

Appendix 2 (as supplied by the authors)

Tables S1-4 show the effect of rebates, compared to transparent pricing, given a variety of assumptions. Each table shows results for five provinces which have substantially different rules about copayments and deductibles. The tables show, in the first group of columns, the difference between (a) the cost to the household when the drug price is reduced by a given percentage rebate and (b) the cost to the household when the drug price is reduced by the same amount. For example, with a 30% co-payment and a 10% rebate on a \$100 drug, the cost to the consumer with the confidential rebate is \$30; the cost to the consumer if the rebate were reflected in the price would be only \$27. In that case, the extra cost would be \$3. If this is repeated 12 times during the year, the extra cost is \$36. Each table allows for a range of drug prices and a range of possible rebates.

The second set of columns show the share of the true cost that the customer pays when there is a confidential rebate. For example, with a 10% confidential rebate, and a 30% co-payment on a \$100 drug, the patient pays \$30, but the true cost to the province is only \$90 after the rebate, so the patient pays 33% of the true cost. The percentages shown in this column also include the dispensing cost, assumed at \$8 per prescription per month.

The tables reflect specific patient situations: Table S1 is for a household with a \$70,000 income (median Canadian income) and one prescription filled per month. Table S2 is for a \$28,000 income, which is the median for single seniors, and one prescription. Table S3 is for a \$70,000 income household with four prescriptions filled per month, and S4 for a \$28,000 household with four prescriptions.

The scenarios in which there is a very large confidential rebate on an expensive drug can result in perverse outcomes. Patients may end up paying hundreds or even thousands of dollars extra per year for expensive drugs because the rebate is confidential. In addition, in some cases, the patient may pay more than the true cost of the drug, and the province makes “profits” from insuring such a drug. This can happen even for relatively poor patients, as we see in Tables S2 and S4. This problem arises particularly in the provinces with deductibles, such as British Columbia and Manitoba. Ontario, which has a fixed dollar co-payment, largely avoids perverse outcomes.

The sources for identifying the amount paid in each case are the provincial formulary websites.

<https://www.ontario.ca/page/get-coverage-prescription-drugs#section-4>

<http://www.health.gov.bc.ca/pharmacare/plani/calculator/calculator.html>

http://www.ramq.gouv.qc.ca/en/citizens/prescription-drug-insurance/Pages/rates_effect.aspx

<https://www.gov.mb.ca/health/pharmacare/estimator.html>

<http://www.health.alberta.ca/services/drugs-seniors.html>

Supplemental Tables: Analysis of effect on patient expenditure by province, rebate and price

Table 1: Median Income, 1 prescription

Drug price per script (\$)	Rebate %	Extra cost to senior if confidential rebate instead of equal price cut								Share of true price paid by consumer given confidential rebate				
		AB	BC	Ontario	QC	MB	AB	BC	Ontario	QC	MB			
25	0.1	\$ 9	\$ 30	\$ -	\$ 10	\$ 30	25%	108%	47%	80%	108%			
50	0.1	\$ 18	\$ 60	\$ -	\$ 21	\$ 60	28%	109%	27%	63%	109%			
100	0.1	\$ -	\$ 120	\$ -	\$ 42	\$ 120	26%	110%	15%	52%	110%			
200	0.1	\$ -	\$ 72	\$ -	\$ 84	\$ 240	13%	95%	8%	46%	111%			
400	0.1	\$ -	\$ -	\$ -	\$ -	\$ -	7%	60%	4%	25%	85%			
800	0.1	\$ -	\$ -	\$ -	\$ -	\$ -	3%	30%	2%	12%	43%			
25	0.3	\$ 27	\$ 90	\$ -	\$ 31	\$ 90	29%	129%	57%	96%	129%			
50	0.3	\$ 54	\$ 180	\$ -	\$ 63	\$ 180	35%	135%	34%	77%	135%			
100	0.3	\$ 48	\$ 360	\$ -	\$ 126	\$ 360	32%	138%	19%	65%	138%			
200	0.3	\$ -	\$ 373	\$ -	\$ 251	\$ 720	17%	121%	10%	58%	141%			
400	0.3	\$ -	\$ 213	\$ -	\$ -	\$ 295	9%	77%	5%	31%	109%			
800	0.3	\$ -	\$ -	\$ -	\$ -	\$ -	4%	39%	3%	16%	55%			
25	0.6	\$ 54	\$ 180	\$ -	\$ 78	\$ 180	42%	183%	80%	136%	183%			
50	0.6	\$ 108	\$ 360	\$ -	\$ 126	\$ 360	54%	207%	52%	119%	207%			
100	0.6	\$ 156	\$ 720	\$ -	\$ 251	\$ 720	52%	225%	30%	106%	225%			
200	0.6	\$ 12	\$ 1,093	\$ -	\$ 503	\$ 1,440	28%	203%	16%	97%	236%			
400	0.6	\$ -	\$ 645	\$ -	\$ 228	\$ 1,735	15%	131%	9%	54%	186%			
800	0.6	\$ -	\$ 69	\$ -	\$ -	\$ -	8%	67%	4%	28%	95%			
25	0.9	\$ 81	\$ 270	\$ -	\$ 168	\$ 270	71%	314%	138%	233%	314%			
50	0.9	\$ 162	\$ 540	\$ -	\$ 242	\$ 540	115%	446%	111%	255%	446%			
100	0.9	\$ 264	\$ 1,080	\$ -	\$ 392	\$ 1,080	139%	600%	80%	281%	600%			
200	0.9	\$ 228	\$ 1,813	\$ -	\$ 754	\$ 2,160	89%	640%	52%	306%	743%			
400	0.9	\$ 156	\$ 2,074	\$ -	\$ 731	\$ 3,175	52%	460%	30%	189%	651%			
800	0.9	\$ 12	\$ 1,594	\$ -	\$ 563	\$ 2,695	28%	251%	16%	103%	355%			

Table 2: Income of \$28,000, 1 prescription

Drug price per script (\$)	Rebate %	Extra cost to senior if confidential rebate instead of equal price cut						Share of true price paid by consumer given confidential rebate					
		AB	BC	Ontario	QC	MB	AB	BC	Ontario	QC	MB		
25	0.1	\$ 9	\$ 30	\$ -	\$ 10	\$ 30	25%	108%	47%	80%	108%		
50	0.1	\$ 18	\$ 18	\$ -	\$ 21	\$ 60	28%	93%	27%	63%	109%		
100	0.1	\$ -	\$ 36	\$ -	\$ 42	\$ 120	26%	66%	15%	52%	110%		
200	0.1	\$ -	\$ -	\$ -	\$ 84	\$ -	13%	37%	8%	46%	59%		
400	0.1	\$ -	\$ -	\$ -	\$ -	\$ -	7%	19%	4%	25%	30%		
800	0.1	\$ -	\$ -	\$ -	\$ -	\$ -	3%	9%	2%	12%	15%		
25	0.3	\$ 27	\$ 90	\$ -	\$ 31	\$ 90	29%	129%	57%	96%	129%		
50	0.3	\$ 54	\$ 78	\$ -	\$ 63	\$ 180	35%	115%	34%	77%	135%		
100	0.3	\$ 48	\$ 108	\$ -	\$ 126	\$ 360	32%	83%	19%	65%	138%		
200	0.3	\$ -	\$ -	\$ -	\$ 251	\$ -	17%	46%	10%	58%	75%		
400	0.3	\$ -	\$ -	\$ -	\$ -	\$ -	9%	24%	5%	31%	39%		
800	0.3	\$ -	\$ -	\$ -	\$ -	\$ -	4%	12%	3%	16%	20%		
25	0.6	\$ 54	\$ 180	\$ -	\$ 78	\$ 180	42%	183%	80%	136%	183%		
50	0.6	\$ 108	\$ 258	\$ -	\$ 126	\$ 360	54%	177%	52%	119%	207%		
100	0.6	\$ 156	\$ 216	\$ -	\$ 251	\$ 720	52%	134%	30%	106%	225%		
200	0.6	\$ 12	\$ 123	\$ -	\$ 503	\$ 278	28%	78%	16%	97%	126%		
400	0.6	\$ -	\$ -	\$ -	\$ 228	\$ -	15%	41%	9%	54%	66%		
800	0.6	\$ -	\$ -	\$ -	\$ -	\$ -	8%	21%	4%	28%	34%		
25	0.9	\$ 81	\$ 270	\$ -	\$ 168	\$ 270	71%	314%	138%	233%	314%		
50	0.9	\$ 162	\$ 438	\$ -	\$ 242	\$ 540	115%	381%	111%	255%	446%		
100	0.9	\$ 264	\$ 558	\$ -	\$ 392	\$ 1,080	139%	358%	80%	281%	600%		
200	0.9	\$ 228	\$ 489	\$ -	\$ 754	\$ 998	89%	246%	52%	306%	397%		
400	0.9	\$ 156	\$ 267	\$ -	\$ 731	\$ 758	52%	143%	30%	189%	232%		
800	0.9	\$ 12	\$ 123	\$ -	\$ 563	\$ 278	28%	78%	16%	103%	126%		

Table 3: Median Income, 4 prescriptions

Drug price per script (\$)	Rebate %	Extra cost to senior if confidential rebate instead of equal price cut						Share of true price paid by consumer given confidential rebate					
		AB	BC	Ontario	QC	MB		AB	BC	Ontario	QC	MB	
25	0.1	\$ 36	\$ 120	\$ -	\$ -	\$ 120		25%	108%	27%	74%	108%	
50	0.1	\$ 72	\$ 72	\$ -	\$ -	\$ 240		28%	88%	15%	43%	109%	
100	0.1	\$ -	\$ -	\$ -	\$ -	\$ -		26%	56%	8%	23%	80%	
200	0.1	\$ -	\$ -	\$ -	\$ -	\$ -		13%	29%	4%	12%	42%	
400	0.1	\$ -	\$ -	\$ -	\$ -	\$ -		7%	15%	2%	6%	21%	
800	0.1	\$ -	\$ -	\$ -	\$ -	\$ -		3%	8%	1%	3%	11%	
25	0.3	\$ 108	\$ 360	\$ -	\$ 38	\$ 360		29%	129%	32%	89%	129%	
50	0.3	\$ 216	\$ 216	\$ -	\$ -	\$ 720		35%	108%	19%	53%	135%	
100	0.3	\$ 192	\$ 127	\$ -	\$ -	\$ 7		32%	71%	11%	29%	100%	
200	0.3	\$ -	\$ -	\$ -	\$ -	\$ -		17%	37%	6%	15%	53%	
400	0.3	\$ -	\$ -	\$ -	\$ -	\$ -		9%	19%	3%	8%	27%	
800	0.3	\$ -	\$ -	\$ -	\$ -	\$ -		4%	10%	1%	4%	14%	
25	0.6	\$ 216	\$ 720	\$ -	\$ 164	\$ 720		42%	183%	46%	126%	183%	
50	0.6	\$ 432	\$ 891	\$ -	\$ -	\$ 1,440		54%	166%	29%	81%	207%	
100	0.6	\$ 624	\$ 559	\$ -	\$ -	\$ 1,447		52%	115%	17%	47%	163%	
200	0.6	\$ 48	\$ -	\$ -	\$ -	\$ -		28%	63%	9%	26%	89%	
400	0.6	\$ -	\$ -	\$ -	\$ -	\$ -		15%	33%	5%	13%	47%	
800	0.6	\$ -	\$ -	\$ -	\$ -	\$ -		8%	17%	2%	7%	24%	
25	0.9	\$ 324	\$ 1,080	\$ -	\$ 583	\$ 1,080		71%	314%	78%	216%	314%	
50	0.9	\$ 648	\$ 1,611	\$ -	\$ 247	\$ 2,160		115%	358%	63%	174%	446%	
100	0.9	\$ 1,056	\$ 1,786	\$ -	\$ 164	\$ 2,887		139%	307%	46%	126%	434%	
200	0.9	\$ 912	\$ 1,306	\$ -	\$ -	\$ 2,407		89%	197%	29%	81%	279%	
400	0.9	\$ 624	\$ 559	\$ -	\$ -	\$ 1,447		52%	115%	17%	47%	163%	
800	0.9	\$ 48	\$ -	\$ -	\$ -	\$ -		28%	63%	9%	26%	89%	

Extra cost to senior if confidential rebate instead of equal price cut

Share of true price paid by consumer given confidential rebate

Table 4: Income of \$28,000, 4 prescriptions

Drug price per script (\$)	Extra cost to senior if confidential rebate instead of equal price cut						Share of true price paid by consumer given confidential rebate					
	Rebate %	AB	BC	Ontario	QC	MB	AB	BC	Ontario	QC	MB	
25	0.1	\$ 36	\$ 1	\$ -	\$ -	\$ -	25%	56%	27%	74%	91%	
50	0.1	\$ 72	\$ -	\$ -	\$ -	\$ -	28%	32%	15%	43%	52%	
100	0.1	\$ -	\$ -	\$ -	\$ -	\$ -	26%	18%	8%	23%	28%	
200	0.1	\$ -	\$ -	\$ -	\$ -	\$ -	13%	9%	4%	12%	15%	
400	0.1	\$ -	\$ -	\$ -	\$ -	\$ -	7%	5%	2%	6%	8%	
800	0.1	\$ -	\$ -	\$ -	\$ -	\$ -	3%	2%	1%	3%	4%	
25	0.3	\$ 108	\$ 73	\$ -	\$ 38	\$ 110	29%	67%	32%	89%	109%	
50	0.3	\$ 216	\$ -	\$ -	\$ -	\$ -	35%	40%	19%	53%	65%	
100	0.3	\$ 192	\$ -	\$ -	\$ -	\$ -	32%	22%	11%	29%	36%	
200	0.3	\$ -	\$ -	\$ -	\$ -	\$ -	17%	12%	6%	15%	19%	
400	0.3	\$ -	\$ -	\$ -	\$ -	\$ -	9%	6%	3%	8%	10%	
800	0.3	\$ -	\$ -	\$ -	\$ -	\$ -	4%	3%	1%	4%	5%	
25	0.6	\$ 216	\$ 181	\$ -	\$ 164	\$ 470	42%	95%	46%	126%	154%	
50	0.6	\$ 432	\$ 37	\$ -	\$ -	\$ -	54%	61%	29%	81%	99%	
100	0.6	\$ 624	\$ -	\$ -	\$ -	\$ -	52%	36%	17%	47%	58%	
200	0.6	\$ 48	\$ -	\$ -	\$ -	\$ -	28%	20%	9%	26%	32%	
400	0.6	\$ -	\$ -	\$ -	\$ -	\$ -	15%	10%	5%	13%	17%	
800	0.6	\$ -	\$ -	\$ -	\$ -	\$ -	8%	5%	2%	7%	8%	
25	0.9	\$ 324	\$ 321	\$ -	\$ 583	\$ 830	71%	164%	78%	216%	265%	
50	0.9	\$ 648	\$ 253	\$ -	\$ 247	\$ 710	115%	132%	63%	174%	214%	
100	0.9	\$ 1,056	\$ 181	\$ -	\$ 164	\$ 470	139%	95%	46%	126%	154%	
200	0.9	\$ 912	\$ 37	\$ -	\$ -	\$ -	89%	61%	29%	81%	99%	
400	0.9	\$ 624	\$ -	\$ -	\$ -	\$ -	52%	36%	17%	47%	58%	
800	0.9	\$ 48	\$ -	\$ -	\$ -	\$ -	28%	20%	9%	26%	32%	