

Supplementary Appendix A: Details on costing of criminal activity

Appendix Table 1: Unit costs (2016 CAD) applied to self-reported incidents of criminal activity

Cost Categories	Unit Cost	Source
Incident Costs		
<i>Violent offenses, income-related property crime, legal status violation, disorderly conduct, other offenses</i>	\$ 4,602	(Krebs et al., 2014)
Arrest processing/Court Costs		
<i>Violent offenses</i>	\$ 6,389	(Krebs et al., 2014; Wall et al., 2000)
<i>Income-related property crime</i>	\$ 2,105	
<i>Drug dealing, sex work, legal status violations, disorderly conduct</i>	\$ 1,867	
<i>Other offenses</i>	\$ 4,109	
Corrections Costs (Monthly)		
<i>Incarceration (based on 30 days incarcerated)</i>	\$ 5,449	(Krebs et al., 2014; Wall et al., 2000)
<i>Parole</i>	\$ 5,683	
<i>Probation, conditional sentence, bail, community court</i>	\$ 1,426	
Victimization Costs		
<i>Assault</i>	\$ 10,009	(Krebs et al., 2014; McCollister et al., 2010)
<i>Break & enter</i>	\$ 1,567	
<i>Theft</i>	\$ 552	
<i>Income-related property crime (weighted average of Break & Enter and theft)</i>	\$ 645	

A set of eight categories of self-reported criminal activity (violent offenses, income-related property crime, drug dealing, sex work involvement, legal status violations, disorderly conduct, and other) were assessed in three dimensions: (1) number of days in the past month of active involvement; (2) average number of times per day activity took place; and (3) number of times arrested in the past month. Information on incarceration, parole or probation status as well as any community court dealings was included. Self-reported activity was multiplied by unit costs updated from (Krebs et al., 2014) and adjusted for inflation to 2016 CAD.

Supplementary Appendix B: Full results for regression analyses conducted in primary analysis and sensitivity analysis

Appendix Table 2: Full two-part multiple regression results for baseline specification with estimates for Parts I, II and combined AME for all covariates.

	Part I		Part II		Combined	
	(Logit)		(GLM)		(AME)	
Daily Crack	0.316*	[-0.034,0.665]	0.626	[-0.198,1.449]	\$4441*	[-\$153,\$9034]
Non-Daily Crack	0.252*	[-0.043,0.548]	0.484	[-0.284,1.252]	\$3464	[-\$830,\$7758]
Daily Meth	0.798***	[0.339,1.256]	0.564	[-0.345,1.472]	\$5845**	[\$663,\$11028]
Non-Daily Meth	0.408**	[0.095,0.721]	0.806***	[0.200,1.412]	\$5723***	[\$2013,\$9434]
Daily Polystimulant	0.602***	[0.285,0.919]	1.273***	[0.579,1.968]	\$8893***	[\$4196,\$13589]
Non-Daily Polystimulant	0.514***	[0.261,0.766]	0.682**	[0.155,1.209]	\$5449***	[\$2180,\$8718]
Cocaine	0.077	[-0.281,0.435]	1.057***	[0.268,1.846]	\$5864**	[\$1220,\$10508]
Treatment (OAT)	-0.444***	[-0.757,-0.131]	-0.402	[-1.203,0.398]	-\$3722	[-\$8213,\$769]
Other treatment (Non-OAT)	0.822***	[0.540,1.104]	-0.305	[-1.045,0.435]	\$1336	[-\$2672,\$5343]
Age	0.025	[-0.035,0.085]	-0.04	[-0.172,0.092]	-\$131**	[-\$241,-\$22]
Age²	-0.001**	[-0.002,-0.000]	0.001	[-0.001,0.002]	-	-
Male	0.641***	[0.422,0.859]	-0.416*	[-0.843,0.011]	\$99	[-\$2265,\$2462]
High School	-0.121	[-0.318,0.076]	0.281	[-0.104,0.666]	\$1050	[-\$1154,\$3255]
Ever in jail	0.559***	[0.334,0.785]	-0.103	[-0.580,0.374]	\$1460	[-\$1170,\$4090]
Mental health 16m	0.031	[-0.139,0.201]	-0.32	[-0.708,0.069]	-\$1581	[-\$3851,\$689]
Homeless 16m	0.587***	[0.381,0.792]	0.565***	[0.151,0.979]	\$5092***	[\$2383,\$7801]
Employment 16m	-0.283***	[-0.478,-0.088]	-0.321	[-0.726,0.085]	-\$2710**	[-\$5128,-\$293]
Opioid	0.392***	[0.211,0.572]	0.343*	[-0.039,0.725]	\$3221***	[\$925,\$5517]
Alcohol	0.228**	[0.048,0.407]	-0.158	[-0.520,0.204]	-\$18	[-\$2035,\$1998]
Constant	-2.325***	[-3.548,-1.102]	10.304***	[7.825,12.782]	-	-

Observations: 5299

95% confidence intervals in brackets

* p<0.1, ** p<0.05, *** p<0.01

Appendix Table 3: Full two-part multiple regression results for injection vs. non-injection in MA subgroup analysis for Parts I, II and combined AME for all covariates.

	Part I (Logit)		Part II (GLM)		Combined (AME)	
Meth Injection	0.25	[-0.101,0.601]	0.584	[-0.145,1.313]	\$6327*	[-\$835,\$13490]
Meth Injection & Non-injection	-0.035	[-0.350,0.279]	0.174	[-0.393,0.740]	\$1349	[-\$3849,\$6547]
Polystimulant	0.16	[-0.132,0.453]	-0.002	[-0.581,0.576]	\$759	[-\$4510,\$6027]
Treatment (OAT)	-0.285	[-0.848,0.278]	-0.606	[-1.771,0.558]	-\$6694	[-\$17758,\$4370]
Other treatment (Non-OAT)	0.550**	[0.050,1.050]	0.212	[-0.774,1.199]	\$4531	[-\$4541,\$13603]
Age	-0.013	[-0.130,0.105]	0.037	[-0.184,0.257]	-\$330**	[-\$644,-\$16]
Age²	-0.001	[-0.002,0.001]	-0.001	[-0.004,0.002]	-	-
Male	0.559***	[0.188,0.931]	0.146	[-0.398,0.690]	\$4000	[-\$1433,\$9433]
High School	-0.379**	[-0.708,-0.050]	0.19	[-0.384,0.763]	-\$182	[-\$5405,\$5041]
Ever in jail	0.492**	[0.116,0.868]	0.163	[-0.450,0.775]	\$3818	[-\$2048,\$9684]
Mental health 16m	0.05	[-0.237,0.337]	-0.364	[-0.910,0.181]	-\$2944	[-\$8250,\$2363]
Homeless 16m	0.469***	[0.174,0.763]	0.319	[-0.253,0.891]	\$5073*	[-\$288,\$10433]
Employment 16m	-0.359**	[-0.675,-0.043]	-0.329	[-0.883,0.224]	-\$4629*	[-\$9942,\$684]
Opioid	0.559***	[0.249,0.869]	0.403	[-0.206,1.011]	\$6244**	[\$96,\$12392]
Alcohol	0.359**	[0.066,0.651]	0.079	[-0.418,0.576]	\$2437	[-\$2051,\$6925]
Constant	-0.829	[-2.908,1.249]	8.843***	[5.007,12.678]	-	-

Observations: 1413

95% confidence intervals in brackets

* p<0.1, ** p<0.05, *** p<0.01

Appendix Table 4: Sensitivity analysis for alternative payer perspectives for monthly crime costs associated with mutually exclusive categories of stimulant use, relative to stimulant abstinence, derived from two-part multiple regression results (2016 CAD).

	Third-Party Payer			Arrests & Convictions	
		(1)		(2)	
Crack Cocaine	Daily	\$4031*	[-\$48, \$8110]	\$84	[-\$56, \$223]
	Non-daily	\$3309*	[-\$556, \$7173]	\$37	[-\$83, \$156]
	No use	<i>Reference</i>		<i>Reference</i>	
Methamphetamine	Daily	\$4850**	[\$133, \$9568]	\$186**	[\$21, \$352]
	Non-daily	\$4688***	[\$1346, \$8029]	\$92	[-\$28, \$212]
	No use	<i>Reference</i>		<i>Reference</i>	
Polystimulant	Daily	\$7976***	[\$3787, \$12166]	\$286***	[\$144, \$428]
	Non-daily	\$5031***	[\$2067, \$7994]	\$173***	[\$73, \$274]
	No use	<i>Reference</i>		<i>Reference</i>	
Powdered Cocaine	Any use	\$5144**	[\$1033, \$9255]	-\$8	[-\$148, \$132]
	No use	<i>Reference</i>		<i>Reference</i>	
Treatment (OAT)	Yes	-\$3630*	[-\$7741, \$481]	-\$183***	[-\$310, -\$56]
	No	<i>Reference</i>		<i>Reference</i>	
Other treatment (non-OAT)	Yes	\$1475	[-\$2162, \$5111]	\$291***	[\$176, \$407]
	No	<i>Reference</i>		<i>Reference</i>	

Observations: 5299

Control variables include: age, gender, education, history of incarceration, mental health issues, employment, homelessness, opioid use, and alcohol use

Average marginal effects presented with 95% confidence intervals in brackets

* p<0.1, ** p<0.05, *** p<0.01

Appendix Table 5: Sensitivity analysis for threshold change to crime cost outliers for monthly crime costs associated with mutually exclusive categories of stimulant use, relative to stimulant abstinence, derived from two-part multiple regression results (2016 CAD).

		> 98 th Percentile Excluded (Base Model) (n = 5299) (1)		> 95 th Percentile Excluded (n = 5268) (2)		> 98 th Percentile Included (n = 5322) (3)	
Crack Cocaine	Daily	\$4441*	[-\$153, \$9034]	\$2114	[-\$519, \$4746]	\$8776	[-\$3606, \$21157]
	Non-daily	\$3464	[-\$830, \$7758]	\$414	[-\$1180, \$2007]	\$5430	[-\$6842, \$17702]
	No use	<i>Reference</i>		<i>Reference</i>		<i>Reference</i>	
Methamphetamine	Daily	\$5845**	[\$663, \$11,028]	\$476	[-\$1480, \$2432]	-\$1162	[-\$15457, \$13132]
	Non-daily	\$5723***	[\$2013, \$9434]	\$3831***	[\$1758, \$5904]	\$9017*	[-\$1690, \$19723]
	No use	<i>Reference</i>		<i>Reference</i>		<i>Reference</i>	
Polystimulant	Daily	\$8893***	[\$4196, \$13,589]	\$3230***	[\$1159, \$5301]	\$19808***	[\$6259, \$33357]
	Non-daily	\$5449***	[\$2180, \$8719]	\$2212***	[\$621, \$3802]	\$2511	[-\$7032, \$12053]
	No use	<i>Reference</i>		<i>Reference</i>		<i>Reference</i>	
Powdered Cocaine	Any use	\$5864**	[\$1220, \$10,508]	\$1650	[-\$441, \$3742]	\$13352*	[-\$2016, \$28721]
	No use	<i>Reference</i>		<i>Reference</i>		<i>Reference</i>	
Treatment (OAT)	Yes	-\$3722	[-\$8213, \$769]	-\$411	[-\$1925, \$1104]	-\$11430	[-\$25766, \$2907]
	No	<i>Reference</i>		<i>Reference</i>		<i>Reference</i>	
Other treatment (non-OAT)	Yes	\$1336	[-\$2672, \$5343]	-\$98	[-\$1482, \$1285]	\$3173	[-\$9119, \$15466]
	No	<i>Reference</i>		<i>Reference</i>		<i>Reference</i>	

Control variables include: age, gender, education, history of incarceration, mental health issues, employment, homelessness, opioid use, and alcohol use

Average marginal effects presented with 95% confidence intervals in brackets

* p<0.1, ** p<0.05, *** p<0.01

Appendix Table 6: Full Part I logistic regression results for sensitivity analysis from alternative payer perspectives.

	Third-Party Payer		Arrests & Convictions	
	(1)		(2)	
Daily Crack	0.316*	[-0.034,0.665]	0.328*	[-0.036,0.692]
Non-Daily Crack	0.252*	[-0.043,0.548]	0.227	[-0.080,0.533]
Daily Meth	0.798***	[0.339,1.256]	0.806***	[0.321,1.292]
Non-Daily Meth	0.408**	[0.095,0.721]	0.337**	[0.009,0.666]
Daily Polystimulant	0.602***	[0.285,0.919]	0.633***	[0.305,0.961]
Non-Daily Polystimulant	0.514***	[0.261,0.766]	0.523***	[0.256,0.789]
Cocaine	0.077	[-0.281,0.435]	-0.025	[-0.408,0.358]
Treatment (OAT)	-0.444***	[-0.757,-0.131]	-0.365**	[-0.688,-0.043]
Other treatment (Non-OAT)	0.822***	[0.540,1.104]	0.866***	[0.575,1.156]
Age	0.025	[-0.035,0.085]	0.045	[-0.020,0.111]
Age²	-0.001**	[-0.002,-0.000]	-0.001***	[-0.002,-0.000]
Male	0.641***	[0.422,0.859]	0.739***	[0.507,0.971]
High School	-0.121	[-0.318,0.076]	-0.105	[-0.314,0.104]
Ever in jail	0.559***	[0.334,0.785]	0.653***	[0.404,0.902]
Mental health 16m	0.031	[-0.139,0.201]	0.006	[-0.172,0.185]
Homeless 16m	0.587***	[0.381,0.792]	0.532***	[0.318,0.747]
Employment 16m	-0.283***	[-0.478,-0.088]	-0.347***	[-0.555,-0.139]
Opioid	0.392***	[0.211,0.572]	0.347***	[0.158,0.536]
Alcohol	0.228**	[0.048,0.407]	0.115	[-0.080,0.309]
Constant	-2.325***	[-3.548,-1.102]	-2.978***	[-4.292,-1.664]

Observations: 5299

95% confidence intervals in brackets

* p<0.1, ** p<0.05, *** p<0.01

Appendix Table 7: Full Part II GLM results for sensitivity analysis from alternative payer perspectives.

	Third-Party Payer		Arrests & Convictions	
	(1)	(2)	(1)	(2)
Daily Crack	0.643	[-0.178,1.464]	-0.035	[-0.239,0.168]
Non-Daily Crack	0.533	[-0.241,1.306]	-0.074	[-0.252,0.104]
Daily Meth	0.489	[-0.449,1.427]	-0.132	[-0.321,0.057]
Non-Daily Meth	0.720**	[0.096,1.345]	-0.022	[-0.180,0.137]
Daily Polystimulant	1.288***	[0.596,1.981]	0.225*	[-0.000,0.450]
Non-Daily Polystimulant	0.721***	[0.193,1.250]	0.038	[-0.103,0.179]
Cocaine	1.043***	[0.256,1.831]	-0.001	[-0.186,0.185]
Treatment (OAT)	-0.47	[-1.288,0.348]	-0.172*	[-0.360,0.016]
Other treatment (Non-OAT)	-0.247	[-1.001,0.508]	0.073	[-0.103,0.249]
Age	-0.043	[-0.175,0.089]	-0.008	[-0.045,0.029]
Age²	0.001	[-0.001,0.002]	0	[-0.000,0.001]
Male	-0.404*	[-0.829,0.022]	-0.008	[-0.131,0.115]
High School	0.3	[-0.092,0.692]	0.028	[-0.071,0.127]
Ever in jail	-0.15	[-0.636,0.335]	0.130**	[0.012,0.249]
Mental health 16m	-0.336*	[-0.724,0.051]	-0.03	[-0.127,0.068]
Homeless 16m	0.522**	[0.104,0.940]	0.191***	[0.069,0.314]
Employment 16m	-0.3	[-0.711,0.112]	-0.077	[-0.199,0.045]
Opioid	0.313	[-0.075,0.702]	0.197***	[0.096,0.299]
Alcohol	-0.174	[-0.544,0.196]	0.052	[-0.058,0.162]
Constant	10.298***	[7.805,12.790]	7.688***	[6.957,8.419]

Observations: 5299

95% confidence intervals in brackets

* p<0.1, ** p<0.05, *** p<0.01

Appendix Table 8: Full Part I logistic regression results for sensitivity analysis to outlier threshold.

	> 98th Percentile Excluded (Base Model)		> 95th Percentile Excluded		> 98th Percentile Included	
	(n = 5299)		(n = 5268)		(n = 5322)	
	(1)		(2)		(3)	
Daily Crack	0.316*	[-0.034,0.665]	0.290*	[-0.055,0.635]	0.335*	[-0.012,0.681]
Non-Daily Crack	0.252*	[-0.043,0.548]	0.238	[-0.062,0.538]	0.249*	[-0.044,0.542]
Daily Meth	0.798***	[0.339,1.256]	0.762***	[0.309,1.216]	0.783***	[0.324,1.242]
Non-Daily Meth	0.408**	[0.095,0.721]	0.403**	[0.088,0.718]	0.403**	[0.092,0.714]
Daily Polystimulant	0.602***	[0.285,0.919]	0.552***	[0.233,0.871]	0.640***	[0.323,0.958]
Non-Daily Polystimulant	0.514***	[0.261,0.766]	0.510***	[0.257,0.763]	0.501***	[0.251,0.751]
Cocaine	0.077	[-0.281,0.435]	0.002	[-0.363,0.366]	0.095	[-0.260,0.451]
Treatment (OAT)	-0.444***	[-0.757,-0.131]	-0.428***	[-0.748,-0.109]	-0.448***	[-0.761,-0.134]
Other treatment (Non-OAT)	0.822***	[0.540,1.104]	0.825***	[0.537,1.113]	0.808***	[0.526,1.091]
Age	0.025	[-0.035,0.085]	0.029	[-0.031,0.089]	0.019	[-0.040,0.079]
Age²	-0.001**	[-0.002,-0.000]	-0.001**	[-0.002,-0.000]	-0.001**	[-0.002,-0.000]
Male	0.641***	[0.422,0.859]	0.651***	[0.432,0.869]	0.640***	[0.421,0.859]
High School	-0.121	[-0.318,0.076]	-0.131	[-0.328,0.065]	-0.119	[-0.317,0.078]
Ever in jail	0.559***	[0.334,0.785]	0.565***	[0.339,0.792]	0.577***	[0.352,0.801]
Mental health 16m	0.031	[-0.139,0.201]	0.03	[-0.140,0.200]	0.044	[-0.126,0.213]
Homeless 16m	0.587***	[0.381,0.792]	0.566***	[0.359,0.773]	0.634***	[0.428,0.840]
Employment 16m	-0.283***	[-0.478,-0.088]	-0.261***	[-0.456,-0.067]	-0.299***	[-0.493,-0.106]
Opioid	0.392***	[0.211,0.572]	0.381***	[0.202,0.560]	0.387***	[0.206,0.568]
Alcohol	0.228**	[0.048,0.407]	0.254***	[0.072,0.435]	0.235***	[0.057,0.414]
Constant	-2.325***	[-3.548,-1.102]	-2.421***	[-3.633,-1.208]	-2.230***	[-3.438,-1.023]

95% confidence intervals in brackets

* p<0.1, ** p<0.05, *** p<0.01

Appendix Table 9: Full Part II GLM results for sensitivity analysis to outlier threshold.

	> 98th Percentile Excluded (Base Model) (n = 5299)		> 95th Percentile Excluded (n = 5268)		> 98th Percentile Included (n = 5322)	
	(1)		(2)		(3)	
Daily Crack	0.626	[-0.198,1.449]	0.56	[-0.327,1.448]	0.461	[-0.456,1.377]
Non-Daily Crack	0.484	[-0.284,1.252]	-0.015	[-0.549,0.518]	0.26	[-0.652,1.171]
Daily Meth	0.564	[-0.345,1.472]	-0.356	[-0.988,0.276]	-0.558	[-1.584,0.468]
Non-Daily Meth	0.806***	[0.200,1.412]	1.100***	[0.516,1.684]	0.437	[-0.328,1.203]
Daily Polystimulant	1.273***	[0.579,1.968]	0.781**	[0.146,1.417]	1.108***	[0.294,1.923]
Non-Daily Polystimulant	0.682**	[0.155,1.209]	0.444*	[-0.063,0.950]	-0.112	[-0.825,0.602]
Cocaine	1.057***	[0.268,1.846]	0.593*	[-0.093,1.279]	0.949*	[-0.072,1.971]
Treatment (OAT)	-0.402	[-1.203,0.398]	0.148	[-0.355,0.652]	-0.593	[-1.546,0.361]
Other treatment (Non-OAT)	-0.305	[-1.045,0.435]	-0.606***	[-1.063,-0.148]	-0.246	[-1.156,0.663]
Age	-0.04	[-0.172,0.092]	-0.058	[-0.171,0.055]	-0.169**	[-0.312,-0.025]
Age²	0.001	[-0.001,0.002]	0.001	[-0.001,0.002]	0.002**	[0.000,0.004]
Male	-0.416*	[-0.843,0.011]	-0.563***	[-0.963,-0.162]	-0.365*	[-0.797,0.067]
High School	0.281	[-0.104,0.666]	0.004	[-0.329,0.336]	0.319	[-0.137,0.774]
Ever in jail	-0.103	[-0.580,0.374]	0.28	[-0.108,0.669]	0.458*	[-0.068,0.984]
Mental health 16m	-0.32	[-0.708,0.069]	-0.1	[-0.420,0.221]	-0.259	[-0.657,0.138]
Homeless 16m	0.565***	[0.151,0.979]	0.24	[-0.098,0.577]	1.482***	[1.020,1.944]
Employment 16m	-0.321	[-0.726,0.085]	0.104	[-0.237,0.446]	-0.609**	[-1.082,-0.135]
Opioid	0.343*	[-0.039,0.725]	0.326*	[-0.019,0.671]	0.327	[-0.101,0.756]
Alcohol	-0.158	[-0.520,0.204]	0.517***	[0.201,0.834]	0.022	[-0.384,0.428]
Constant	10.304***	[7.825,12.782]	10.009***	[7.925,12.093]	13.130***	[10.424,15.835]

95% confidence intervals in brackets

* p<0.1, ** p<0.05, *** p<0.01

Appendix Table 10: Full results for fixed effects logistic regression sensitivity analysis for Part I of baseline specification.

	Baseline Part I (Logit) (n=5299)		Fixed Effects Part I (Logit) (n=1795)	
	(1)		(2)	
Daily Crack	0.316*	[-0.034,0.665]	0.182	[-0.445,0.809]
Non-Daily Crack	0.252*	[-0.043,0.548]	0.152	[-0.340,0.644]
Daily Meth	0.798***	[0.339,1.256]	0.979**	[0.204,1.755]
Non-Daily Meth	0.408**	[0.095,0.721]	0.174	[-0.367,0.715]
Daily Polystimulant	0.602***	[0.285,0.919]	0.103	[-0.462,0.669]
Non-Daily Polystimulant	0.514***	[0.261,0.766]	0.438*	[-0.023,0.900]
Cocaine	0.077	[-0.281,0.435]	0.353	[-0.217,0.923]
Treatment (OAT)	-0.444***	[-0.757,-0.131]	0.337	[-0.278,0.952]
Other treatment (Non-OAT)	0.822***	[0.540,1.104]	0.381	[-0.075,0.836]
Age	0.025	[-0.035,0.085]	0.378*	[-0.038,0.793]
Age²	-0.001**	[-0.002,-0.000]	-0.007***	[-0.012,-0.003]
Male	0.641***	[0.422,0.859]	-	<i>Omitted</i>
High School	-0.121	[-0.318,0.076]	-	<i>Omitted</i>
Ever in jail	0.559***	[0.334,0.785]	-	<i>Omitted</i>
Mental health 16m	0.031	[-0.139,0.201]	0.247*	[-0.037,0.532]
Homeless 16m	0.587***	[0.381,0.792]	0.273*	[-0.042,0.589]
Employment 16m	-0.283***	[-0.478,-0.088]	-0.103	[-0.430,0.225]
Opioid	0.392***	[0.211,0.572]	0.035	[-0.291,0.362]
Alcohol	0.228**	[0.048,0.407]	0.124	[-0.177,0.425]
Constant	-2.325***	[-3.548,-1.102]	-2.978***	[-4.292,-1.664]

95% confidence intervals in brackets

* p<0.1, ** p<0.05, *** p<0.01