<table>
<thead>
<tr>
<th>Name of drug</th>
<th>Formulation</th>
<th>Price per unit</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adderall, 15mg pill</td>
<td></td>
<td></td>
<td>$7</td>
</tr>
<tr>
<td>Morgantown, West Virginia</td>
<td></td>
<td>$7.00</td>
<td>$7.00</td>
</tr>
<tr>
<td>Xanax, 2mg pill</td>
<td></td>
<td></td>
<td>$1.50</td>
</tr>
<tr>
<td>Richmond, California</td>
<td></td>
<td>$1.50</td>
<td>$1.50</td>
</tr>
<tr>
<td>oxycodone, 5mg pill</td>
<td></td>
<td></td>
<td>$3</td>
</tr>
<tr>
<td>Tennessee</td>
<td></td>
<td>$3.00</td>
<td>$3.00</td>
</tr>
<tr>
<td>oxycodone, 5mg pill</td>
<td></td>
<td></td>
<td>$8</td>
</tr>
<tr>
<td>California</td>
<td></td>
<td>$8.00</td>
<td>$8.00</td>
</tr>
<tr>
<td>Klonopin, 2mg pill</td>
<td></td>
<td></td>
<td>$2</td>
</tr>
<tr>
<td>North Carolina</td>
<td></td>
<td>$2.00</td>
<td>$2.00</td>
</tr>
<tr>
<td>heroin (powder), bag powder</td>
<td></td>
<td>$40.00</td>
<td>$40.00</td>
</tr>
<tr>
<td>Oregon</td>
<td></td>
<td>$40.00</td>
<td>$40.00</td>
</tr>
<tr>
<td>Adderall, 5mg pill</td>
<td></td>
<td></td>
<td>$3</td>
</tr>
<tr>
<td>Indianapolis, Indiana</td>
<td></td>
<td>$3.00</td>
<td>$3.00</td>
</tr>
<tr>
<td>Vicodin, 5mg/300mg pill</td>
<td></td>
<td></td>
<td>$2</td>
</tr>
<tr>
<td>New York</td>
<td></td>
<td>$2.00</td>
<td>$2.00</td>
</tr>
<tr>
<td>Adderall XR, 25mg pill</td>
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<td></td>
<td>$2</td>
</tr>
<tr>
<td>Overland Park, Kansas</td>
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<td>$2.00</td>
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</tr>
<tr>
<td>Apo-Oxycodone CR (imprinted APO OCD), 80mg pill</td>
<td></td>
<td>$30</td>
<td>$30.00</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td></td>
<td>$30.00</td>
<td>$30.00</td>
</tr>
</tbody>
</table>
External Referrals

**Find Treatment**
SAMHSA, ADIN, DroguesInfoService.fr, L’ANAPAA, DBDD

**Overdose Prevention**
Medication safety sites, HRC, naloxone

**Safe Storage, Disposal & Takeback**
FDA, Health Products Stewardship Association

**Safe Pain Management & Advocacy**
Canadian Pain Coalition, PainAustralia.org, RBK Stuttgart

**Harm Reduction**
HRC, EuroHRN
Unique Visitors per Day

1.2 Million visitors per year

Mobile
Accounts for 74% of visits

Search
87% of visits come from organic search

2013
250

2016
3252
Visitor Demographics
Based on 58% of known demographics from Google account users

40%
Male
18-34 years-old

19%
Male
35+ years-old

23%
Female
18-34 years-old

16%
Female
35+ years-old

As captured by Google Analytics. January 1 through March 31, 2016
Who is Likely to Submit a Price?
Percent of visitors, 58% of known Google Account users, 1Q2016

- 18-24 years-old: 7.0%
- 25-34 years-old: 6.4%
- 35-44 years-old: 5.8%
- 45+ years-old: 4.6%
Methods
Do different deterrence strategies result in discernible street price differences?

**STEP 1**
USA Data in USD
Nov 1, 2010 through Apr 30, 2016
Solid oral formulations

**STEP 2**
Compare unprotected to ADF price per milligram, within active ingredient

**STEP 3**
Geometric means and 95% CI
N = 139,434

**STEP 4**
Non-parametric Wilcoxon rank-sum (Mann-Whitney) tests

(Partial-) Antagonists: Subutex vs. Suboxone
Prodrugs: morphine vs. codeine; Vyvanse vs. Adderall
Physical barriers: Zohydro vs. IR hydrocodone vs. Hysingla ER; OxyContin OC vs. OP;
Opana ER original vs. reformulation; Xartemis XR vs. IR oxycodone;
IR hydromorphone vs. Exalgo; Ritalin vs. Concerta; morphine

Not enough data to evaluate yet:
Targin(iq), Oxytrex, Oxecta, Quillivant XR, Talwin, Amrix, Xstampza ER, MorphaBond
Hydromorphone

Price per mg

$3

$2

$1

N = 3,370

N = 40

Percent difference

-41%

IR hydromorphone

Exalgo

$2.63/mg
Oxymorphone

$1.47/mg

Percent difference

Price per mg

$0.50

$1.00

$1.50

Open ER original

Open ER reformulated

-34.8%

N=

263

497
Hydrocodone

$0.79/mg

Price per mg

Percent difference

hydrocodone (non-ADF)
Zohydro ER (original)
Zohydro ER (reformulated)
Hysingla ER

-26.1%
-73.1%
-50.8%

Oxycodone

Price per mg

$0.92/mg

N= 1,502  3,983  25,335  17

Percent difference

-17.7%

OxyContin OC  OxyContin OP  IR oxycodone  Xartemis XR

6.75%
Buprenorphine

$2.12/mg (Suboxone)

Price per mg

N= 166  109  505  39

Percent difference

$3

$2

$1

Suboxone (tablet)

Subutex

Suboxone (film)

Zubsolv

2.66%

-2.81%

16.8%
Tapentadol

Price per mg

$0.15/mg

N=108

-27.4%

Nucynta ER
Amphetamine

Price per mg

$0.40

$0.30

$0.20

$0.10

N= 31,541

4,207

Percent difference

0%

-20%

-40%

-60%

Adderall (amphetamine)

Vyvanse (lisdexamfetamine)

-52.1%
Percent Discount for ADF Versions

Putative abuse-deterrent formulation versus unprotected formulations with same active ingredient, using statistical comparison that is less influenced by outliers.

(Partial-) Antagonist
- Suboxone tablet 3%
- Suboxone Film 3%
- Xartemis XR 0%
- OxyContin OP 18%
- Ritalin LA 24%
- Zohydro ER (1st) 26%
- Nucynta ER 27%
- Opana ER 35%
- Exalgo 41%
- Hysingla ER 51%
- Concerta 52%
- codeine 49%
- Vyvanse 52%

Physical Barrier

Prodrug

p-values and Z-scores:
- Suboxone tablet: p = .48, Z = .71
- Suboxone Film: p = .67, Z = .43
- Xartemis XR: p < .01, Z = 4.1
- OxyContin OP: p < .01, Z = 9.1
- Ritalin LA: p = .02, Z = 2.4
- Zohydro ER (1st): p = .05, Z = 1.9
- Nucynta ER: p < .01, Z = 5.9
- Opana ER: p < .01, Z = 4.0
- Exalgo: p < .01, Z = 2.4
- Hysingla ER: p < .01, Z = 19
- Concerta: p < .01, Z = 24
- codeine: p < .01, Z = 57