SMOKING CESSATION

FOR CANCER PATIENTS

MARCH 2017

Key Cost Estimates on Cancer Treatment and Smoking Cessation in Canada

RAW DATA FILE

CANADIAN PARTNERSHIP AGAINST CANCER
PARTENARIAT CANADIEN CONTRE LE CANCER

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How to use this resource

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- Please refer to the Key Costs Slides for details on methods, scope and limitations
- This document contains detailed assumptions, sources of information to develop key cost estimates on smoking cessation and cancer treatment
- Multiple assumptions are presented within which may not represent all jurisdictions and/or patient populations
- Changes over time in intervention costs, evidence on effectiveness and healthcare costs may change the estimates presented within
- Users are encouraged to use these estimates as starting point in developing jurisdiction-specific cost estimates

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Average Costs of Smoking Cessation Interventions (2016 Dollars)

PHARMACOTHERAPY – MEDICATIONS

CESSATION INTERVENTION	POLICY AND SOURCE	AVERAGE CANADIAN COST ESTIMATE – 2016 DOLLARS	AVERAGE COST PER WEEK/ HOUR	NUMBER NEEDED TO TREAT (NNT)	F/P/T COVERAGE[a]
Bupropion (BUP) ***(Zyban and Bupropion HCL Generic Versions)***	Days 1-3: Take one 150mg tablet once a day in the morning. Day 4 to the end of treatment: Take one 150 mg tablet twice a day, once in the morning and once in the early evening (at least 8 hours between doses). The recommended length of bupropion therapy is seven to twelve weeks.[b] Bupropion can be used for an additional 12 weeks, if needed.[c]	**Zyban:** **Min:** 7 weeks therapy: **$92** **Mean:** 9 weeks therapy: **$119** **Max:** 12 weeks therapy: **$160** **Generic Versions:** **Min:** 7 weeks therapy: **$25** **Ave:** 9 weeks therapy: **$32** **Max:** 12 weeks therapy: **$43**	**Zyban:** $13/w **Generic:** $4/w	11[d] (abstinence at 6 months	AB BC NB NIHB NL NT NU ON PE QC SK
Varenicline (VAR) ***(Champix)***	Days 1-3: take one 0.5mg tablet once a day. Days 4-7: take one 0.5mg tablet twice a day, once in the morning and once at night. Day 8 to the end of treatment: take one 0.5mg **or** 1mg tablet twice a day, once in the morning and once at night. The recommended length of varenicline treatment lasts between 12 and 24 weeks.[e,f]	**Min:** 12 weeks therapy: **$304** **Mean:** 18 weeks therapy: **$459** **Max:** 24 weeks therapy: **$614**[g]	$25/w	8[h] (abstinence at 6 months	AB BC MB NB NIHB NL NS NT NU ON PE QC SK

PHARMACOTHERAPY – NICOTINE REPLACEMENT THERAPY (NRT)

CESSATION INTERVENTION	POLICY AND SOURCE	AVERAGE CANADIAN COST ESTIMATE – 2016 DOLLARS	AVERAGE COST PER WEEK/ HOUR	NUMBER NEEDED TO TREAT (NNT)	F/P/T COVERAGE[i]
NRT: Gum ***(Nicorette, Thrive)***	Typically used for 3 months; different dosages (2mg and 4mg units), can chew between 10-12 pieces per day initially; max 20 pieces.[e,j] Beyond 12 weeks, use 1-2 pieces/day if needed to manage cravings.[k]	**12 weeks use.** **Min:** 10 pieces per day: **$218** **Mean:** 16 pieces per day: **$349** **Max:** 20 pieces per day: **$437**	**Min:** $18/w **Mean:** $29/w **Max:** $36/w	15[l]	AB BC MB NIHB NL NS NT NU PE QC YK
NRT: Inhaler ***(Nicorette Inhaler)***	6-12 cartridges per day for first 6 weeks, gradually reduce number of cartridges/day from weeks 6-12. Beyond 12 weeks, use 1-2 cartridges/day, if needed to manage cravings.[m]	**Min:** 6 cartridges/day – 12 weeks; 1 cartridge/day – 12 weeks: **$447** **Mean:** 12 cartridges/day – 12 weeks; 3 cartridges/day – 3 weeks; 1 cartridge/day – 3 weeks: **$830** **Max:** 16 cartridges/day – 12 weeks; 6 cartridges/day – 3 weeks; 2 cartridges/day – 3 weeks: **$1149**	**Min:** $19/w **Mean:** $46/w **Max:** $64/w	15[l]	
NRT: Spray ***(Nicorette Quickmist)***	32-64 sprays per day for first 6 weeks, then 16-32 sprays per day for next 3 weeks, then 2-4 sprays per day for next 3 weeks.[n] Typically used for 12 weeks, gradually reduce sprays/day from weeks 6-12. Use beyond 12 weeks, if needed to manage cravings.[o]	**Min:** 32 sprays/day – 6 weeks; 16 sprays/day – 3 weeks; 2 sprays/day – 3 weeks: **$362** **Mean:** 48 sprays/day – 6 weeks; 24 sprays/day – 3 weeks; 3 sprays/day – 3 weeks: **$542** **Max:** 64 sprays/day – 6 weeks; 32 sprays/day – 3 weeks; 4 sprays/day – 3 weeks: **$723**	**Min:** $30/w **Mean:** $45/w **Max:** $60/w	15[l]	
NRT: Patch ***(Habitrol, Nicoderm, Transdermal Nicotine)***	Varies; typically worn for 3 months; different dosages (7-21 mg), worn for different time periods (16-24 hours) – may switch dosages in the 3 months.[e] Patch can be used for 10-12 weeks or longer if necessary.[p]	**Min:** 8 weeks: **$160** **Mean:** 10 weeks: **$200** **Max:** 12 weeks: **$239**	$20/w	15[l]	
NRT: Lozenge ***(Nicorette)***	Weeks 1-6, 8-15 lozenges/day; Weeks 7-9, 4-8 lozenges/ day; Weeks 10-12, 2-4 lozenges/ day. Beyond 12 weeks, use 1-2 lozenges/ day if needed to manage cravings.[qr]	**Min:** 6 weeks – 8 lozenges/day; 3 weeks – 4 lozenges/day; 3 weeks – 2 lozenges/day: **$118** **Mean:** 6 weeks – 12 lozenges/day; 3 weeks: 6 lozenges/day; 3 weeks: 3 lozenges/day; 6 weeks: 1 lozenge/day: **$188** **Max:** 6 weeks: 15 lozenges/day; 3 weeks: 8 lozenges/day; 3 weeks: 4 lozenges/day; 12 weeks: 2 lozenges/day: **$268**	**Min:** $10/w **Mean:** $10.50/w **Max:** $11/w	15[l]	

BEHAVIOURAL/COUNSELLING

CESSATION INTERVENTION	POLICY AND SOURCE	AVERAGE CANADIAN COST ESTIMATE – 2016 DOLLARS	AVERAGE COST PER WEEK/ HOUR	NUMBER NEEDED TO TREAT (NNT)	F/P/T COVERAGE[s]
Brief Counselling	Ask, Advise, Assist approach[t,u]	**Ask:** 30 seconds: **$0.36** **Advise:** 2 minutes: **$1.43** **Assist:** 30 minutes: **$21.47** **Total: $23**	$43/h[v]	34-40[w,x]	Varies by P/T Some jurisdictions have implemented billing codes for cessation
Intensive Counselling	Step 1: Ask, Advise, Assist approach[n,o] Step 2: First visit to smoking cessation program for counselling with health care professional Step 3: One visit per week for counselling for 11 weeks Step 4: 26-week follow-up phone call[o]	**Assumptions:** Step 1: **$23** Step 2: 1 hour: **$43** Step 3: 330 minutes: **$236** Step 4: 10 minute phone call: **$7** **Total: $310**	**$43/h[p]**	14-27[q,y,z]	Varies by P/T Some jurisdictions have implemented billing codes for cessation

TABLE NOTES AND SOURCES

[a] Full Federal (F), Provincial (P), Territorial (T) coverage details available at: https://content.cancerview.ca/download/cv/prevention_and_screening/tobacco_cessation/documents/cessationaidcoveragepdf?attachment=0 NIHB= Non-Insured Health Benefits from Health Canada.

[b] BC Smoking Cessation Program: https://www.quitnow.ca/quitting/medications/nicotine-bupropion

[c] Reid, RD, Pritchard G, Walker K et al. (2016). Managing smoking cessation. Canadian Medical Association Journal. 188 (17-18).

[d] Smoking cessation, Pharmacological therapy- BPJ 20 2009 [Internet]. Available from: http://www.bpac.org.nz/BPJ/2009/April/quitting.aspx

[e] BC Smoking Cessation Program: https://www.quitnow.ca/quitting/medications/nicotine-varenicline

[f] AB Smoking Cessation Program: https://www.albertaquits.ca/files/AB/files/library/AB_PDF_Nicotime_Replacement_and_Prescription_Drugs.pdf

[g] The costs for 0.5mg and 1.0mg of VAR are equal because the number of units ingested is equal at either dosage, and the average cost per unit is also equal at either dosage.

[h] Smoking cessation – Pharmacological therapy: http://www.bpac.org.nz/BPJ/2009/April/quitting.aspx http://www.bpac.org.nz/BPJ/2009/April/quitting.aspx

[i] Full Federal (F), Provincial (P), Territorial (T) coverage details available from: https://content.cancerview.ca/download/cv/prevention_and_screening/tobacco_cessation/documents/cessationaidcoveragepdf?attachment=0; NIHB= Non-Insured Health Benefits from Health Canada.

[j] Health Canada: http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/body-corps/aid-eng.php

[k] Reid, RD, Pritchard G, Walker K et al. (2016). Managing smoking cessation. Canadian Medical Association Journal. 188 (17-18).

[l] Nicotine Replacement Therapy for Smoking Cessation: http://www.thennt.com/nnt/nicotine-replacement-therapy-for-smoking-cessation/

[m] Reid, RD, Pritchard G, Walker K et al. (2016). Managing smoking cessation. Canadian Medical Association Journal. 188 (17-18).

[n] Nicorette: http://www.nicorette.ca/products/quickmist

[o] Reid, RD, Pritchard G, Walker K et al. (2016). Managing smoking cessation. Canadian Medical Association Journal. 188 (17-18).

[p] Reid, RD, Pritchard G, Walker K et al. (2016). Managing smoking cessation. Canadian Medical Association Journal. 188 (17-18).

[q] Nicorette: http://www.nicorette.ca/products/lozenge

[r] Reid, RD, Pritchard G, Walker K et al. (2016). Managing smoking cessation. Canadian Medical Association Journal. 188 (17-18).

[s] Full Federal (F), Provincial (P), Territorial (T) coverage details available from: https://content.cancerview.ca/download/cv/prevention_and_screening/tobacco_cessation/documents/cessationaidcoveragepdf?attachment=0; NIHB= Non-Insured Health Benefits from Health Canada.

[t] CAN-ADAPTT. Canadian Smoking Cessation Clinical Practice Guidelines. 2011;64. Available from: https://www.nicotinedependenceclinic.com/English/CANADAPTT/Guideline/Introduction.aspx

[u] University of Ottawa Heart Institute. Best Practices for Clinical Smoking Cessation in Canada: The Ottawa Model for Smoking Cessation 2011-2012 Highlight Document. 2012; Available from: http://ottawamodel.ottawaheart.ca/files/omsc/docs/omsc2011-12report.pdf

[v] Average wage of health care professionals (physicians, registered nurses + pharmacists) used to calculate personnel costs

[w] Physician advice alone has a small effect on smoking cessation: http://www.cochraneprimarycare.org/physician-advice-alone-has-small-effect-smoking-cessation

[x] What are the most effective ways you can help patients stop smoking? | The Journal of Family Practice [Internet]. Available from: http://www.mdedge.com/jfponline/article/63215/what-are-most-effective-ways-you-can-help-patients-stop-smoking

[y] PEARLS Practical Evidence About Real Life Situations Motivational interviewing may assist smokers to quit [Internet]. [cited 2016 Dec 7]. Available from: http://www.cochraneprimarycare.org/sites/cochraneprimarycare.org/files/public/uploads/pearls/249_Motivational%20interviewing%20may%20assist%20smokers%20to%20quit.pdf

[z] Moore RA, Gavaghan DJ, Edwards JE, Wiffen P, McQuay HJ, Cates C, et al. Pooling data for Number Needed to Treat: no problems for apples. BMC Med Res Methodol [Internet]. BioMed Central; 2002 Dec 25 [cited 2016 Dec 7];2(1):2. Available from: http://bmcmedresmethodol.biomedcentral.com/articles/10.1186/1471-2288-2-2

ADDITIONAL SOURCES OF NRT COST INFORMATION:

Costs of NRT were derived from publicly available information from provincial and territorial drug formularies in Canada. At the time of this analysis, information was available publicly from Alberta* and Quebec†. Price per unit of NRT was used in the development of cost estimates, an average of price was developed across brands and in some cases dosages. The following table summarizes the unit costs and the average cost for each NRT strategy. For the lozenges, assumptions were developed as prices were not listed on available formularies for this intervention. The assumption was that the price of a unit of lozenge was equal to the price of an average unit of gum.

INTERVENTION	GENERIC NAME	BRAND NAME	DOSAGE	AB UNIT PRICE	QC UNIT PRICE	AVERAGE
Cartridge	Nicotine	Nicorette Inhaler	10 mg	$0.7566		$0.76
Gum	Nicotine	Nicorette	2 mg	$0.3027	$0.2524	$0.28
Gum	Nicotine	Thrive	2 mg		$0.2016	$0.20
Gum	Nicotine	Nicorette Plus	4 mg	$0.3027	$0.2524	$0.28
Gum	Nicotine	Thrive	4 mg		$0.2636	$0.26
Patch	Nicotine	Habitrol	14 mg/24 hr	$2.6786	$2.6786	$2.68
Patch	Nicotine	Nicoderm	14 mg/24 hr	$3.6157	$2.6786	$3.15
Patch	Nicotine	Transdermal Nicotine	14 mg/24 hr	$2.7257		$2.73
Patch	Nicotine	Habitrol	21 mg/24 hr	$2.6786	$2.6786	$2.68
Patch	Nicotine	Nicoderm	21 mg/24 hr	$3.6157	$2.6786	$3.15
Patch	Nicotine	Transdermal Nicotine	21 mg/24 hr	$2.7257		$2.73
Patch	Nicotine	Habitrol	7 mg/24 hr	$2.6786	$2.6786	$2.68
Patch	Nicotine	Nicoderm	7 mg/24 hr	$3.6157	$2.6786	$3.15
Patch	Nicotine	Transdermal Nicotine	7 mg/24 hr	$2.7257		$2.73
Spray	Nicotine	Nicorette Quickmist	1 mg	$0.2119		$0.21

* Alberta Drug Formulary: https://www.ab.bluecross.ca/dbl/idbl_main1.html

† Quebec Drug Formulary: http://www.ramq.gouv.qc.ca/en/publications/citizens/legal-publications/Pages/list-medications.aspx

Smoking Cessation Intervention Building Blocks

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These scenarios are meant to be illustrative examples. Jurisdictions are encouraged to build their own scenarios as a starting point, and incorporating local sources of data to improve accuracy of the estimates.

SMOKING CESSATION INTERVENTIONS BY AVERAGE PER PATIENT QUIT ATTEMPT COSTS + NUMBER OF PATIENT QUIT ATTEMPTS

	AVERAGE PER QUIT ATTEMPT COSTS						NUMBER OF QUIT ATTEMPTS[1]		
INTERVENTION*	BRIEF ADVICE	INTENSIVE COUNSELLING	BUP	VAR	NRT	SUBTOTAL	MIN 6.3	AVG 19.6	MAX 29.6
Brief Advice only	$23					$23	$144.90	$450.80	$680.80
Brief Advice + BUP	$23		$43			$66	$415.80	$1,293.60	$1,953.60
Intensive Counselling only		$310				$310	$1953.00	$6,076.00	$9,176.00
Brief Advice + VAR	$23			$304		$327	$2060.10	$6,409.20	$9,679.20
Intensive Counselling + BUP		$310	$43			$353	$2223.90	$6,918.80	$10,448.80
NRT only					$360	$360	$2268.00	$7056.00	$10,656.00
Brief Advice + NRT	$23				$360	$383	$2412.90	$7506.80	$11,336.80
Intensive Counselling + VAR		$310		$304		$614	$3868.20	$12,034.40	$18,174.40
Intensive Counselling + NRT		$310			$360	$670	$4221.00	$13,132.00	$19,832.00
Intensive Counselling + BUP + NRT		$310	$43		$360	$713	$4491.90	$13,974.80	$21,104.80
Intensive Counselling + VAR + NRT		$310		$304	$360	$974	$6136.20	$19,090.40	$28,830.40

TABLE NOTES AND SOURCES

[1] Based on modelling and data from Chaiton et al, 2016 study on estimating quit attempts in Canadian population, minimal, maximal, and average scenarios are presented that would likely be relevant to most cancer patient populations. Minimum quit attempts = 6.3 attempts. This scenario comes from a recall of quit attempts over a lifetime amongst successful quitters, may underestimate actual number of quit attempts. Maximum quit attempts = 29.6 attempts. This scenario comes from a life table approach, whereby the success rate of quit attempts varies by "quit attempt age" as observed during period of the study. This approach is offsetting – it overestimates chance of success, may underestimate subsequent attempts. Average quit attempts = 19.6 attempts. This scenario comes from a constant rate assumption, whereby every quit attempt has the same chance of success, no matter how many previous quit attempts there have been, may underestimate actual number of quit attempts. Finally, Chaiton et al's maximum quit attempts (142) wasn't used in this analysis, as this represents a lifetime approach, and is less relevant to the cancer patient population, though may be helpful when estimating quit attempts in the general population.

Chaiton M, Diemert L, Cohen JE, *et al* Estimating the number of quit attempts it takes to quit smoking successfully in a longitudinal cohort of smokers *BMJ Open* 2016;6:e011045. doi: 10.1136/bmjopen-2016-011045

* Effectiveness of each intervention varies

SCENARIO 1 – BRIEF ADVICE + REFERRAL

INTERVENTION	UNIT	COST/UNIT	PER PATIENT QUIT ATTEMPT COST
Personnel costs to complete screening	0.5 minutes	$42/hour[a]	$0.35
Personnel costs to provide advice	2.0 minutes	$42/hour[a]	$1.41
Personnel costs to complete referral*	0.5 hours	$42/hour[a]	$21.16
		SUBTOTAL	$23 per quit attempt
			TOTAL
Min number of quit attempts[1]	6.3 attempts	$23/per attempt	**$144.90 per patient**
Avg number of quit attempts[1]	19.6 attempts	$23/per attempt	**$450.80 per patient**
Max number of quit attempts[1]	29.6 attempts	$23/per attempt	**$680.80 per patient**

TABLE NOTES AND SOURCES

[a] Average wage of health care professionals (physicians, registered nurses + pharmacists) used to calculate personnel costs

* Referral may be to an external smoking cessation program, quitline, etc

[1] Based on modelling and data from Chaiton et al, 2016 study on estimating quit attempts in Canadian population, minimal, maximal, and average scenarios are presented that would likely be relevant to most cancer patient populations. Minimum quit attempts = 6.3 attempts. This scenario comes from a recall of quit attempts over a lifetime amongst successful quitters, may underestimate actual number of quit attempts. Maximum quit attempts = 29.6 attempts. This scenario comes from a life table approach, whereby the success rate of quit attempts varies by "quit attempt age" as observed during period of the study. This approach is offsetting – it overestimates chance of success, may underestimate subsequent attempts. Average quit attempts = 19.6 attempts. This scenario comes from a constant rate assumption, whereby every quit attempt has the same chance of success, no matter how many previous quit attempts there have been, may underestimate actual number of quit attempts. Finally, Chaiton et al's maximum quit attempts (142) wasn't used in this analysis, as this represents a lifetime approach, and is less relevant to the cancer patient population, though may be helpful when estimating quit attempts in the general population.

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SCENARIO 2 – BRIEF ADVICE + NRT

INTERVENTION	UNIT	COST/UNIT	PER PATIENT QUIT ATTEMPT COST
Personnel costs to complete screening	0.5 minutes	$42/hour[a]	$0.35
Personnel costs to provide advice	2.0 minutes	$42/hour[a]	$1.41
Personnel costs to assist with NRT[b]	0.5 hours	$42/hour[a]	$21.16
NRT[b]	12 weeks	$30/week[b]	$360.00
		SUBTOTAL	$383 per quit attempt
			TOTAL
Min number of quit attempts[1]	6.3 attempts	$383/per attempt	**$2412.90 per patient**
Avg number of quit attempts[1]	19.6 attempts	$383/per attempt	**$7506.80 per patient**
Max number of quit attempts[1]	29.6 attempts	$383/per attempt	**$11336.80 per patient**

TABLE NOTES AND SOURCES

[a] Average wage of health care professionals (physicians, registered nurses + pharmacists) used to calculate personnel costs

[b] NRT could be patch, gum, lozenge, inhaler or spray. Average costs per week, based on average use of each form: $20 patch, $10 lozenge, $29 gum, $45 spray + $46 inhaler

[1] Based on modelling and data from Chaiton et al, 2016 study on estimating quit attempts in Canadian population, minimal, maximal, and average scenarios are presented that would likely be relevant to most cancer patient populations. Minimum quit attempts = 6.3 attempts. This scenario comes from a recall of quit attempts over a lifetime amongst successful quitters, may underestimate actual number of quit attempts. Maximum quit attempts = 29.6 attempts. This scenario comes from a life table approach, whereby the success rate of quit attempts varies by "quit attempt age" as observed during period of the study. This approach is offsetting – it overestimates chance of success, may underestimate subsequent attempts. Average quit attempts = 19.6 attempts. This scenario comes from a constant rate assumption, whereby every quit attempt has the same chance of success, no matter how many previous quit attempts there have been, may underestimate actual number of quit attempts. Finally, Chaiton et al's maximum quit attempts (142) wasn't used in this analysis, as this represents a lifetime approach, and is less relevant to the cancer patient population, though may be helpful when estimating quit attempts in the general population.

Chaiton M, Diemert L, Cohen JE, *et al* Estimating the number of quit attempts it takes to quit smoking successfully in a longitudinal cohort of smokers *BMJ Open* 2016;6:e011045. doi: 10.1136/bmjopen-2016-011045

SCENARIO 3 – "BEST PRACTICE" SMOKING CESSATION PROGRAM (COUNSELLING + PHARMACOTHERAPY)

	INTERVENTION	UNIT	COST/UNIT	PER PATIENT QUIT ATTEMPT COST
A	Personnel costs to complete screening, advice + referral to internal best practice smoking cessation program	2.5 minutes + 0.5 hours	$42/hour[a]	$22.92
	Personnel costs for initial visit to smoking cessation program	1.0 hours	$42/hour	$42.32
	Personnel costs for counselling sessions	0.5 hours/week for 11 weeks	$42/hour	$237.82
	Personnel costs for follow-up phone call at 26 weeks	10 minutes	$42/hour	$7.05
			SUBTOTAL	**$310.11**
B	Varenicline (VAR)	12 weeks	$25/week	$304.00
C	Buproprion (BUP)	12 weeks	$3.58/week	$43.00
D	NRT	12 weeks	$30/week	$360.00

		MIN QUIT ATTEMPTS	AVG QUIT ATTEMPTS	MAX QUIT ATTEMPTS
SUBTOTAL COMBINATION OF COUNSELLING + PHARMACOTHERAPY		**6.3**	**19.6**	**29.6**
A + C =	$353	$2223.90	$6,918.80	$10,448.80
A + B =	$614	$3,868.20	$12,034.40	$18,174.40
A + D =	$670	$4221.00	$13,132.00	$19,832.00
A + C + D =	$713	$4491.90	$13,974.80	$21,104.80
A + B + D =	$974	$6136.20	$19,090.40	$28,830.40

TABLE NOTES AND SOURCES

[a] Average wage of health care professionals (physicians, registered nurses + pharmacists) used to calculate personnel costs

[B] NRT could be patch, gum, lozenge, inhaler or spray. Average costs per week, based on average use of each form: $20 patch, $10 lozenge, $29 gum, $45 spray + $46 inhaler

[1] Based on modelling and data from Chaiton et al, 2016 study on estimating quit attempts in Canadian population, minimal, maximal, and average scenarios are presented that would likely be relevant to most cancer patient populations. Minimum quit attempts = 6.3 attempts. This scenario comes from a recall of quit attempts over a lifetime amongst successful quitters, may underestimate actual number of quit attempts. Maximum quit attempts = 29.6 attempts. This scenario comes from a life table approach, whereby the success rate of quit attempts varies by "quit attempt age" as observed during period of the study. This approach is offsetting – it overestimates chance of success, may underestimate subsequent attempts. Average quit attempts = 19.6 attempts. This scenario comes from a constant rate assumption, whereby every quit attempt has the same chance of success, no matter how many previous quit attempts there have been, may underestimate actual number of quit attempts. Finally, Chaiton et al's maximum quit attempts (142) wasn't used in this analysis, as this represents a lifetime approach, and is less relevant to the cancer patient population, though may be helpful when estimating quit attempts in the general population.

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Average Costs of Cancer Treatment (2016 Dollars)[aa]

MALES

TUMOUR SITE	PHASE, ESTIMATED AVERAGE NET COST (95% CI)*			
	PRE-DIAGNOSIS (3 MONTHS)**	INITIAL (6 MONTHS)**	CONTINUING (ANNUAL)**	TERMINAL (12 MONTHS)**
Lung	$2065 ($1643–$2489)	$25,244 ($25,236–$25,253)	$6233 ($6225–$6240)	$44,206 ($44,200–$44,213)
Colorectal	$310 (–$114-$733)	$28,319 ($28,311–$28,328)	$6135 ($6131–$6141)	$36,509 ($36,501–$36,516)
Prostate	$718 ($423–$1013)	$9456 ($9453–$9460)	$5652 ($5650–$5655)	$19,591 ($19,585–$19,598)
Head and Neck	$670 ($367–$975)	$22,195 ($22,182–$22,208)	$5802 ($5794–$5812)	$42,071 ($42,056–$42,087)

FEMALES

TUMOUR SITE	PHASE, ESTIMATED AVERAGE NET COST (95% CI)*			
	PRE-DIAGNOSIS (3 MONTHS)**	INITIAL (6 MONTHS)**	CONTINUING (ANNUAL)**	TERMINAL (12 MONTHS)**
Lung	$2306 ($1857–$2754)	$24,314 ($24,300–$24,329)	$7042 ($7033–$7052)	$40,177 ($40,169–$40,184)
Breast	$1370 ($1063–$1675)	$13,765 ($13,758–$13,771)	$7594 ($7591–$7597)	$20,946 ($20,939–$20,951)
Colorectal	$611 ($137–$1085)	$27,898 ($27,885–$27,912)	$6026 ($6019–$6033)	$35,058 ($35,050–$35,065)
Head and Neck	$1371 ($988–$1754)	$22,803 ($22,769–$20,835)	$7941 ($7922–$7959)	$40,985 ($40,962–$41,008)

TABLE NOTES AND SOURCES

* Estimated average net costs for each phase includes costs of chemotherapy and radiation therapy, all physician services (primary care physicians, specialists and other physicians) and diagnostic tests and laboratory services, outpatient prescription drugs for patients aged 65+ and/or on social assistance (only), inpatient hospitalizations (which includes any drugs provided during the hospital stay), ambulatory care (which includes same-day surgeries/procedures and emergency department visits), other institution-based care (which includes complex continuing care and long-term care), and home care. These costs **do not cover** community service agency costs, costs covered under private health care plans, including outpatient drug costs for those aged <65 years, or other health care costs paid out-of-pocket.

** For the average costs of cancer treatment, all patients had a pre-diagnosis phase, which is defined as the 3 months before diagnosis. This phase typically includes diagnostic testing to establish the cancer diagnosis. Following the pre-diagnosis phase, the time between diagnosis and death was divided into three clinically relevant phases of care:

1. Initial: includes the primary course of therapy and any adjuvant therapy (defined as 6 months from date of diagnosis);

2. Continuing: encompasses ongoing surveillance and active follow-up treatment for cancer recurrence and/or new primary cancers (expressed as an annual estimate); and

3. Terminal: captures the intensive services, often palliative, provided in the year before death.

[aa] de Oliveira C, Pataky R, Bremner KE, Rangrej J, Chan KKW, Cheung WY, et al. Phase-specific and lifetime costs of cancer care in Ontario, Canada. BMC Cancer [Internet]. BMC Cancer; 2016;16(1):809. Available from: http://bmccancer.biomedcentral.com/articles/10.1186/s12885-016-2835-7

SMOKING CESSATION

FOR CANCER PATIENTS

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