OxyContin growth opportunities

Phase I Final Report: Diagnostic

Sept 13, 2013

McKinsey&Company

Detailed contents (1/3)

Detailed contents (2/3)

Detailed contents (3/3)

Contents

Findings on market landscape & demand forecast

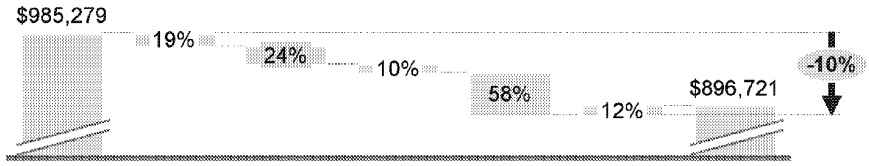
PRELIMINARY

- A number of factors have contributed to the decline in OxyContin sales, including pharmacy access, DEA actions, negative media/PROP, state legislation, managed care access, and sales force execution
- Despite an overall decline in OxyContin TRx, **greater geographical granularity reveals variation in OxyContin performance**
  - There is substantial variability in OxyContin TRx change by zip code
  - There is also substantial variability in Oxycontin share of ERO market by state
- **In the past year, about ~85% of OxyContin's decline is in-line with the decline of the overall market (branded EROs), with 15% attributable to loss of branded ERO market share**
  - Maintaining a constant share of the forecasted branded ERO market could be worth ~$3.4B of revenue over 4 years
- OxyContin performance also differs significantly across specialties
  - OxyContin TRx written by **NPs and PAs are growing quickly, while PCPs are one of the fastest declining** segments
  - OxyContin has **high share of ERO market among orthopedic specialists, surgeons, and rheumatologists**
  - There is some variability in NBRx share of TRx by specialty
  - Pallative medicine, orthopedics, and emergency medicine experienced the largest decline in OxyContin tablets/TRx in the last year
- OxyContin has a slightly lower share of the ERO market among younger prescribers, accounting for decile
- **Tablets/ Rx and strength are declining** and a significant portion of the decline can be attributed to **changing prescriber behavior**
  - Tablet per prescription has fallen steadily over the past two years
  - High dosage prescriptions are falling at a faster rate compared to low dosage tablets
  - **Tablets per prescription is declining in 47 states**, even those with a TRx increase
  - In interviews, **prescribers report writing for fewer pills and lower strengths**, and increasingly referring patients to pain specialists **due to increased time/ hassle of managing opioid patients (due to pharmacy issues, managed care access and fear of legal consequences/ DEA)**

OxyContin performance has been driven by a number of factors

Weak driver
Strong driver

OxyContin Mgs
$ 000s, % share of decline accounted for



Drivers of Oxy-Contin perform-ance

Sales force execution	▪ Only making 67% of target OxyContin P1s [1] ▪ >50% of OxyContin calls made to low-decile[2] ▪ 75% of TRx loss from doctors not called on (for 12 mos ending in Mar 2013)
Pharmacy access	▪ National pharmacies implemented policies to restrict filling of opioid prescriptions ▪ Walgreens alone accounted for 50-70% of OxyContin unit decline between Mar-Jun2013
DEA/ litigation risk	▪ 'Chilling effect' on prescribers, pharmacies and wholesalers by investigating targets but not releasing written guidance ▪ More hassle for doctors to prescribe opioids ▪ No differentiation between AD and non-AD
Neg. media/ PROP	▪ CDC names drug overdose as leading cause of injury death in US, with 45% involving prescription painkillers
State legislation	▪ States passing regulations for prescribing and dispensing of opioids (e.g., PMP use, licensing, dosing levels)
Managed care	▪ Positive impact from average rebate rate declining from 26% to 24.7%, price increase and mix shift ▪ Formulary status lost for several Part D plans[3]

1For H1 2013
2Low decile refers to deciles 0-4; based on Q1 2013
3 Over past 3 years

Despite an overall decline in OxyContin TRx, greater granularity reveals pockets of growth

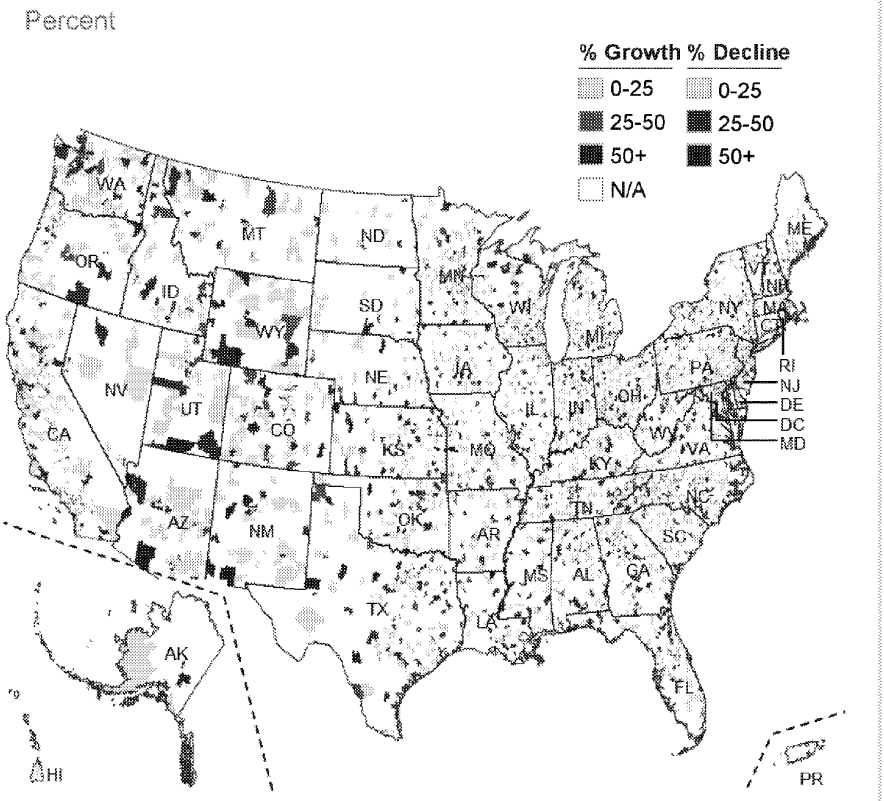
	States	Territories	Zip codes	Prescribers
Total #	50	525	9,000	200,000
% increasing TRx	20%	26%	39%	47%
% decreasing TRx	80%	74%	61%	53%
% increasing Tabs/ TRx	7%	17%	43%	n/a
% decreasing Tabs/ TRx	93%	83%	57%	n/a

Note: Calculations are for 12 mos ending in March 2013 vs 12 mos ending in March 2012

SOURCE: IMS

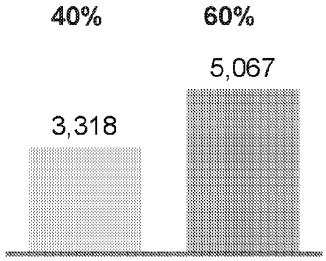
There is substantial variability in OxyContin TRx change by zip code

TRx change by zip code, Apr 2011-Mar 2012 v. Apr 2012-Mar 2013



Number of growing and declining zip codes[1]

Number of zipcodes



	Growing zipcodes	Declining zipcodes
Avg TRx/zip	669	538
Example zip codes	Fort Wayne, IN (+5.1K) Pinehurst, NC (+3.2 K) Fayetteville, NC (+2.6K)	Knoxville, TN (-1.9K) Tampa, FL (-1.9K) Renton, WA (-1.5K)

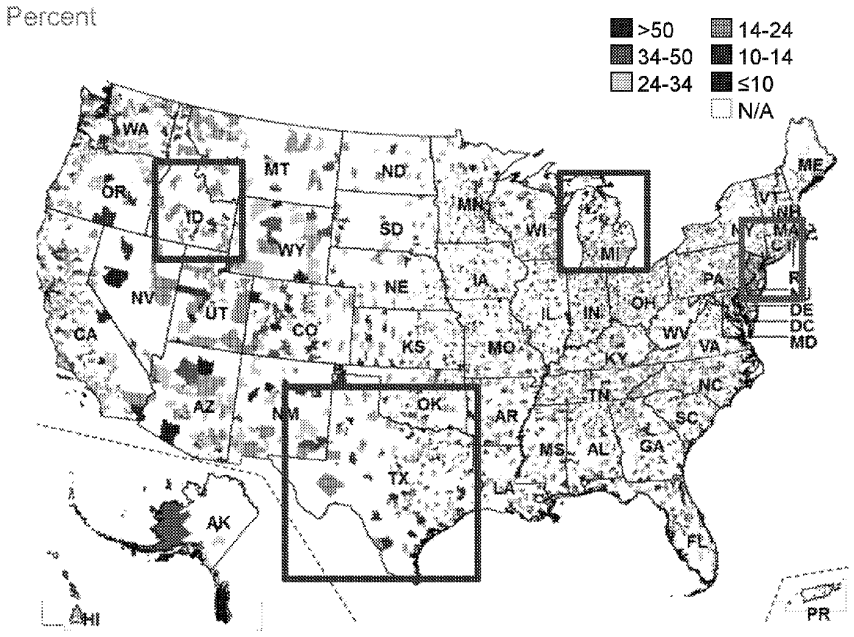
1 Zip codes with fewer than 60 Oxycontin TRx in both 2011 and 2012 were not considered, accounting for approximately 100,000 TRx in 2011 and 2012

SOURCE: IMS; Purdue Sales and Marketing; Team analysis

There is also substantial variability in Oxycontin share of ERO market by state

PRELIMINARY

Oxycontin share of ERO market by zip, 2012[1]



- There are potentially state level factors influencing OxyContin market share

States with highest & lowest OxyContin share of ERO market, 2012

State	Oxy Share	Gx Share
Highest		
Rhode Island	43	50
New Jersey	41	47
Connecticut	41	47
D.C.	37	52
Minnesota	37	60
Lowest		
Nevada	14	74
Michigan	16	77
Mississippi	17	71
Texas	18	68
Idaho	18	72
US Average		
US	24	65

1 April 2012 to March 2013

SOURCE: IMS

In states where OxyContin has low share of ERO market, generics have higher share

2012[1] share of ERO market, highest and lowest share states

Percent

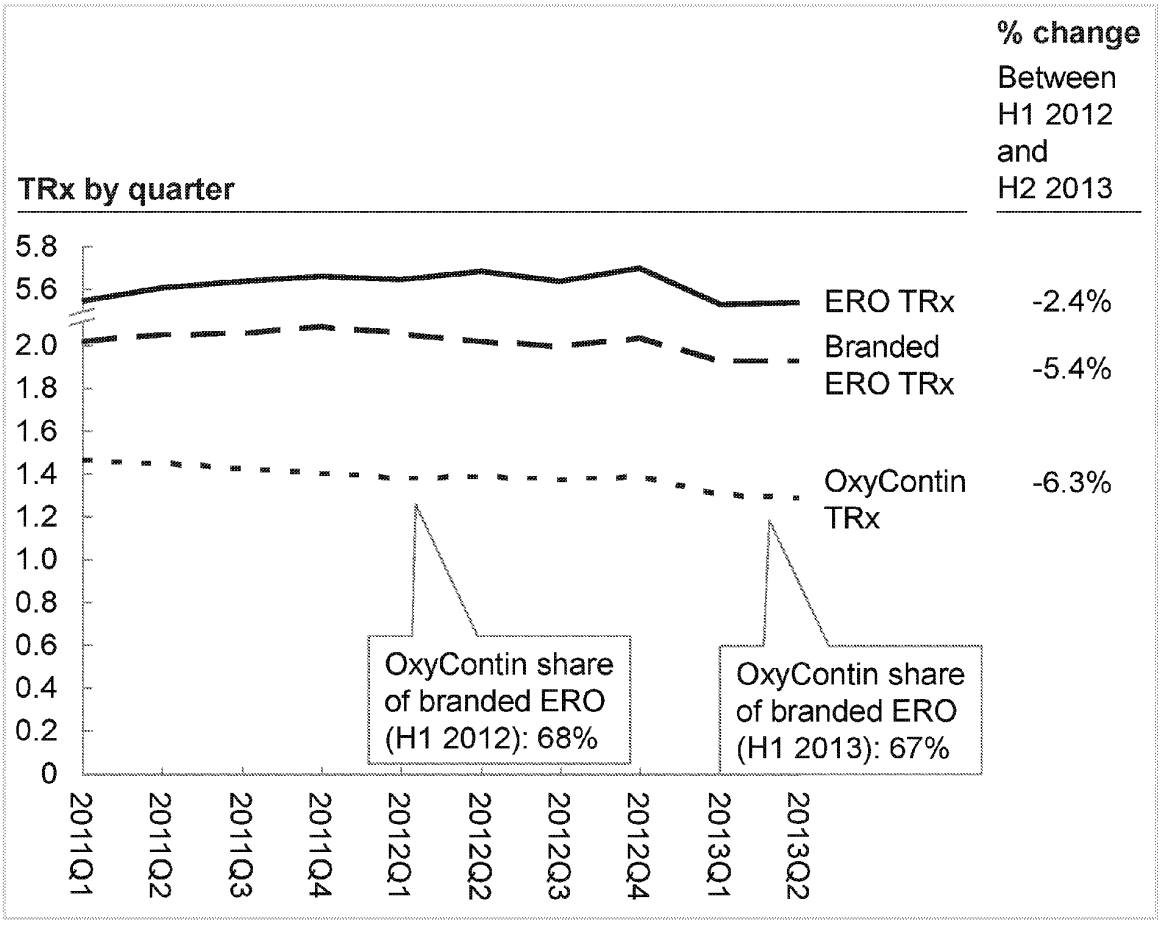
	State	All Other Branded	BUTRANS	OPANA ER	OXYCONTIN	Generic
Highest Share of ERO	RI	3%	2%	2%	43%	50%
	NJ	6%	2%	4%	42%	47%
	CT	6%	2%	4%	41%	47%
	DC	5%	3%	3%	37%	52%
	MN	1%	1%	1%	37%	60%
Avg		4%	2%	3%	40%	51%
Lowest Share of ERO	NV	4%	1%	7%	14%	74%
	MI	4%	1%	3%	16%	77%
	MS	6%	2%	5%	17%	71%
	TX	6%	5%	4%	18%	68%
	ID	5%	3%	2%	18%	72%
Avg		5%	2%	4%	17%	72%
	All 50 States	5%	2%	4%	24%	65%

- In states where OxyContin has low share of ERO market, generics have higher share
- **Among states where OxyContin has low share of ERO:**
  - **NV** and **MS:** Opana share of market is above national average
  - **TX** and **ID:** Butrans share of market is above national average

1 April 2012 to March 2013

SOURCE: IMS

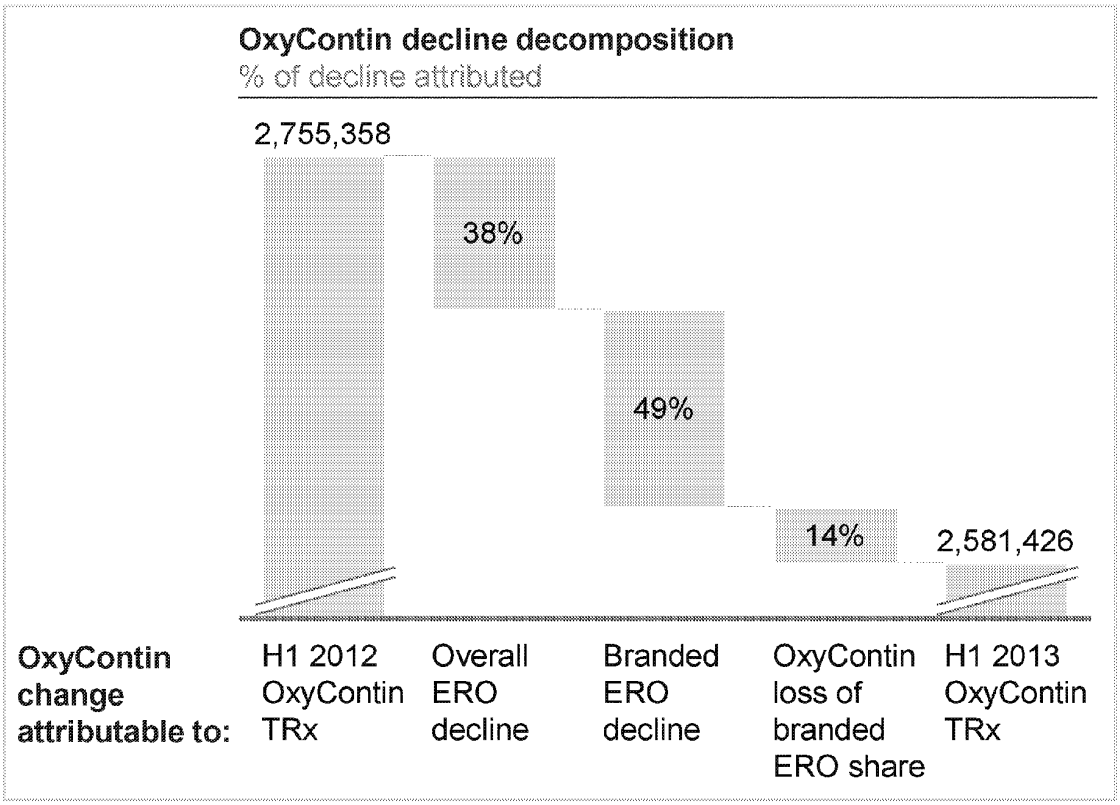
OxyContin's decline has been faster than decline of branded ERO products



OxyContin decline has been faster than overall ERO market and branded ERO market, indicating that OxyContin has lost share of branded EROs

SOURCE: IMS

OxyContin's recent decline can largely be attributed to decline in branded ERO market



While OxyContin has lost share of branded ERO, the largest portion of OxyContin's decline can be attributed to overall decline in ERO and branded ERO

SOURCE: IMS

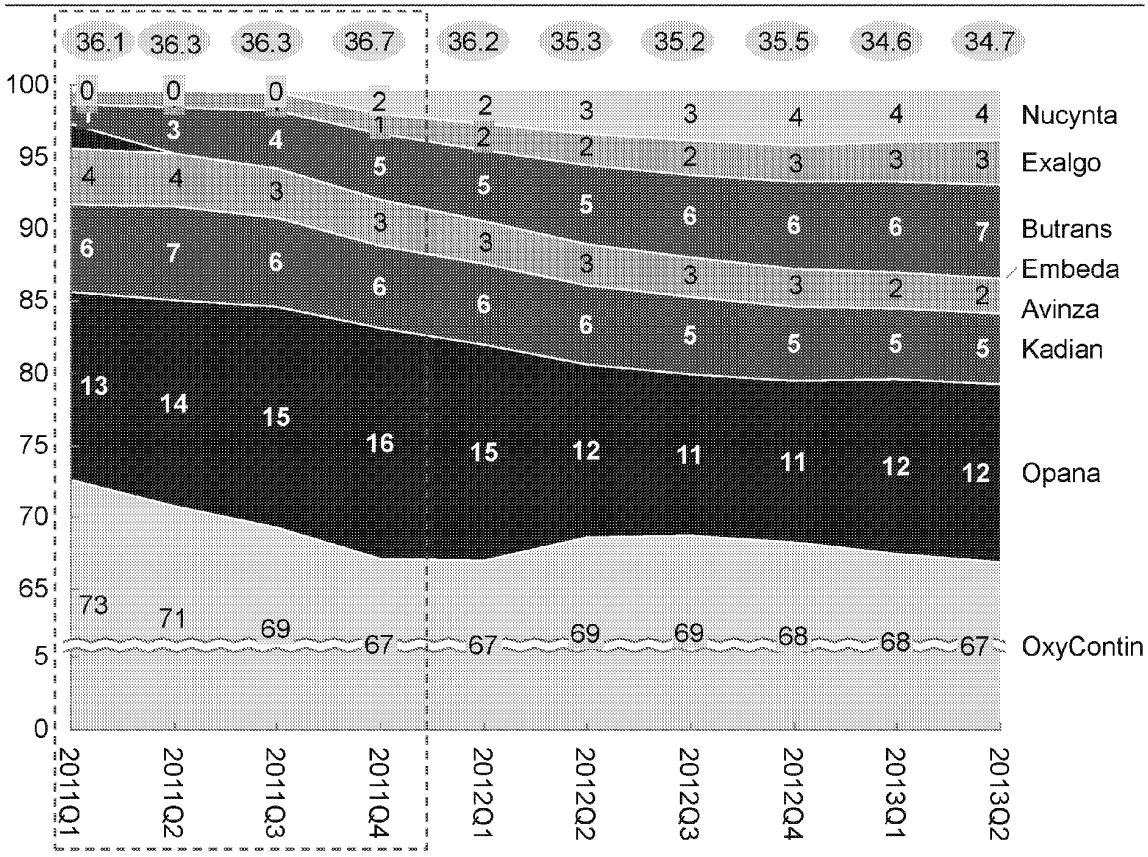
While branded drugs overall lost share in the ERO market, OxyContin also lost share to other branded products

Branded share of ERO market

Period of reformulation introduction and OxyContin generics exiting market

Share of ERO branded market, by TRx

%



- OxyContin share of branded EROs has fallen from 73% to 67%
- Butrans, Exalgo, and Nucynta have increased share of the branded ERO market

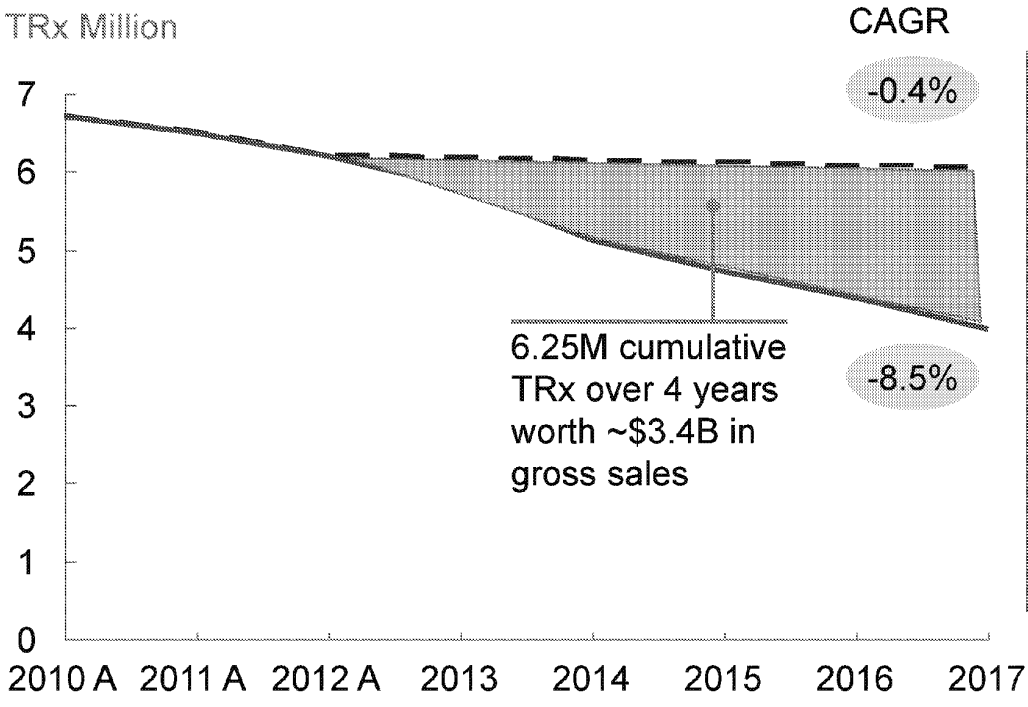
SOURCE: IMS

Maintaining a constant share of the forecasted branded ERO market would be worth ~$3.4B of revenue over 4 years

Forecast @ constant share of branded ERO market

Purdue forecast[1]

Projected OxyContin TRx

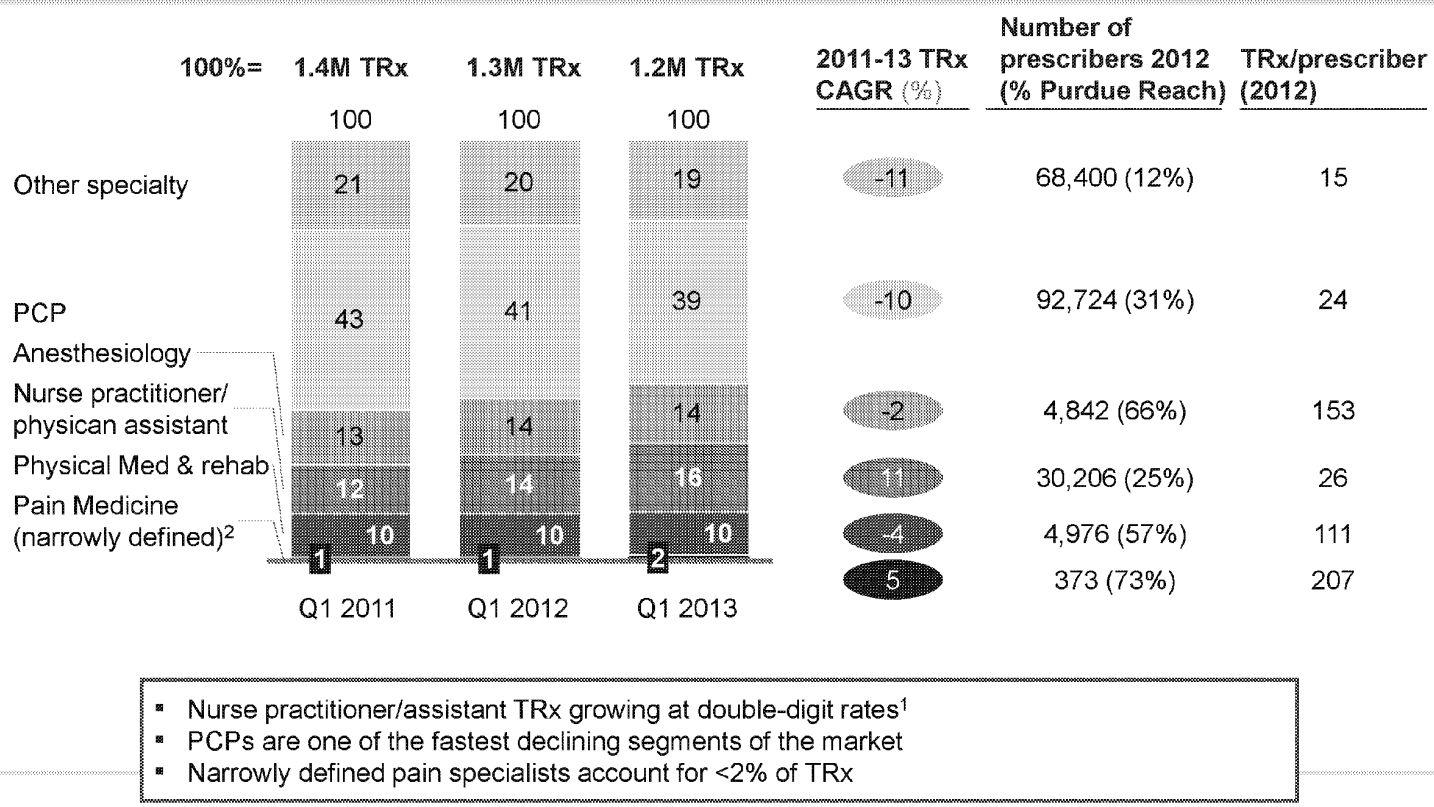


- 2012-17 external forecast growth rates
  - All Opioids: 1.8%
  - EROs: -0.4%
  - Branded EROs: -0.4%
  - OxyContin: -8.5%
- How much can be captured/retained by Oxy? At what cost?

SOURCE: Cowen and Company "Therapeutic Categories Outlook" report, October 2012, Purdue mid-year revised forecast, Purdue mid-year update 2013 forecast; McKinsey analysis

NPs and PAs are growing quickly, while PCPs are one of the fastest declining segments

OxyContin % TRx by prescriber specialty



- Nurse practitioner/assistant TRx growing at double-digit rates[1]
- PCPs are one of the fastest declining segments of the market
- Narrowly defined pain specialists account for <2% of TRx

1 NPs can prescribe controlled substances in 41 states
2 Does not include pain medicine as a subspeciality

SOURCE: IMS; NP Central; Team analysis

OxyContin has high share of ERO market among orthopedic specialists, surgeons, and rheumatologists

PRELIMINARY

2011 2012

2012 OxyContinTRx[1]	OxyContin's share of ERO market by prescriber specialty	2011	2012
227	Orthopedic	61	58
79	Surgeons	34	32
90	Rheumatology	30	28
105	Oncology – Hematology	28	27
272	All others	26	25
27	Geriatric	25	25
2,132	IM-FP-GP	26	24
1	Neurology	27	24
39	Psychiatry	25	24
141	Neurology	25	24
811	NRP-PHA	24	24
38	Emergency medicine	24	24
548	Physical medicine & rehab	24	23
4	Pallative medicine	23	22
79	Pain medicine	20	20
735	Anesthesiology	20	19

1 E.g., total Rx written by that specialty, in thousands

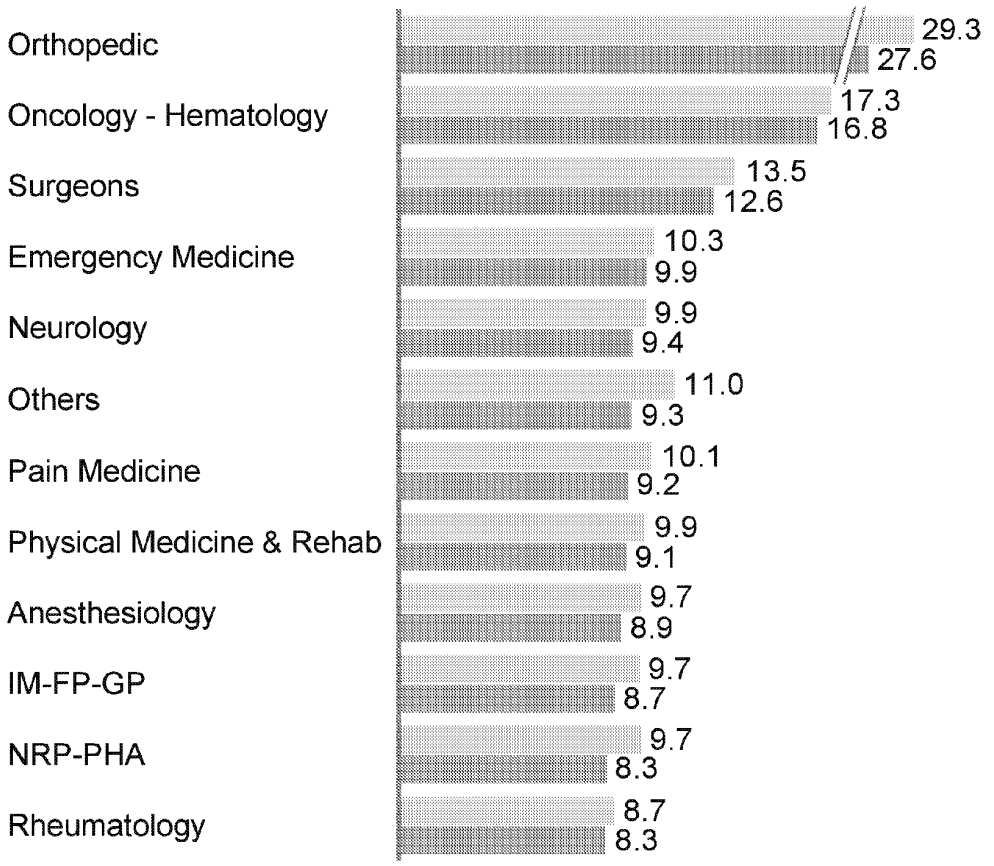
SOURCE: IMS

There is variability in NBRx share of TRx by specialty

PRELIMINARY

OxyContin NBRx % of TRx by prescriber specialty

Percent

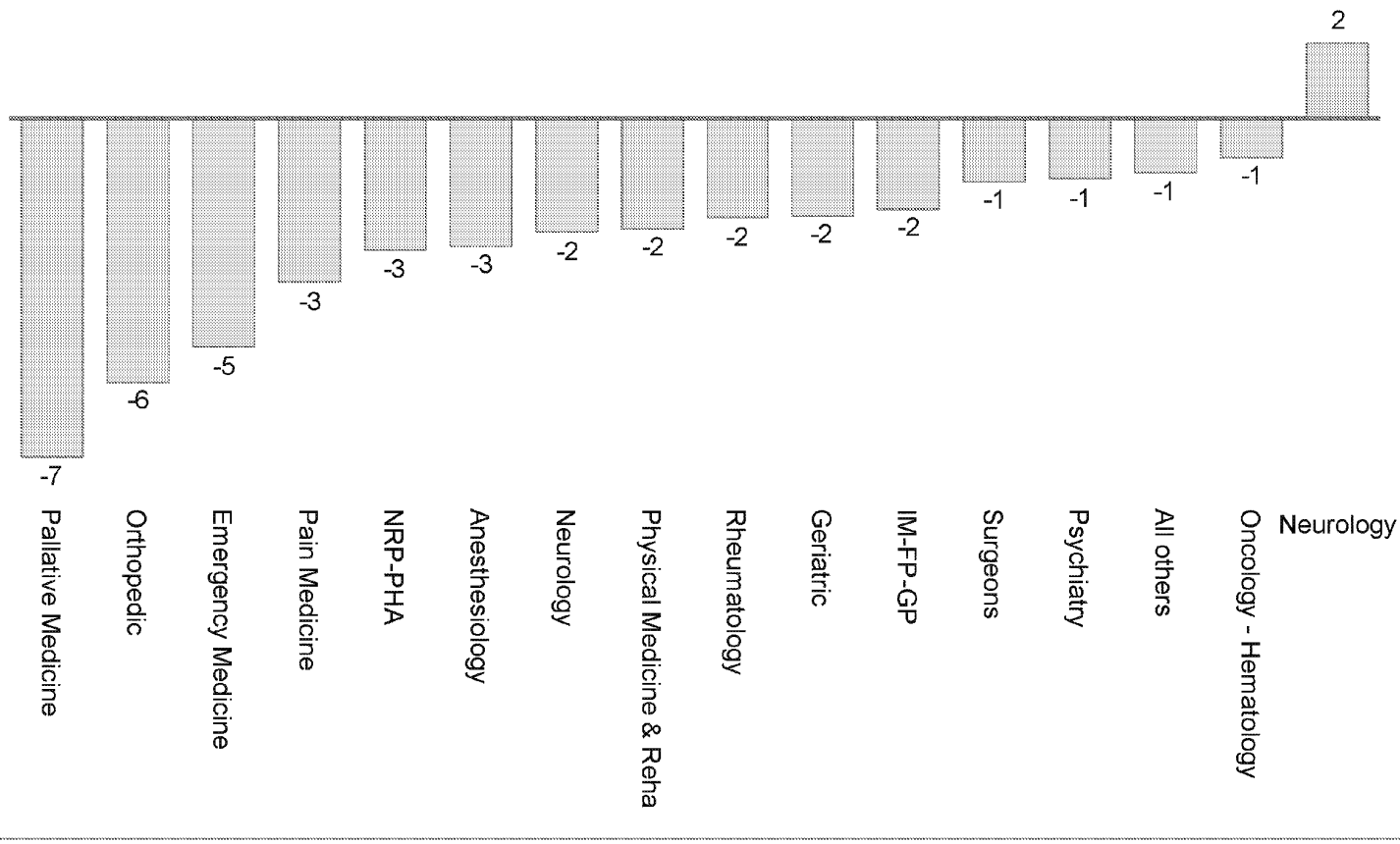


- Orthopedic and Oncology-Hematology, and Surgeons have the highest NBRx % share of overall TRx
- NP/PA segment has a very low NBRx % of TRx
- Average NBRx share of TRx across all specialties was **9.4%** in Q4 2012 – Q1 2013, down from **10.4%** Q4 2011 – Q1 2012

SOURCE: IMS

Pallative medicine, orthopedic, and emergency medicine experienced the largest decline in OxyContin tablets/TRx in the last year

% Change in Units/TRx by Specialty, 1H 2012 vs 1H 2013



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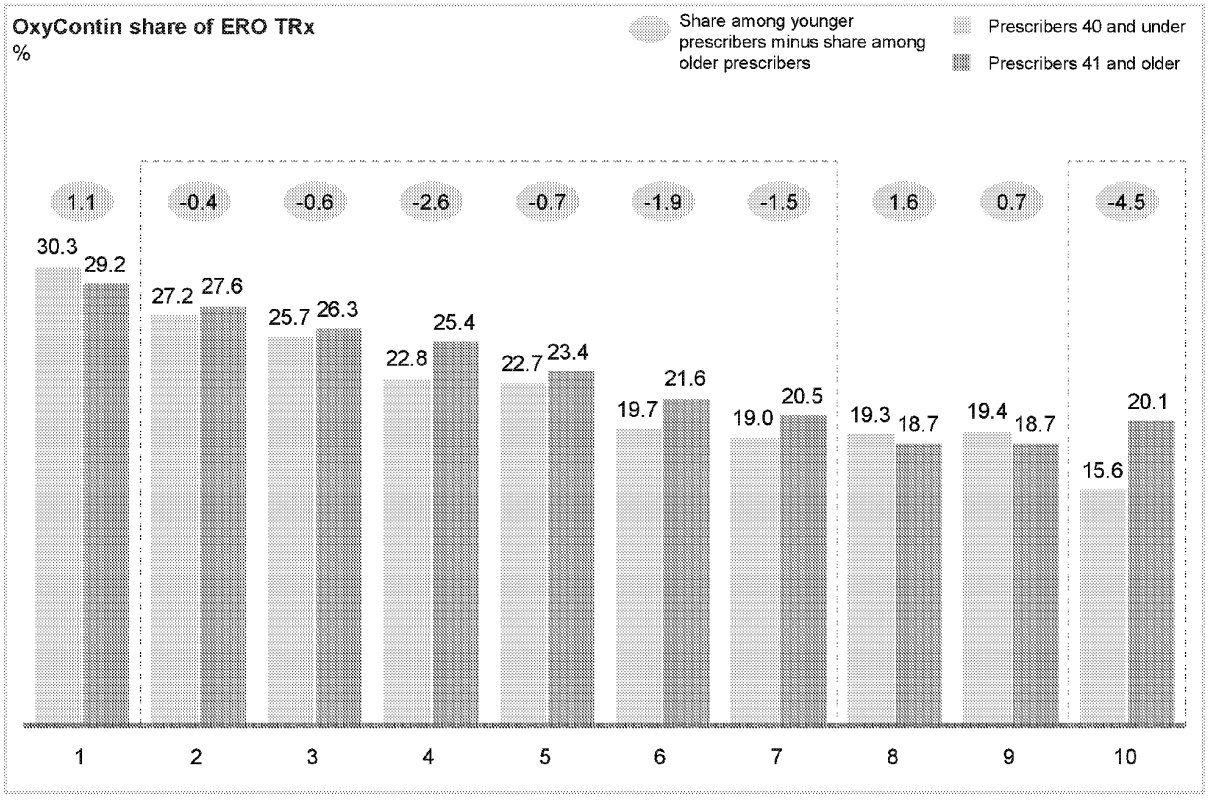
SOURCE: IMS

OxyContin tends to have a lower share of ERO among younger prescribers, even after controlling for decile



- If OxyContin had same share of ERO among younger prescribers as older prescribers, this would imply ~20k incremental scripts or $6.9mn in net revenue
- However, bigger challenge may be that younger prescribers with different prescribing habits will eventually fill the market

Note:ERO decile and OxyContin share of ERO is based on Jan-Jun 2013 data. AMA and AOA profile information is not comprehensive and does not cover all HCPs who have prescribed for ERO in the last 6 months.

SOURCE: IMS; AMA; AOA; Purdue marketing team; Team analysis

Prescribers report writing for fewer pills and lower strengths, and increasingly referring patients to pain specialists

Prescribers are writing for **fewer pills and lower strengths, and increasingly referring patients to pain specialists…**

- "I try to use more long-acting opioids (to reduce pill count) and **try to prescribe fewer pills and lower strengths**… because it's less to worry about… less potential for addiction and diversion"- *Primary care physician in Family Practice*
- "[There's] increased review of physician practice. **Many of my colleagues are hesitant and prescribe less**. I do too. **I just don't want to take up with the task**" – *Family Practitioner*
- "**Made decision about 9 months ago to funnel patients to pain clinics** for patients taking medication for chronic use"- *Primary care physician in larger practice*

… because managing **opioid patients takes increasing amount of time and resources due to pharmacy issues, managed care access and fear of legal consequences/ DEA**

Pharmacy issues

- "I think [pushback from pharmacies] does impact my prescribing behavior… I will think I don't want to prescribe this because I'm going to get pushback … then I will prescribe something that will get less push back… **a different drug and/or lower doses**" – *Primary care physician in small group practice*

Managed care access

- "Cost is a main driver of deciding what drug to prescribe to patients…Outpatients are still largely driven by cost and tiers, which makes **prescribing generics and narcotics the easier choice**" – *Primary care physician*

Legal/ DEA concerns

- "There seems to be a **growing trend of referrals to pain specialists** today- Doctors **prescribe lower doses of narcotics**, and **even pain specialists move away from opiates**. This is likely driven by increased media attention, high abuse rates, and prescribers fearing regulatory and legal complications" – *Medical Director of major pain center*

Note: Full prescriber interview summaries are available in the appendix

SOURCE: Prescriber interviews

Tablet per prescription has fallen steadily over the past two years

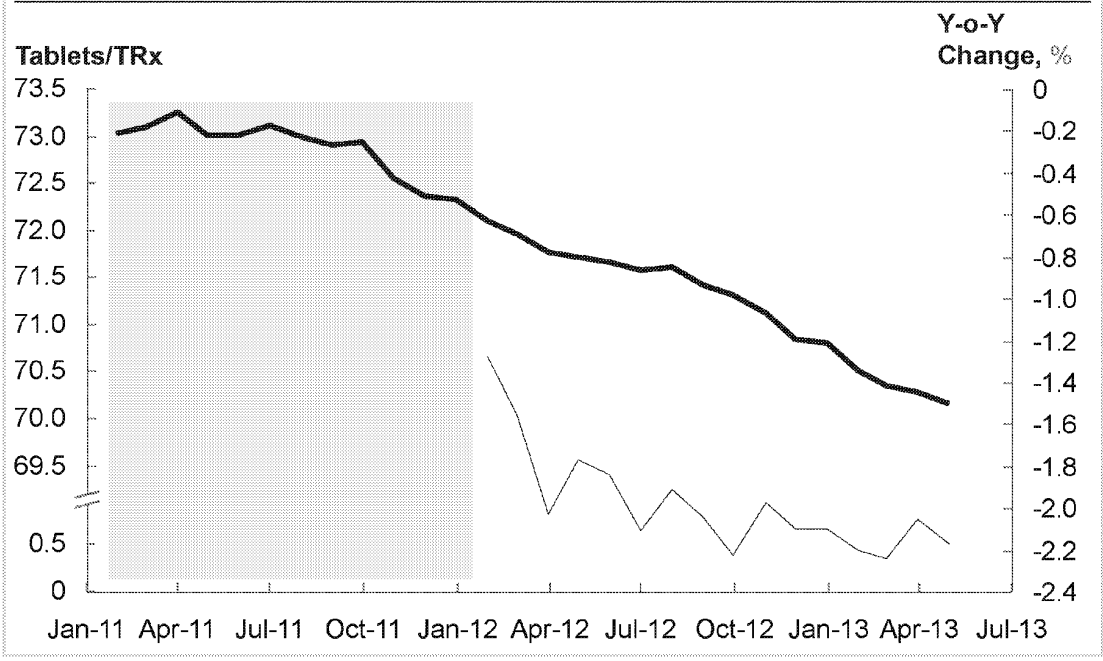
Reformulation introduction and OxyContin generics exiting market

Tablets/Rx (LHS)

YOY Change (%, RHS)

OxyContin tablets/TRx and year-over-year change, 2011-2013[1]

tablets, percent



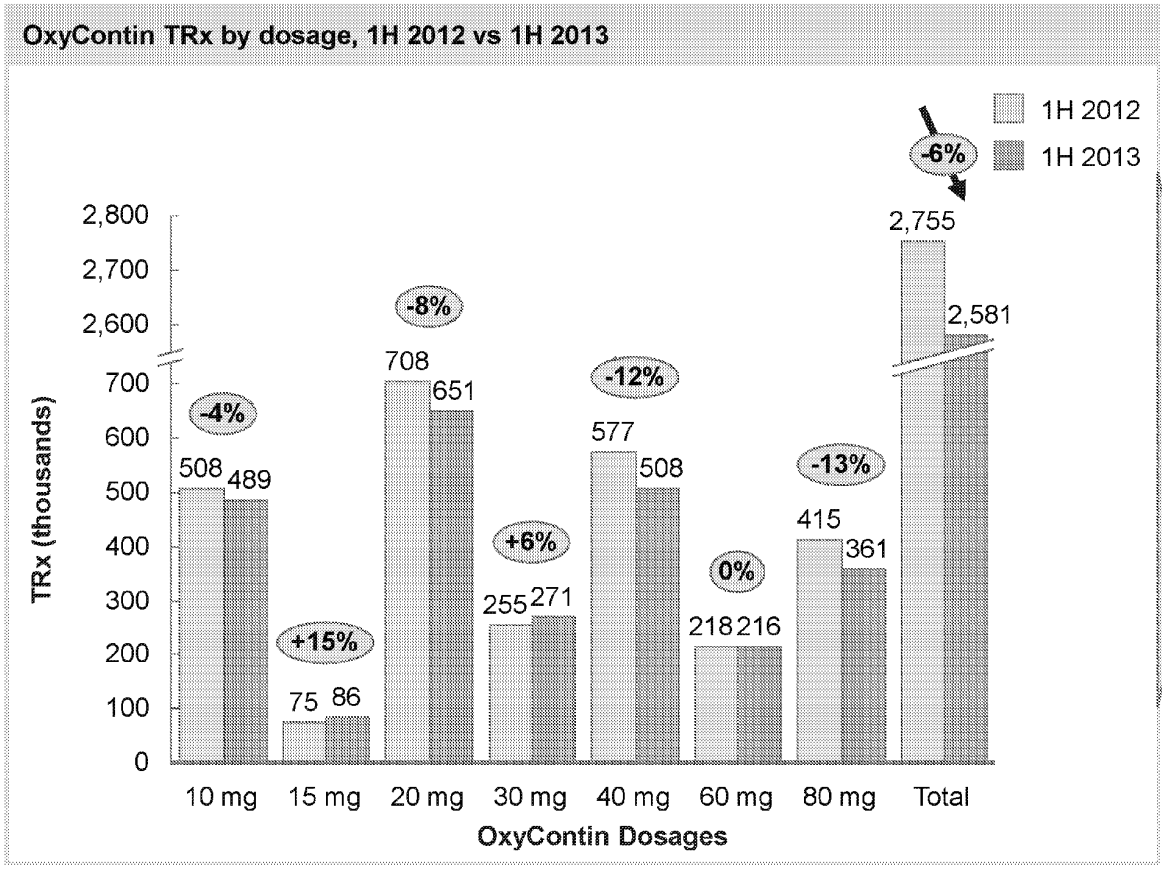
- 2011 average tablet/Rx was 72.9[2], 71.5 for 2012, and 70.3 for 2013 (YTD)
- Year-over-year decline was -1.9% between 2011 and 2012, while the decline between 2012 and 2013 YTD is -1.6%

1 Data from Jan 2011 to April 2013

2 January to December calendar year, same applies for 2012 figure

SOURCE: IMS

High dosage prescriptions are falling at a faster rate compared to low dosage prescriptions



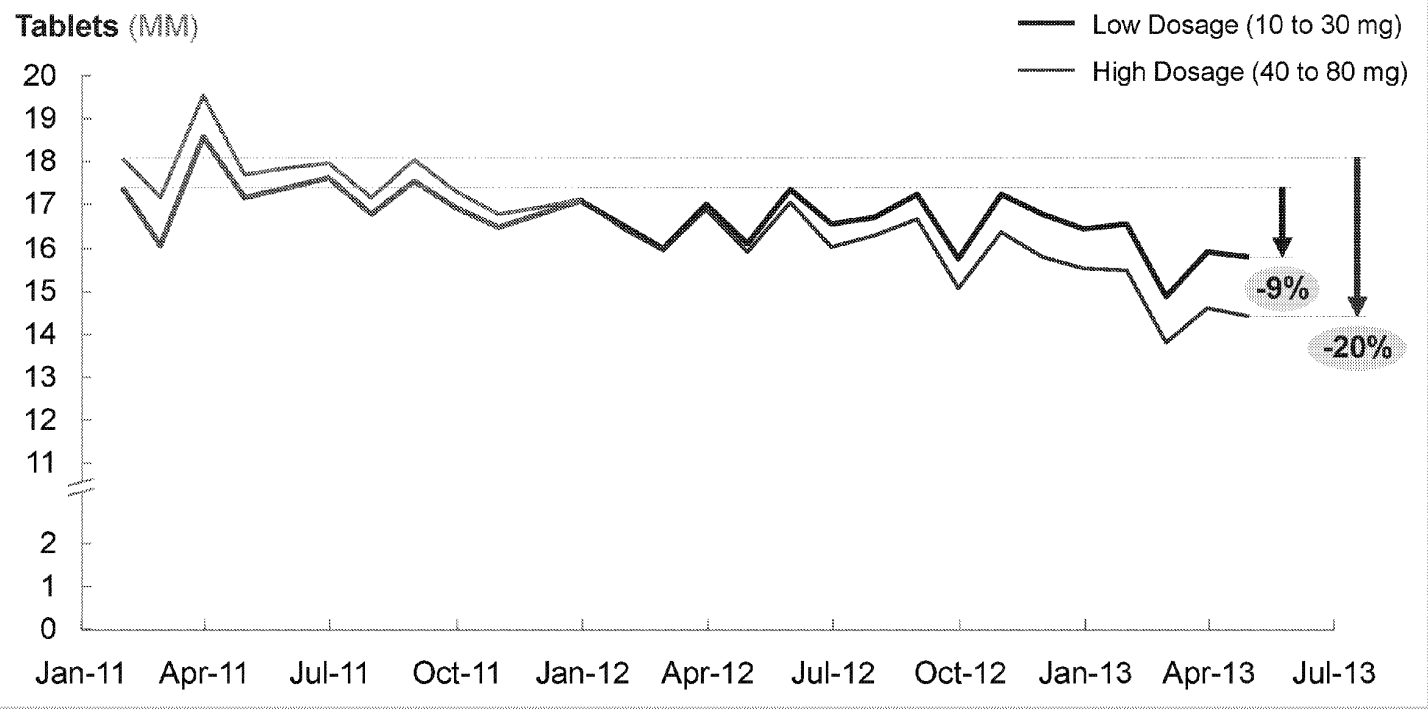
- 80 mg and 40 mg prescriptions are declining most rapidly
- 15 mg and 30 mg prescriptions have the highest rate of growth
- Low dosages (10-30 mgs) declined at 3%, while high dosages (40-80 mgs) declined at 10%

SOURCE: IMS

Tablets with higher dosage are declining at a higher rate compared to low dosage tablets

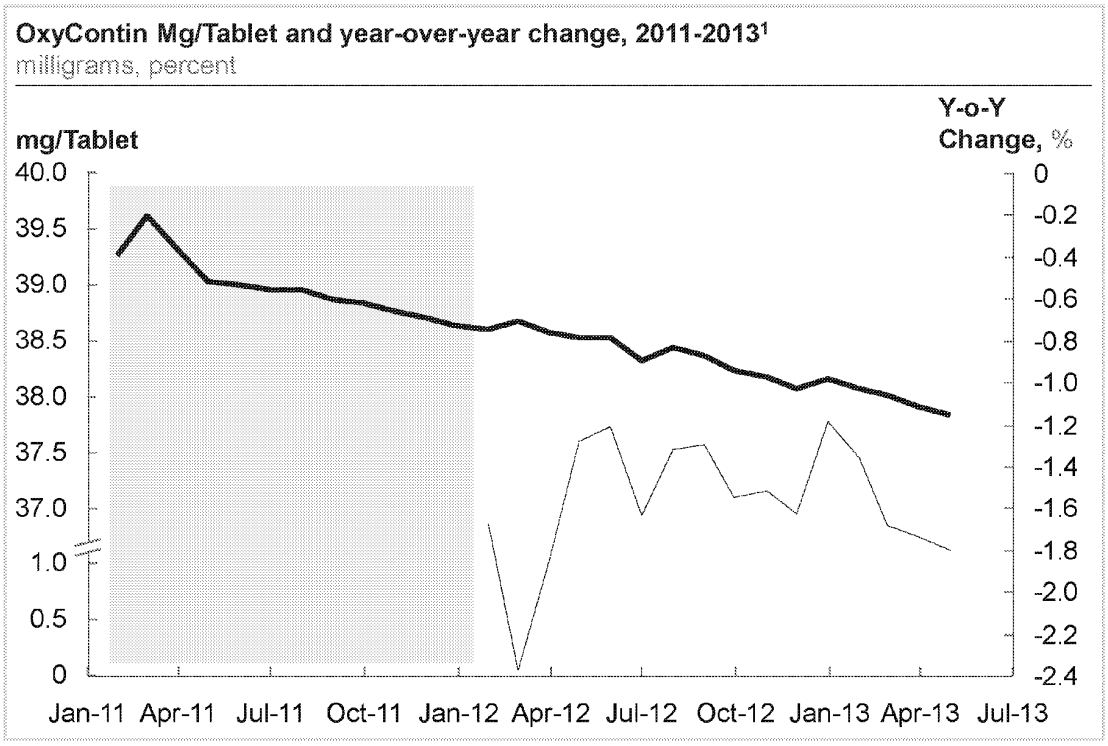
Reformulation introduction and OxyContin generics exiting market

Tablets prescribed, high versus low dosage, Jan 2011 – Jul 2013
Millions of tablets



SOURCE: IMS

Milligram per tablet has fallen steadily over the past two years, with rate of decline remaining relatively constant in the past year



- Average mg/tablet was 39.0 for 20112, 38.4 for 2012, and 38 for 2013 (YTD)
- Rate of decline of average mg/tablet was -1.6% between 2011 and 2012, and -1.1% between 2012 and 2013 (YTD)

1 Data from Jan 2011 to April 2013

2 January to December calendar year, same applies for 2012 figure

SOURCE: IMS

Tablets per prescription declined in 47 states, even those with a TRx increase

State	Tablets (mn) H1 2012	Tablets (mn) H1 2013	Tablets (mn) % change	TRx H1 2012	TRx H1 2013	TRx % change	Tablets/ TRx H1 2012	Tablets/ TRx H1 2013	Tablets/ TRx % change
FL	11.7	9.7	-17%	164,196	139,348	-15%	71.2	69.3	-3%
NV	1.6	1.3	-16%	20,779	17,896	-14%	77.5	75.3	-3%
KY	2.8	2.4	-14%	42,523	37,013	-13%	66.1	65.1	-2%
RI	1.2	1.0	-14%	16,149	14,203	-12%	72.1	70.5	-2%
NM	1.5	1.3	-13%	20,278	18,291	-10%	72.3	69.6	-4%
OH	8.5	7.4	-13%	120,769	107,151	-11%	70.4	68.9	-2%
WA	4.8	4.2	-13%	69,738	61,510	-12%	68.5	67.8	-1%
WV	1.0	0.9	-12%	15,529	13,636	-12%	66.7	66.5	0%
TX	7.6	6.7	-12%	98,162	86,656	-12%	77.8	77.2	-1%
UT	1.9	1.7	-12%	26,238	23,763	-9%	72.2	70.0	-3%
CO	4.6	4.0	-12%	70,162	62,989	-10%	65.2	64.2	-2%
OR	3.4	3.0	-12%	48,787	43,368	-11%	70.7	70.3	-1%
AZ	6.9	6.1	-11%	90,549	82,124	-9%	76.0	74.2	-2%
HI	0.7	0.6	-11%	10,614	9,574	-10%	69.0	67.8	-2%
IA	1.3	1.2	-11%	19,919	18,091	-9%	65.9	64.4	-2%
MI	5.2	4.7	-11%	68,249	61,550	-10%	76.5	75.7	-1%
CA	18.5	16.6	-11%	218,838	201,602	-8%	84.6	82.1	-3%
MN	4.0	3.6	-10%	61,036	56,581	-7%	64.9	62.8	-3%
WI	5.2	4.7	-10%	72,739	66,266	-9%	71.5	70.5	-2%
VT	0.4	0.4	-9%	6,842	6,172	-10%	61.0	61.2	0%
IL	3.7	3.4	-9%	53,903	50,036	-7%	69.2	67.8	-2%
KS	2.3	2.1	-9%	34,857	32,296	-7%	66.6	65.5	-2%
ME	1.3	1.2	-8%	18,780	17,757	-5%	68.3	66.3	-3%
MT	0.8	0.8	-8%	12,662	11,770	-7%	64.8	63.9	-1%
ND	0.4	0.3	-8%	6,090	5,612	-8%	59.9	59.8	0%
IN	4.7	4.4	-7%	65,539	63,080	-4%	72.1	69.6	-3%
GA	4.3	4.0	-7%	63,725	59,739	-6%	67.6	67.2	-1%
MO	4.9	4.6	-7%	70,566	67,082	-5%	69.6	68.3	-2%
OK	3.7	3.4	-7%	51,173	48,529	-5%	71.4	70.4	-1%
AL	3.7	3.5	-6%	54,750	52,548	-4%	68.4	66.8	-2%
NE	0.9	0.9	-6%	14,895	14,308	-4%	62.8	61.5	-2%
WY	0.4	0.4	-6%	6,203	5,939	-4%	65.8	64.6	-2%
LA	2.0	1.9	-5%	28,669	27,962	-2%	68.8	66.7	-3%
ID	0.9	0.9	-5%	13,670	12,819	-6%	66.5	67.1	1%
SD	0.6	0.5	-5%	8,395	8,263	-2%	66.9	64.3	-4%
MS	1.1	1.1	-5%	16,288	15,755	-3%	68.3	67.0	-2%
NH	1.5	1.4	-5%	23,275	22,277	-4%	63.7	63.2	-1%
NY	10.9	10.3	-5%	140,208	137,538	-2%	77.7	75.2	-3%
PA	11.3	10.8	-5%	161,796	156,234	-3%	70.1	69.0	-2%
CT	4.1	3.9	-5%	56,894	55,493	-2%	72.3	70.8	-2%
TN	6.1	5.8	-4%	85,140	84,941	0%	71.6	68.7	-4%
NJ	7.9	7.5	-4%	114,460	112,143	-2%	68.7	67.3	-2%
MD	4.2	4.1	-4%	60,452	59,344	-2%	70.2	68.7	-2%
DC	0.4	0.4	-3%	6,767	6,680	-1%	61.3	60.0	-2%
NC	7.5	7.3	-3%	104,418	104,941	1%	72.2	69.7	-3%
VA	4.3	4.1	-3%	60,577	60,926	1%	70.2	67.9	-3%
AR	1.6	1.6	-3%	24,576	23,257	-5%	66.2	68.2	3%
SC	2.9	2.8	-3%	40,849	41,017	0%	70.6	68.5	-3%
AK	0.5	0.5	-2%	6,958	6,903	-1%	70.2	69.6	-1%
MA	4.7	4.7	-1%	67,588	67,549	0%	69.9	69.0	-1%
PR	0.1	0.1	3%	2,934	2,874	-2%	46.0	48.5	6%
DE	0.9	1.0	8%	14,209	15,709	11%	66.5	65.3	-2%
Grand Tot	197.8	181.2	-8%	2,755,391	2,581,457	-6%	71.8	70.2	-2%

- **TRx has decreased in 46 of states** while units/TRx has decreased in every state except Idaho, Arkansas, and Puerto Rico
- States with the **highest percentage decrease in TRx are Florida, Nevada, Kentucky, and West Virginia**

SOURCE: IMS

Contents

Findings on messaging and positioning

PRELIMINARY

- **Opioids overall are still viewed as effective and necessary class of painkillers**, though side effects and addiction are concerns

- Key themes from prescriber interviews on abuse deterrents include:
  - Prescriber awareness of abuse deterrence and label change is mixed
  - Opinions on impact/efficacy of abuse deterrence vary
  - Most prescribers are concerned about abuse, but attempt to establish measures to protect themselves
  - Concerns remain that technology does not address oral abuse
  - Less informed prescribers ask for additional information and education around abuse deterrent formulations

- Existing market research suggests that **most physicians do not feel that reformulation positively impacts their prescribing behavior**, and that **diversion, abuse and regulatory concerns continue to weigh on prescribers**

Opioids overall are still viewed as effective and necessary class of painkillers, though side effects and addiction are concerns

"Short term use of opiates is highly efficacious, however concerns about safety arise for longer-term use"

- Medical Director of major pain center

"If you remove opioids totally from the picture there's no way to treat a lot of types of pain patients"

– Anesthesiologist and pain specialist

"Opioids are often the preferred choice for long-term treatment, as side effects for NSAIDs can be more severe"

– Primary care physician

"Very good, strong medications, very good relief, only problem is they don't want them to be first line of treatment"

– Medical Director of major pain center

Note: Full prescriber interview summaries are available in the appendix

SOURCE: Prescriber interviews

Awareness of abuse deterrence and impact on prescribing varies amongst prescribers (1/3)

Key themes	Supporting evidence
Prescriber awareness of abuse deterrence and label change is mixed	▪ "I am only vaguely aware of abuse deterrence"- *Primary care practitioner* ▪ "In the end it doesn't really hurt anyone, to the extent that I understand the technology" – *Private practitioner and assistant professor at large medical school* ▪ "I know (abuse deterrent reformulations) exist"- *Family practitioner* ▪ "For some people (abuse deterrence) probably matters, such as first time prescribers and non-specialists, but for specialists, (the label change) probably doesn't make much of a difference because they were already aware of the reformulation (before the label change)- *Anesthesiologist and Head/Neck surgeon* ▪ "I knew already since 2010 about (OxyContin's abuse deterrence), so the new labeling doesn't make big difference" – *Physical Rehabilitation and Pain specialist*
Most prescribers are concerned about abuse, but attempt to establish measures to protect themselves	▪ "(Concern about abuse) hasn't changed that much, because (prescribers in practice) follow preferred and recommended guidelines- *Chief of Interventional Spine and Pain Management at major hospital* ▪ "(Abuse is) main concern in every practice…and we need (abuse monitoring) resources because of the nature of our practice" – *Pain specialist in private practice* ▪ "I'm always worried about (abuse) and definitely see it"- *Internist* ▪ "If I get an inkling, I check immediately and warn the patient" – *Family doctor in family group practice* ▪ "I worry about diversion…same thing for Adderall, valium, etc…"- *Family practitioner in private practice*

SOURCE: McKinsey prescriber interviews

Awareness of abuse deterrence and impact on prescribing varies amongst prescribers (2/3)

Key themes	Supporting evidence
Opinions on impact/efficacy of abuse deterrence vary	▪ "Abuse deterrence is a good thing…I would choose abuse deterrent drugs every time, if patient insurance covers it" – *Anesthesiologist and Pain Management Physician at major hospital* ▪ I had extremely curtailed the prescription for OxyContin, but now that I see the clinical difference, I am much more comfortable writing for it"- *Private practitioner with pain management fellowship* ▪ "It's a win-win for everyone, as long as the price is ok" – *Physician at major hospital* ▪ "(I would) certainly (prescribe abuse deterrent formulations)…you never know who you're dealing with"- *Internist* ▪ "(OxyContin reformulation is a) much better reformulation…but having said that, many pain doctors are still humans and suffer from emotional inhibition bc of all the bad press it had, bc it still has the name OxyContin"- A*nesthesiologist with fellowship in pain management* ▪ "(Abuse deterrent formulations) are good faith effort to show reasonable response to the abuse issues"- *Chief of Interventional Spine management at large hospital* ▪ "These are (nonetheless) control substances, whether they can be abused or not, we have to assume they are abused"- *Family practitioner in private practice*

SOURCE: McKinsey prescriber interviews

Awareness of abuse deterrence and impact on prescribing varies amongst prescribers (3/3)

Key themes	Supporting evidence
Concerns remain that technology does not address oral abuse	▪ "I don't know how effective abuse deterrence is in practice…Just because you can't crush something, doesn't mean you can't eat all your pills at once" –*Primary care physician specializing in internal medicine* ▪ "No formulation on the market that is overdose resistant" - *Pain Management and Physical Medicine and Rehabilitation* ▪ The only abuse deterrence I would put any stake in is when you add niacin (to prevent oral abuse)"- *Anesthesiologist and Pain Management Physician at major hospital*
Less informed prescribers ask for additional information and education around abuse deterrent formulations	▪ "The FDA decision [on OxyContin] should carry weight…data would very valuable…should be incentive to use this medicine"- *Addiction specialist* ▪ "There are several studies on abuse deterrence out there…what we need is information from trustworthy sources" – *Anesthesiologist and Head/Neck surgeon* ▪ "(It would be good) if pharma companies made it more clear that this drug is now a preferred medicine"- *Private practitioner and assistant professor at large medical school* ▪ "I haven't seen any data that shows effectiveness of abuse deterrence… not statistics" – *Family practitioner* ▪ "I want to see that (the drug) is not diverted and used on the street…I don't find the (existing) data all that compelling"- *Anesthesiologist and Pain Specialist at large hospital* ▪ "If there is enough education, we may be using them more frequently, to mitigate abuse" – *Family doctor in family group practice*

SOURCE: McKinsey prescriber interviews

OxyContin specific prescriber market research shows regulatory concerns and media/press weigh on prescribers, despite reformulation

Topic	Key take-aways	Study	Source	Timing/when
Market dynamics	▪ Prescribers with increasing TRx stated **increase in patients with pain, leading to increases in OxyContin prescriptions** ▪ Prescribers with **decreasing TRx stated regulatory concerns and media/press** as key drivers	OxyContin prescriber comparison	PJ Quinn	May, 2012
	▪ **Duragesic and MS Contin considered main competitors** ▪ **Key market drivers**: safety, tolerability, efficacy, good patient satisfaction, and favourable dosing	OxyContin Brand Health Tracker	Synovate Healthcare	July, 2011
Abuse awareness and prescribing behavior	▪ **Abuse and diversion are main deterrence** factors; class wide issue, with higher salience for Oxy	ONU/Oxy Copositioning	PJ Quinn	November, 2012
	▪ Majority of prescribers stated that **prescribing behavior is unlikely to change**	OxyContin new formulation awareness	Synovate healthcare	October, 2010
Awareness on abuse deterrence	▪ **Little awareness and perceived impact** on crush-resistant formulation ▪ **OxyContin seen as "fallen Hero"**- powerful drug, dampened by concerns around diversion, abuse and regulatory restrictions	ONU/Oxy Co-positioning	PJ Quinn	November, 2012
	▪ **3 in 5 physicians aware** of reformulated OxyContin	OxyContin new formulation awareness	Synovate healthcare	October, 2010

No new market research on OxyContin (e.g. abuse deterrence awareness) has been conducted since the April 2013 FDA ruling

Contents

Findings on segmentation and targeting

- Analysis of sales force reach suggests **calls are insufficiently focused on high deciles**
  - Cumulative reach is 47% by market basket volume and 53% by OxyContin volume
  - While reach is >70% for market decile 10, 9, and 8, it declines sharply for decile 7 (65% reach), decile 6 (57% reach), and decile 5 (47% reach)
  - ~7500 prescribers in market decile 5-10 were not called on in Q1 2013

- Sales force reach are also **insufficiently focused on NBRx**
  - Sales force reaches less than 40% of OxyContin NBRx by volume (44% if orthopedic surgeons are excluded)
  - ~9600 NBRx decile 5-10 prescribers were not called on in Q1 2013

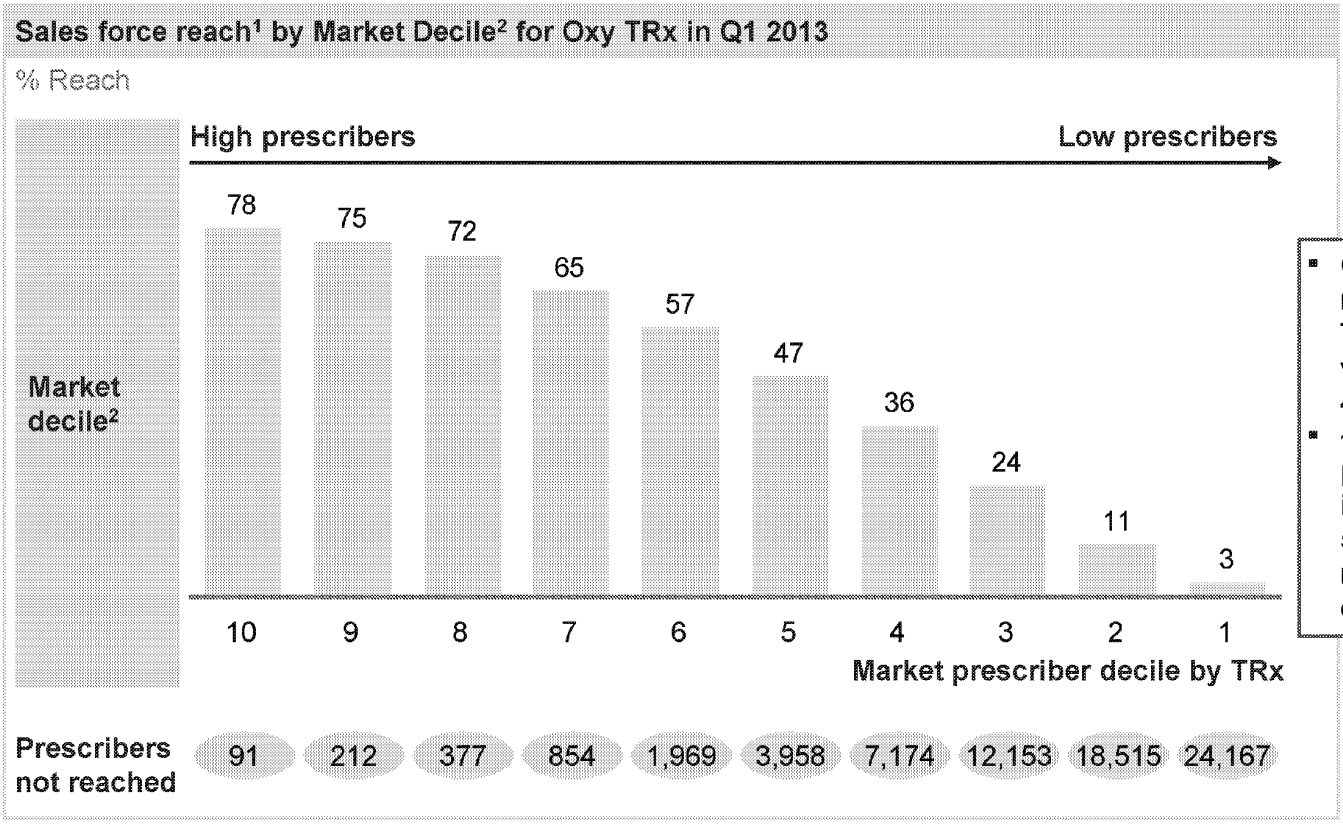
- Initial analysis shows no difference in OxyContin market share among identified corporatized providers

- **Prescribers who do not receive calls account for 75% of the overall OxyContin decline**

- **OxyContin is still promotionally sensitive**
  - Vacancy and retrospective call responsiveness analyses show that OxyContin is promotionally sensitive across deciles
  - Promotional sensitivity is further evidenced by physician-level 'natural pilots'

- **At the territory level, OxyContin performance is largely driven by external market attractiveness factors including ERO growth, Gx penetration, household income, and managed care access**

There are ~ 7,500 Decile 5-10 prescribers that the sales force is not reaching

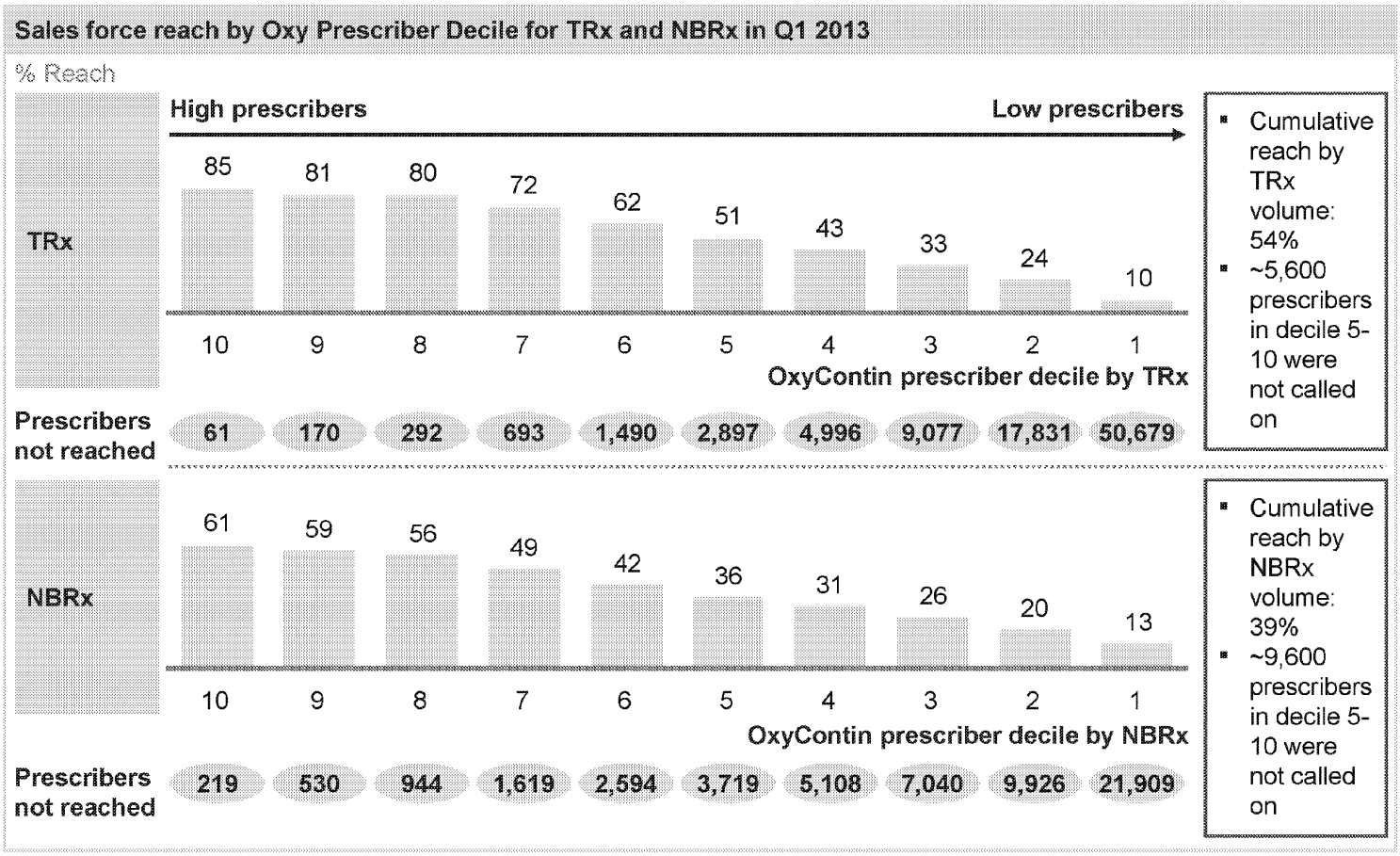


1 Reach defined as at least 1 P1 or P2 in Q1 2013

2 Market decile based on ER-IR market basket as defined by ZS Assosciates

SOURCE: IMS; Purdue Sales and Marketing; Team analysis

Sales force reach is lower by NBRx decile compared to reach by Oxy decile

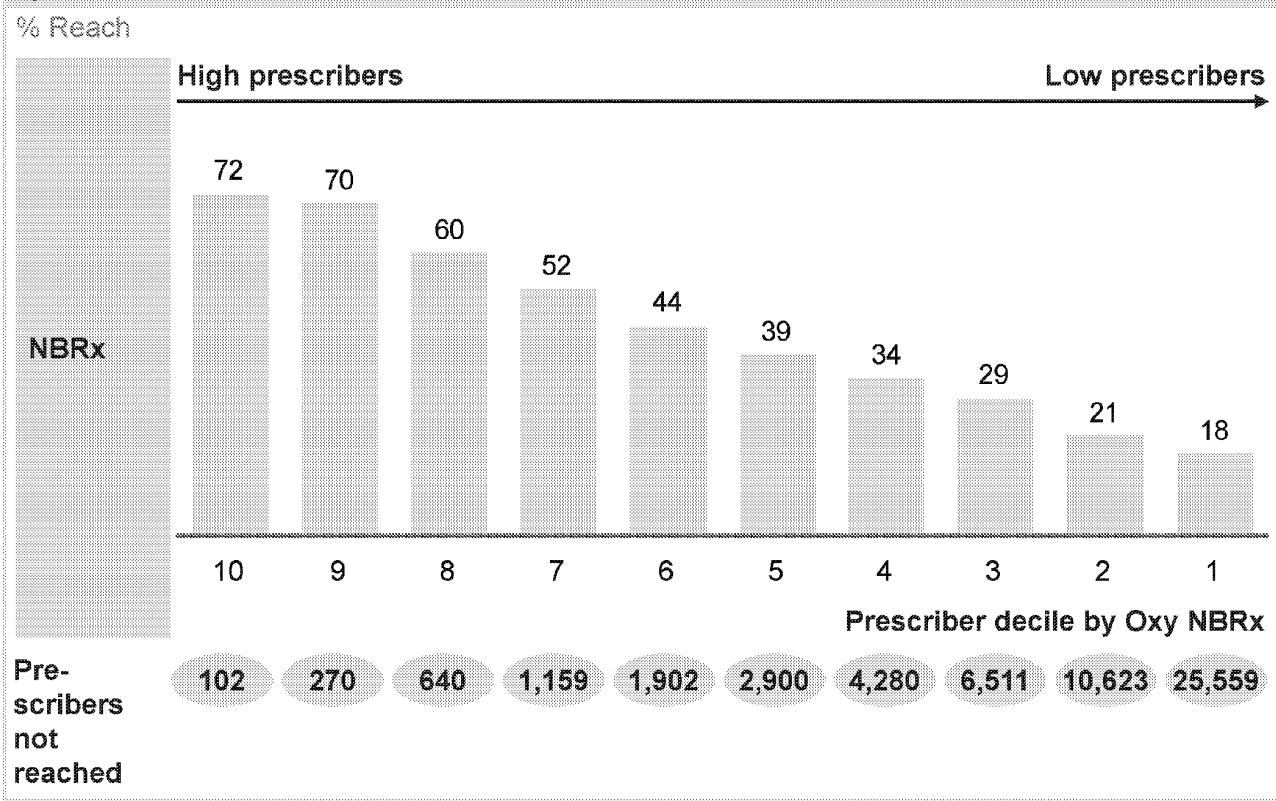


1 Reach defined as at least 1 P1 or P2 in Q1 2013

SOURCE: IMS; Purdue Sales and Marketing; Team analysis

Reach by NBRx is higher when orthopedic surgeons are excluded from the sample, as they tend to be higher NBRx and reach is lower

Sales force reach[1] by Oxy Prescriber Decile for NBRx (excluding orthopedic surgeons[2]) in Q1 2013

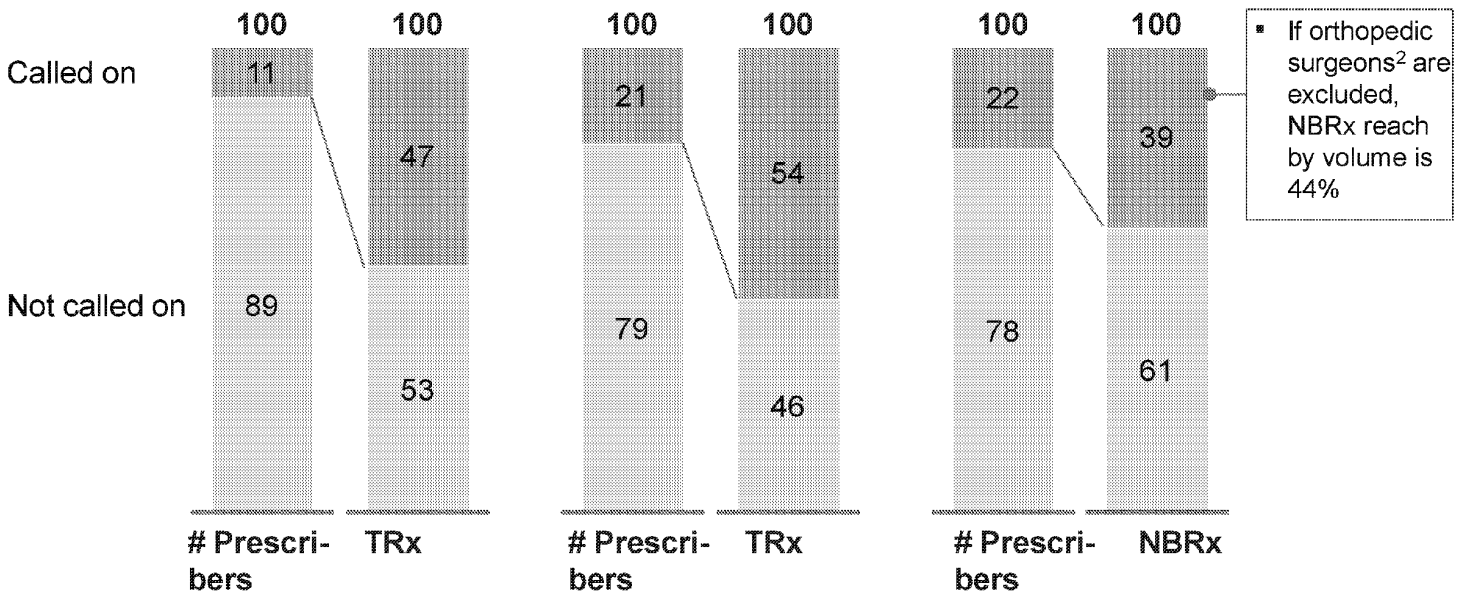


1 Reach defined as at least 1 P1 or P2 in Q1 2013
2 Many orthopedic surgeons are high NBRx writers due to the acute nature of the pain they treat

SOURCE: IMS; Purdue Sales and Marketing; Team analysis

The sales force reach of OxyContin NBRx is ~40% by volume

OxyContin sales force reach in Q1 2013 (including P1 or P2 calls)



1 For 3-month period ending in March 2013; Reach defined as any physician who received at least one call (P1 or P2) in the time period specified
2 Many orthopedic surgeons are high NBRx writers, due to the acute nature of the pain they treat

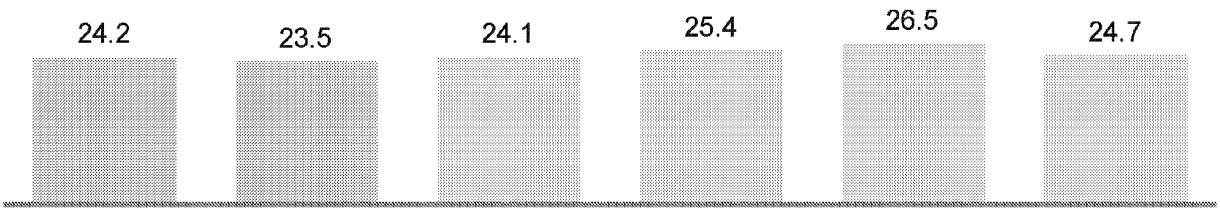
SOURCE: IMS; Purdue Sales and Marketing; team analysis

Initial analysis shows no difference in OxyContin performance among identified corporatized providers

Baseline
Focused on corporatized providers

- 18% of all OxyContin scripts written by prescribers identified as affiliated
- 3% of all OxyContin scripts written by prescribers identified as Top 300 affiliate

2012 OxyContin share of ERO scripts
%



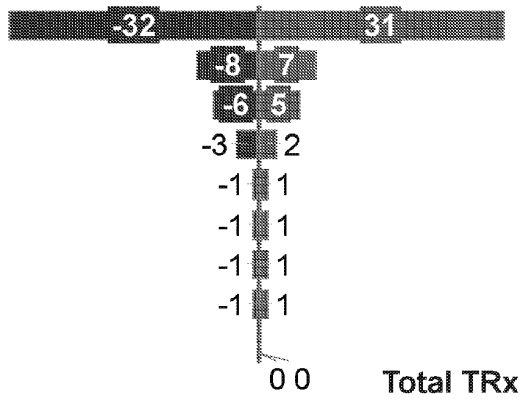
Scope of prescribers considered	Total	On call list	Identified as affiliated	Identified as Top 300	Identified as Top 300 - expanded[1]	Zipcodes w/ heavy corp. provider presence[2]
Total 2012 ERO script (mns)	22.2	12.6	3.6	0.73	0.98	4.6
Total OxyContin script (mns)	5.4	3.0	0.88	0.19	0.26	1.1
Total prescribers	332341	50041	14347	3906	12140	-

1 Matching on addresses, we identified additional providers who may also be affiliated with Top 300 corporatized providers but who were not identified as such by the sales force.
2 Using McKinsey database of largest corporatized providers, which focuses on Greater Boston, Greater Los Angeles, Greater Pittsburgh, Pacific Northwest, and Greater Dallas

SOURCE: Affiliation data collected by Purdue sales force; McKinsey database of largest corporatized providers

Overall, TRx increased for 47% of prescribers

Prescribers by change in TRx from 2011 to 2012
% prescribers

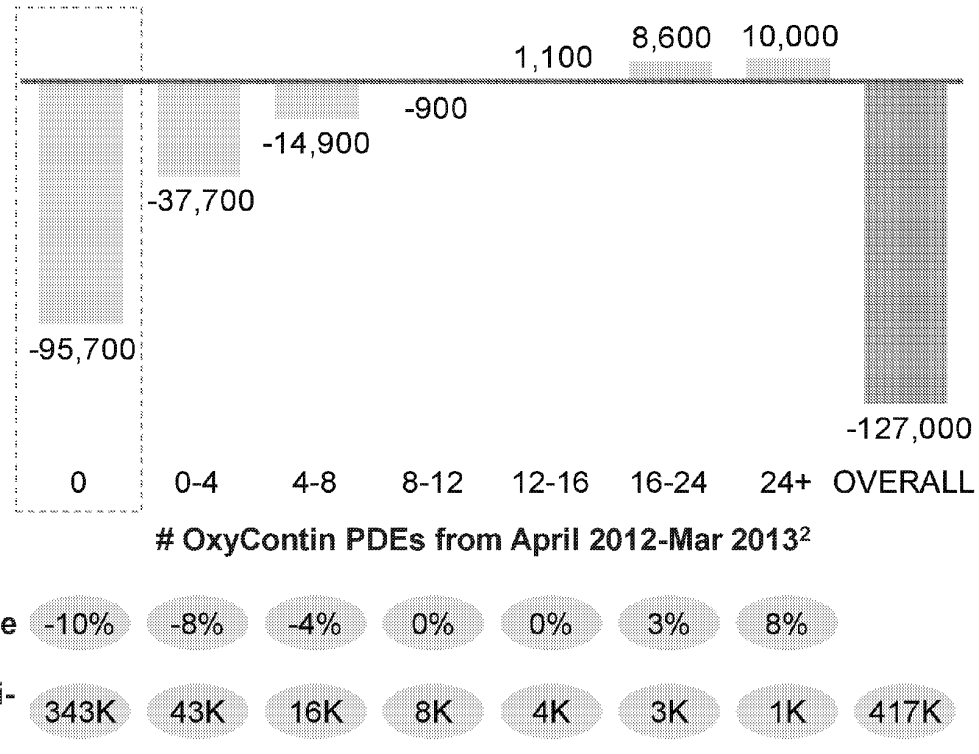


Change in TRx # TRx/MD	TRx impact for declining (Thousand)	TRx impact for increasing (Thousand)
0 to 5	214	204
5 to 10	158	138
10 to 20	252	202
20 to 30	169	126
30 to 40	115	86
40 to 60	148	106
60 to 100	146	123
100 to 500	468	429
>500	88	121
Total TRx Thousand	**~1,800**	**~1,500**

- 61% of declining prescribers fall into the 0 to -5 TRx decline category, and less than 5% fall into categories 40 to >500 decline
- 65% of prescribers with increasing TRx fall into the 0 to 5 TRx category
- TRx impact per prescriber is highest for highest Trx growth and decline categories

SOURCE: IMS

Prescribers who did not receive calls account for ~75% of OxyContin decline



	0	0-4	4-8	8-12	12-16	16-24	24+	OVERALL
% decline	-10%	-8%	-4%	0%	0%	3%	8%	
# prescribers	343K	43K	16K	8K	4K	3K	1K	417K

- **75% of the decline of OxyContin is concentrated in prescribers that Purdue does not call**
- The impact of calls is particularly strong in high-deciles; **2/3rds of 96K decline is in deciles 5-10**
- Analysis also shows call sensitivity throughout range of PDEs
- This suggests that increased call activity may have a substantial impact on slowing the decline of OxyContin

1 TRx change measured in absolute terms between 6 months ending in March 2012 and 6 months ending in March 2013
2 PDE (primary detail equivalent) calculated using 1.0 weight for a P1 and 0.5 for a P2

SOURCE: IMS

Prescribers who do not receive calls account for 75% of the overall OxyContin decline

Absolute change in OxyContin TRx[1] by # of PDEs and market decile

# of Rx

# of PDEs April 2012 – March 2013

Market Decile	0	0.5 to 4	4 to 8	8 to 12	12 to 16	16 to 24	>24	Totals
10	-5,345	-6,794	-7,383	-1,565	-3,976	-3,974	5,139	**-23,899**
9	-5,531	-9,632	-2,496	-1,501	-1,181	644	1,345	**-18,352**
8	-11,513	-5,071	-5,948	-471	-637	2,698	1,486	**-19,455**
7	-9,427	-7,135	-3,647	-1,879	1,492	1,729	940	**-17,926**
6	-11,700	-6,273	-78	-911	286	1,396	796	**-16,483**
5	-19,647	-8,896	-4,929	-1,359	187	1,375	-49	**-33,318**
4	-23,657	-6,857	-2,389	-197	721	1,047	55	**-31,278**
3	-29,980	-5,098	-45	1,632	1,027	733	208	**-31,523**
2	-20,812	4,505	2,817	991	1,252	840	14	**-10,394**
1	35,986	11,080	6,877	2,776	972	1,475	335	**59,501**
All	**-94,699**	**-36,674**	**-14,871**	**-890**	**1,141**	**8,567**	**10,397**	**-127,028**

1 TRx change measured in absolute terms between 6 months ending in March 2012 and 6 months ending in March 2013

SOURCE: IMS; Purdue sales

PDEs have a significant impact on TRx growth, controlling for decile

% Change in OxyContin TRx[1] by # of PDEs and market decile

Percent (# of prescribers)

# of PDEs April 2012 – March 2013

Market Decile	0	0.5 to 4	4 to 8	8 to 12	12 to 16	16 to 24	>24	Totals
10	-30% (41)	-41 (49)	-22% (76)	-4% (81)	-9% (98)	-6% (134)	10% (92)	**-9% (571)**
9	-26% (110)	-37% (126)	-7% (172)	-4% (190)	-3% (178)	1% (245)	4% (129)	**-7% (1150)**
8	-37% (240)	-16% (268)	-14% (337)	-1% (406)	-1% (314)	6% (282)	6% (141)	**-7% (1,988)**
7	-22% (654)	-17% (639)	-7% (711)	-4% (667)	3% (489)	5% (372)	8% (122)	**-6% (3,654)**
6	-17% (1660)	-11% (1429)	0% (1302)	-2% (1067)	1% (646)	6% (383)	11% (128)	**-6% (6,615)**
5	-19% (3,954)	-13% (2,672)	-8% (2,137)	-3% (1,309)	1% (631)	9% (391)	-2% (76)	**-11% (11,170)**
4	-16% (8,677)	-9% (4,548)	-5% (2,797)	-1% (1,447)	5% (608)	16% (278)	4% (60)	**-10% (18,415)**
3	-16% (19,956)	-7% (7,177)	0% (3,161)	10% (1,338)	17% (472)	24% (229)	38% (33)	**-10% (32,366)**
2	-11% (53,222)	12% (9,903)	24% (2,815)	21% (903)	79% (313)	133% (107)	- (10)	**-4% (67,273)**
1	30% (244,773)	134% (15,226)	448% (2,275)	582% (576)	800% (159)	7504% (61)	- (11)	**46% (263,081)**
All	**-10% (343,248)**	**-8% (42,883)**	**-4% (15,956)**	**0% (8,068)**	**0% (3,935)**	**3% (2,498)**	**8% (805)**	**(406,283)**

1 TRx change measured in percent terms between 6 months ending in March 2013 and 6 months ending in March 2012

SOURCE: IMS; Purdue sales

For all deciles, increased calls are associated with higher OxyContin TRx growth – a sign of promotional sensitivity

Absolute change in OxyContin TRx[1] per prescriber by # of PDEs and market decile

# of Rx

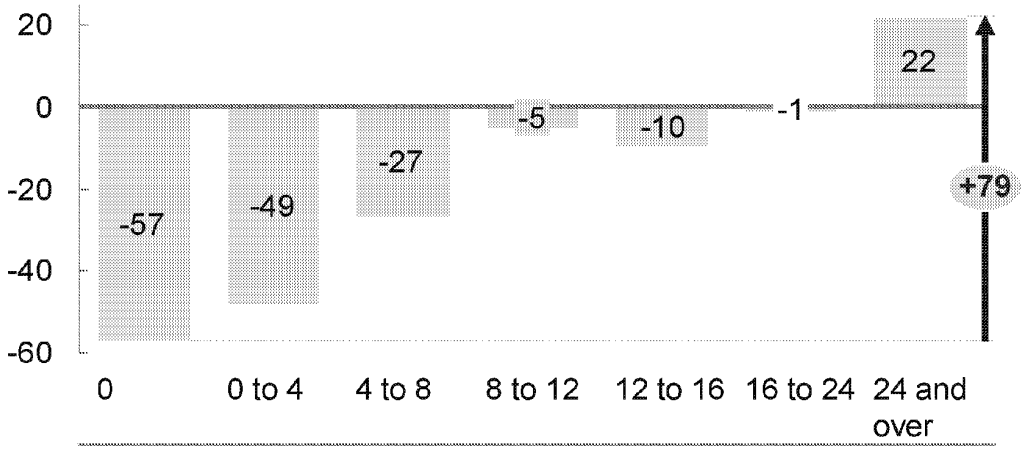
Change in OxyContin TRx per prescriber

Market Decile	# of prescribers	0	0.5 to 4	4 to 8	8 to 12	12 to 16	16 to 24	>24	Totals
10	571	(130.4)	(138.7)	(97.1)	(19.3)	(40.6)	(29.7)	55.9	**(41.9)**
9	1,150	(50.3)	(76.4)	(14.5)	(7.9)	(6.6)	2.6	10.4	**(16.0)**
8	1,988	(48.0)	(18.9)	(17.6)	(1.2)	(2.0)	9.6	10.5	**(9.8)**
7	3,654	(14.4)	(11.2)	(5.1)	(2.8)	3.1	4.6	7.7	**(4.9)**
6	6,615	(7.0)	(4.4)	(0.1)	(0.9)	0.4	3.6	6.2	**(2.5)**
5	11,170	(5.0)	(3.3)	(2.3)	(1.0)	0.3	3.5	(0.6)	**(3.0)**
4	18,415	(2.7)	(1.5)	(0.9)	(0.1)	1.2	3.8	0.9	**(1.7)**
3	32,366	(1.5)	(0.7)	(0.0)	1.2	2.2	3.2	6.3	**(1.0)**
2	67,273	(0.4)	0.5	1.0	1.1	4.0	7.9	1.4	**(0.2)**
1	263,081	0.1	0.7	3.0	4.8	6.1	24.2	30.5	**0.2**
All	**406,283**	**(0.3)**	**(0.9)**	**(0.9)**	**(0.1)**	**0.3**	**3.5**	**13.0**	**(0.3)**

1 TRx change measured in absolute terms between 6 months ending in March 2012 and 6 months ending in March 2013

SOURCE: IMS; Purdue sales

Increased calls have a significant impact on OxyContin TRx – Market deciles 8 to 10



	0	0 to 4	4 to 8	8 to 12	12 to 16	16 to 24	24 and over
# of Prescribers	391	443	585	677	590	661	362
% Change in TRx	-32%	-29%	-14%	-3%	-4%	0%	7%

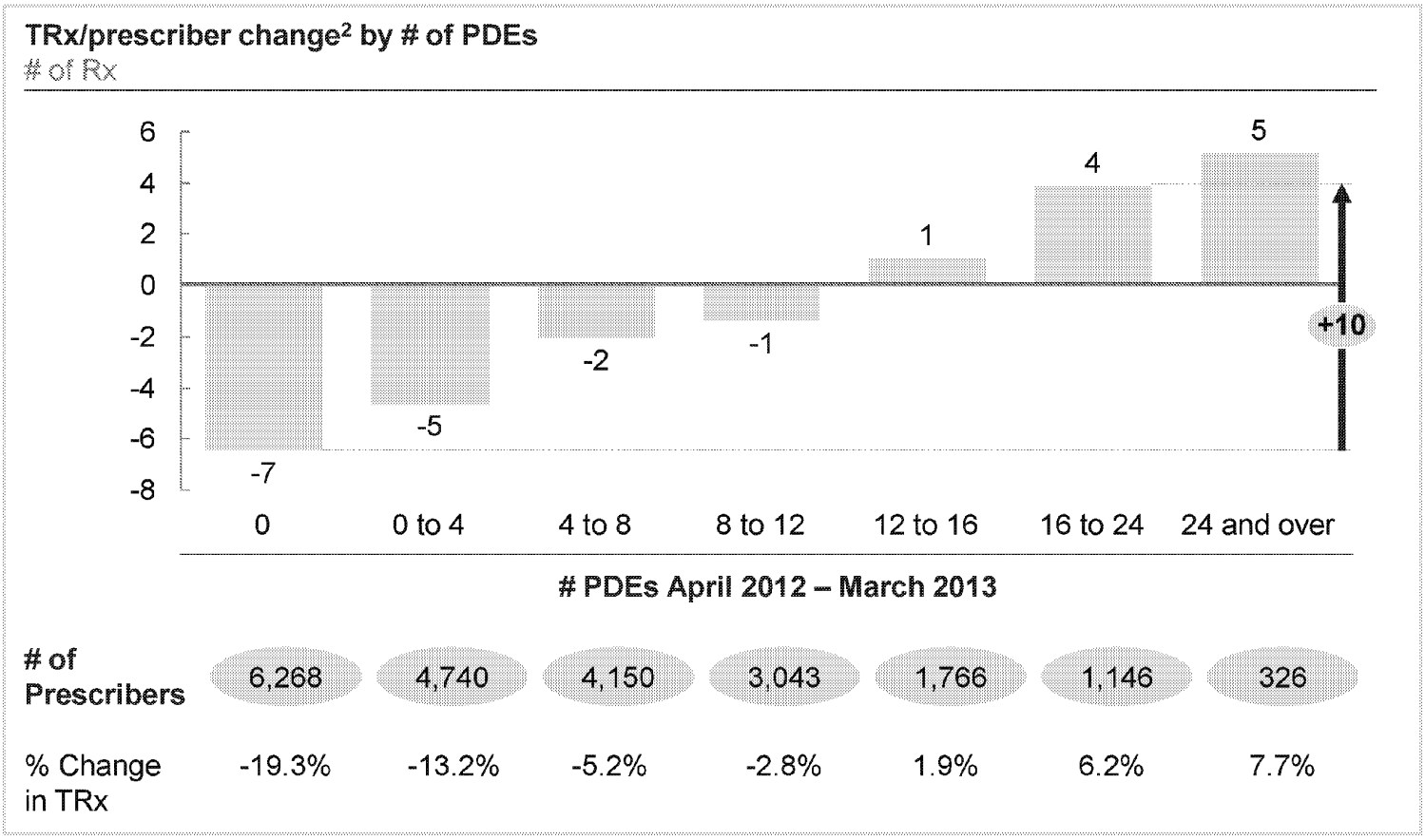
Key insights

- There is significant call sensitivity of Oxy for high-decile physicians particularly through 12 calls/yr
- There are 362 high-value physicians to whom >24 calls were made per year – these increased substantially more than physicians

1 Market decile based on ER-IR market basket as defined by ZS Associates
2 TRx change measured in percent terms between 6 months ending in March 2013 and 6 months ending in March 2012

SOURCE: IMS; Purdue sales

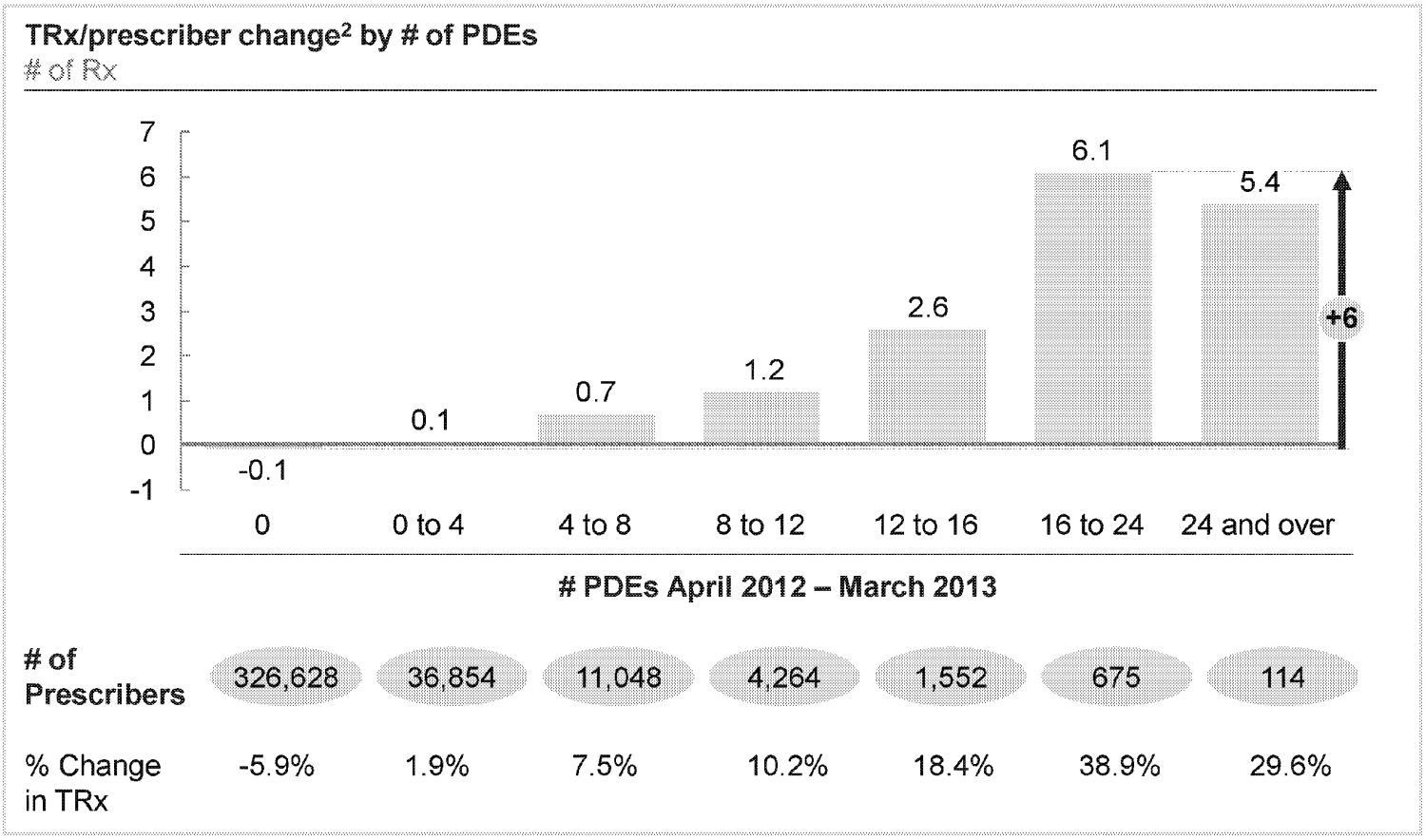
Increased calls have a significant impact on OxyContin TRx – Market deciles 5 to 7



1 Market decile based on ER-IR market basket as defined by ZS Associates
2 TRx change measured in percent terms between 6 months ending in March 2013 and 6 months ending in March 2012

SOURCE: IMS; Purdue sales

Increased calls have a significant impact on OxyContin TRx – Market deciles 1 to 4



1 Market decile based on ER-IR market basket as defined by ZS Associates
2 TRx/prescriber change measured between 6 months ending in March 2013 and 6 months ending in March 2012

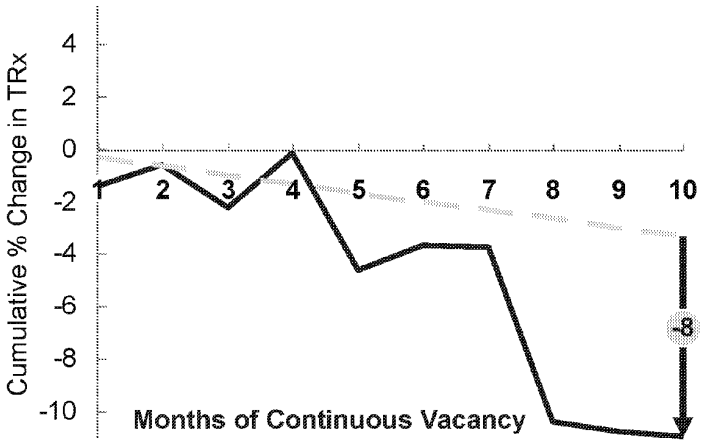
SOURCE: IMS; Purdue sales

Vacancy analysis suggests that OxyContin is still responsive to calls

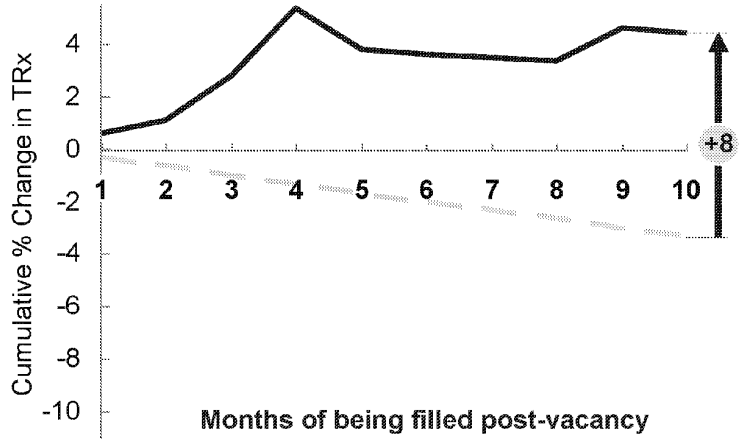
%

Overall avg. monthly Oxy TRx trend
Avg. change in sample

Cumulative change in OxyContin TRx following vacancy



Cumulative change in OxyContin TRx after vacancy is filled



- After 10 months of vacancy, Oxy TRx falls an average of 8% v. the overall trend; the effect is similar when zips are filled post- vacancy
- Given that the sales force calls on ~54% of OxyContin volume, this is **consistent with a ~15% impact on prescribers actually called**

1 % changes calculated using a weighted average of month TRx change for 8373 zip codes with >100 total TRx in a 28 month period (Jan 2011 to April 2013)

SOURCE: IMS; Purdue Sales Operations; team analysis

Calling on high decile physicians with appropriate frequency can have major impact on OxyContin TRx: physician "natural pilot"

True physician example

Specialty : **Anesthesiology**

Location : **Wareham, Massachusetts**

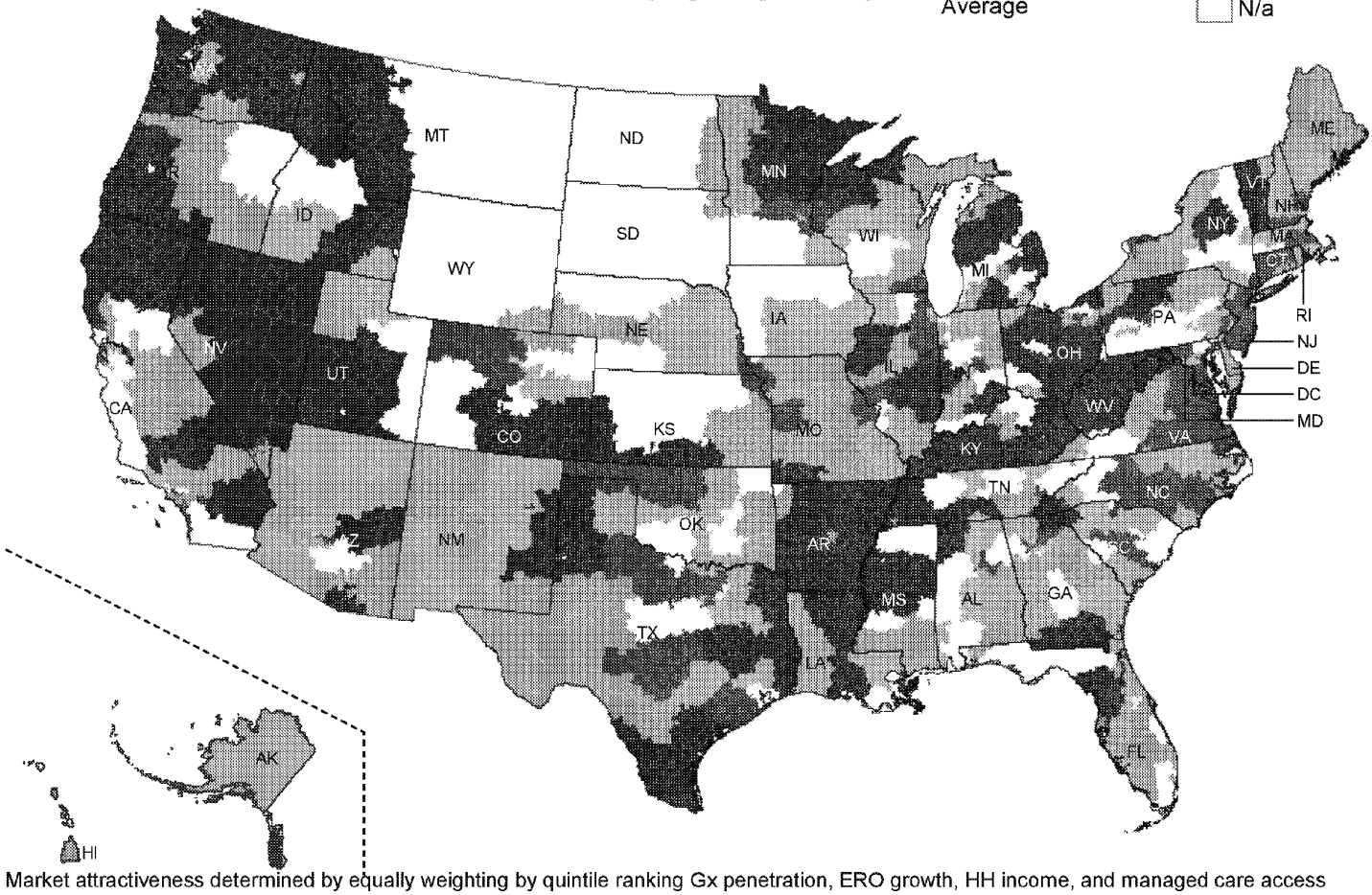
Market Decile : **8**

	12 months ending March 2012		12 months ending March 2013
Calls made on physician	**0 P1** **1 P2**	→	**18 P1** **1 P2**
OxyContin scripts written during 2nd half of year	**177**	→	**344**
OxyContin share of ERO Market	**26%**	→	**43%**

- This physician went from receiving 0 P1s to 18 P1s – this resulted in a 94% increase in TRx
- This is not an isolated case
  - **84 physicians** in deciles 7-10 went from receiving <4 PDEs to >14 PDEs
  - These physicians **increased** OxyContin TRx by **39%**, compared to a **17% decline** in physicians that continued to receive <4 PDEs

SOURCE: IMS; Purdue Sales Operations; team analysis

A number of external factors contribute to patterns of market attractiveness by geography



1 Market attractiveness determined by equally weighting by quintile ranking Gx penetration, ERO growth, HH income, and managed care access
2 Analysis conducted on year ending in March 2012 v. year ending in March 2013

SOURCE: IMS; I-gallery data; team analysis

OxyContin performance is largely driven by external market attractiveness factors

Territories (examples)

Market Attractiveness[1]	OxyContin TRx Growth 2011-2012[2]	
	Above Average	Below Average
Most attractive	**74** New Haven, CT East Suffolk, NY Virginia Beach, VA	**31** Jersey City, NJ Lowell, MA North Chicago, IL
Somewhat attractive	**68** San Jose, CA Drexel Hill, PA Charleston, SC	**37** North Atlanta, GA Appleton, WI Dallas South, TX
Average	**61** Boston South, MA Mankato, MN Westminster, CO	**42** East Queens, NY Park City, UT Ann Arbor, MI
Somewhat unattractive	**36** Pittsburgh Central, PA Louisville East, KY Oklahoma City, OK	**72** Milwaukee South, WI East Baltimore, MD Seattle, WA
Most unattractive	**22** Detroit, MI Bakersfield, CA Las Vegas East, NV	**80** Tampa Metro, FL Dayton South, OH Bellingham, WA

1 Market attractiveness determined by equally weighting by quintile ranking Gx penetration, ERO growth, household income, and managed care access
2 Analysis conducted on year ending in March 2012 v. year ending in March 2013

SOURCE: IMS; I-gallery data; team analysis

Contents

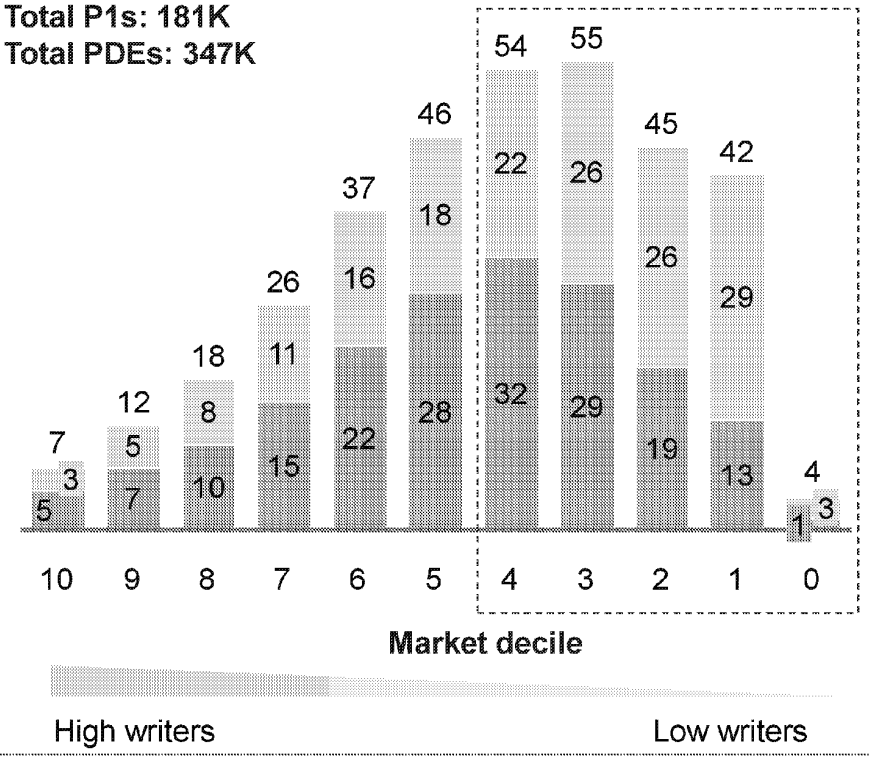
Sales force focus and execution findings and implications

Key Findings	Implications/Opportunities
▪ 75% of total OxyContin decline is concentrated in prescribers than Purdue does not call on – 2/3 of these prescribers are in high market deciles (5-10) ▪ More than 50% of OxyContin primary calls are to low-decile (0-4) prescribers ▪ Decile 5-10 prescribers write on average 25 times more scripts per prescriber than decile 0-4, indicating that a call on decile 5-10 prescribers is likely higher-impact than a call on decile 0-4 ▪ Analysis shows call sensitivity throughout range of PDEs	▪ There is significant opportunity to slow the decline of OxyContin by **calling on more high-value physicians**
▪ Purdue sales force is making only 67% of OxyContin budget P1s (1H 2013) ▪ Purdue call volume is lower than industry benchmark ▪ P1 call attainment varies widely across territories	▪ Total OxyContin calls could be increased substantially if all reps **performed the budgeted # of OxyContin calls**
▪ 45% of OxyContin calls are off-list	▪ Any change in targeting will need to accompanied by a cultural change toward greater **adherence**
▪ Incentive comp structure for reps is misaligned with Purdue's economics	▪ Revision to incentive comp could better align reps to Purdue's economics
▪ The revenue upside from sales re-targeting and adherence could be well over $100M	▪ A comprehensive change program for the sales force can capture significant incremental value for Purdue

Currently, over 50% calls are made to low decile prescribers

Secondary details (PDE equiv)[1]
Primary details

Number of OxyContin calls by market decile[2], annualized based on Q1 2013
Number of Primary Detail Equivalents (PDEs); thousands

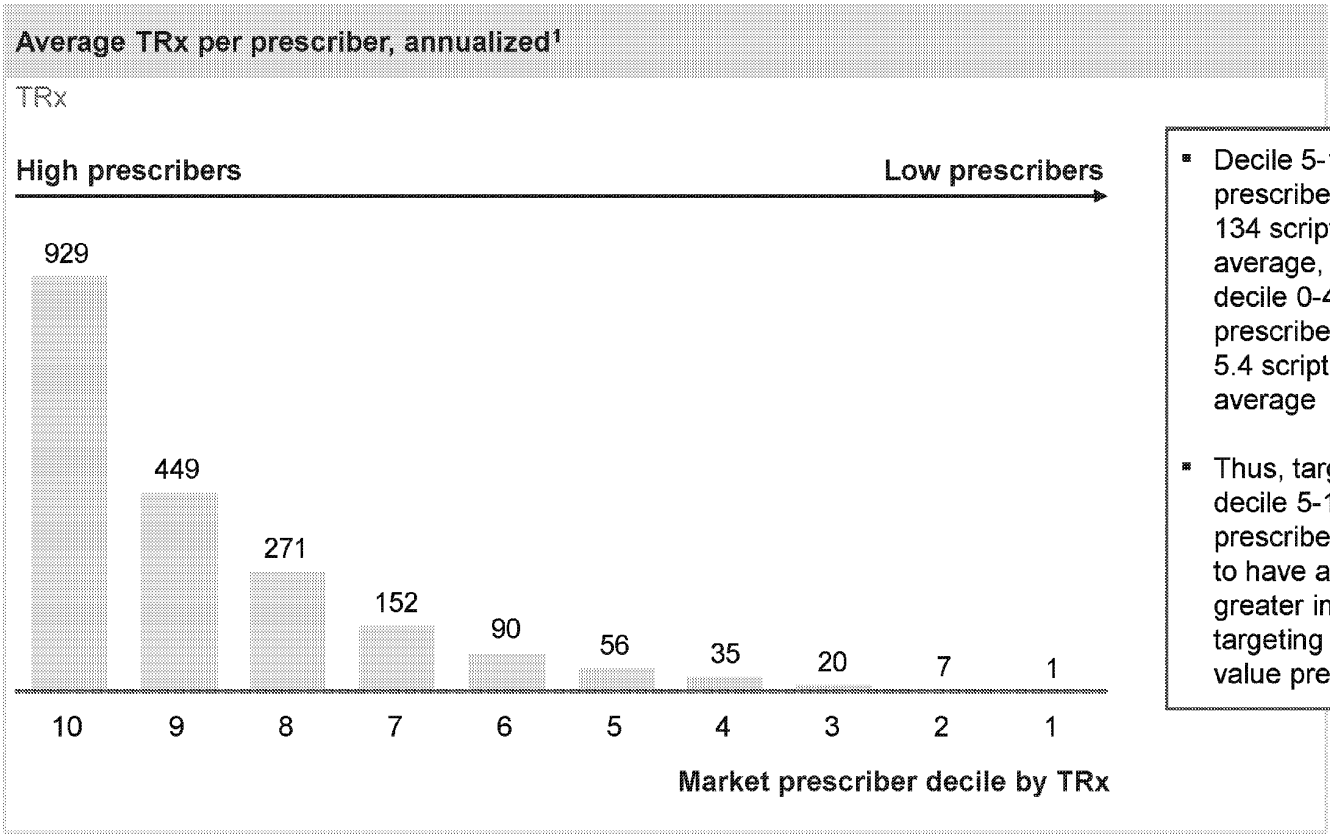


- 52% of OxyContin primary calls (95K) and 57% of primary detail equivalents are made to low-market decile prescribers (0-4)
- Given that there are ~14,000 uncalled physicians in deciles 5-10, there is significant opportunity to shift calls to higher potential prescribers
- Reasons for low-decile calls may include:
  - Lack of access to higher decile prescribers
  - Opportunism
  - KOLs
  - Geographic territory definition
  - Lack of rep call list adherence

1 PDEs calcuated as 1.0 x P1 calls + 0.5 x P2 calls
2 Market decile based on ER-IR market basket as defined by ZS Associates

SOURCE: IMS, Purdue call data

Decile 5-10 prescribers write on average 25 times more scripts per prescriber than decile 0-4



- Decile 5-10 prescribers write 134 scripts on average, while decile 0-4 prescribers write 5.4 scripts on average
- Thus, targeting decile 5-10 prescribers is likely to have a much greater impact than targeting lower value prescribers[1]

1 Based on H2 2012 data

SOURCE: IMS; Purdue Sales and Marketing; Team analysis

The sales force is currently performing only 67% of the budgeted primary calls on OxyContin

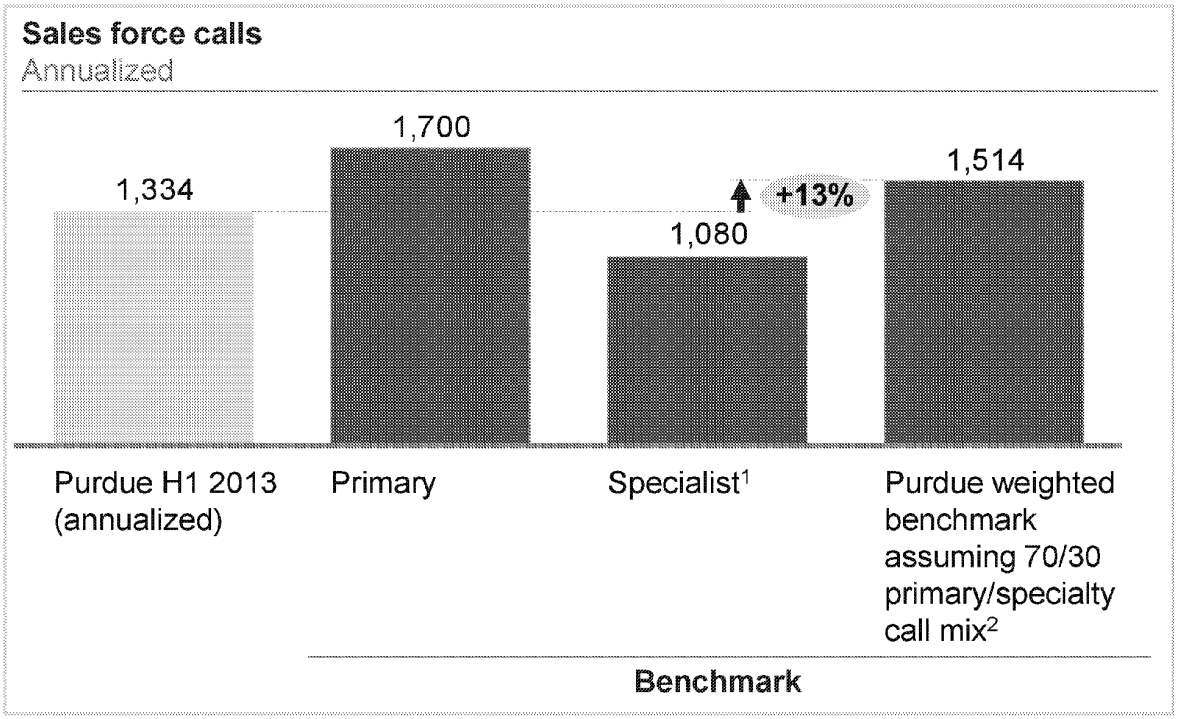
Average monthly OxyContin calls
Jan – June 2013

	P1	P2	Primary Detail Equivalents (PDEs)[1]
Per Rep			
▪ Target[2]	55	59	84
▪ Actual[3]	37	58	66
Field force total			
▪ Target	28,875	30,713	44,231
▪ Actual	19,600	30,400	34,800
▪ **% actual v. target**	**67%**	**99%**	**79%**

1 P1s plus 50% of P2s
2 Target based on published call plan (e.g. 2 calls/mo on Oxy Supercores and 1 call/mo on Cores)
3 Assuming 525 active sales reps

SOURCE: Purdue sales reports; Purdue internal interviews; team analysis

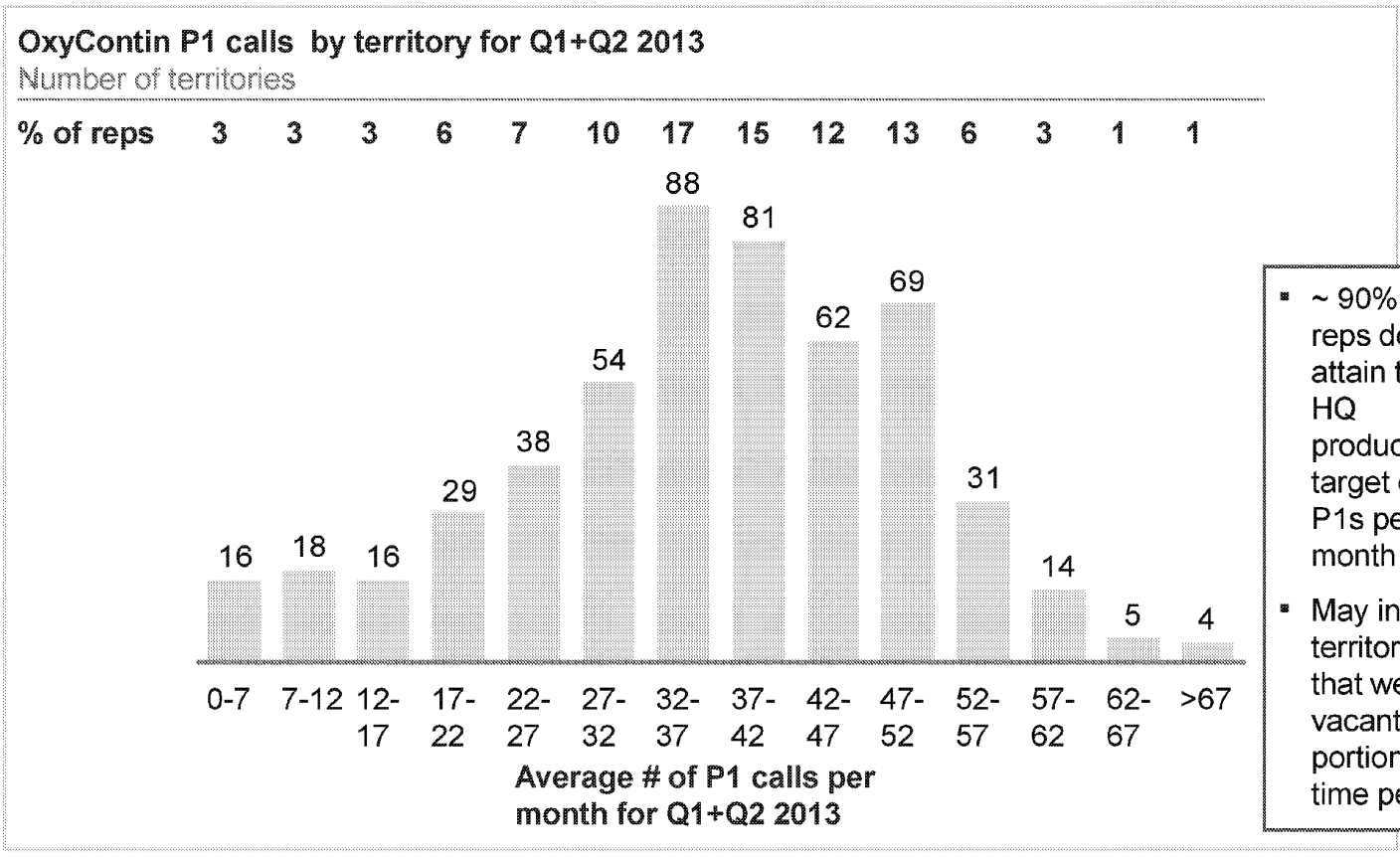
Purdue call volume is lower than benchmark



1 This is the lowest sales force call benchmark among specialties; this benchmark is for niche oncology drugs.
2 70% of Purdue OxyContin details are for GPs, which include GPs (52% of OxyContin details) and NRP (18% of OxyContin details). Specialty details include Phys Med & Rehab (7% of OxyContin details), Anesthesiology (7%), Rheum (2%), Orthopedic (2%), Neurology (2%), and other specialties that each make up 1% or less of OxyContin details.
3 Assuming 12 calls/ year/ prescriber, 39 incremental scripts per prescriber that is newly called upon (assuming Decile 5-7 sales responsiveness calculated by ZS Associates), 71 pills/ script, $6.2 average price per pill, with 25% rebate and other fees.

SOURCE: GP/Specialist mix from ZS report "M6 Alignment and Preliminary Placement Review v2.0", slide 74; McKinsey benchmarks; Purdue sales reports; Team analysis

There is a wide variance of actual P1 call attainment across territories



SOURCE: IMS, Purdue call data

One possible way to attain benchmark ~1500 calls per year is to decrease training days by ~6 days and increase calls per day by 5%

One possible route to benchmark

Current call activity

Number of "on territory" days per year

Item		Days[1]
Number of working days		260
Holidays		-11.3
Vacation and other time off		-27.2
Trainings and meetings		-17.5
Other company-related time off of field		-4.3
Total days		199.7
Avg calls per day	x	7
Total calls per year		1398

Potential new allocation

Number of "on territory" days per year

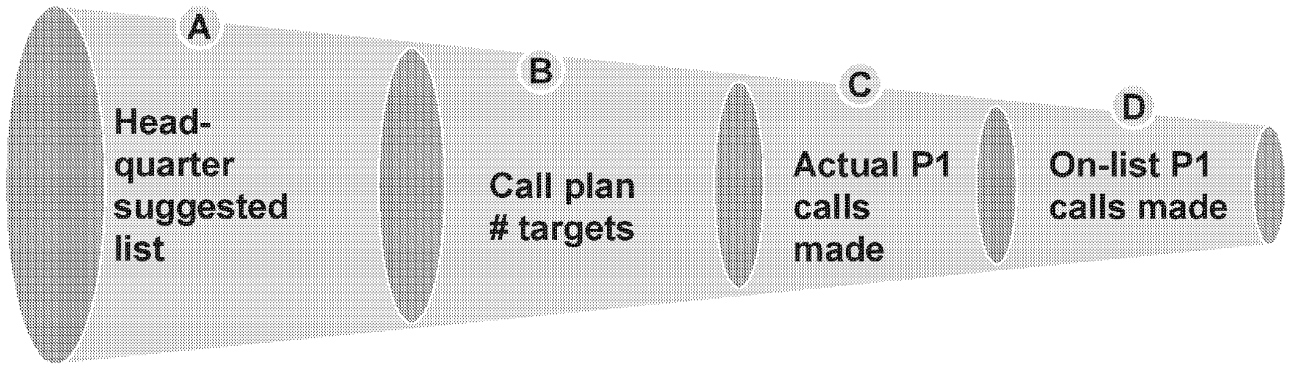
Item		Days[1]
Number of working days		260
Holidays		-11.3
Vacation and other time off		-27.2
Trainings and meetings		-11.5
Other company-related time off of field		-4.3
Total days		205.7
Avg calls per day	x	7.35
Total calls per year		1512

1 Purdue 2012 Actual data was used for this analysis

SOURCE: Purdue; team analysis

Adherence to the call list is only ~55%

Number of prescribers reached for OxyContin in Q1 2013



	A	B	C	D
# of Prescribers	42,000	26,000	18,000	10,000
Per rep	*80*	*50*	*34*	*19*

68%

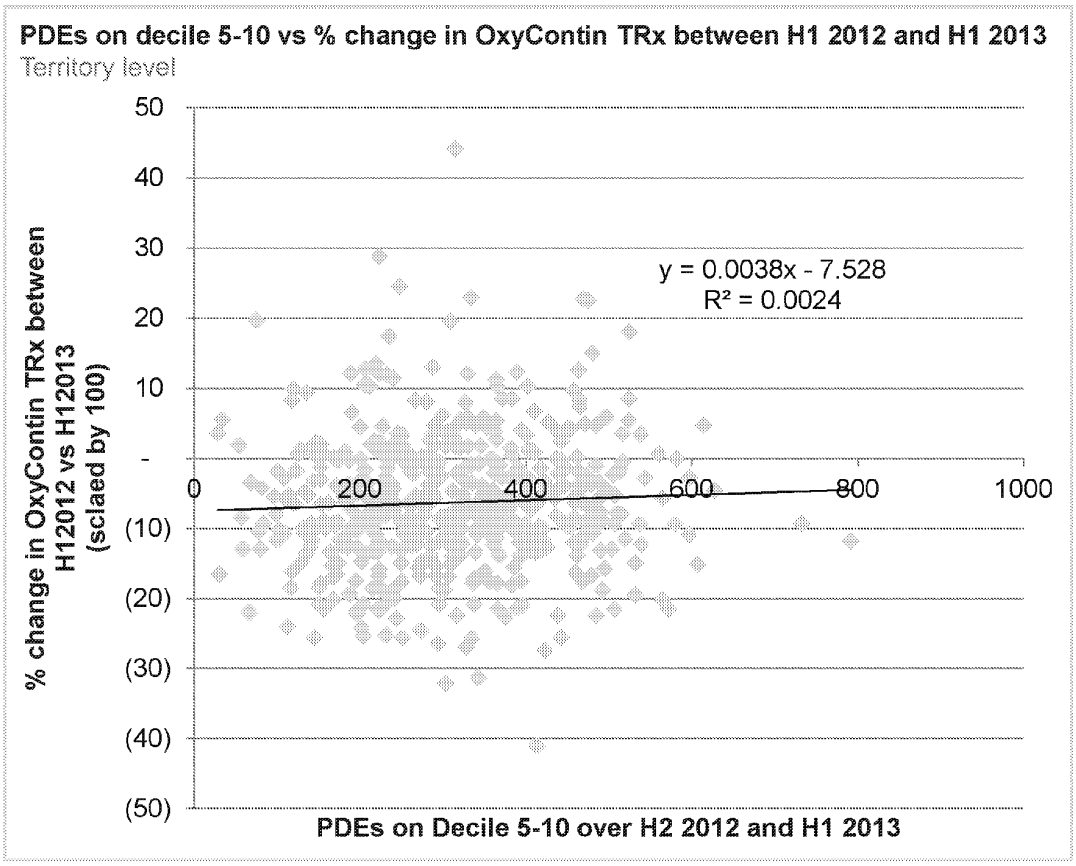
38%

Of the P1 calls made…

- 8,000 out of the 18,000 calls actually made were off-list (44%)

SOURCE: ZS Associates report; Purdue call data; Team analysis

Calls on decile 5-10 prescribers positively correlate with OxyContin growth

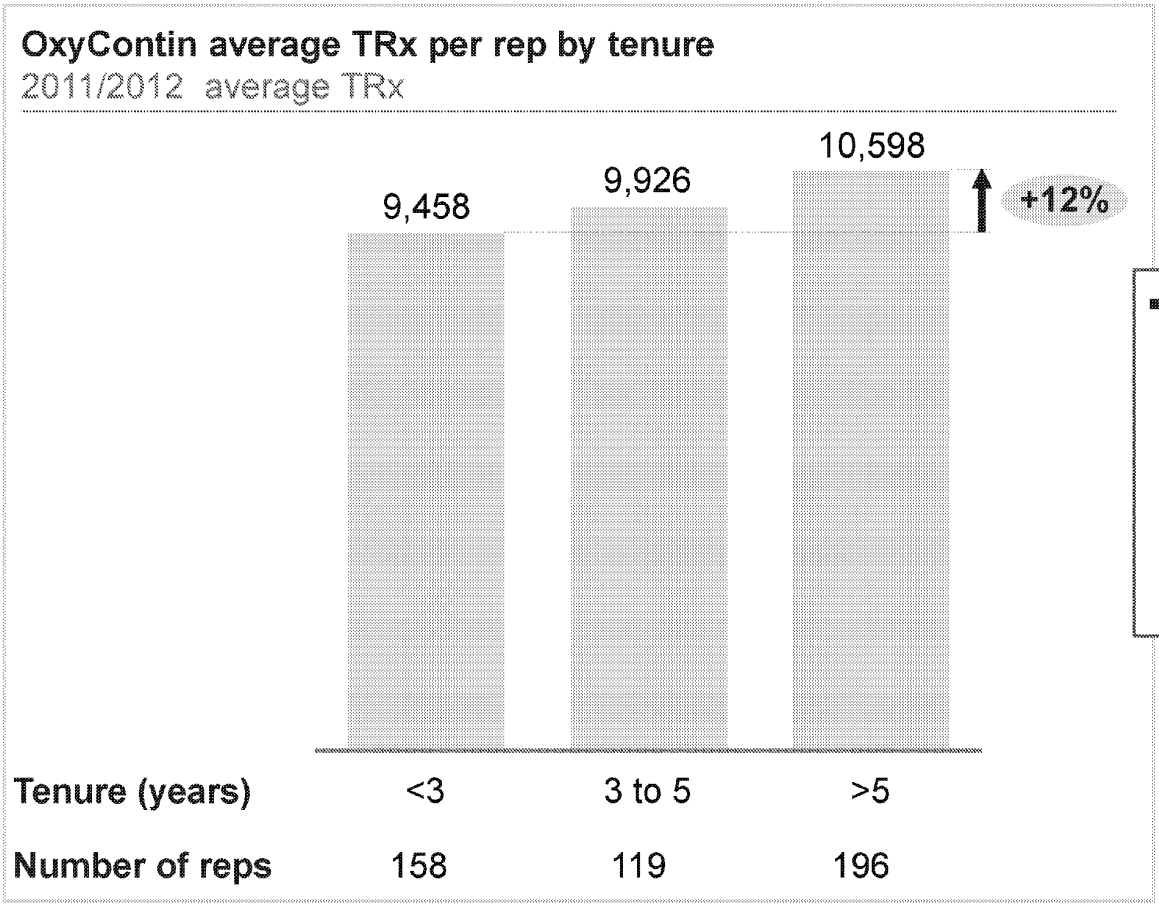


Implies that doing 175 more PDEs on deciles 5-10[1] is associated with 0.6 percentage point increase in OxyContin growth rate

1 Which is going from 25th to 75th percentile of PDEs on deciles 5-10

SOURCE: Purdue call data; IMS; Team analysis

Some variability exists across tenure for average prescriptions per rep

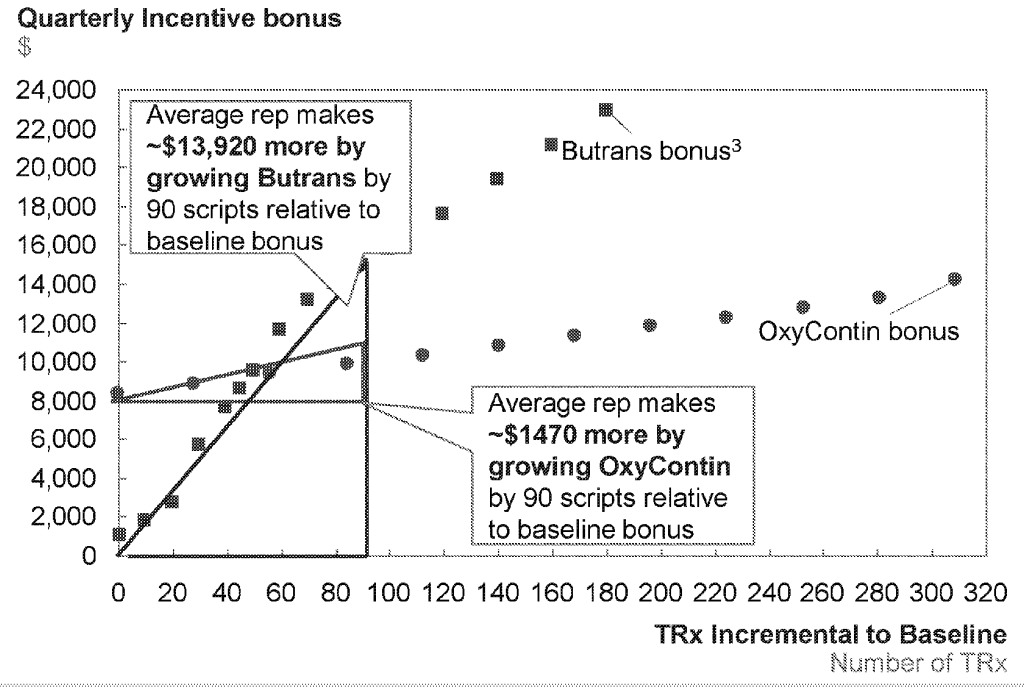


- Reps with >5 years tenure are in territories with average 12% higher TRx than reps <5 years (*not controlled for other factors)*

SOURCE: Purdue 2011-2013 OxyContin sales data, Zip to Terr file

Incentive comp structure is steeper for Butrans, making each incremental Butrans script more valuable to reps relative to OxyContin

Q3 2013 incentive compensation based on performance of an average rep[1]

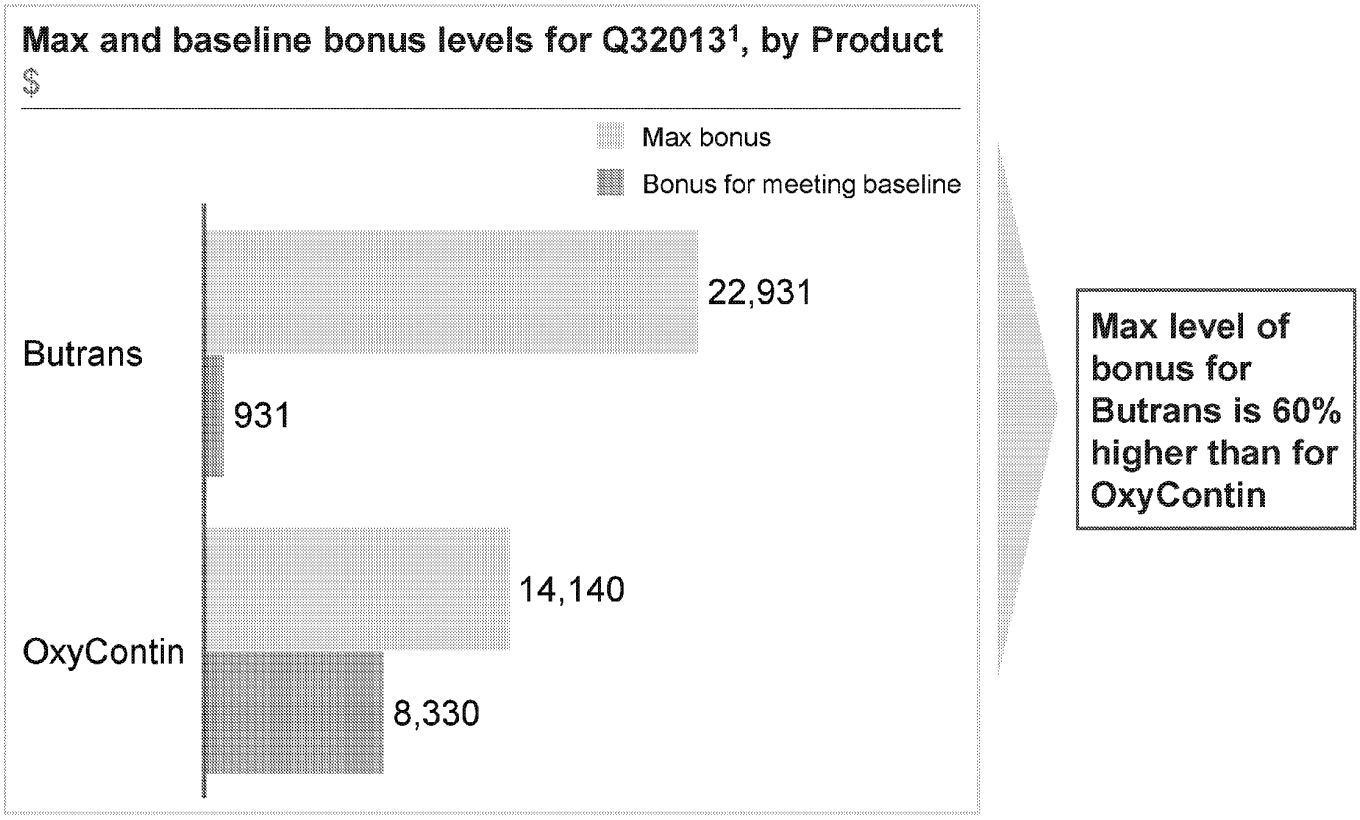


- For average rep, **incremental scripts relative to baseline worth far more for Butrans than for OxyContin,** because slope of bonus curve is steeper for Butrans
- **Purdue, in contrast, makes 67% more if rep sells 90 OxyContin incremental scripts than 90 Butrans incremental scripts** ($30k vs $18k)[2]
- Additionally, incentive comp could incorporate call list adherence and rep productivity

1 Uses Q3 2013 incentive plan. Assumes 232 Butrans scripts/ quarter for average rep, and 2809 OxyContin scripts/ quarter for average rep.
2 Assumes average $267 gross price/ Butrans script and $447 gross price/ OxyContin script. Lastly assume net revenue (net of rebates and fees) is ~75% of gross price.
3 Balanced portfolio bonus included in Butrans bonus calculation as is indexed to Butrans scripts

SOURCE: Purdue sales; Purdue Budget; team analysis

Max level of bonus for Butrans at a higher level than for OxyContin



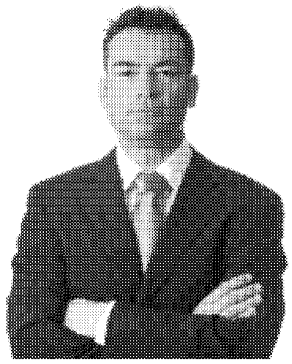
1 Uses Q3 2013 incentive plan. Assumes 232 Butrans scripts/ quarter for average rep, and 2809 OxyContin scripts/ quarter for average rep. Balanced portfolio bonus indexed to Butrans scripts

SOURCE: Purdue sales; Purdue Budget; team analysis

Reps who make more OxyContin P1s on high-decile prescribers generate more OxyContin growth in their territory

ACTUAL DATA

Relationship between TRx growth and P1s on high decile prescribers holds across territories

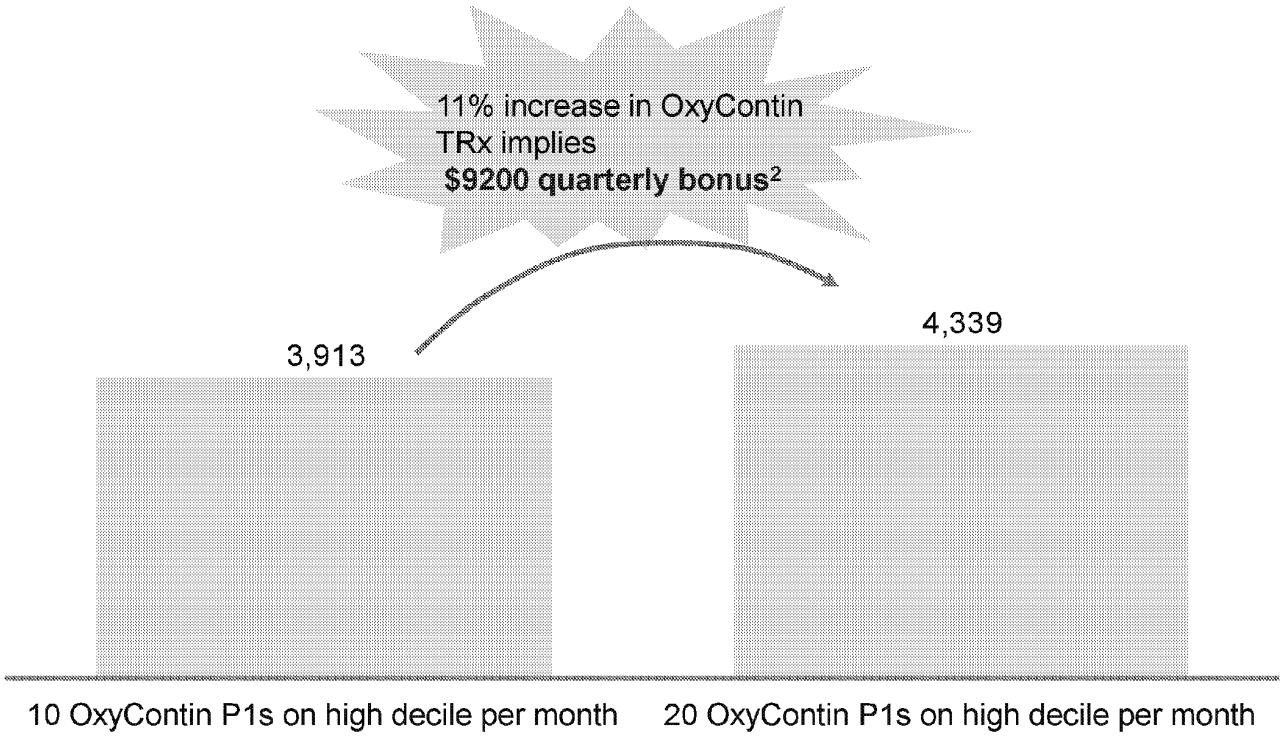


		Sales rep A	Sales rep B	
Sales rep B generated 7% more growth…	% change in Oxy TRx, H1 2012 vs H1 2013	0%	7.3%	+7300 bp
by making more Oxy P1s on high decile doctors…	Oxy P1s on high decile MDs (5-10) per mo	23	28	+22%
despite operating in a similar territory to Sales rep A	State	TN	TN	
	# of high-decile docs in territory	70	56	

SOURCE: IMS; Purdue sales data

Going from 10 to 20 OxyContin P1s on high-decile prescribers generates 11% increase in OxyContin scripts1 – a $9200 quarterly bonus for avg rep

OxyContin TRx per year, on average



1 Based on regression accounting for the number of high-decile prescribers in the territory
2 Under current Q2 2013 incentive plan

SOURCE: IMS; Purdue sales data; Purdue Q2 2013 Rep incentive plan

Observations from rep ride-a-longs

Challenges

- Reps given guidance to only speak about **abuse-deterrence label once** with each physician (guidance "not to make it a selling point")
- Reps **struggling to engage prescribers in focused conversations about OxyContin**
- Reps **overwhelmed by amount of data available, and unable to use it effectively** for call planning and focusing conversations with prescribers
- Observation that rep still had **old version of OxyContin label** without latest section on abuse-deterrence
- Prescribers "not asking" to talk to **MSL**
- Belief that **pharmacies occasionally switching patients** w/o physician call-back
- **Corporatized provider** in area wouldn't write anything unless **"dirt cheap"** – physician view
- **Abuse was seen as a real issue** for each practice and pharmacy visited; the new label was of interest among prescribers and office staff
- **Pharmacy call-backs seen as an unsustainable 'drag'** on practice economics

Opportunities

- Reps **trying to apply techniques and topics introduced at trainings** (e.g., "challenger" approach)
- One rep attributed extensive dropping of **co-pay cards** at pharmacies to increasing sales in territory
- Talking about availability of **newer strengths** (e.g. 15mg) seen as effective
- One rep able to generate new writers through **persistent calls** each month
- Use of **dinner programs** seen as effective
- Talked about **managed care 'wins'** (e.g. MedCo part D)
- Spending time with **office manager discussing managed care coverage and processes** useful
- Can use pharmacy stocking report to **ensure pharmacies are carrying all dosages** of OxyContin
- Engaging interested prescribers on the importance of using **tamper resistance formulations** could increase comfort in using OxyContin

SOURCE: Rep ride-a-long field observations

The revenue upside from sales re-targeting and adherence could be up to $250M

PRELIMINARY

Based on ZS Response curves

Lever	# of MDs		PDEs per MD: Current (Avg.)		PDEs per MD: Suggested	Total PDE change	TRx impact per MD[3]	Total impact[4]: TRx	Total impact[4]: Revenue
Increase reach on decile 5-10 MDs not currently called	*All*	8,700							
	Reachable	~70%[1]							
	MDs reached	6,000	0	⇨	12-24[2]	103k	69	**411k**	**$177M**
Increase frequency on decile 5-10 MDs with suboptimal call frequency		16,400	10	⇨	12-24[2]	152k	24	**387k**	**$166M**
Reduce calls on decile 0-4 MDs		43,000	5	⇨	0	(110k)	(5)	**(210k)**	**($90M)**
Total impact						**145k**		**587k**	**$250M**

- **145k incremental PDEs** could be achieved by *either*
  - Increasing current Oxy P1 calls from ~37/rep/month to the 50/rep/month (90% of target) *plus* adding an incremental 65 reps *or*
  - Keeping productivity at current level an adding ~190 reps. Typically an additional 10-20% reps are required given inefficiencies in real-world geographic deployment, thus the deployed total could be as many as 210-230 reps

- Opportunity for up to **$250M impact** from:
  - Targeting high value prescribers
  - Performing budgeted target Oxy P1s
- Assumes **no change to Butrans** call plan

NOTE: Purdue call numbers based on blended and annualized Q1+Q2

1 15% discount on access, 10% discount on territory misalignment, 11% discount on other MDs not reachable (e.g. Region 0, IR only)

2 24 calls decile 6-10, 12 calls on decile 5; 3 Based on ZS call responsiveness curves by decile ; 4 On annualized basis

SOURCE: ZS Associates, IMS, Purdue call data, team analysis

65 to 190 additional reps will be needed to capture full opportunity depending on the increase in productivity of the sales force

	Description	Additional reps[1]	Estimated impact[2]	Rationale/ What you have to believe
1 Optimize and expand[3]	a Shift calls to high-value prescribers and increase rep productivity to 90% of target (e.g. 50 v. 55 calls/rep/mo); add reps to fill gap	65+		▪ Desire to maximize potential opportunity ▪ Believe current field force can improve both productivity and adherence
	b Improve targeting, improve productivity by ~20%, and add reps to fill gap	115+	+$250M	▪ Sales force has potential to moderately improve productivity
	c Shift calls to high value prescribers, no change in rep productivity, add reps to fill gap	190-230		▪ Believe call list adherence can be improved but challenging to improve productivity ▪ Desire quick impact
2 Optimize with current capacity	▪ Shift calls to high-value prescribers and increase rep productivity to 90% of target (e.g. 50 calls/rep/mo); do not add reps	None	+$220M	▪ Believe current field force can improve both productivity and adherence simultaneously

- Estimates do not include haircut for execution
- Additional reps required could be larger to:
  - Account for territory alignment
  - Increase field force size ahead of new product launch

1 Does not account for territory mis-alignment
2 Pro-forma relative to 1H 2013 performance, annualized
3 All scenarios assume 24 calls per year on deciles 6-10, 12 calls on Decile 5

SOURCE: IMS; Purdue call data; ZS Associates; McKinsey analysis

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Findings on pharmacy and wholesale access

PRELIMINARY

- **A number of issues at the pharmacy and wholesale level are significantly impacting patient access:**
  - **Pharmacists are increasingly turning away opioid patients, especially at chain pharmacies**
  - Major pharmacies have implemented **stringent guidelines on opioid dispensing,** including pill count limits and requirements that patient must have filled same script at same pharmacy previously
  - **Walgreen's has eliminated incentives for pharmacists to dispense controlled substances** as part of its DEA settlement
  - **Pharmacists increasingly calling back physicians**, creating additional work and hassle for physicians
  - **Distributors are keeping a tight hold on supply of all controlled substances**, with pharmacies unable to order more than historical levels without risking being cut off
  - **There are reports of wholesalers cutting off pharmacies altogether**
- **Using available data, we have evaluated the extent of the access issue**
  - Patient calls to the **Medical Service line on access issues** have been increasing – though this represents only a fraction of the potential impact
  - Analysis of patient survey data collected by the Pain Care Forum shows **direct evidence of patients having difficulty filling opioid prescriptions**
  - Share of redeemed OxyContin savings cards **fell sharply for CVS in Q3 2012 and for Walgreens in Q2 2013**
  - **Walgreen's purchasing has been declining at a rate far faster than other pharmacies, with an acceleration in the March-June 2013 time period after the Good Faith Dispensing policy was rolled out in full**
    - Walgreen's estimated monthly retail purchasing of OxyContin declined ~2% (in units) from Q1 2013 to Q2 2013 compared to a 1% decrease over the same period for all other pharmacies
    - In addition**, fewer Walgreens stores are purchasing high-dosage** (60mg, 80mg) OxyContin and overall purchases of high-strength OxyContin is falling faster as Walgreen's relative to other pharmacies
  - There is little evidence that mail order is increasing to offset retail pharmacy access issues

Access issues at pharmacy and distributor level

PRELIMINARY

Low impact ● High impact

	Actions impacting access	Potential size of impact
1 Pharmacies	a Turn away patients who raise 'flags', which may include: – Living far from pharmacy, or prescription was written far from the pharmacy – Being new patients – Having a prescription for >120 units	●
	b Call back physicians to verify prescription and to discuss treatment plan	◕
	c Modify Rx to fewer tabs (must call back physician)	◑
	d Stock out of opioids (either because limited deliveries imposed by distributors or HQ)	◔
	e Choose not to carry opioids at all	◔
2 Wholesalers	a DEA actions have led to several wholesale distribution facilities being barred from shipment of class 2 drugs for periods of time	◔
	b Halt C2 shipments to pharmacies that order 'too much', as measured by dosing units and molecule type (compared to historical purchase levels and purchase of non-controlled substances)	◑
	c Limit volume of C2 shipments to pharmacies (e.g., only allow orders up to historical purchase levels +10%)	◑

SOURCE: Purdue interviews; Pharmacist interviews

Guidelines established by major pharmacy chains and increased work associated with filling opioid prescriptions have restricted patient access

Pharmacy chains are implementing guidelines for which patients can fill opioid prescriptions, increasing pharmacists' risk of filling opioid prescriptions…

Common mandatory requirements

- Government ID
- No previous failed attempt to fill the prescription at another pharmacy belonging to same chain
- Clear PDMP check, in states where available

Additional flags

- Has not previously filled a prescription for the same medicine and dosage at same pharmacy
- Quantity is 120 units or more
- Patient on medication for 6 months or more
- Lives far from the pharmacy
- Prescription not filled on time
- Paid through cash/ credit card rather than insurance

… moreover, pharmacists report increased work and hassle associated with filling opioid prescriptions

- "We kind of discourage [the opioid business]… **it's more headaches than it's worth** for the low profits [and] if you give one patient one prescription [for an opioid], they bring their friends"– *Clinical coordinator at Publix (FL)*
- "Stress load is high- they aren't insuring techs [and] it used to take 10-15 mins to fill a prescription, now it takes a lot longer…Pharmacy also not providing enough support to fill these prescriptions… **80% of the time, they just refuse patients**." – *Clinical coordinator at Publix (FL)*
- "With budget cuts and staffing cuts – we don't have time to handle everything… **it's easier to turn away patients… my personal turn away rate for opioids is about 5%**" – *Former Pharmacy Manager at Walgreens (KY)*

SOURCE: Purdue; Pharmacy expert interviews

Walgreens has eliminated pharmacists' incentives to fill opioid prescriptions as part of its DEA settlement

Settlement and Memorandum of Agreement
Addendum: Prospective Compliance
Section 6

"Beginning in 2014, Walgreens will **exclude any accounting for controlled substance prescriptions dispensed by a particular pharmacy from bonus computations** for pharmacists and pharmacy technicians at that pharmacy"

Possible that this has already been implemented, given other elements of the settlement (e.g., GFD) appears to have been implemented before the settlement was finalized and made public

SOURCE: DEA website (http://www.justice.gov/dea/divisions/mia/2013/mia061113_attach.pdf)

Pharmacies are calling back physicians to verify prescription and to discuss treatment plan

PRELIMINARY

Pharmacists are calling back physicians more frequently to verify and scrutinize prescriptions…

"It used to be that prescriber decided what drugs patients get, now pharmacists are now questioning the decision… for example, we had a case today where the patient was on IR, and we called the doctor back to suggest he change the prescription to 80/20 ER/IR"
– *Former senior pharmacy director at CVS (FL)*

"We are now asking doctors to modify prescriptions… for example, if we think the patient isn't opioid tolerant already, we will call the doctor."
– *Former Walgreens Pharmacy Manager (KY)*

"Pharmacist should look for different flags: In a certain market area? IR and ER? Days supplied? Proximity of the patient to the pharmacy and prescriber? Does the prescription look altered? Is this a valid DEA number? Is this a valid prescriber? … Then he calls the prescriber to validate for every TRx (requirement in the last year or two)"
- *Former senior pharmacy director at CVS (FL)*

… which leads to increased work and irritation for the physician, potentially decreasing OxyContin prescriptions

"Patients went to many pharmacies [in Manhattan] and most pharmacies don't dispense OxyContin"
– *Physician specializing in pain control*

Potential for negative feedback loop

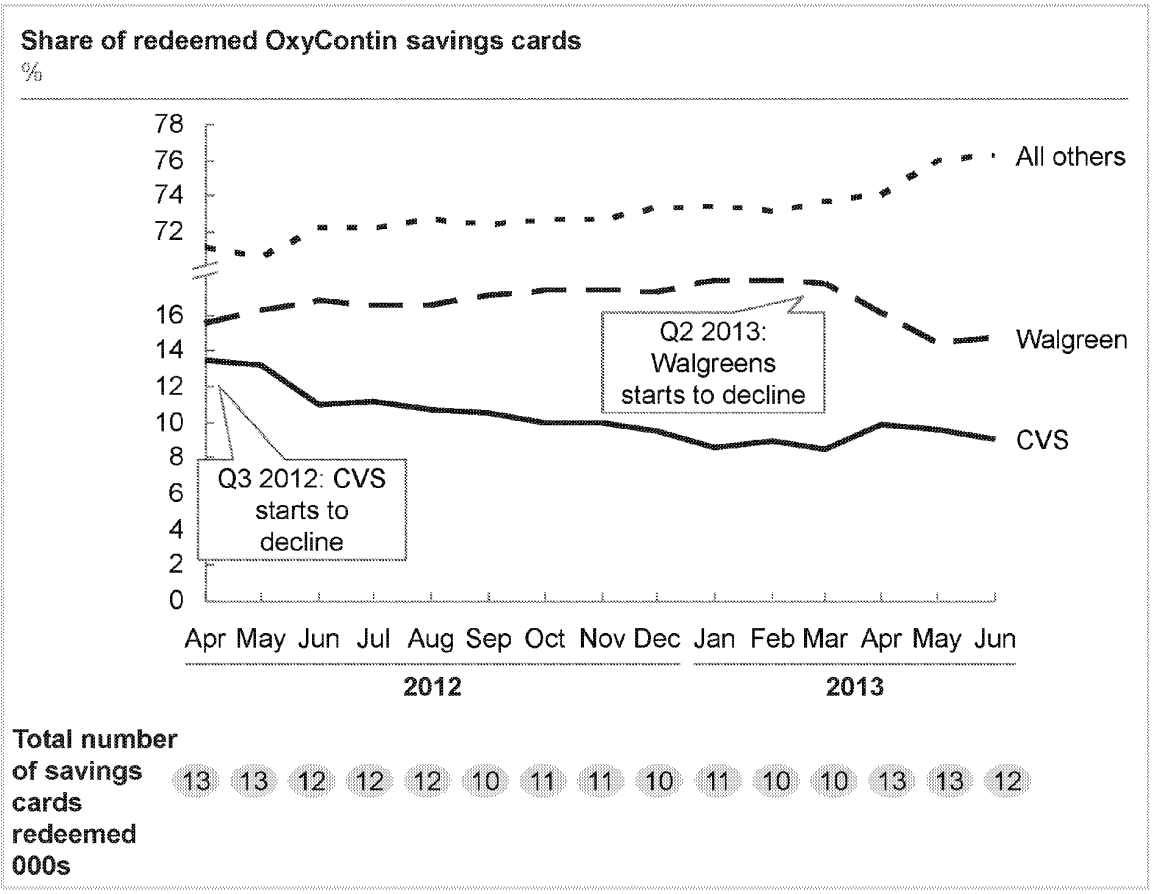
"The patient population is annoying, the documentation is annoying. A lot of my colleagues decide to stop doing opioid prescription later in their career (because they are tired of the hassle)"
- *Anesthesiologist and Pain Management Physician at major hospital*

"PCPS are increasing referrals to specialists, part because of the big hassle around drug testing, pain contracts, and patient monitoring"
– *Anesthesiologist and Head/Neck surgeon*

SOURCE: Pharmacist expert interviews during week of 7/15/2013; Prescriber interviews during June and July 2013

Share of savings cards redeemed started to decline in Q3 2012 for CVS and Q2 2013 for Walgreens

PRELIMINARY - IN VALIDATION



Total number of savings cards redeemed 000s

13 13 12 12 12 10 11 11 10 11 10 10 13 13 12

- CVS' share of redeemed savings cards starts declining in Q3 2012, coinciding with its national rollout of dispensing policy for controlled substances
- Walgreens' share of redeemed savings cards starts to decline in Q2 2013, coinciding with the national rollout of GFD

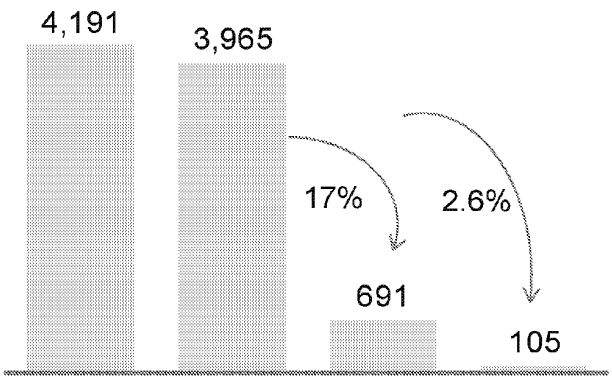
SOURCE: Purdue savings cards data

Analysis of patient data collected by the Pain Care Forum shows direct evidence of patients having difficulty filling opioid prescriptions

PRELIMINARY

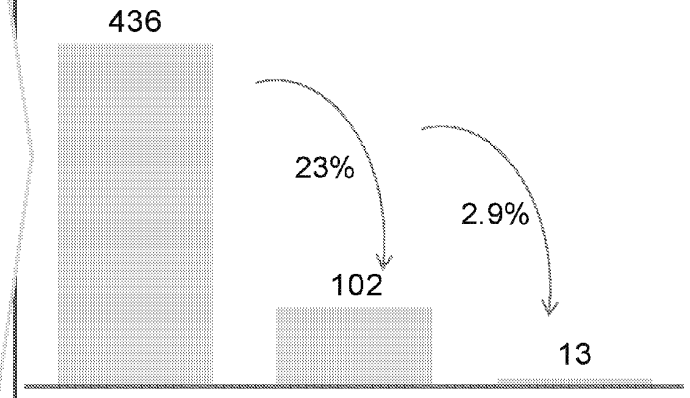
Among respondents, 95% are currently taking prescription pain meds and of those, **17% report having been denied filling a prescription**…

Number of respondents



…OxyContin patients, making up 10% of prescription drug patients in the survey, report **denial rates of 23%**

Number of respondents

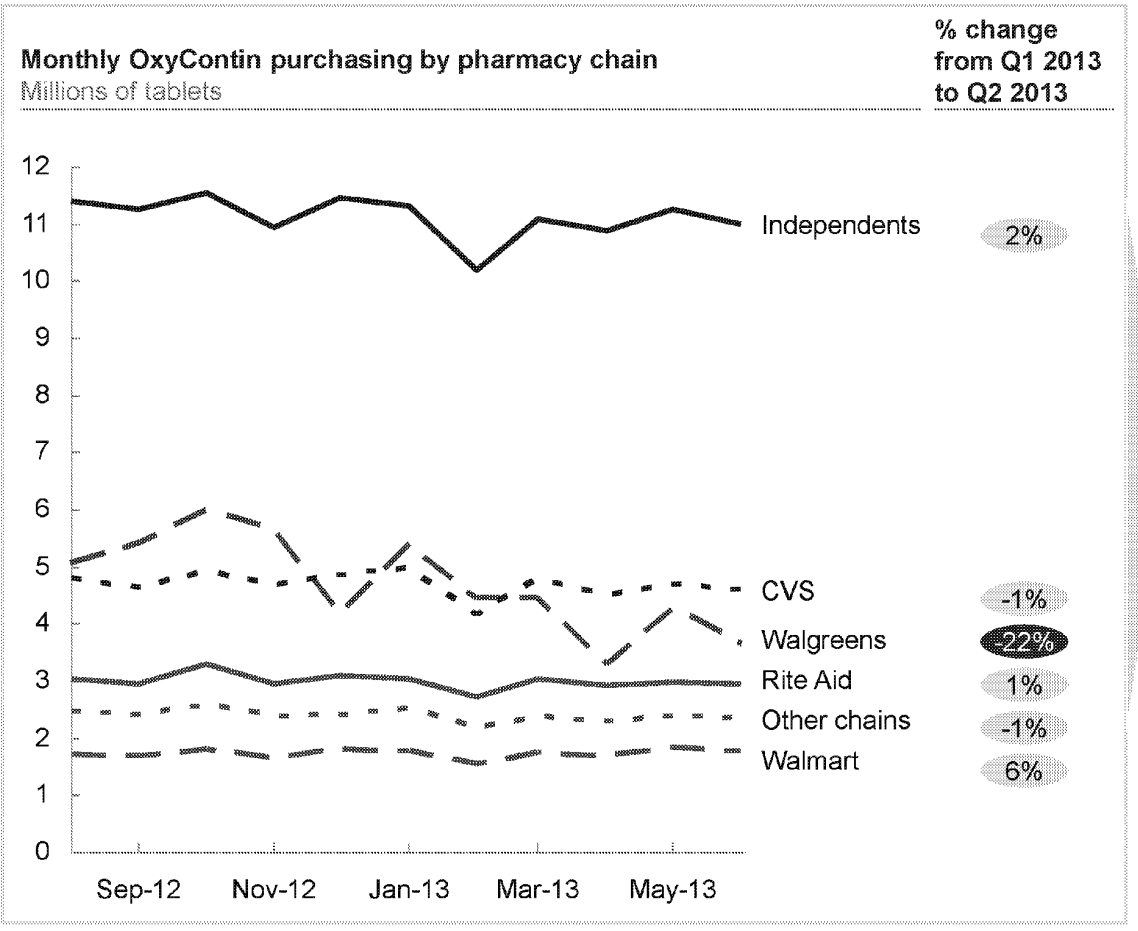


1 E.g., only including those who identified themselves as currently taking prescription pain medication

Note: Survey respondents were found by sending survey link to email list of National Fibromyalgia & Chronic Pain Association and other organizations; also posted via social media. Responses analyzed here were collected between 6/22/2013 – 8/9/2013, but survey collection still ongoing at the time of analysis. 40 states are represented in the survey

Source: Pain Care forum survey data

Walgreens purchasing of OxyContin has fallen more relative to purchasing by other chains and independent pharmacies



- Walgreens purchasing declined by 22% between Q1 and Q2 2013 (time of GFD implementation[1]), far outpacing the overall market decline of 3% over the same time period
- ~70% of the decline in OxyContin tablets over the Mar- Jun 2013 time period is attributable to Walgreens

1 Good Faith Dispensing policy, elements of which are described in the previous slides in this section

SOURCE: Market Visibility; OMS

Last Modified 9/13/2013

The number of Walgreens pharmacies purchasing high-dosage OxyContin has fallen significantly…

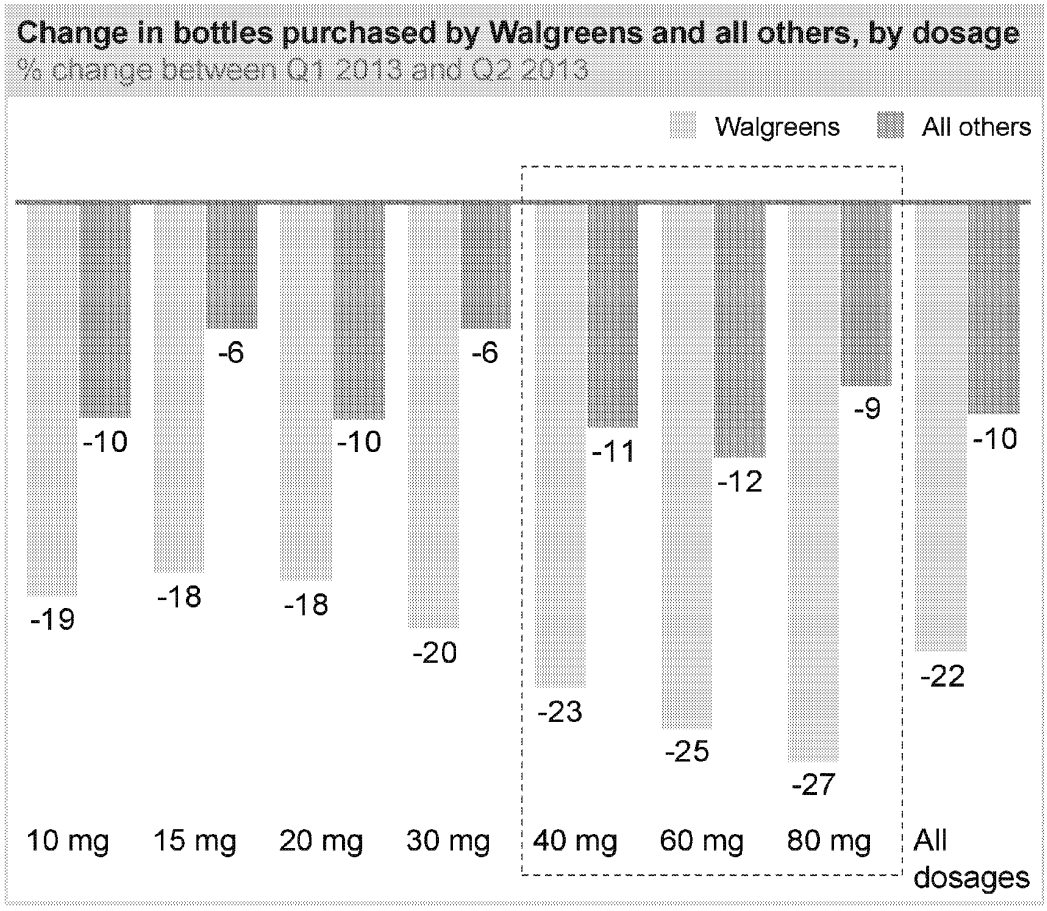
Number of WAG stores with any purchase of OxyContin, by dosage
# of stores

	Oct – Dec 2012	Apr – Jun 2013	Change	% Change
10 mg	4944	4331	-613	-12.4%
20 mg	5646	4993	-653	-11.6%
30 mg	3666	3044	-622	-17.0%
40 mg	4988	4299	-689	-13.8%
60 mg	3046	2399	-647	-21.2%
80 mg	3865	3190	-675	-17.5%
Any dosage	6943	6661	-282	-4.1%

- Number of stores purchasing have **fallen the most between Q4 2012 and Q2 2013 for the high dosages**

SOURCE: OMS

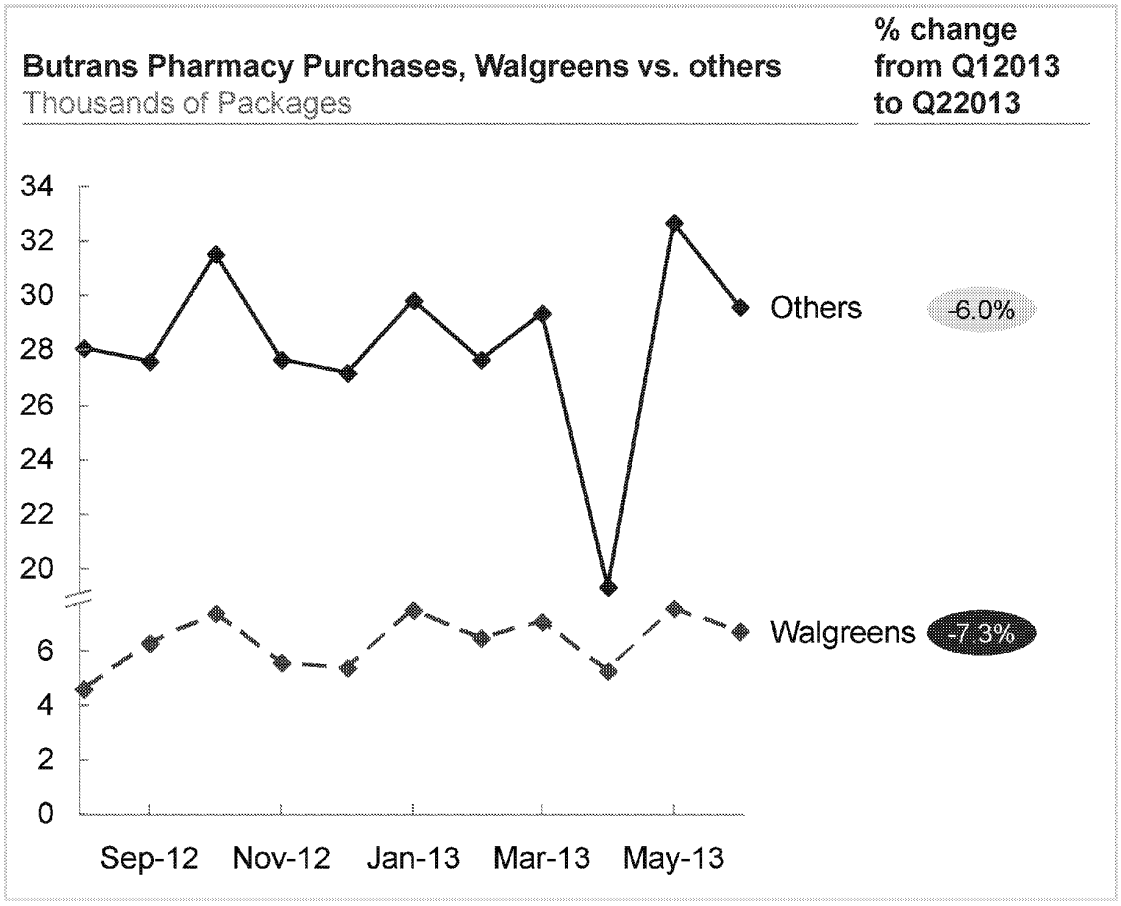
…and Walgreen's purchasing declined much more steeply for high-dosage OxyContin



- 40, 60 and 80mg units declined ~25% faster than 10mg units
- Overall market tended to see faster declines in high-dosage units, but Walgreens showed a far faster decline in high dosage units

SOURCE: OMS

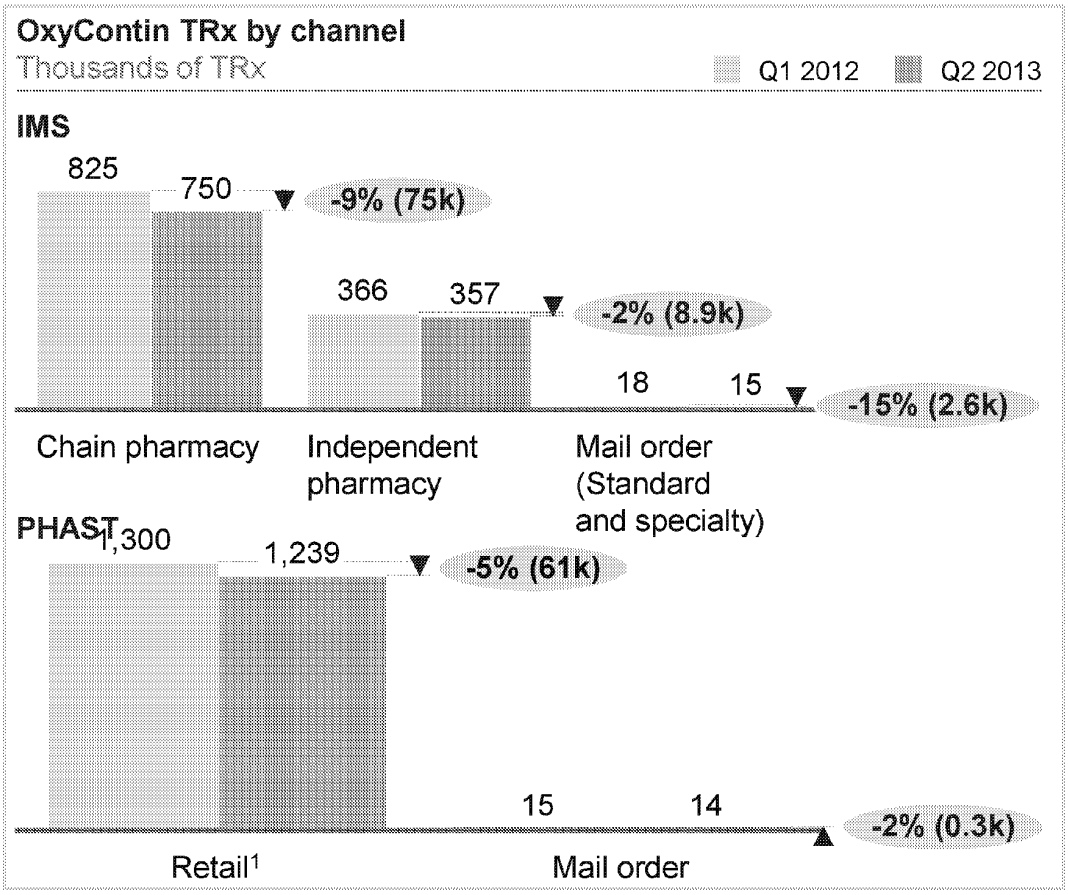
Walgreens' purchasing of Butrans also declined more compared other pharmacies, but not to same extent as OxyContin



- Walgreens' purchasing of Butrans has also declined more between Q1 and Q2 2013 compared to other pharmacies

SOURCE: OMS

IMS and PHAST data both show no evidence that mail order is offsetting TRx losses from chain pharmacies



- Chain pharmacy volume decreased by 9% (75k scripts), while mail order declined by 15% (2.6k scripts) – providing **no indication that mail order has offset declines in chain pharmacy volumes**
- This relationship **holds even when we focus on Q1 2013 vs Q2 2013 (e.g., time of Walgreen's GFD implementation)**

1 Retail in PHAST data includes chain pharmacies, independent pharmacies, and food stores

Source: IMS; PHAST

Even by dosage, there is little evidence that mail order is offsetting declines at the chain pharmacy level

OxyContin TRx by channel and dosage
Change between Q1 2012 and Q2 2013

Dosage	Channel	Q1 2012 TRx	Q2 2013 TRx	% change
10mg	Chain	160998	151210	-6.1
	Mail order	2571	2104	-18.2
20mg	Chain	217528	194323	-10.7
	Mail order	4868	3941	-19.04
30mg	Chain	75490	80619	+6.8
	Mail order	1347	1038	-23.9
40mg	Chain	171146	144114	-15.8
	Mail order	4285	3643	-14.9
60mg	Chain	61827	59931	-3.1
	Mail order	1204	1279	+6.2
80mg	Chain	115799	93401	-19.3
	Mail order	3307	2903	-12.3

- Mail order volume declined for all strengths, with the exception of 60mgs
- Even for 60mgs, increase in mail order volume (+75 TRx) does not significantly offset chain volume declines (-1896)

Source: IMS

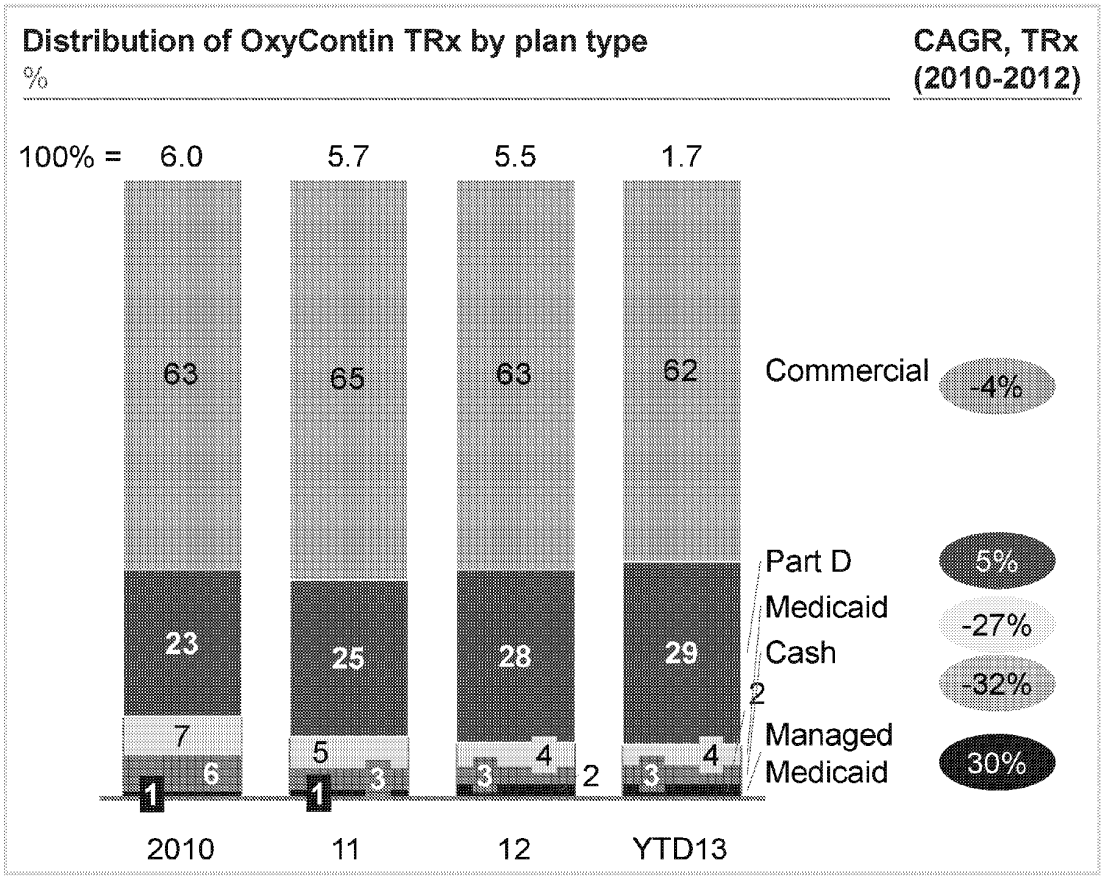
Contents

Managed care – executive summary

PRELIMINARY

- **To date, Purdue has successfully maintained strong tier and rebate position in Commercial plans though it faces a more challenging environment in Medicare Part D**
  - Medicare Part D is the only growing segment of the business, increasing from 23% to 29% of OxyContin TRx from 2010-12
  - OxyContin share in all market segments (Part D, Commercial, Medicaid) declined between 2010 and 2012
  - While Commercial has maintained a relatively high level of access, Part D plans have much more restricted access
- **Formulary status has a significant impact on OxyContin share of ERO, for both Commercial and Part D**
  - In Commercial, OxyContin has 32% share of ERO among plans with Pref. Branded Access and 22% share of ERO among plans with no formulary coverage. In Part D, OxyContin share is 28% in plans with Pref. Branded Access and 11% in plans with no formulary coverage.
  - In Part D, OxyContin is best keeping up with overall ERO growth in plans where OxyContin has Pref. Branded Tier access
- **There have been several key adverse changes in formulary status for OxyContin in recent years, mainly in Part D**
  - Changes in formulary status have substantially impacted OxyContin TRx volumes
  - Moreover, formulary changes in Part D can "spillover" into Commercial plans
- **However, substantial variation in share even for territories with similar levels of access suggests opportunities for better pull-through**
- While payors see pain as a relatively stable class, rebates mentioned as one reason why OxyContin continues to stay on Preferred Branded tier
  - Management of pain category overall is stable in outlook – rebates mentioned as one reason why OxyContin stays on Preferred Branded Tier
  - Lack of differentiation among opioids in the market, but wide range of options is important
  - Pain is a relatively important category in formulary, but behind oncology and other higher-cost drug types
  - Differing levels of awareness about AD reformulation
  - Even with AD benefits, cost savings of generics is heavy counterweight to using more expensive AD formulations

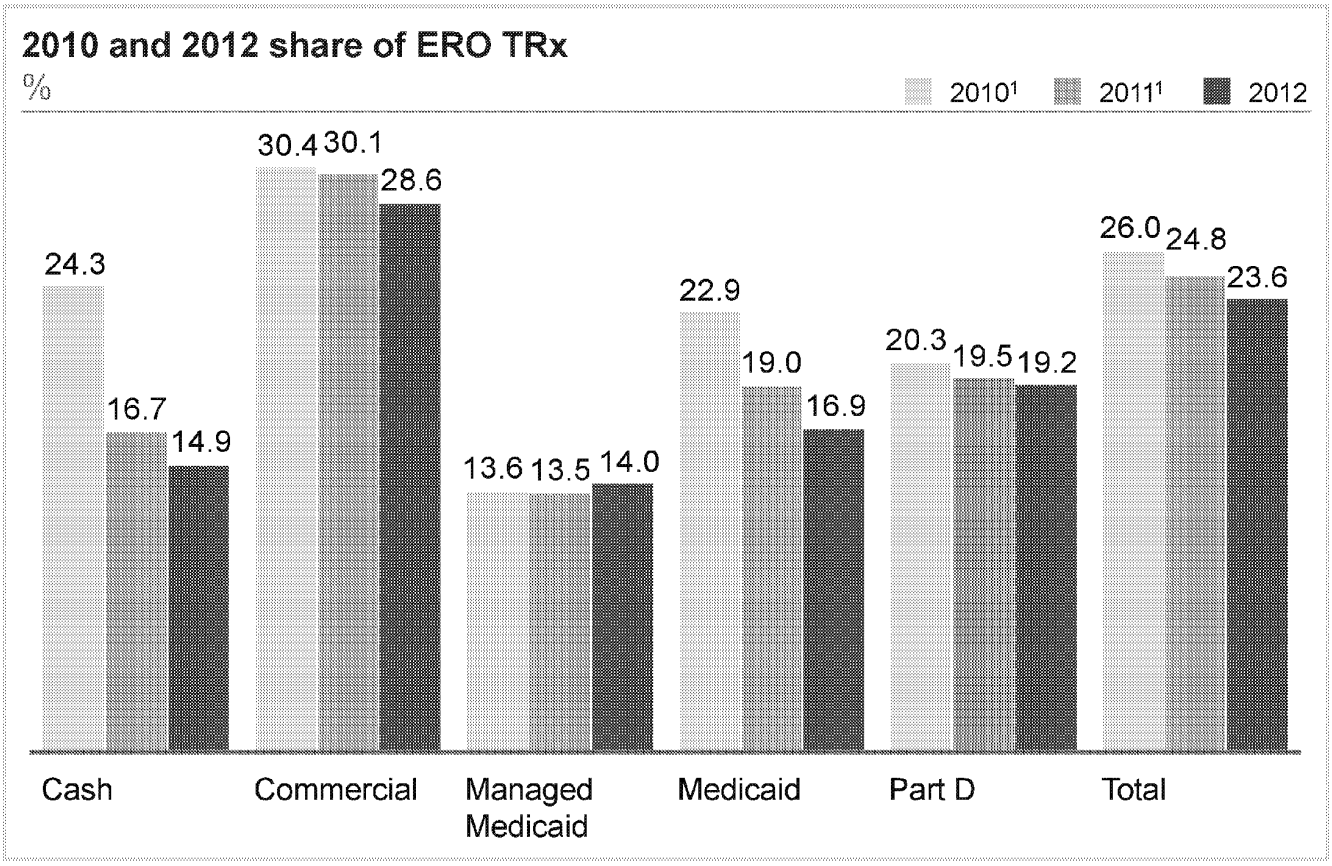
Medicare Part D is the only significant and growing book of business for OxyContin



- As Medicare's percent share of insured increases, Purdue will need to actively address reimbursement pressures
- Primary growth driver for OxyContin Part D was likely the increase in covered population

SOURCE: IMS

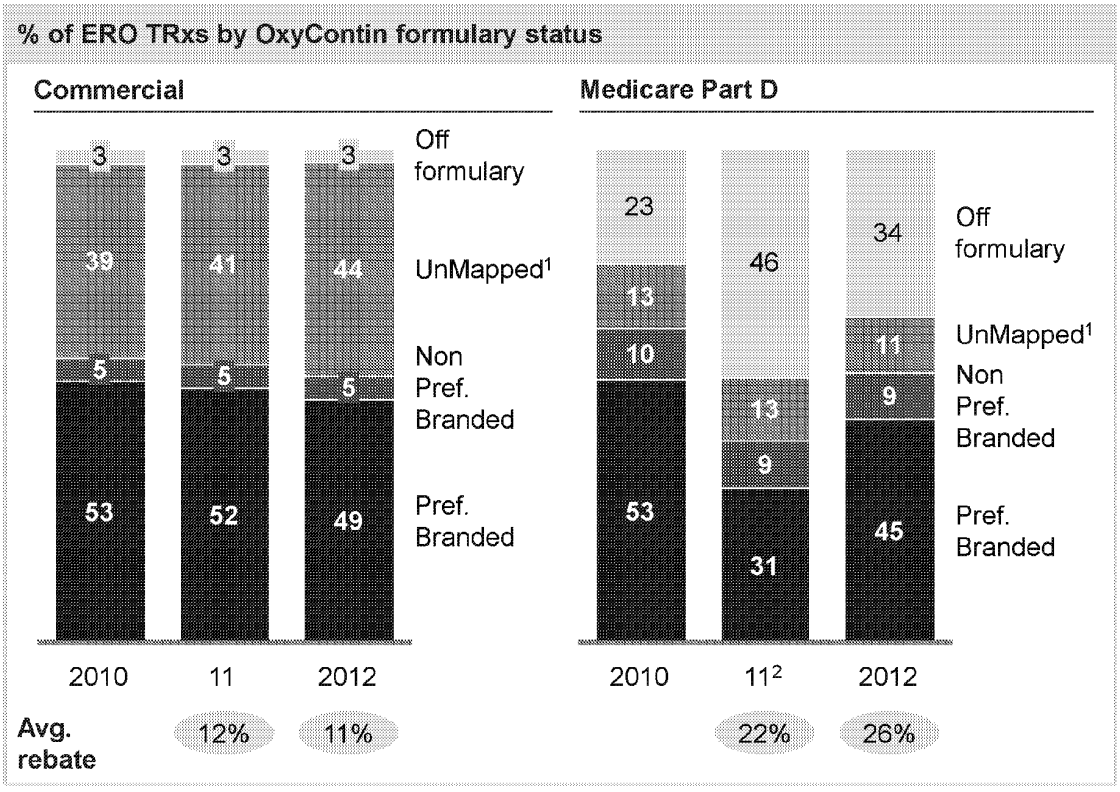
… but OxyContin's share of the ERO market is declining in all significant segments, including Part D



1 2010 and 2011 coincides with period of reformulation rollout and exit of generic OxyContin from the market

SOURCE: IMS

To date, Purdue has maintained a strong tier and rebate position in commercial plans, but has faced a more challenging environment in Part D



- In Part D, a significant fraction of ERO Rxs fall under plans where OxyContin is not on formulary
- Assuming Medicare continues to grow at current rates and Commercial plans decline, significant value is at risk

1 UnMapped refers to ERO TRxs written under plans where the formulary status of OxyContin is unknown or cannot be systematically matched into a database with formulary status information

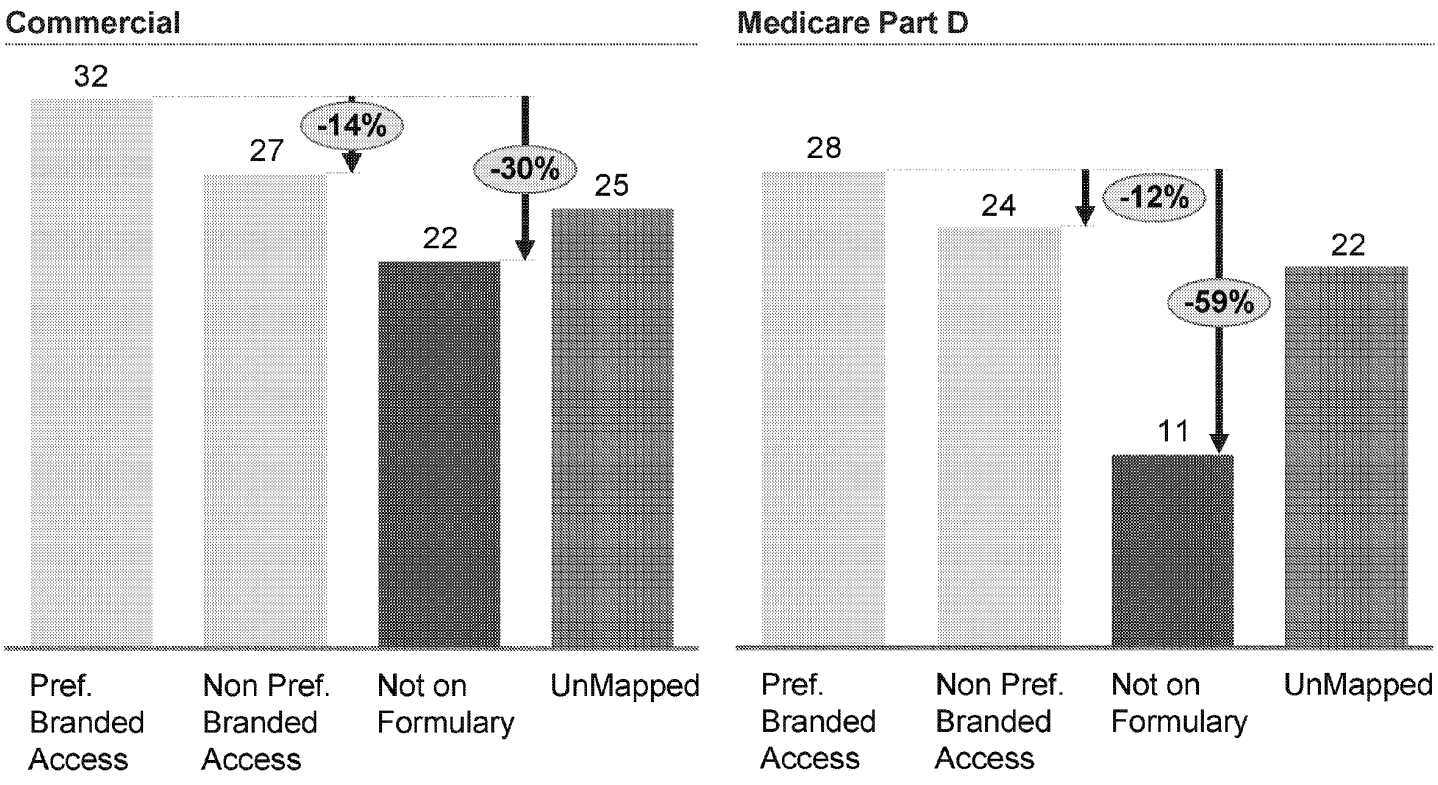
2 Aetna Part D, Wellpoint Part D, and Silverscript go off formulary in 2011; Silverscript comes back on formulary at the end of 2011

SOURCE: IMS, IGallery, Managed care agreement logs

Coverage has an impact on market share in both Commercial and Part D

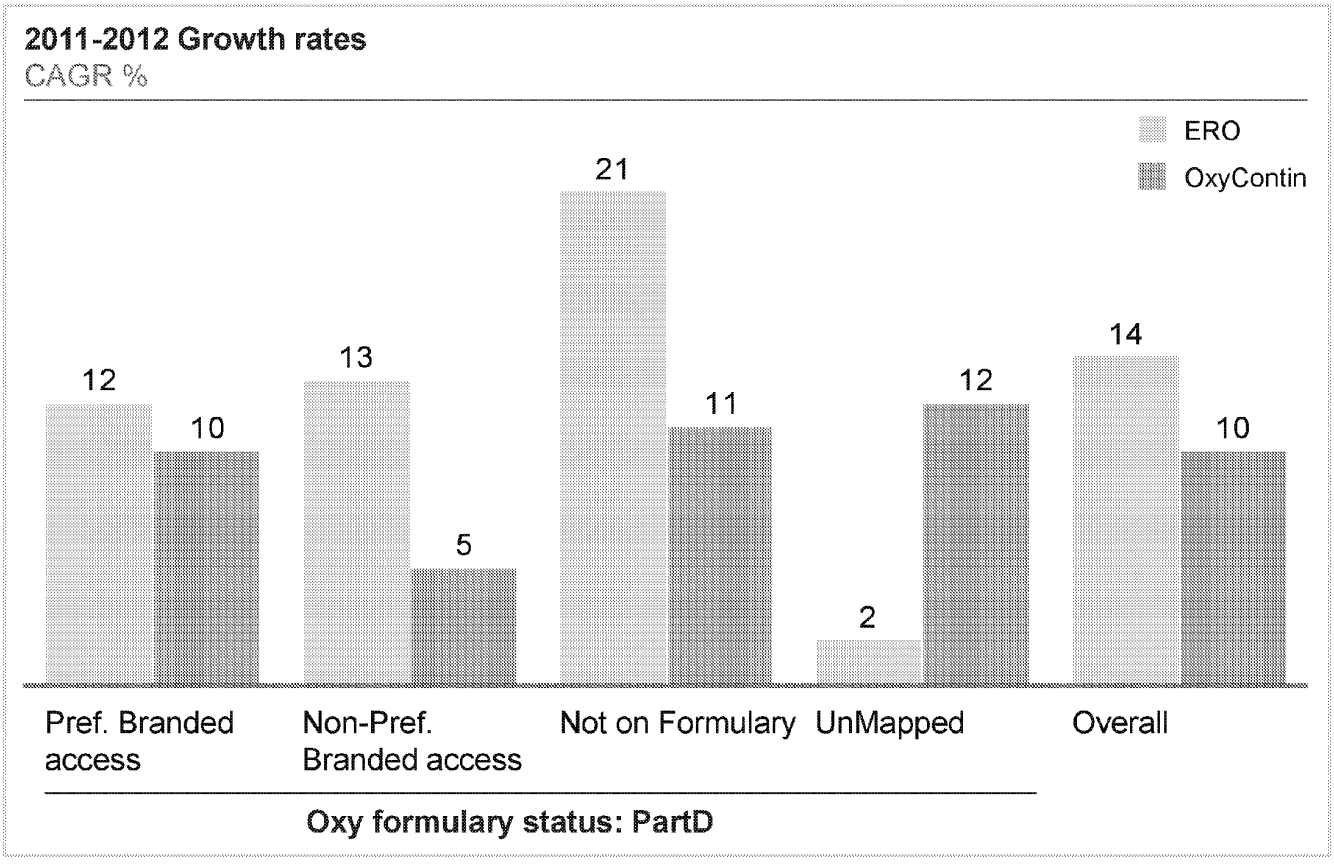
Oxycontin share of ERO TRxs, 2012

%



SOURCE: IMS data, IGallery data (Purdue internal data)

In Part D, OxyContin growth is best keeping up with overall ERO growth in plans where OxyContin has Preferred Branded Tier access



SOURCE: IMS, IGallery

There have been several key adverse changes in formulary status for OxyContin in recent years

	Payor	Formulary change	Period	Rationale	ERO TRx 2012 (000s)	Percentage of overall ERO market with payor (%)
Finalized as of Jan 2013	Humana (Part D)	Removal from formulary	2009 - present	▪ Dissatisfied with rebate levels ▪ Decreasing service to dual-eligibles overall	107k (Comm) 863k (Part D)	0.5% (Comm) 3.7% (Part D)
	Aetna (Part D)	Removal from formulary	2010 - present	▪ Dissatisfied with rebate levels ▪ Desires to move away from perceived OxyContin patients	219k	1%
	Caremark (Part D)	Removal from formulary	Jan 2011 - Nov 2011	▪ Dissatisfied with rebate levels	1,213k (Silverscript)[1]	5.2% (Silverscript)[1]
	Wellpoint (Part D)	Removal from formulary	Jan 2011- present	▪ Dissatisfied with rebate levels ▪ Views class as very generic	168k	0.7%
	Kaiser (TBC)	Removal from formulary	-	▪ -	22k	0.1%
	Regence (Comm)	New PA requirement	Late 2011	▪ -	58k	0.2%
	UHC (Part D, MA)	Removal from formulary	Jan 2014	▪ Dissatisfied with rebate levels ▪ Lack of differentiation of OxyContin	146k	0.6%
Pending	UHC (Part D, PDP)	Removal from formulary	Pending	▪ Dissatisfied with rebate levels ▪ Lack of differentiation of OxyContin	1,280k	5.7%

1 In the IMS data, there is a dip in Oxycontin's share of ERO Rxs for Silverscript from 21% in 2010 to 18.7% in 2011, and back up to 22% in 2012. Oxycontin was placed back on formulary in Nov 2011, partially triggered by the acquisition of Member Health by CVS (Member Health had a previously negotiated contract with Purdue)

SOURCE: Internal interviews; Fingertip Formulary

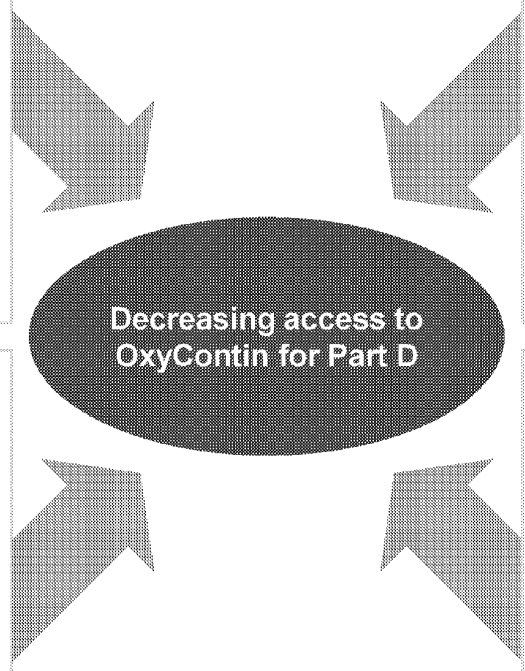
Changes in formulary status in Part D are driven by genericization, government actions, and perceived profile of OxyContin patients

Genericization of the class

- Branded products have gone off patent
- Majority of ERO scripts are written for generic products

Government actions

- Decline in reimbursement rates for MAPD and capitation for Medicare Advantage, combined with increased cost of managing elderly increases cost pressures
- Increased scrutiny of products with possibility of abuse



Perceived profile of OxyContin patients

- OxyContin patients seen as high-cost patients who are undesirable for many payors
- Payors see restricting access to OxyContin as way to avoid attracting these patients
- Even if patients may be shiftin abuse to other EROs, payors are more tolerant of this because drugs are cheaper

Perceived lack of differentiation of OxyContin

- Lack of head-to-head studies showing difference in clinical outcomes (e.g., pain management, ability to return to work)
- Lack of data showing financial benefit of OxyContin to payors (e.g., fewer emergency room visits, lower utilization of other services)

SOURCE: Internal and external interviews

Market share and growth of largest plans by volume – Commercial

Sorted by ERO market size

	2012 ERO TRx (000s)	Oxy TRx (000s)			Oxy share of ERO (%)		Formulary status[1]
		2011	2012	2011-2012 delta	2012	2011-2012 delta	
Medco Hlth Solutions Unsp.	1585	543	515	-28	32	-1	Pref. Branded
United Healthcare	500	179	173	-6	35	-1	Pref. Branded
Tricare	475	163	146	-17	31	-1	Pref. Branded
Express Scripts Unspec	422	132	131	-1	31	-2	Unmapped
Advancepcs Unspec	408	116	122	6	30	0	Pref. Branded/ Unmapped
Federal employees/ FEHB	353	105	110	5	31	-1	Pref. Branded/ Unmapped
BCBS Wellpoint/Anthem[2]	349	142	113	-29	32	0	Pref. Branded
Workers Comp – Employer[3]	310	119	109	-10	35	-1	Pref. Branded
Aetna Inc.	304	112	96	-16	32	-1	Pref. Branded
Cigna	254	78	83	5	32	-1	Pref. Branded
All other third party	243	39	40	1	16	-1	Unmapped
Walgreens Hlth Init Unspec	240	40	36	-4	15	-3	Unmapped
BCBS Healthcare Service	229	64	62	-2	27	-2	Pref. Branded/ Non Pref Access

1 Many payors have plans that vary somewhat in formulary status. However, the dominant formulary status is listed here.
2 Wellpoint lost 7mn patients during this time period, helping to explain why OxyContin scripts fell significantly with this plan but share was not impacted.
3 Worker's Comp does not have a formulary; however, the level of access appears to be most comparable to a Pref. Branded tier from internal interviews.

SOURCE: IMS data, Fingertips data

Market share and growth of largest plans by volume – Part D

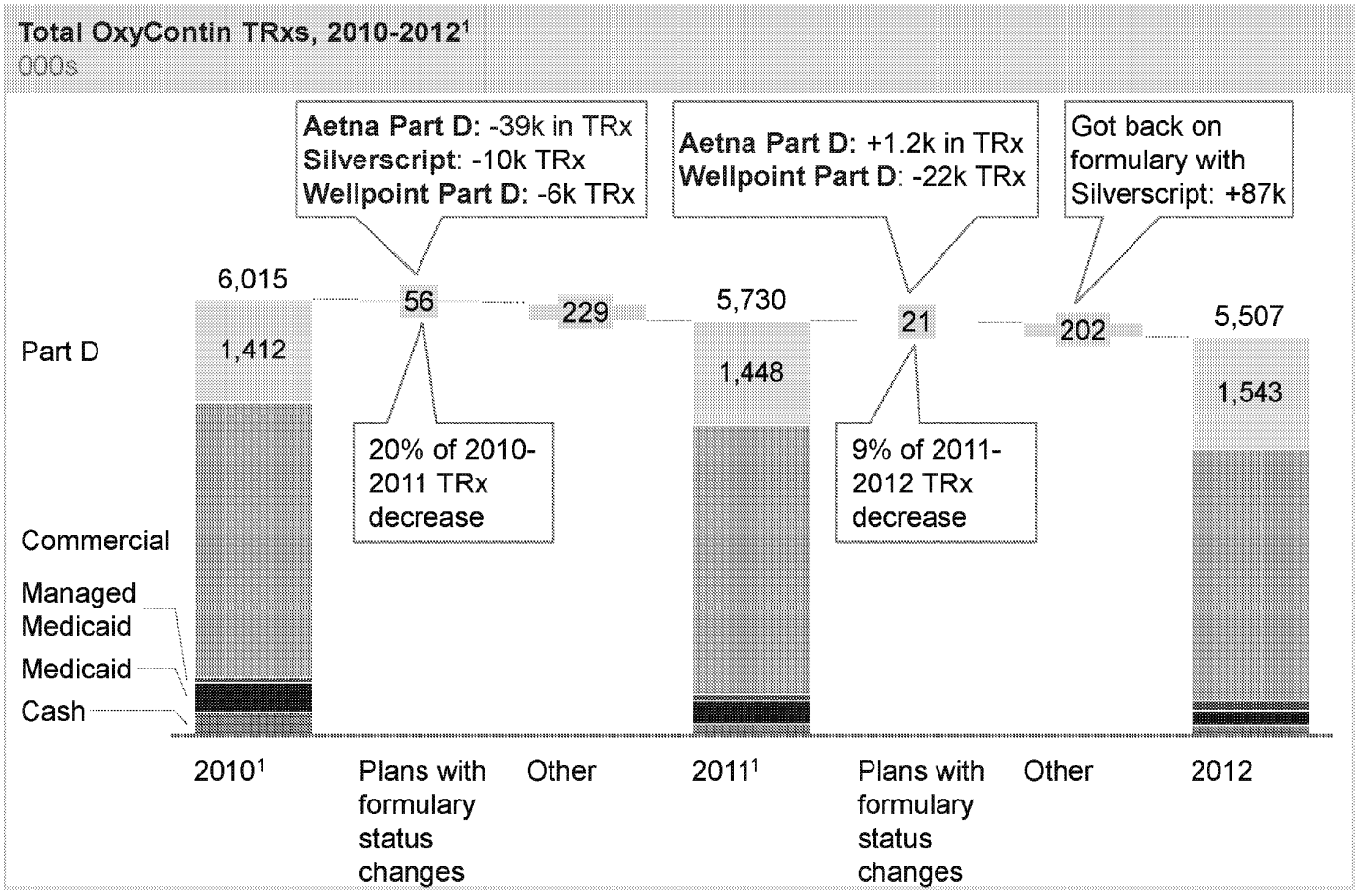
Sorted by ERO market size

	2012 ERO TRx (000s)	2012 Oxy TRx (000s)			2012 Oxy share of ERO (%)		Formulary status[1]
		2011	2012	2010-2012 delta	2012	2011-2012 delta	
UHC/Pacificare/AARPMedD	1,748	570	528	-42	30	0	Mixed
Silverscript	1,213	175	262	87	22	3	Pref. Branded
Humana	863	37	42	5	5	-1	NC
Universal American Corp	722	3	3	0	0	0	Unmapped
Coventry Health	431	56	69	13	16	-1	NC
Wellcare Health Plans	297	18	16	-2	5	-1	NC
Cigna	269	73	83	10	31	-1	Pref. Branded
Healthspring/Bravo	261	20	22	2	8	1	NC
Health Net Inc.	254	52	71	19	28	0	Non Pref Access/ Pref. Branded.
ESI/Medco Med PDP	239	70	80	10	34	0	Pref. Branded
Aetna Inc.	219	27	29	1	13	-5	NC
Bcbs Wellpoint/Anthem	168	56	34	-22	20	-3	Mixed
United American InsCo	79	13	21	9	27	-4	Mixed

1 Many payors have plans that vary somewhat in formulary status. However, the dominant formulary status is listed here.

SOURCE: IMS data

Changes in formulary status have substantially impacted OxyContin TRx volumes



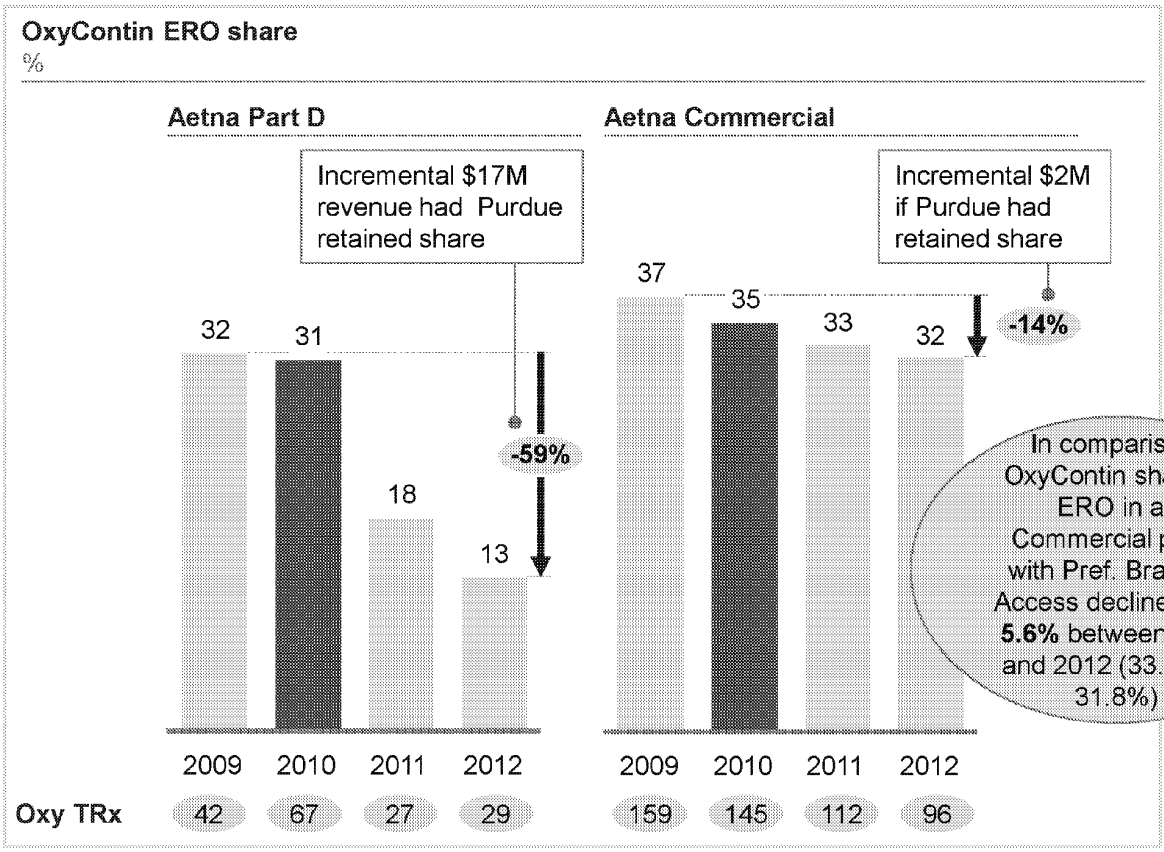
1 2010 and 2011 coincides with period of reformulation rollout and exit of generic OxyContin from the market

SOURCE: IMS, Internal interviews

Loss of Part D formulary can spill over into Commercial

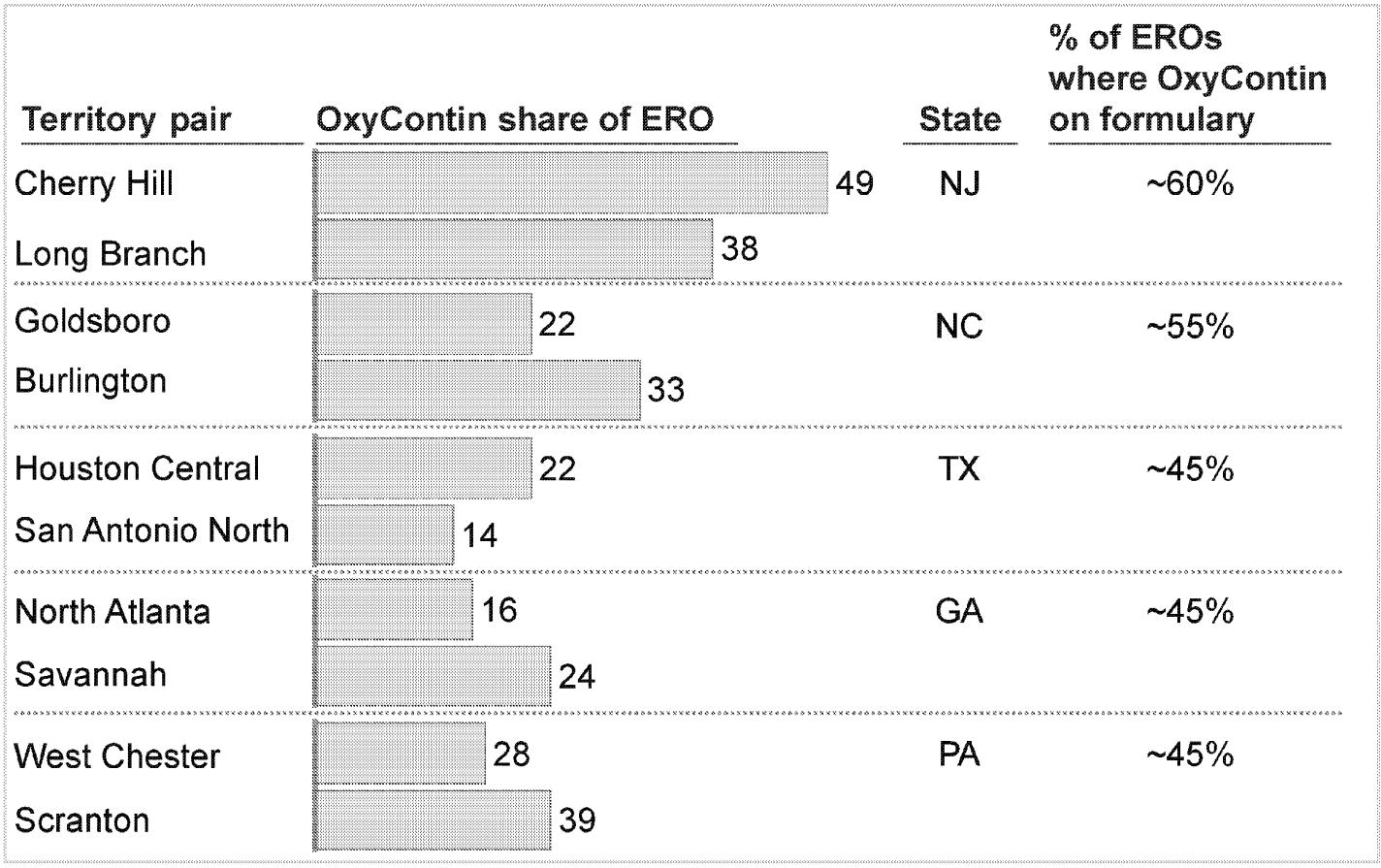
Summary of OxyContin performance in Aetna plans post loss of Medicare Part D formulary status

Year of to OxyContin loss of Part D formulary status in Jan 2010



SOURCE: IMS PlanTrak; Purdue iGallery data; Purdue interviews; Team analysis

Even across territories with equal access situations, there is differential pull through



SOURCE: IMS, IGallery

While payors see pain as a relatively stable class, rebates mentioned as one reason why OxyContin continues to stay on Preferred Branded tier

Themes from interviews	Example quotes
Management of pain category overall is **stable in outlook – rebates mentioned as one reason why OxyContin stays on Preferred Branded Tier**	"I think this category is pretty much settled… we've only just added some step edits to increase generic utilization… OxyContin has been on preferred tier for very long time… really no plans to move it anywhere because we would lose rebates and also it was recently reformulated with abuse deterrence"
Lack of differentiation among opioids in the market, but wide range of options is important	"No products that really stand out/ differentiated… but important to have wide range of opioids available for prescribers… important from a clinical perspective because people react differently to pain medications and have allergies"
Pain is a relatively important category in formulary, but behind oncology and other higher-cost drug types	"Pain is 4-5% of my total spend – somewhat important but heavily driven by generics… [there's] no differentiation among pain medication – it's one big bucket"
Differing levels of awareness about AD reformulation	"I haven't seen anything that has blown me away… the jury is still out… I don't think the sample sizes are large enough for our kind of population"
Even with AD benefits, cost savings of generics is heavy counterweight to using more expensive AD formulations	"If it could be proven that the product decreases/ eliminates abuse, yes, payors would consider it… but bottom line is very important, just having clinical advantage might not be enough"

Interviewed experts attributes include:
- Perspectives from SE, West, and NE
- Experience in plans with 200k to 5.5mn lives
- Pharmacy Ops Manager, Regional Medical Director, and Pharmacy Director

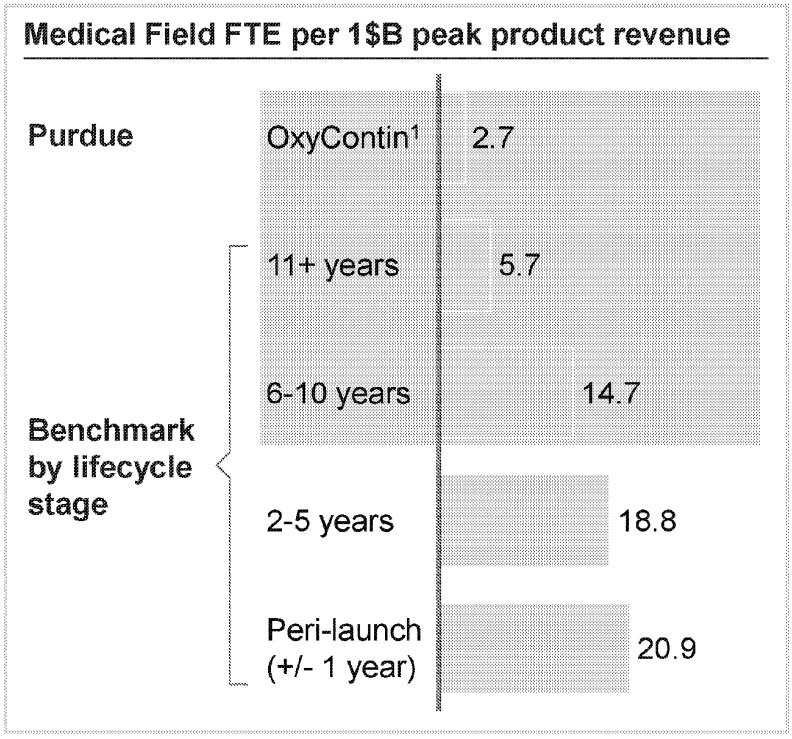
Note: Refer to full summary of payor interview notes for details

SOURCE: Payor expert interviews

Contents

OxyContin appears somewhat under-resourced on MSLs compared to industry benchmarks

Most relevant comparisons



- Even compared to products 11+ years old, OxyContin seems under-resourced on MSLs who focus on building field support for products
- OxyContin may need higher level of MSL resources, even given its age, due to AD reformulation
- ~6-7 additional MSL FTEs would bring OxyContin to benchmark

1 6 MSLs for $2.2 bn net OxyContin sales in 2012. Only MSLs dedicated to field information dissemination were counted.

SOURCE: Purdue Medical Affairs; McKinsey benchmarks

Current Purdue MSL practices vs. industry practice

	Current Purdue practice	Industry practice
Payors	▪ Avoid bringing in MSLs unless payor makes unsolicited request	▪ MSLs target payors for delivery of medical content related to product
Prescribers	▪ MSLs do not target any prescribers (including KOLs) to deliver OxyContin-related medical information	▪ MSLs target KOLs for delivery of medical content related to product ▪ MSLs may also target other prescribers who have unmet medical information needs

SOURCE: Purdue HECON; Purdue national payor accounts; Purdue Medical Affairs; McKinsey experts

Potential leverage points to defend & bolster OxyContin position in the market

PRELIMINARY

Current perceptions	Potential data to generate/disseminate
▪ Physicians believe OxyContin has equal or greater risk of abuse relative to other products	a Randomized trial analyzing abuse rates for OxyContin v. other ERO products b Real world IR v. Oxy abuse rates
▪ Physicians are unaware that certain types of abuse (injecting, snorting) are no higher with OxyContin relative to other products	c Poison control center cases by type relative to prevalence of product
▪ Unclear long-term efficacy	d Data showing lower rates of immune suppression, endocrinological problem e Lower switching v. comparators (e.g. ER morphine)
▪ Payors: Abuse-deterrent OxyContin does reduce costs of abuse but does not lower the overall formulary cost due to price v. Gx	f Estimates of cost of abuse (e.g. emergency room visits) and prevalence of abuse in particular payor's population

Key Questions to address

- How much of this data exists already but is not well understood by physicians?
- What additional data could support these and what would it take (resources, timing)?
- What are the best dissemination channels for different stakeholders? What resources (e.g. MSLs) are required?
- What is the overall message?

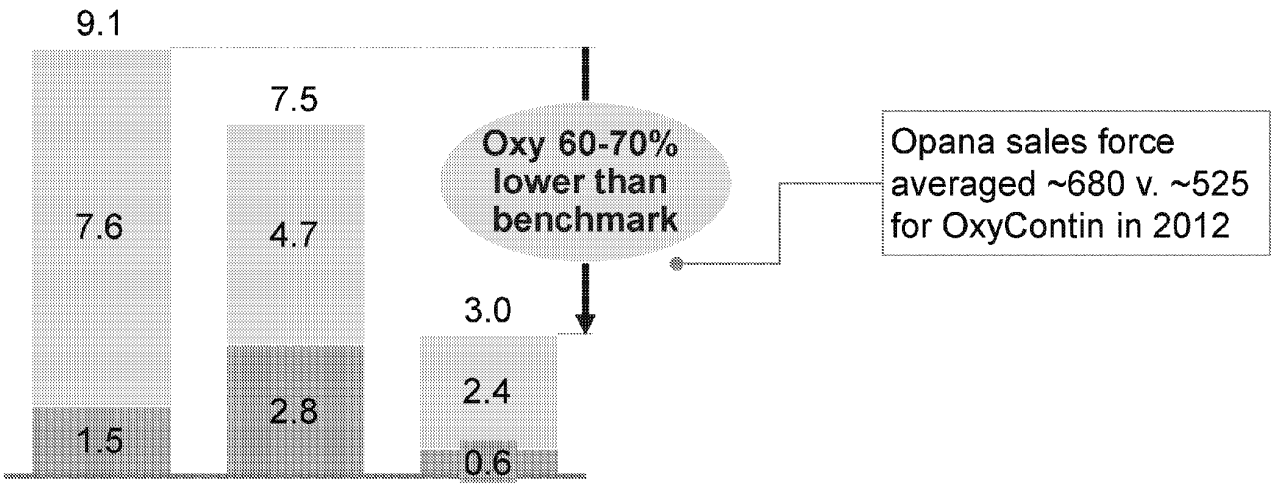
Contents

OxyContin is resourced well below benchmark

Sales
Promotion

Sales & promotion cost per dollar revenue[1]

%



1 DTC cost removed from benchmark set; Sampling is included (~0.4% of revenues); 2012 numbers for Purdue – 2013 allocation may be different
2 N=6; average revenue of $1.9B; average of 3 years before LOE. Average time on market 11 years (range 7-18 years)
3 N=4; average revenue of $1.1B; average of 2 years before LOE

SOURCE: McKinsey Commercial and Medical benchmarking; Purdue Finance; Encuity research; Team analysis

Contents

Patients play a limited role in the treatment pathway (1/2)

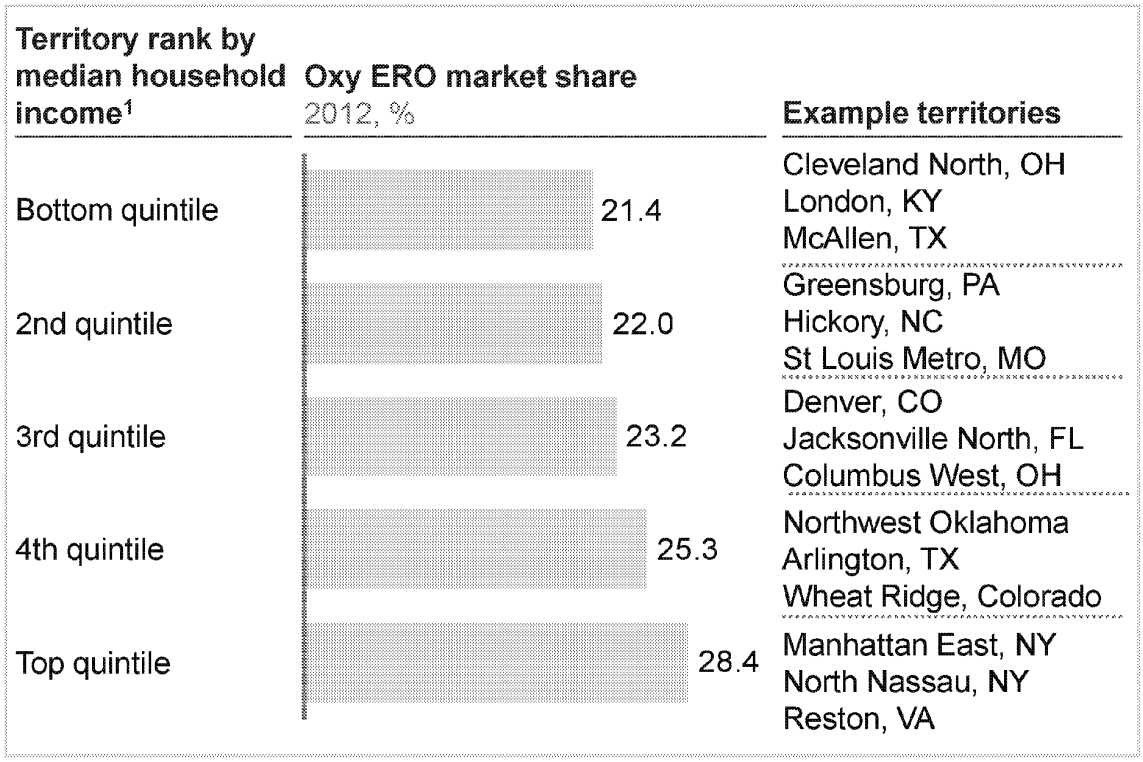
Key themes	Supporting evidence
Prescribers are concerned about cost to patients	▪ "I try to get all my patients on EROs, the problem is that going to EROs is a financial burden"- *Anesthesiologist* ▪ "I would love to use a long-acting narcotic, but (…) it's expensive- *Internist* ▪ "They're still expensive, and patients don't prefer them. At the end of the day, it's hard to push for them if you have cheaper drugs" – *Staff Anesthesiologist and Pain Specialist at large hospital* ▪ "Cost is (my) main driver of decision making"- *Primary care practitioner* ▪ "Insurance companies will pay…it's just a huge copay (for the patient). I often warn patients in advance"- *Private Practitioner* ▪ "The best deals (for patients) out there are where company give (copay) cards saying that patients will pay no more than certain amount" – *Orthopedic surgeon*
Some **patients are concerned about use of narcotic** drugs	▪ "Usually I don't have problems, patients have pretty good idea of what's out there as they were referred and have experience with many pain meds"- *Anesthesiologist* ▪ "Patient reaction to drug prescribed varies by patient, though usually strongest negative reaction to methadone, heroine, though they also have heard of OxyContin"- *Physical Rehabilitation and Pain specialist* ▪ "(Some) patients want to avoid narcotics at all cost, but need this to counter drug side effects (of other drugs like NSAIDs)- *Interventional Spine and Pain Management* ▪ "There are still some people out there who want to avoid narcotics"- *Internist* ▪ "Some patients are resistant to narcotics, but most want to just control pain. I explain to patients that they may need opioids to control pain"- *Anesthesiologist and Head/Neck surgeon*

Patients play a limited role in the treatment pathway (2/2)

Key themes	Supporting evidence
Prescribers consider a **variety of factors** specific to each patient when treating pain	▪ "I (typically) start with NSAIDs if I can, recognizing that NSAIDS are not benign drugs… I am anxious about treating (certain types of patients) with NSAIDS (due to side effects like stomach ulcers)"- *Primary care practitioner /internal medicine* ▪ "I start with NSAIDs; if (pain) becomes more chronic, I add Lyrica or Cymbalta, (especially) if pain is nerve related. Opioids are my last resort"- *Primary care practitioner* ▪ "(I consider) pain type, drug history, insurance coverage (when prescribing a drug). (I see) most economic issues for opioids"- *Anesthesiologist and pain specialist* ▪ "Patients will often have a preference- *Attending physician at major hospital*

SOURCE: McKinsey prescriber interviews

Oxy share of ERO market is significantly higher in territories in which median household income is higher



May be opportunity to better target programs aimed at co-pay assistance to patients in lower-income areas

1 Based on zip-level household income data weighted by population

SOURCE: IMS; Census

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Overview of prescribers interviewed to date

Total # of prescribers interviewed: 20

Specialty split: PCPs (7), specialists (13)

Geographical split: CA (1), GA (1), IL (1), ME (2), MD (2), MO (1), NH(1), NJ (2), NV(1), NY(4), PA (3), VA (1)

Details by specialty

- Pain Management and Physical Medicine and Rehabilitation, Director of Pain Management at hospital
- Pain Specialist, private practice
- Medical Director and Principal Investigator at Cancer Pain Management and Palliative Care center, board certified in in Anesthesiology, Pain Medicine and Addiction Medicine
- Board certified in Physical Medicine and Rehabilitation and Pain Management
- Orthopedic surgeon
- Attending physician at major hospital
- Specialist in acute cancer, chronic pain, and anesthesiology
- Chief of Interventional Spine and Pain Management for regional health system
- Medical Director at pain center, trained in Anesthesiology and Head and Neck Surgery
- Physician of internal medicine
- Anesthesiologist and Pain Management Physician and major hospital
- Addiction specialist
- Pain specialist in private practice
- Internist with private practice
- Private practitioner with pain fellowship
- Primary care physician in Family Practice
- Family Practitioner and Assistant Professor at large University
- Primary care physician in larger practice
- Primary care physician in small group practice

Summary of prescriber interviews

FOR DISCUSSION

Theme	Interview Quotes
Opioids are an **effective class of painkillers**, although **side effects and addiction** are a concern	▪ "Very good, strong medications, very good relief, only problem is they don't want them to be first line of treatment" – *Medical Director of major pain center* ▪ "Even patients with acute post-surgery pain prefer pain to side effects of those meds" – *Physician specializing in pain control* ▪ "If you remove opioids totally from the picture there's no way to treat a lot of types of pain patients"– *Anesthesiologist and pain specialist* ▪ "Short term use of opiates is highly efficacious, however concerns about safely arise for longer-term use" - *Medical Director of major pain center* ▪ "Opioids are often the preferred choice for treating long-term treatment, as side effects for NSAIDs can be more severe" – *Primary care physician*
Mixed views on abuse deterrence highlight AD as positive factor, but caution that oral abuse is still possible	▪ "Win-win for everyone, as long as price is ok" – *Experienced internist and anesthesiologist* ▪ "The FDA decision [on OxyContin] should carry weight...data would very valuable...should be incentive to use this medicine"- *Addiction specialist* ▪ "For some people it probably matters, for example first time prescribers and non-specialists. For specialists it doesn't make much of a difference because they knew before" – *Medical Director of major pain center* ▪ "I don't know how effective abuse deterrence is in practice…Just because you can't crush something, doesn't mean you can't eat all your pills at once" –*Primary care physician specializing in internal medicine* ▪ "The only abuse deterrence I would put any stake in is when you add niacin (to prevent oral abuse)"- *Anesthesiologist and Pain Management Physician at major hospital* *(See next page for additional quotes)*

Summary of prescriber interviews

FOR DISCUSSION

Theme	Interview Quotes
Mixed views on abuse deterrence highlight AD as positive factor, but caution that oral abuse is still possible	*(continued)* ▪ "Abuse deterrence is a good thing…I would choose abuse deterrent drugs every time, IF patient insurance covers it" – *Anesthesiologist and Pain Management Physician at major hospital* ▪ "There are several studies on abuse deterrence out there…what we need is information from trustworthy sources" – *Anesthesiologist and Head/Neck surgeon* ▪ I had extremely curtailed the prescription for OxyContin, but now that I see the clinical difference, I am much more comfortable writing for it"- *Private practitioner with pain management fellowship* ▪ "if there is enough education, we may be using them more frequently, to mitigate abuse (theft, family abuse, patient abuse), in the end it doesn't really hurt anyone to the extent that I understand the technology"- *Family Practitioner*

Summary of prescriber interviews

FOR DISCUSSION

Theme	Interview Quotes
Prescribers **fear legal consequences** (DEA, revoked license) of prescribing opioids, leading to **more referrals to pain specialists and decline of prescriber pool**	▪ "The prescriber pool will most probably shrink, as fewer prescribers want to deal with the issues around opioid prescriptions, such as abuse" – *Director of Pain Management* ▪ "We see more fear and warnings about opioids, including concerns about legality" – *Primary care physician* ▪ "The DEA is always a concern. As long as you keep good records, drug test patients, take appropriate action, I don't think it's a problem. In the next few years I'm not sure what's going to happen though"- *Anesthesiologist and Pain Management Physician at major hospital* ▪ "The DEA hasn't really changed anything I do. I am trained and have the proper documentation and know how to monitor patients appropriately. I work with local DEA field agents"- *Pain specialist* ▪ "I've had investigators from district attorney's office to get information on patients… People get checked on all the time [by the DEA]…[there is] a lot more scrutiny." – *Pain specialist in private practice* ▪ "The new trend seems to be more PCPs referring pain patients to specialists to insure themselves against issues of overdosing and side effects" – *Attending physician at major medical center* ▪ "There seems to be a growing trend of referrals to pain specialists today- Doctors prescribe lower doses of narcotics, and even pain specialists move away from opiates. This is likely driven by increased media attention, high abuse rates, and prescribers fearing regulatory and legal complications" –*Medical Director of major pain center* ▪ "Treating chronic pain requires a specialist…on top of that, there are all the DEA and legal concerns about opioid use, (such that) PCPs want specialists to manage that" – *Primary care physician*

Summary of prescriber interviews

FOR DISCUSSION

Theme	Interview Quotes
Prescribers report rising rate of pharmacy access issues, affecting their patients and prescribing behavior	▪ "[There's been] a big change in dispensing by pharmacies…Access to oxycodone has been extremely difficult, even for people who are fairly well known to pharmacists… patients get flat out denied several times a week" – *Private practitioner in state with tight opioid controls* ▪ "I think [pushback from pharmacies] does impact my prescribing behavior… I will think I don't want to prescribe this because I'm going to get pushback … then I will prescribe something that will get less push back… a different drug and/or lower doses" – *Primary care physician in small group practice* ▪ "Pharmacies are definitely getting more strict with pill counts too. Sometimes it feels like they're overstepping their boundaries a little"- *Pain specialist in private practice* ▪ "If the # of pills is greater than 120 pills, that generates a call back from the pharmacist"- *Private practitioner with pain management fellowship* ▪ "Patients went to many pharmacies [in Manhattan] and most pharmacies don't dispense OxyContin" – *Physician specializing in pain control* ▪ "There is much more communication today amongst pharmacies (on opioid prescriptions), which is becoming a limitation to patients"- *Primary care physician*

Summary of prescriber interviews

FOR DISCUSSION

Theme	Interview Quotes
Managed care access limits prescription choice and available options	▪ "Older generic medications are usually better covered, for example methadone" – *Medical Director of major pain center* ▪ "OxyContin is a very good drug, good molecule, pretty well tolerated and has a very wide dosage range. It is less widely covered by insurance, which is sad because now it's actually less abuse-able" – *Experienced anesthesiologist* ▪ "Rejections happen more often every day…very frustrating, unclear what insurance will cover what drug" – *Physician specializing in pain control* ▪ "Insurance is biggest determinant; payers determine formulary, risk profile of patient, and potential medical problems. Won't pay for branded one-third of the time." – *Physician operating several pain practices* ▪ "About 20-25% of my chronic pain patients will come back to to tell me that insurance denied the script. Sometimes the pharmacy contacts the physician and asks for a supplemental script, or patients will pay cash difference" – *Attending physician at major hospital* ▪ "Physicians get slapped on the wrist (for prescribing more expensive drugs), and need to stay with generics" – *Primary care physician* ▪ "Cost is a main driver of deciding what drug to prescribe to patients…Outpatients are still largely driven by cost and tiers, which makes prescribing generics and narcotics the easier choice" – *Primary care physician*

Summary of prescriber interviews

FOR DISCUSSION

Theme	Interview Quotes
Managing patients on **opioids takes increasing amount time and resources**	▪ "Treating patients with chronic pain now requires much more management, including contract agreements, drug testing, and patient record keeping to avoid legal complications" – *Attending physician at major* medical center ▪ "The patient population is annoying, the documentation is annoying. A lot of my colleagues decide to stop doing opioid prescription later in their career (because they are tired of the hassle)"- *Anesthesiologist and Pain Management Physician at major hospital* ▪ "PCPS are increasing referrals to specialists, partly because of the big hassle around drug testing, pain contracts, and patient monitoring" – *Anesthesiologist and Head/Neck surgeon* ▪ "There is a lot more work involved. At some point there will be too much work"- *Pain specialist in private practice* ▪ "We need these [drug screening] resources because of the nature of our practice"- *Pain specialist at major pain clinic* ▪ "I just don't want more paperwork…I want to use narcotics, but I use them less due to more oversight"- *Family Practitioner* ▪ "[Prescribing opioids] is a big burden, has made us a little worried…getting cumbersome for what it was worth"- *Primary care physician in larger practice* ▪ "I spend at least 2 hours per week receiving calls from pharmacies [about opioid prescriptions]… and that's not even counting the calls that my staff is handling… we talk about this often at our office meetings" - *Primary care physician in small group practice*

Summary of prescriber interviews

FOR DISCUSSION

Theme	Interview Quotes
Prescribers are writing for **fewer pills and lower strengths, and increasingly referring patients to pain specialists**	▪ "I try to use more long-acting opioids (to reduce pill count) and try to prescribe fewer pills and lower strengths… because it's less to worry about… less potential for addiction and diversion"- *Primary care physician in Family Practice* ▪ "[There's] increased review of physician practice. Many of my colleagues are hesitant and prescribe less. I do too. I just don't want to take up with the task" – *Family Practitioner* ▪ "Made decision about 9 months ago to funnel patients to pain clinics for patients taking medication for chronic use"- *Primary care physician in larger practice*
Despite AD reformulation, **OxyContin brand still carries negative connotation** for some doctors	▪ "OxyContin is one of the less abuse able EROs on the market today, but the perceived fear on the street and confusion about abuse potential remains high" – *Medical Director of major pain center* ▪ "The OxyContin reformulation may be much better, but having said that, many pain doctors are still humans and suffer from emotional inhibition because of all the bad press it had, because it still has the name OxyContin"- *Medical Director of major pain center*

Summary of prescriber interviews

FOR DISCUSSION

Theme	Interview Quotes
Opioids are usually used after NSAIDs are tried or if NSAIDs pose risk to patient	▪ "Treatment decision depends on patient diagnosis, drug history and drugs currently taken, effect of pain on daily functioning" - *Medical Director of major pain center* ▪ "Opioids can be a good choice when patients have NSAID specific side effects, such as renal dysfunction or stomach ulcers" – *Medical Director of major pain center* ▪ "I start with NSAIDs if I can, recognizing that NSAIDS are not benign drugs… I may try something like Lyrica, then if it's still not working, try Vicadin or Norco… if they need to be on a maintenance drug, then I will give them an extended release plus breakthrough" - *Primary care physician in small group practice* ▪ "Start with NSAIDs… if becoming more chronic, then add Lyrica/Cymbalta if pain is nerve related; opiates are last resort." –*Primary care physician*
Additional comments	▪ "I see a Medical Science guy once in a while -always informative"- *Pain specialist* ▪ "Some reps direct me to sites that helps me navigate prior auths - covermymeds.com - it is helpful"- *Pain specialist* ▪ "I want help [from drug manufacturers] with knowing what the coverage status would be and getting prior authorizations" - *Primary care physician in small group practice* ▪ "Where things will really go: Knockout genes of pain reception- create a drug that will block the pain receptor and completely take away the pain without the euphoric effects of opioids- that will be really big target"- *Pain specialist in private practice*

Overview of pharmacists interviewed

Total # of pharmacists interviewed: 6

Chain affiliation: Walgreens (2), CVS (1), Rite-Aid (1), Publix (1), Independent

Geographical split: FL (2), IL (1), KY (1), MA (1), NJ (1)

Relevant experiences

- Former Pharmacy Manager for a top 3 retail pharmacy chain for 10+ years (until 2013)
- Pharmacy Manager for a major retail pharmacy chain
- Former National Director of Pharmacy Operations at a top 3 retail pharmacy chain
- Member of State Board of Pharmacy
- Clinical coordinator for regional pharmacy chain
- Former Director of Professional Practice at a top 3 retail pharmacy chain , oversaw mail order services (until 2013)

SOURCE: Pharmacist expert interviews during week of 7/15/2013

Summary of pharmacist interviews

Key takeaways	Quotes
DEA actions have had a **"chilling effect"** on pharmacy chains, distributors, and pharmacists; this is made **even worse by lack of specific requirements**	▪ "DEA has taken a strong role in deciding how pain medications are dispensed, having a 'chilling effect' on pharmacists who fear losing their jobs or their license" – *Former senior pharmacy director at CVS (FL)* ▪ "No they have not [put out specific requirements or regulations]… that's the unfortunate part, if they specify the requirement, it would clarify things… they speak in riddles "corresponding responsibility" – *Former senior pharmacy director at CVS (FL)* ▪ "Walgreens [having] 7 pharmacies shut down sent shockwaves through the industry" – *Former senior pharmacy director at Walgreens (IL)* ▪ "[It's] somewhat sad – pharmacists now feel very vulnerable about their own pharmacy license and their jobs. They turn away patients who are looking for those controlled substances and pharmacists who work for chains don't have any incentive to take any risk whatsoever" – *Former senior pharmacy director at Walgreens (IL)*
Pharmacists **observe increasing fear among prescribers about quantity and dosage**	▪ "Doctors are afraid, so they stop prescribing" – *Clinical coordinator at Publix (FL)* ▪ "In Illinois – [the state board is] already writing letters to those who are prescribing more than their peers, making doctors more cognizant about how much and how many pills they are prescribing " – *Former senior pharmacy director at Walgreens (IL)* ▪ "OxyContin dropped off the map from where they were 5 years ago… Doctors are afraid to write them… a few are resistant but most are unwilling to write or go to morphines… they give least amount that they can, weakest dose that he can. He used to write 60, now he'll give you 30"- *Pharmacy Manager at RiteAid (MA)*
Significant increase in due diligence and paperwork associated with C2 drugs	▪ "Walgreens and CVS now need to fill in paperwork in triplicates [for opioid prescriptions]" – *Clinical coordinator at Publix (FL)* ▪ ""There's a lot more paperwork… need to check SS number, driver's license" – *Former Pharmacy Manager at Walgreens (KY)*

SOURCE: Pharmacist expert interviews during week of 7/15/2013

Summary of pharmacist interviews

Key takeaways	Quotes
Pharmacists report **turning away patients,** especially those with suspicious prescriptions or new patients **because of risk associated with opioids, perception that patients will "bring their friends", and associated paperwork burden**	▪ "We kind of discourage [the opioid business]... it's more headaches than it's worth for the low profits [and] if you give one patient one prescription [for an opioid], they bring their friends"– *Clinical coordinator at Publix (FL)* ▪ "Stress load is high- they aren't insuring techs [and] it used to take 10-15 mins to fill a prescription, now it takes a lot longer…Pharmacy also not providing enough support to fill these prescriptions…80% of the time, they just refuse patients." – *Clinical coordinator at Publix (FL)* ▪ "With budget cuts and staffing cuts – we don't have time to handle everything... it's easier to turn away patients... my personal turn away rate for opioids is about 5%" – *Former Pharmacy Manager at Walgreens (KY)*
Walgreen's and CVS' internal memos on C2 drugs increases oversight and stresses "reasonable quantity", but may not be setting mandatory national limits on tablets/ Rx or strength mix	▪ "The 2 largest chains – [making up] 80% of total dispensing – released internal memos, 1.5 year ago for one, 6-8 months for the other – *Former senior pharmacy director at CVS (FL)* ▪ "Pharmacies would fill set number of prescriptions per day – if they reach that number of prescriptions for the day, they tell patients that they are stocked out. Similar limits on pills per script, or number of high-dosage pills" – *Former senior pharmacy director at CVS (FL)* ▪ "Walgreens looks at how much each pharmacy is purchasing, and controls by generating monthly reports and sending company reps out to pharmacy to scrutinize... I don't know of specific caps for tablets/ Rx or scripts per week, I don't think it wouldn't be automatic cap" – *Former senior pharmacy director at Walgreens (IL)* ▪ "There's not a [official] limit... technically it is up to pharmacists judgment... but the pharmacists are scared because they don't want to lose their job or their license... my supervisor says if you are not turning away some patients, you're not doing your job" – *Former Pharmacy Manager at Walgreens (KY)*

SOURCE: Pharmacist expert interviews during week of 7/15/2013

Summary of pharmacist interviews

Key takeaways	Quotes
Some individual pharmacies or districts are likely **self-imposing TRx or pill limits per week**	▪ "It's possible that local District Manager is using a personal number for limit pills/ script" - *Former senior pharmacy director at Walgreens (IL)* ▪ " I won't fill an opioid until 2 days before the previous prescription runs out… "that's a personal/ professional standard, not a Rite-Aid policy" – *Pharmacy Manager at RiteAid (MA)*
Lack of flexibility in supply to the pharmacy, constricted both by chain HQ and distributor	▪ "Distributors only fills X of all scheduled II narcotics… this restriction from distributors became prominent when DEA took action against some CVS stores 2 years ago in Sanford – *Former senior pharmacy director at CVS (FL)* ▪ "There's an internal panel that look at patient utilization, prescribers pattern and recommend that they cut off some patients or prescribers - retail might be told to "back down" if orders go up too much" – *Senior pharmacy director at CVS (FL)* ▪ "You get to the end of the year, the Feds put a limit for a chain in the area, and if the stores reach that max, they can't get any more… we just know that they put limits (we can order 8 but we might get 2), but we don't have any visibility" – *Clinical coordinator at Publix (FL)* ▪ We are no longer allowed to increase orders for C2… corporate has policies on how much each pharmacy can get per week." – *Former Pharmacy Manager at Walgreens (KY)*
Questionable metrics seem to be used by DEA and distributors, **leading to anecdotal gross constrictions in supply**	▪ There are "war stories out there [about supply] … a small town in Illinois has only a Walmart, CVS, and an independent pharmacy… Walmart and CVS sat together and decided not to serve OxyContin anymore… the wholesaler sees volume driven up at the independent, and then the distributor cuts off the independent. This happened pretty recently" – *Former senior pharmacy director at Walgreens (IL)*

SOURCE: Pharmacist expert interviews during week of 7/15/2013

Summary of pharmacist interviews

Key takeaways	Quotes
Pharmacists have a **positive view of AD technologies but cost is an issue**	▪ "These AD technologies are very costly for patients" – *Former senior pharmacy director at CVS (FL)* ▪ "The rub is that they are available but often insurance plan doesn't cover them… PAs often in place and then doctors are so stressed out … it all comes down to money" – *Clinical coordinator at Publix (FL)* ▪ "Robberies went down when deterrent formulations went down, they aren't going for the OxyContin AD" –*Pharmacy Manager at RiteAid (MA)*
Protocol for dispensing opioids has become more stringent	▪ "Pharmacist should look for different flags: In a certain market area? IR and ER? Days supplied? Proximity of the patient to the pharmacy and prescriber? Does the prescription look altered? Is this a valid DEA number? Is this a valid prescriber? Known to the pharmacy? What is the frequency? The Pharmacist goes to DEA website to verify if prescriber has a valid DEA number and whether there was a sanction against a prescriber). Then call the prescriber to validate for EVERY TRx (requirement in the last year or two)" - *Former senior pharmacy director at CVS (FL)*
Dimensions that pharmacies are conservative on	▪ **Quantity:** "First thing that we look at is the quantity… if you're starting, they are going to give you 20 or 30… if you bring in a prescription for 180 or 240 for the first time, then that's a flag." – *Clinical coordinator at Publix (FL)* ▪ **Dosage: "**If someone comes in with 80mgs, they aren't going to fill it unless they have a history of lower dosages" –*Pharmacy Manager at RiteAid (MA)*

SOURCE: Pharmacist expert interviews during week of 7/15/2013

Summary of pharmacist interviews

Key takeaways	Quotes
Mail order is currently a more reliable channel for patients to access opioid drugs	▪ "Direct to channel opioids are already being done – the only issue is interstate commerce, because the dispensing state might differ from prescribing state; Typically the dispensing state's laws prevail but also have to consider the most stringent state" – *Former senior pharmacy director at CVS (FL)* ▪ "To get an opioid prescription filled by mail, patient needs to mail the prescription and it is scrutinized… [it takes] 5-7 days to fill. Mail order patients have more reliable access to drugs because mail order have more visibility into the supply" – *Former senior pharmacy director at CVS (FL)*
Some see DEA as potential partner for AD manufacturers	▪ I don't see that AD is getting a differentiated treatment yet, but I do think that it might have a positive, differentiated effect down the road → DEA may be a driver – *Former senior pharmacy director at Walgreens (IL)*

SOURCE: Pharmacist expert interviews during week of 7/15/2013

Overview of payors interviewed

Total # of payors interviewed: 3

Geographical split: Northeast (1), California (1), Southeast (1)

Details of payors interviewed

- Payor expert 1
  - In managed care for over 20 years
  - Pharmacy Operations Manager, RPh
  - Current payor:
    - Commercial only
    - 1.2 mn lives
    - Open 3-tier formulary design
- Payor 2
  - Worked in several large payors
  - Regional Medical Director, MD
  - Current payor:
    - 60% Commercial, 40% Med D
    - 212k lives
    - Very tight prior authorization system
- Payor 3
  - 10 years in managed care
  - Pharmacy Director, PharmD
  - Current payor:
    - 75% Commercial, 20% Medicaid, 5% Med D
    - 5.5 mn lives

Summary of Payor Interviews

FOR DISCUSSION

Theme	Interview Quotes
Management of the pain category overall is **stable in outlook – rebates mentioned as one reason why OxyContin stays on Preferred Branded Tier**	▪ "There isn't a lot of management [of this category right now]" – Payor 1 ▪ "I do think aggressive management towards generics leveling off in pain.. but I do see payors really looking for opioid-like analgesic that's not addictive" – Payor 2 ▪ "I think this category is pretty much settled… we've only just added some step edits to increase generic utilization… Oxycontin has been on preferred tier for very long time… really no plans to move it anywhere because we would lose rebates and also it was recently reformulated with abuse deterrance" – Payor 3
Lack of differentiation among opioids in the market, but wide range of options is important	▪ No products that really stand out/ differentiated… but important to have wide range of opioids available for prescribers… important from a clinical perspective because people react differently to pain medications and have allergies – Payor 3 ▪ Patients will perceive that the generics don't work as well… but as payors we haven't seen studies that show that generics don't work as well… we need to see studies that it doesn't work… that hasn't been borne out – Payor 2 ▪ All drugs are equivalent of pain relief but different levels of euphoria (morphine- low, oxy – high) – Payor 1
Pain is a relatively important category in formulary, but behind oncology and other higher-cost drug types	▪ "Pain is 4-5% of my total spend – somewhat important but heavily driven by generics… [there's] no differentiation among pain medication – it's one big bucket" - Payor 1 ▪ "Pain is somewhere in the middle… pain isn't the most expensive medication (except for OxyContin)… but it has high utilization… not like RA, MS, etc that are "budget busters" which require more attention" – Payor 3
Differing levels of awareness about AD reformulation	▪ "[OxyContin] did show that 'drug liking' among potential abusers [was lower]" – Payor 1 ▪ "There was some data about AD… but at best, I would say it was inconclusive… it showed that you can't do XYZ to the pill but it wasn't definitive from a real-world perspective" – Payor 3 ▪ "I haven't seen anything that has blown me away… the jury is still out… I don't think the sample sizes are large enough for our kind of population" – Payor 2

Summary of Payor Interviews

FOR DISCUSSION

Theme	Interview Quotes
Even with AD benefits, cost savings of generics is heavy counterweight to using more expensive AD formulations	▪ "We want most people to be on generics and selective use of AD for vulnerable populations" – Payor 1 ▪ "If it could be proven that the product decreases/ eliminates abuse deterrence, yes, payors would consider it… but bottom line is very important, just having clinical advantage might not be enough" – Payor 3 ▪ I could see access improving access to AD drugs… but it's difficult to know how these will be treated vs cost savings of generics – Payor 2
Payors **aren't looking at cost of opioid users separately**	▪ We don't track PMPM for opioid users… it's mostly generic, and we don't even do it for OxyContin – Payor 3 ▪ We haven't tracked PMPM costs for opioid users… we're more tracking ER visits [which are related] – Payor 2
Somewhat aware of pharmacy-level access issues	▪ [It's a pain for a] pharmacy to get C2s… a lot of pharmacies don't stock C2s…we can look at certain pharmacies and sometimes tell doctors which pharmacies carry certain medicines – Payor 1 ▪ No, haven't heard of pharmacy access issues for legitimate products – Payor 3 ▪ I have heard of pharmacies not filling prescription…. But they call the doctor that should take care of it – Payor 2
Mixed opinions on **whether prescribing behavior is changing**	▪ "Addictions are #1 public health issue in this country… Doctors don't want to prescribe as much opiates because of addiction… doctors are more judicious then they used to be…particullary in the area of back pain" – Payor 2 ▪ No change in prescribing patterns that [I've] noticed… maybe the change has been so slow – Payor 3
No strict criteria for categorizing drug classes as "genericized"	▪ Each category is unique… [there is] no blanket "genericized" class" – Payor 1 ▪ No blanket label for completely "genericized"… case by case basis – Payor 3

Summary of Payor Interviews

FOR DISCUSSION

Theme	Interview Quotes
Some variation in how payors use step edits vs PAs vs tiers	▪ "[We impose] step edits if trying to encourage physicians to follow a logical process… PAs are much more restrictive… ensures that the patient has the right clinical condition for the expensive drug" – Payor 1 ▪ If we have 2+ products with comparable clinical efficacy, then we might put in step edits… step edits are used to steer patients to generics" – Payor 3 ▪ Higher tier is 1st option, then prior auth, step edit – Payor 2
Payors work with PBMs to flag potential opioid abusers in their patient population	▪ "We work with PBMs to combat it as best as we can, to track patients and physicians who might be abusing" – Payor 3 ▪ "PBM does claims processing, runs the reports (but we do pharmacy design)… identifies potential abusers by looking at number of prescriptions, doctor shopping, pharmacy-shopping… but not measuring abuse costs" – Payor 1
Mixed responses to novel contracting arrangements between manufacturers and payors, with pay-for-performance having highest appeal	▪ "I haven't actively participate in any collaborations [with manufacturers]… our lawyers don't allow it" – *Payor 1* ▪ "Innovative contracting [is] not a good opportunity because pharmacos are restricted in what they can do, and payors are restricted in what they can accept… even for pay-for-performance, there needs to be significant collaboration and integration to track data…[and I'm] not very optimistic about it" – Payor 3 ▪ "Pay for performance always works… if they put some performance guarantee in there" – Payor 2

Summary of Payor Interviews

FOR DISCUSSION

Theme	Interview Quotes
Open to considering a **flat pricing approach from branded drugs**	▪ "Lots of drugs have flat pricing – we like it because [it's] easier to model pricing" – Payor 1 ▪ "Going to flat pricing is quite common... especially drugs used in Primary Care... we try to take advantage of that sometimes by splitting the pill in half... give the patient a pill cutter and have them pay only half the copay" – Payor 3
Other	▪ "[We are] concerned if every drug has to go AD [due to regulations]... then drug cost will go up 15-20%.. what I don't want to see is that we are required to write AD for a 75-year old cancer patient... a doc might say I'm only going to prescribe AD because I want to say that I'm being careful." – Payor 1 ▪ "[There will be] pharmacy access challenges in bringing new drugs onto the market, [because] pharmacies don't want to stock unless there is a use." – Payor 1