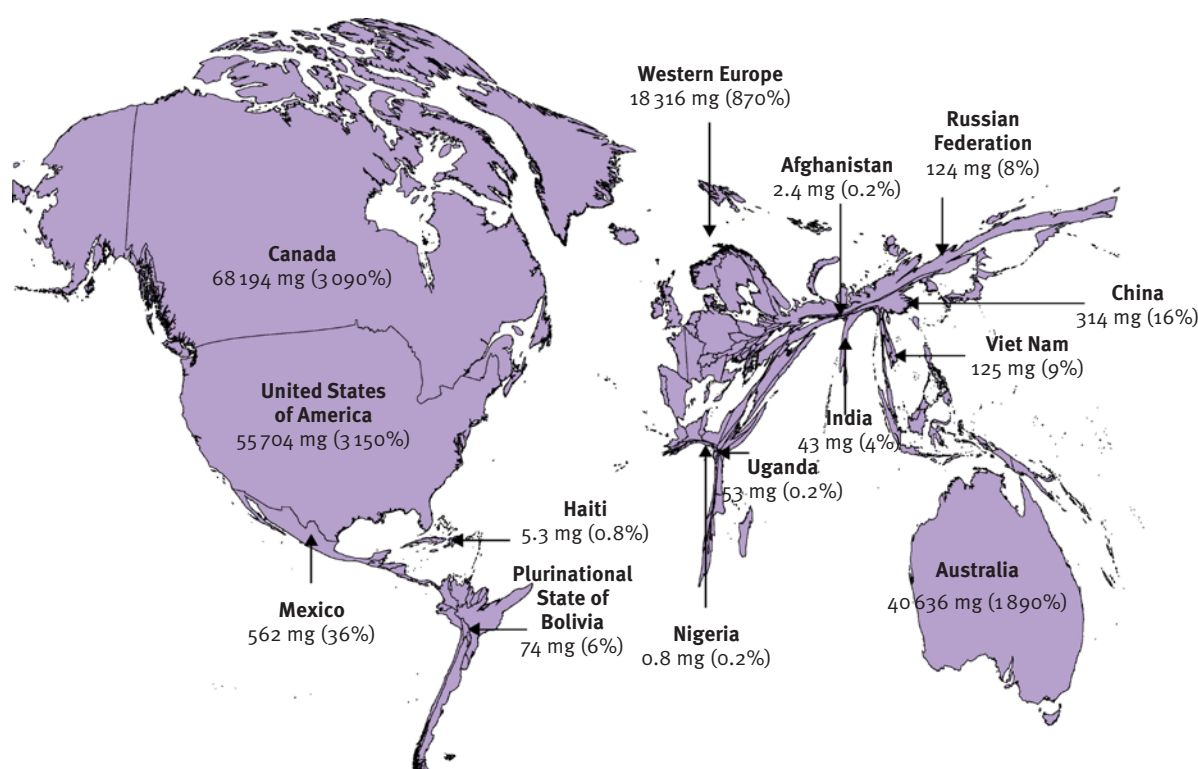
8. Map 2 illustrates the imbalance in the availability of opioid analgesics for consumption through the expansion or reduction in the size of each country. An excess in availability for consumption exists in the countries whose size is expanded (for example Australia, Canada and the

United States of America) and the extremely low level of the need for opioid analgesics being met in areas of Africa, Asia, Central and South America, the Caribbean and Eastern Europe is shown by the shrunk size of those regions.

9. The table overleaf contains the data relating to that imbalance. In the period 2010–2013, high-income countries had available for consumption a total of 287.7 tons in distributed opioid morphine equivalent against a calculated need of 86.4 tons, an excess of 233 per cent. Low-income countries with a projected need of 37.2 tons and only 0.1 ton of distributed opioid morphine equivalent had a deficit of 99.7 per cent. Upper-middle income countries and low-middle income countries had deficits of 96.7 and 99.3 per cent, respectively.

<sup>7</sup>Felicia Marie Knaul and others. “Alleviating the access abyss in palliative care and pain relief: an imperative of universal health coverage—the Lancet Commission report”, *The Lancet*, vol. 391, No. 10128 (April 2018).

**Map 2. Availability of opioid analgesics against need for pain treatment**



Source: Felicia Marie Knaul and others. “Alleviating the access abyss in palliative care and pain relief: an imperative of universal health coverage — the Lancet Commission report”, *The Lancet*, vol. 391, No. 10128 (April 2018).

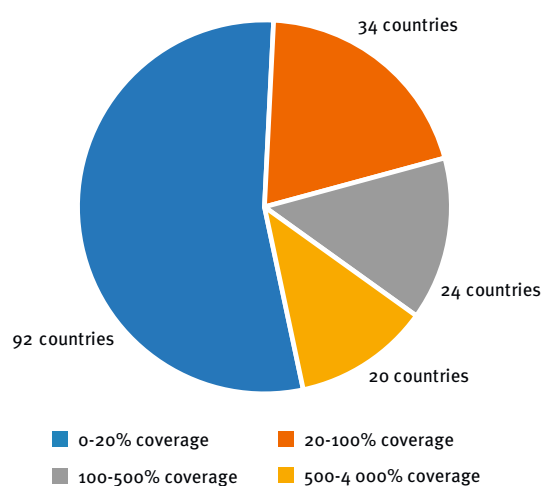
Note: Distributed opioid morphine equivalent (morphine in mg/patient in need of palliative care, average 2010–2013), and estimated percentage of need that is met for the health conditions most associated with serious health-related suffering.

**Morphine-equivalent unmet and total need for palliative care due to health conditions most associated with serious health-related suffering and projected unmet and total need using the Western European benchmark, by country income group and distributed opioid morphine equivalent reported by the International Narcotics Control Board for the period 2010–2013 (tons)**

	<i>Unmet need arising from conditions most associated with serious health-related suffering</i>	<i>Total need arising from conditions most associated with serious health-related suffering</i>	<i>Projected unmet need</i>	<i>Projected total need</i>	<i>Distributed opioid morphine equivalent</i>
High-income countries	0.4	22.7	64.0	86.4	287.7
Upper-middle-income countries	25.1	34.7	281.2	290.8	9.6
Lower-middle-income countries	18.7	19.8	165.7	166.8	1.1
Low-income countries	4.3	4.4	37.1	37.2	0.1
Total	48.5	81.6	548.0	581.2	298.5

Source: Felicia Marie Knaul and others. “Alleviating the access abyss in palliative care and pain relief: an imperative of universal health coverage — the Lancet Commission report”, *The Lancet*, vol. 391, No. 10128 (April 2018).

**Figure III. Percentage of pain treatment needs met by opioid analgesics available for consumption (2010–2013)**



Source: Felicia Marie Knaul and others. “Alleviating the access abyss in palliative care and pain relief: an imperative of universal health coverage—the Lancet Commission report”, *The Lancet*, vol. 391, No. 10128 (April 2018).

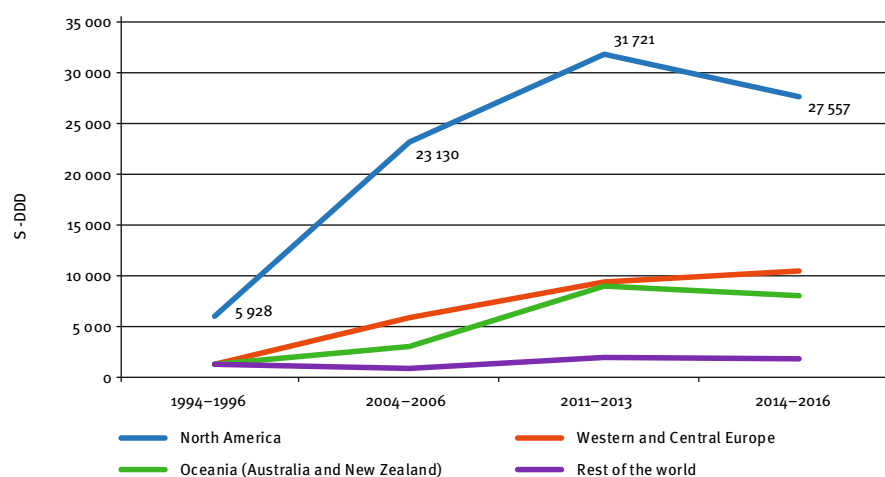
10. Of the 170 countries for which data were available, the Lancet Commission on Palliative Care and Pain Relief identified that 54 per cent (92 countries) had available for consumption 20 per cent or less of the amount of controlled substances needed for the treatment of pain, as calculated with the serious health-related suffering indicator

(see figure III). Of those, 75 had available for consumption less than 10 per cent of the amount required. The vast majority of those are classified as low or lower-middle income but some are classified as upper-middle income. Just 20 countries had enough opioid analgesics available for consumption to cover their pain treatment needs many times over (between 500 and 4,000 per cent). Among those, eight countries (Austria, Australia, Belgium, Canada, Denmark, Germany, Switzerland and the United States) had opioid analgesics available for consumption sufficient to cover more than 1,000 per cent of their needs; Canada and the United States had above 3,000 per cent.

11. A regional analysis of the data covering the periods 1994–1996 and 2014–2016 confirms the disparity in the availability of opioid analgesics for consumption, with slightly differing trends in each region (see figure IV). North America is the region with the highest level of availability for consumption, with 27,557 S-DDD in the period 2014–2016, despite a decline from the peak of 31,721 S-DDD in the period 2011–2013. Western and Central Europe is the region with the second-highest levels of availability, with a stable trend of increase to 10,382 S-DDD in the period 2014–2016. Similarly to the trend observed in the countries in North America, Australia and New Zealand also saw a decrease in the average S-DDD, from 8,927 in the period 2011–2013 to 7,943 in the period 2014–2016. In other regions, levels of availability for consumption are considerably lower. Figures V to VII illustrate those trends in detail.

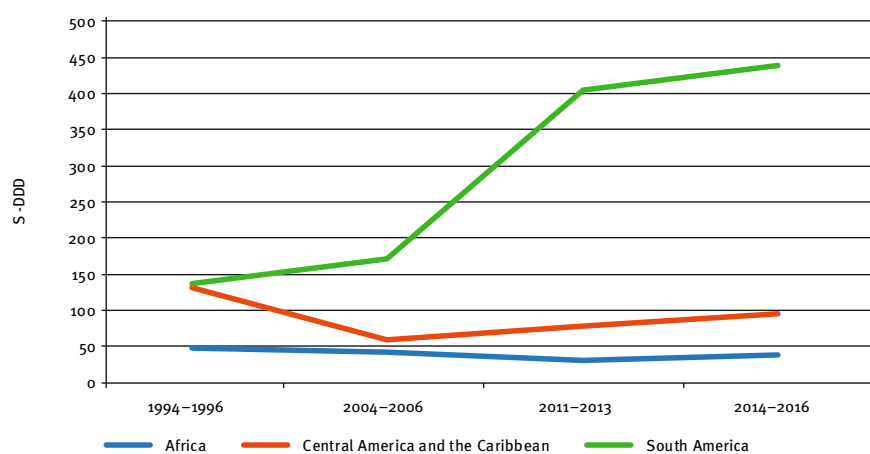


Figure IV. Trends in availability of opioid analgesics for consumption, by region, 1994–2016



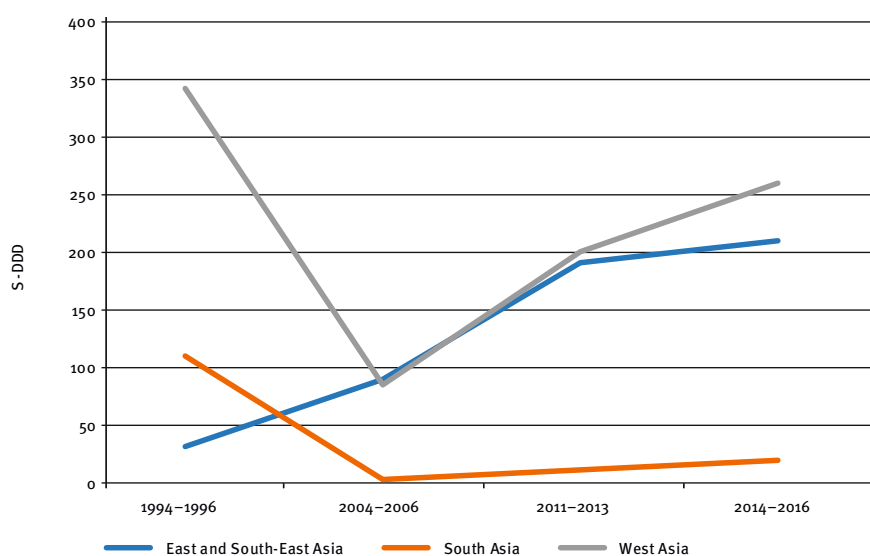
Note: S-DDD per million inhabitants per day, by total regional population.

Figure V. Trends in availability of opioid analgesics for consumption, selected subregions, 1994–2016

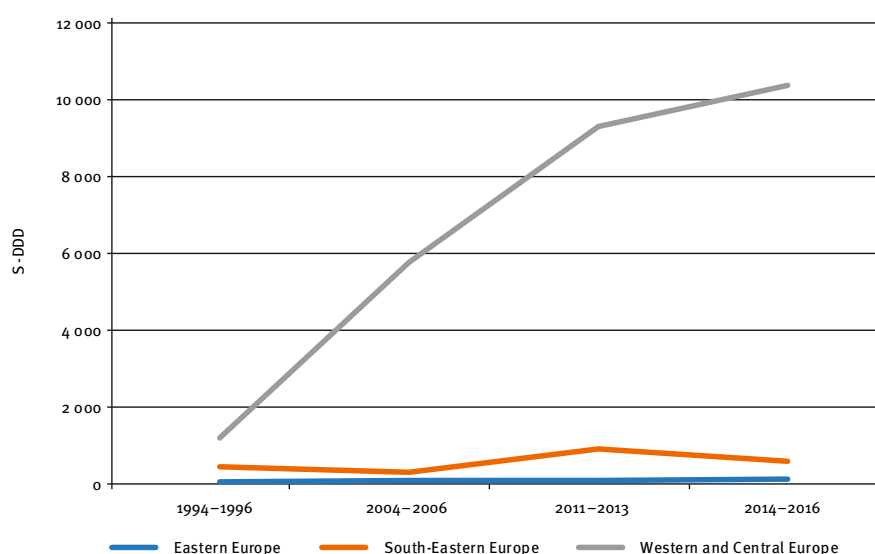


Note: S-DDD per million inhabitants per day, by total regional population.

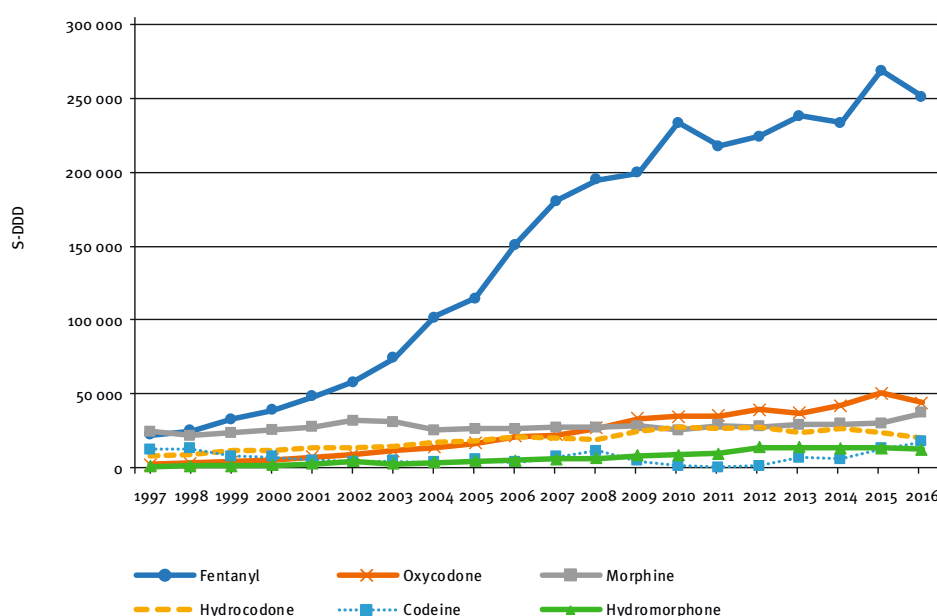
Figure VI. Trends in availability of opioid analgesics for consumption, Asia, 1994–2016



Note: S-DDD per million inhabitants per day, by total regional population.

**Figure VII. Trends in availability of opioid analgesics for consumption, Europe, 1994–2016**

Note: S-DDD per million inhabitants per day, by total regional population.

**Figure VIII. Availability of fentanyl, oxycodone, morphine, hydrocodone, codeine and hydromorphone, for consumption, defined daily doses for statistical purposes, 1997–2016**

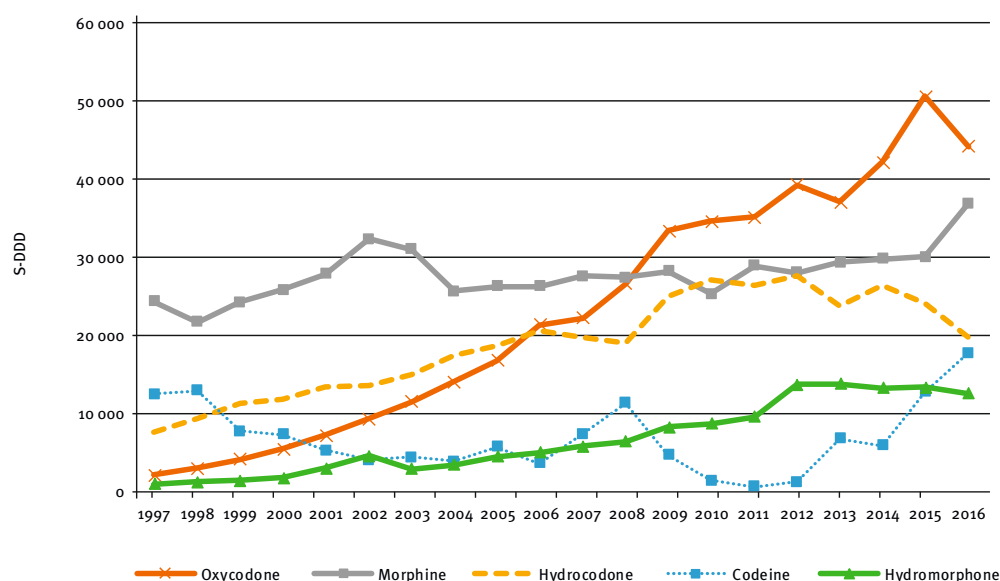
Note: S-DDD per million inhabitants per day, by total world population.

### Increase in availability of synthetic opioids and stable trend in the availability of morphine

12. A comparison of trends in the availability for consumption of the main opioid analgesics (codeine, fentanyl, hydrocodone, hydromorphone, morphine and oxycodone), expressed in S-DDDs (see figures VIII and IX), shows that there has been a marked increase in the availability of fentanyl since 1997. Although the availability of fentanyl has been concentrated in high-income

countries, in recent years there have been significant increases in availability in various countries in the Middle East, South-East Asia and Central and South America. While the availability of fentanyl has been increasing, together with that of oxycodone, albeit at a lower level, the availability of morphine, the most affordable opioid available, has remained stable. This is a matter of concern because the increased availability of morphine could significantly reduce the gap between the need for pain treatment and the limited access to opioid analgesics in low- and middle-income countries.

**Figure IX. Availability of oxycodone, morphine, hydrocodone, codeine and hydromorphone for consumption, defined daily doses for statistical purposes, 1997–2016**



Note: S-DDD per million inhabitants per day, by total world population.

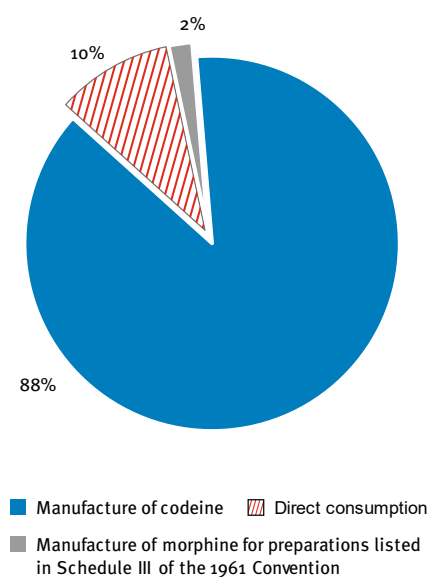
### Limited use of morphine for palliative care

13. Over the years, INCB has monitored the supply of and demand for opiate raw materials and opioid analgesics in terms of the utilization of opiate raw materials (as reflected in the demand by manufacturers) and in terms of the global availability of all opiates for consumption. According to the data reported to INCB, overall supply is more than sufficient to cover the licit needs expressed by competent national authorities. However, the imbalance shown in maps 1 and 2 and in the table above indicates that many authorities are not estimating their needs accurately.

14. In the 20-year period 1997–2016, the manufacture of morphine increased considerably: from 273.9 tons in 1997, it stabilized at about 450 tons between 2011 and 2014, before decreasing to 419.2 tons in 2015 and remaining at roughly the same level (422.1 tons) in 2016. Since 2000, of the total amount of morphine utilized globally, on average only 10 per cent was reported to have been used for palliative care. A smaller amount (2 per cent, on average) was used to manufacture preparations containing morphine listed in Schedule III of the 1961 Convention. The majority (88 per cent, on average) was converted into codeine or into substances not covered by the 1961 Convention. Most of the codeine manufactured (89 per cent) was used to manufacture cough medication (figure X).

15. In 2016, of the limited amount (10 per cent) of morphine used directly for pain management, a small percentage (14 per cent) was available in countries constituting

**Figure X. Utilization of morphine, 2000–2016**



80 per cent of the world population. The remaining 86 per cent of available morphine, excluding preparations included in Schedule III of the 1961 Convention, was concentrated in a small number of countries located mainly in Europe and North America. Although the 14 per cent available for consumption in countries constituting 80 per cent of the world population represents an improvement over the level in 2014 (9.5 per cent), the disparity in availability for consumption of an affordable

opioid analgesic such as morphine continues to be a matter of concern. Although most countries had morphine available for consumption in 2016, many people still had limited access to it and a number of competent national authorities reported difficulties in procuring it.

16. The limited use of morphine and the difficulties in procuring it for pain relief are also related to the marketing of more expensive synthetic opioids that are used for

the same indications as opiates. Since 1997, the overall availability of opioid analgesics for consumption has more than tripled. The share of availability of opiates in the total availability for consumption of opioid analgesics fluctuated between 59 per cent in 1997 and 51 per cent in 2008; it reached a peak of 68 per cent in 2014 but decreased to 61 per cent in 2016. The share of synthetic opioids increased from 32 per cent in 2014 to 39 per cent in 2016.