

## Opioid Utilization Profile in Brazilian Federal Hospitals

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### Introduction

Countries in the northern hemisphere debate about an opioid epidemic [1], in the South there is still a need for studies to measure trends in use and also investigate how inpatient consumption may contribute to an epidemic. In this sense, Brazilian federal hospitals are a privileged context to investigate the consumption of opioids in order to measure the differences in their use and investigate how the consumption of hospitalized patients may be contributing to this increase.

### Material and Methods

A longitudinal study was performed, using purchases as a proxy for consumption in Brazilian federal hospitals. Opioids were selected based on national and international consumption trends and relevance of use. The bidding data was collected from the Integrated System of General Services Administration (SIASG) [2] and hospital data obtained in the National Registry of Health Establishments (CNES) [3] from 2010 to 2019. Hospitals were stratified by region, number of beds, complexity and service characteristics. Consumption was expressed in Defined Daily Dose (DDD)/100 beds and mg/100 beds, since not all opioids had DDD and occupancy rates were not available for calculating bed-days.

### Results and Discussion

The general consumption of opioids in 85 federal hospitals increased 159% over the ten-year period, from 3.4 million mg / 100 beds in 2010 to 8.8 in 2019. Tramadol and morphine were the most consumed opioids, corresponding to more than 95% of purchases during the study period. Most hospitals, 51% (43), were under the Ministry of Education (MEC), 36% (31) to the Ministry of Defense (MD) and 13% (11) to the Ministry of Health (MS). Most large, medium/high complexity federal hospitals were mainly linked to the MEC, but consumption was led by hospitals with the same profile as the MS. Except in 2015, in which MD hospitals, mostly small and low/medium complexity, which serve exclusively military personnel, recorded tramadol consumption higher than the largest federal hospitals in the country (69,632 DDD/100 beds), which is equivalent to 5 times the amount consumed by MEC hospitals (13,105 DDD/100 beds) and 1.7 times the MS hospitals (39.010/100 beds).

### Conclusion

Despite the limitations on the availability of data for calculating the nDDD / 100 bed-days, there was a substantial increase in opioid consumption in federal hospitals, which may be related to the demand for better treatment of pain, as well as changes in the medical use of these substances. Regarding to the observed consumption disparities, other studies involving data on consumption, accompanied by dispensing data, prescription and other sources of information, such as hospital stay, pain assessment during hospitalization, can help clarify the quality of pain treatment. Since federal hospitals

concentrate a considerable amount of highly complex care in the public sector, it is important to follow the general trends in opioid consumption by these units in Brazil.

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