

# RADARS<sup>®</sup>

## S Y S T E M



Researched Abuse, Diversion and Addiction-Related Surveillance System



## First Quarter 2014 Technical Report

### *Appearance of Canadian Oxycodone Extended Release Products in the United States*

#### Key Points:

1. Canada has two forms of extended release (ER) oxycodone products available: OxyNEO<sup>®</sup> and generic formulations of OxyContin<sup>®</sup>. The United States allows only an abuse deterrent formulation (reformulated OxyContin), which is difficult to crush and snort or inject. Concern has been expressed because the Canadian generic formulations available are crushable while OxyNEO is abuse deterrent.
2. This report uses data from the RADARS<sup>®</sup> System StreetRx<sup>™</sup> Program to assess whether crushable oxycodone products in Canada are being abused in the United States.
3. Data from StreetRx in the United States shows that formulations of oxycodone ER from Canada have been endorsed by respondents in the United States, indicating that the generic formulations are crossing the border into the United States.
4. The price of crushable oxycodone products are higher than ADF products in both the United States and Canada.

#### Background

In the United States, the original formulation of OxyContin was crushable and became a popular drug of abuse. In 2009, a difficult to crush “abuse deterrent formulation” (ADF) of OxyContin was introduced in the United States. The old crushable formulation was discontinued and OxyContin was subsequently marketed only in the abuse deterrent formulation. Postmarketing surveillance indicated that diversion and abuse of OxyContin decreased dramatically after introduction of the new formulation. (1,2)

The original, crushable, formulation of OxyContin was introduced to Canada in 1996. As in the United States, the drug became popular for abuse. In March 2012, the manufacturer introduced the abuse deterrent formulation in Canada, but changed the name to OxyNEO.(3) The original formulation was withdrawn from the market. In the United States, generic equivalents of the old (crushable) OxyContin formulation were proposed, but prohibited by US FDA. In Canada, however, crushable generic equivalents were approved, thereby creating a natural experiment with both crushable and difficult to crush products available in Canada, but only the abuse deterrent formulation available in the United States.

Since crushable formulations of oxycodone extended release are currently available in Canada, but not the United States, we determined whether purchasers on the street or “black market” in the United States endorsed purchase of these products.

## Methods

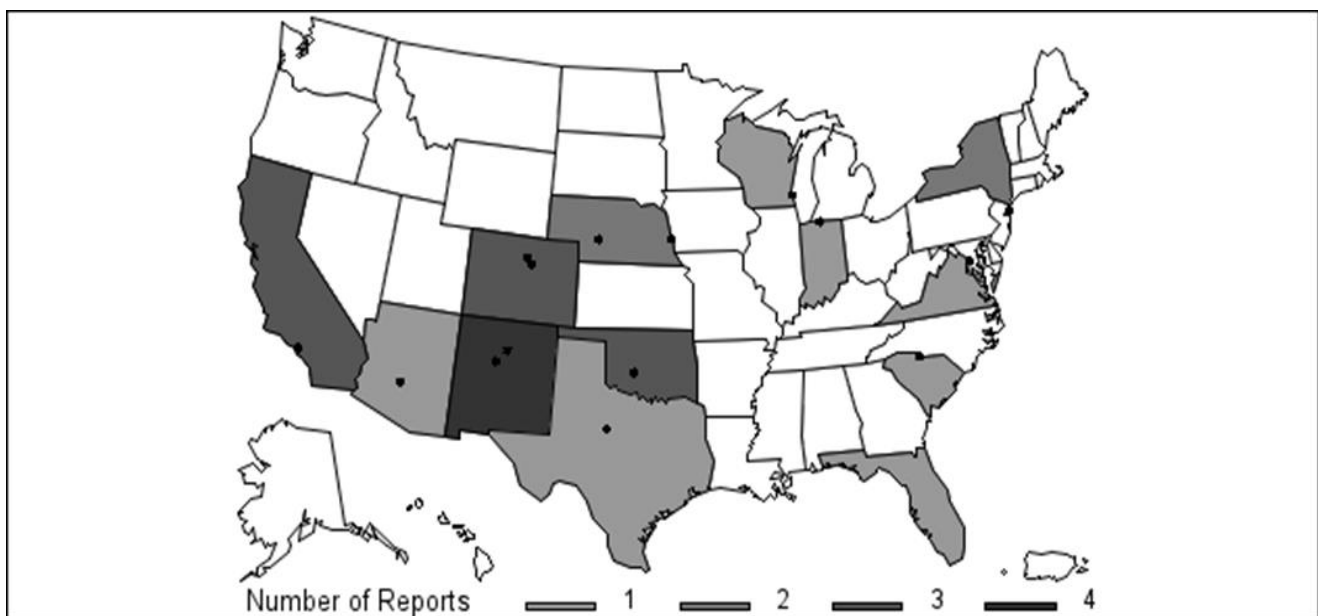
United States StreetRx™ was launched in November 2010. Canadian StreetRx™ was launched without promotion in 2013. Both sites allow purchasers of street drugs to enter the specific drug product and the price paid into a website utilizing crowd source strategy (4).

The data used for this study were collected from July 1, 2012 through December 31, 2013, and include individual reports of prices paid as well as prices ascertained from a search of websites. Figure 1 includes a map of the number of reported Canadian oxycodone products in the United States from the United States StreetRx Program. Table 1 gives the number of reports, the median price paid, and the range of prices by drug product in both the United States StreetRx Program and the Canadian StreetRx Program. The main limitation of StreetRx data include self-report. Although aided by photographs of the products on the site, the individual identifies the product without verification.

## Results

- Participants at the United States StreetRx site endorsed one of the formulations of Canadian oxycodone ER (crushable) 39 times during the study period (Table 1).
- The reports covered a wide distribution of the United States (Figure). The states with highest number of reports were New Mexico, California, Colorado and Oklahoma.
- The median price of both American and Canadian crushable oxycodone ER products was \$1.00 per milligram compared to \$0.63 – 0.75 for the abuse deterrent formulations. There were no reports of OxyNEO in United States StreetRx.
- In both countries, the crushable formulations are more expensive than the abuse deterrent product.

**Figure 1. Geographic Distribution of Canadian Oxycodone Extended Release Product Endorsement July 1, 2012 through December 31, 2013**



Each state is shaded according to the number of reports received (0 to 4 per state). White represents no reports. Stars indicate the city of reported Canadian oxycodone products when available.

**Table 1. Median Price of Oxycodone Extended Release Formulations in the United States and Canada**  
July 1, 2012 through December 31, 2013.

Formulation	United States		Canada	
	Number of reports	Reported Median Price per milligram, US Dollar (range)	Number of reports	Reported Median Price per milligram, Canadian Dollar (range)
<b>Crushable “Old OxyContin”</b>				
Apo-Oxycodone CR (imprint APO OCD)	24	1.00 (0.15 – 16.80)	1	1.00 (NR)
OxyContin®	93	1.00 (0.06 – 10.00)	16	1.00 (0.54 – 6.00)
Co-Oxycodone CR (imprint OXY CR)	11	1.00 (0.30 – 4.00)	0	NR
Teva-Oxycodone CR (imprint N)	4	0.88 (0.10 – 3.75)	0	NR
Average		1.00		1.00
<b>Abuse Deterrent “New OxyContin”</b>				
Oxycodone ER (OxyContin in US, OxyNEO in Canada)	277	0.63 (0.03 – 10.00)	15	0.75 (0.38 – 1.40)
Average		0.63		0.75

- Crushable = drug can easily be converted to fine powder
- Abuse Deterrent = “New” OxyContin, OxyNEO – drug can only be converted to fine powder through prolonged effort (e.g. grinding down with power tool).
- NR – Not reported

## Conclusions

Canadian oxycodone ER products with a crushable formulation, but not those with a difficult to crush formulation, are endorsed by users of the black market in the United States. Both crushable and abuse deterrent formulations are purchased with buyers paying a 25% to 30% premium for the crushable formulation.

## Suggested citation

Dart RC, Martinez E, Severtson SG, Menone CM, Dasgupta N (2014). Appearance of Canadian Oxycodone Extended Release Products in the United States. RADARS System Technical Report, 2014-Q2.

## References

1. Severtson SG, Bucher Bartelson B, Davis JM, Muñoz A, Schneider MF, Chilcoat H, Coplan PM, Surratt H, Dart RC. (2013) Reduced Abuse, Therapeutic Errors, and Diversion Following Reformulation of Extended-Release Oxycodone in 2010. *J PAIN*; 14:1122-1130.
2. Butler SF, Cassidy TA, Chilcoat H, Black RA, Landau C, Budman SH, Coplan PM. (2013) Abuse rates and routes of administration of reformulated extended-release oxycodone: initial findings from a sentinel surveillance sample of individuals assessed for substance abuse treatment. *J PAIN*; 14: 351-358.3
3. PL Detail-Document, New Oxycodone Formulation: OxyNeo. Pharmacist's Letter/Prescriber's Letter. January 2012.
4. Dasgupta N, Freifeld C, Brownstein JS, Menone CM, Surratt HL, Poppish L, Green JL, Lavonas EJ, Dart RC. Crowdsourcing Black Market Prices for Prescription Opioids. *J MED INTERNET RES* 2013;15(8):e178)

