

*Original Article*

# Cross-Sectional Pilot Study to Monitor the Availability, Dispensed Prices, and Affordability of Opioids Around the Globe

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## Abstract

**Context.** Opioids are essential medicines. The World Health Organization and Health Action International monitor the price of essential medicines. However, their surveys do not include opioids, and there is no information on their affordability.

**Objectives.** To provide information on access to pain treatment, as measured by the availability and dispensed price of five opioids in 13 formulations, and the affordability of oral immediate-release (IR) morphine.

**Methods.** The International Association for Hospice and Palliative Care members were distributed by their countries' Gross National Income (GNI) level using the World Bank categories, such as high income country (HIC), upper middle income country (UMIC), lower middle income country (LMIC), low income country (LIC), and randomized. A total of 10 participants were selected from each ( $n = 40$ ) domain. Participants were asked to identify a pharmacy located closest to a public facility, which provides diagnosis/treatment for life-threatening conditions and report the lowest dispensed price of the smallest selling unit and strength of each formulation. Availability and median (Me) price were calculated for each. Affordability and percentage of international buyer price (IBP) were calculated for morphine oral solid IR.

**Results.** A total of 30 participants from 26 countries (response rate = 75%) responded. Significant correlation was found between availability and GNI (range: 65–68% [HIC and LIC];  $R = 0.781$ ;  $P < 0.0001$ ). Injectable and morphine oral solid sustained release (SR) were the most available (59% and 55%). Methadone (oral) was the cheapest (Me = 0.5) followed by fentanyl (transdermal; Me = 2.2). The Me price for morphine oral solid IR and ratios between dispensed and IBP were lower in HIC than in LMIC (price = 0.03 vs.

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0.16; ratio = 2.23 vs. 0.03). Affordability for morphine oral solid IR was five days (Me = 0.1; range = 29–0.25).

**Conclusion.** Patients in LMIC and LIC have limited access to opioids, and there are subsidies in place for more expensive medications and formulations in all GNI levels, but not for morphine oral solid IR. Additional research is necessary to identify the reasons behind these findings. *J Pain Symptom Manage* 2014;■:■–■. © 2014 U.S. Cancer Pain Relief Committee. Published by Elsevier Inc. All rights reserved.

### Key Words

*Essential medicines, opioids, availability, accessibility, affordability*

## Introduction

The World Health Organization (WHO) recognizes palliative care and pain relief as critical public health issues.<sup>1–3</sup> Strong opioids are a cornerstone of pain treatment, of which morphine is considered essential by the WHO.<sup>4</sup> In 2007, the International Association for Hospice and Palliative Care (IAHPC) developed a list of Essential Medicines (EMLs) in Palliative Care,<sup>5</sup> which includes opioids for the treatment of pain and other symptoms. Still, in many countries, limited or no access is a significant problem. Developing countries with about 80% of the world population account for 6% of the global morphine consumption<sup>3</sup> resulting in millions of patients suffering needlessly.

Access to opioids is limited owing to several reasons, including restrictive drug control laws and regulations, lack of education, and high prices.<sup>6,7</sup> In developing countries, they have been reported to be more expensive than in developed nations,<sup>8–11</sup> and prices in small cities and rural areas are higher than in large cities.<sup>12</sup> Opioid pricing is impacted by additional factors, such as markups resulting from safety and security measures required by the national laws on the manufacturing, importation, distribution, storage, and dispensation of controlled medicines. Pricing is also affected by the type of formulation, namely complex delivery mechanisms, such as transdermal patches (TPs); transmucosal or SR formulations are costlier to make than immediate release (IR) oral formulations (solid or liquid).

The WHO and Health Action International (HAI) developed a method to monitor and report the price of essential medicines as a measure of access,<sup>13</sup> which has prompted some governments to lower the cost of medicines.<sup>14</sup> However, with one exception,<sup>15</sup> the

WHO/HAI surveys do not include opioids, and there is limited information on their price and affordability. In 2008, the IAHPC decided to develop the Opioid Price Watch (OPW) Project as a component of the agreement of work as a nongovernmental organization in formal relations with the WHO. This article describes the pilot study implemented to test OPW.

## Objectives

The objectives of the article are to:

1. Provide information on opioid availability globally;
2. Show opioid price patterns among regions and countries, as reflected in differences in treatment costs, affordability, and differences in prices as a ratio of the international reference price; and
3. Allow further analysis of the difficulties in availability and affordability of opioid analgesics and suggest possible strategies addressing the identified problems.

## Methods

The study design was a cross-sectional study.<sup>16</sup> The project proposal is available in the IAHPC web site in <http://hospicecare.com/resources/opioid-price-watch/>. An ethics review board from the Fundacion Federacion Medica de Buenos Aires in Argentina approved the study.

The opioids were selected using the following criteria:

1. Included in the 17th edition of the WHO Model EMLs<sup>4</sup>
2. Included in the IAHPC EML but not included in the WHO EML<sup>5</sup>

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