COMMONWEALTH OF MASSACHUSETTS
HEALTH POLICY COMMISSION

TECHNICAL APPENDIX

ADDENDUM TO PRESCRIPTION DRUG COUPON STUDY: REPORT TO THE MASSACHUSETTS LEGISLATURE

Table of Contents

1. Data sources

Symphony Health IDV® (Integrated Dataverse)

IDV® (Integrated Dataverse) from Symphony Health contains longitudinal patient data sources that capture adjudicated prescription, medical, and hospital claims across the United States for all payment types, including commercial plans, Medicare Part D, cash, assistance programs, and Medicaid. The IDV contains over 10 billion prescriptions claims linked to over 280 million unique prescription patients of with an average of 5 years of prescription drug history. IDV® claims are sourced from pharmacies. Claims from hospital and physician practices include over 190 million patients with CPT/HCPCS medical procedure history as well as ICD-9/10 diagnosis history of which nearly 180 million prescription drug patients are linked to a diagnosis. The overall sample represents over 65,000 pharmacies, 1,500 hospitals, 800 outpatient facilities, and 80,000 physician practices.

The HPC procured all commercially available IDV® Massachusetts pharmacy claims data for claims from 2011 to 2018.

2. Supplemental data tables

2.1 Supplemental data for Exhibit 14

Relative utilization of branded drug versus generic close therapeutic substitutes in the Massachusetts commercial and Medicare populations

Case study drug	Medicare	Commercial	Share of branded drug claims using a coupon in the commercial population	Population with higher relative utilization
Nuvigil (2014, 2015)	0.27	0.54	14.6%	Commercial
Eliquis (2016, 2017)	0.21	0.41	20.1%	Commercial
Abilify (2013, 2014)	0.19	0.35	2.8%	Commercial
Vesicare (2016, 2017)	0.22	0.27	1.9%	Similar
Effient (2015, 2016)	0.006	0.036	10.2%	Commercial
Latuda (2016, 2017)	0.032	0.058	15.2%	Commercial
Crestor (2014, 2015)	0.073	0.10	16.3%	Commercial
Benicar (2014, 2015)	0.059	0.076	5.4%	Commercial
Otezla (2016, 2017)	0.013	0.016	68.0%	Commercial
Dexilant (2015, 2016)	0.016	0.019	10.3%	Similar
Pristiq (2015, 2016)	0.0044	0.0067	8.3%	Commercial
Lyrica (2016, 2017)	0.11	0.11	8.2%	Similar
Vytorin (2015, 2016)	0.0020	0.0032	1.8%	Commercial
Aggrenox (2013, 2014)	0.029	0.024	1.9%	Similar

Notes: For each case study drug, use trends are averaged for the two most recent years of applicable data, such as the two years before a generic equivalent entered the market. "Similar" use trends between commercial and Medicare population were defined as less than a 25% difference in the relative use of the branded drug versus generic close therapeutic substitutes. Relative utilization of Abilify versus its generic close therapeutic substitutes was calculated using all available commercial claims in Symphony Health data. Given Abilify may be considered a preferential treatment for pediatric patients by some providers, the HPC conducted sensitivity analyses excluding claims for patients 25 and under, and the ratio remained similar.
Source: HPC analysis of Symphony Health IDV® database (commercial) and CMS Part D Prescriber Public Use Files (Medicare)

Average annual number of 30 day fills in the Massachusetts Medicare and commercial populations for case study drug sets

Case study sets	Medicare	Commercial
Nuvigil (2014, 2015)	2,631	3,769
modafinil	9,864	6,982
Eliquis (2016, 2017)	146,979	21,040
warfarin	716,237	51,461
Abilify (2013, 2014)	104,923	30,520
risperidone	165,649	25,969
olanzapine	129,895	12,082
quetiapine	236,449	43,968
ziprasidone	26,911	4,943
Vesicare (2016, 2017)	46,279	6,503
oxybutynin	214,602	24,371
Effient (2015, 2016)	6,526	4,235
aspirin dipyridamole	12,396	1,381
clopidogrel	342,502	55,888
warfarin	735,803	61,711
Latuda (2016, 2017)	21,911	4,902
aripiprazole	53,822	13,668
risperidone	163,846	17,256
paliperidone	5,572	531
olanzapine	143,554	10,756
quetiapine	283,808	39,171
ziprasidone	27,168	3,835
Crestor (2014, 2015)	268,482	99,948
simvastatin	1,608,229	451,039
atorvastatin	1,505,157	429,592
pravastatin	566,911	161,402
Benicar (2014, 2015)	45,191	16,844
losartan potassium	627,580	168,259
losartan hydrochlorothiazide	83,316	32,718
irbesartan	52,232	21,214
Otezla (2016, 2017)	1,704	612
methotrexate	85,343	23,139

leflunomide	13,704	3,385
sulfasalazine	19,331	5,599
azathioprine	17,806	6,632
Dexilant (2015, 2016)	30,293	8,684
pantoprazole	339,446	91,550
omeprazole	1,516,709	351,793
omeprazole bicarb	1,018	465
esomeprazole	27,945	16,478
lansoprazole	29,922	14,721
Pristiq	8,145	6,366
venlafaxine	208,491	103,842
citalopram	503,391	235,000
escitalopram	172,977	116,436
fluoxetine	306,419	184,892
paroxetine	184,757	68,843
sertraline	493,429	247,175
Lyrica (2016, 2017)	95,575	17,165
gabapentin	883,197	155,771
Vytorin (2015, 2016)	8,501	3,359
simvastatin	1,625,239	242,017
atorvastatin	1,864,074	420,808
pravastatin	602,267	330,952
rosuvastatin (2016 only)	136,948	50,230
Aggrenox (2013, 2014)	30,350	3,119
dipyridamole	2,389	350
clopidogrel	305,143	58,695
warfarin	729,092	72,339

Notes: For each case study drug, utilization is pooled for the two most recent years of applicable data, such as the two years before a generic equivalent entered the market. Symphony data represent a subset of the commercial market and CMS data capture the full Massachusetts Medicare population. Data in commercial sample reflect approximately 40% of all commercial claims in Massachusetts; sample representativeness may vary by drug.

Source: HPC analysis of Symphony Health IDV® database (commercial) and CMS Part D Prescriber Public Use Files (Medicare)

2.2 Supplemental data for spending calculations

Spending impact: Difference in annual commercial spending between current commercial utilization ratio versus alternative scenario with Medicare utilization ratio

Drug name	Year	Average annual spending impact in study sample
Eliquis	2016, 2017	$2,353,551
Otezla	2016, 2017	$304,709
Effient	2015, 2016	$940,622
Latuda	2016, 2017	$1,897,803
Pristiq	2015, 2016	$2,065,673
Vesicare	2016, 2017	$208,862
Crestor	2014, 2015	$2,979,355
Benicar	2014, 2015	$357,382
Nuvigil	2014, 2015	$250,837
Abilify	2013, 2014	$8,158,259
Dexilant	2015, 2016	$206,478
Vytorin	2015, 2016	$212,801
Lyrica	2016, 2017	$106,541
Aggrenox	2013, 2014	-$140,623

Notes: Spending reflects an average of the two most recent years of applicable data for each drug, such as the two years before a generic equivalent entered the market. Analysis includes a rebate estimate of 11% for the branded drugs, based on the average rebate in the commercial market 2015-2017 from the Center for Health Information and Analysis. Data in commercial sample reflect approximately 40% of all commercial claims in Massachusetts; sample representativeness may vary by drug. Final spending impact presented in the report was extrapolated to the full Massachusetts commercial market.
Source: HPC analysis of Symphony Health IDV® database