

**Supplementary File 1: Fee Schedule by Province**

<b><u>Province</u></b>	<b><u>Name of procedure</u></b>	<b><u>Code</u></b>	<b><u>Price (CAD\$)</u></b>
<b>Alberta<sup>1</sup></b>	Inhalation challenge test	03.38Q	226.29
<b>British Columbia<sup>2</sup></b>	Inhalation challenge		71.42 (total)
	Professional fee	S00968	35.71
	Technical fee	S00969	35.71
<b>Manitoba<sup>3</sup></b>	Histamine, methacholine, cold air administration for measurement of non specific reactivity for asthma	8865	142.30 (total)
	Professional component	8863	93.95
	Technical component	8864	48.35
<b>New Brunswick<sup>4</sup></b>	Non specific bronchial provocative test	2131	78.50
<b>Newfoundland and Labrador<sup>5</sup></b>	Histamine or methylcholine threshold test	58350	34.70
<b>Nova Scotia<sup>6</sup></b>	Inhalation Bronchial Challenge Testing with methacholine or similar compounds	03.38A	45.98
<b>Ontario<sup>7</sup></b>	Non-specific bronchial provocative test (histamine, methacholine, thermal challenge)	J333A	82.95
	Professional component	J333C	34.70
	Technical component	J333B	48.25
<b>Prince Edward Island<sup>8</sup></b>	Metacholine Challenge	2245	72.23
<b>Québec<sup>9</sup></b>	Test de provocation bronchique non spécifique (histamine ou méthacholine ou les deux)	00815	40.00
<b>Saskatchewan<sup>10</sup></b>	Histamine-Methacholine test		111.20
	Professional component	77D	89.90
	Technical component	276D	21.30
<b>Average Price</b>			90.56

These prices and codes come from the most up-to-date fee schedule for each province, for which the year of publication varies between 2010 and 2014 (see the references for more information).

**SUPPLEMENTAL REFERENCES**

1. Alberta Health Care Insurance Plan. Medical Procedure List. 2014.
2. British Columbia Medical Services Commission. Payment Schedule. 2014.
3. Manitoba Minister of Health. Manitoba Physician's Manual. 2014.
4. Government of New Brunswick. New Brunswick Physicians' Manual. 2014.
5. Newfoundland and Labrador Department of Health & Community Services. Medical Payment Schedule. 2013.
6. Nova Scotia Medical Services Insurance. Physicians' Bulletin. Vol L. 2014.
7. Ontario Health Insurance. Schedule of Benefits and Fees. 2014.
8. Medical Society of Prince Edward Island, Government of Prince Edward Island, Health PEI. Master Agreement. 2010.
9. Régie de l'assurance maladie du Québec. Manuel de facturation Rémunération à l'acte. 2013.
10. Saskatchewan Ministry of Health. Payment Schedule for Insured Services Provided by a Physician. 2012.

**Supplementary File 2: Exclusions and Data Format and Handling**

Nova Scotia does not have medical claim records for BCT for the relevant time period because it only recently developed the corresponding billing code. Nova Scotia was therefore excluded from the study. For Prince-Edward Island, the data cell for year 2006-2007 indicated “Too small for reporting – less than 6.” Thus, the number of tests for this year was assumed to be five. For Ontario year 2001, J333A counts were added to J333C for a more accurate total count (billing option “A” was discontinued in 2001). To compute the sum of BCT claims (only to estimate the percentage of asthmatics who had a bronchial challenge test between 2000-2014), the missing data cell for Newfoundland and Labrador for year 2000-2001 were estimated from years 2001-2002 to 2014-2015 through a linear trend at point analysis in SPSS. Finally, medical claim data follow the fiscal year format while other data follow the calendar year format. For the purpose of statistical manipulations, year 2014 here refers to claim data from fiscal year 2014-2015, year 2013 refers to claim data from 2013-2014, and so on. Data sources are available in Supplementary file 4.

## Supplementary File 3: Test Frequency by Year and Province

Province	Alberta	British Columbia		Manitoba			New Brunswick	Newfoundland and Labrador	Nova Scotia	Ontario			Prince Edward Island	Québec	Saskatchewan	
	03.38Q	S00968*	S00969	8863*	8864	8865	2131	58350	03.38A	J333A	J333B	J333C*	2245	00815	77D*	276D
2000/01	206	4083	4250	1588	394	0	246	432 <sup>a</sup>	-- <sup>b</sup>	13834	3614	3614 <sup>c</sup>	19	22285	371	0
2001/02	251	3674	3822	1699	376	1	296	424	--	--	17785	17865	14	21834	391	24
2002/03	245	3811	3868	1387	293	0	284	409	--	--	17641	17585	23	22711	317	16
2003/04	252	3678	3681	1378	264	0	310	396	--	--	15834	15869	10	23174	416	35
2004/05	205	3396	3407	1415	278	1	313	374	--	--	17139	17160	12	22099	392	19
2005/06	277	3987	4019	1252	207	1	407	427	--	2	18120	18246	8	22023	394	0
2006/07	263	3939	3966	1232	235	0	625	318	--	--	18481	18594	5 <sup>d</sup>	21530	393	0
2007/08	317	3925	3923	1096	222	0	517	274	--	--	17855	17795	37	21204	398	0
2008/09	336	3979	3987	1106	272	0	430	184	--	--	19252	19237	75	21074	334	1
2009/10	413	4280	4274	1122	202	0	517	196	--	--	20059	20071	73	22553	306	1
2010/11	534	4153	4156	1100	251	0	483	515	--	--	20269	20263	88	22044	295	0
2011/12	653	3778	3780	1158	194	0	531	281	--	--	20149	20142	87	21260	247	1
2012/13	670	3818	3830	1081	179	0	571	230	--	--	19777	19684	51	21704	252	0
2013/14	936	4040	4050	1002	81	0	898	356	--	--	19146	19041	66	21851	286	0
2014/15	771	3694	3678	958	1	0	716	123	--	--	20524	20273	83	22170	282	0

Note: When more than one component code applies to a province, the component code whose data we used for this study is denoted with an asterisk (the professional component was always used unless otherwise specified).

<sup>a</sup> Data unavailable for this year. Data estimated from a linear trend at point analysis in SPSS.

<sup>b</sup> Statistics unavailable for this province as this is a new procedure since November 21, 2014.

<sup>c</sup> Billing option “A” was discontinued in 2001. For calculations, J333A counts were added to J333C for accuracy.

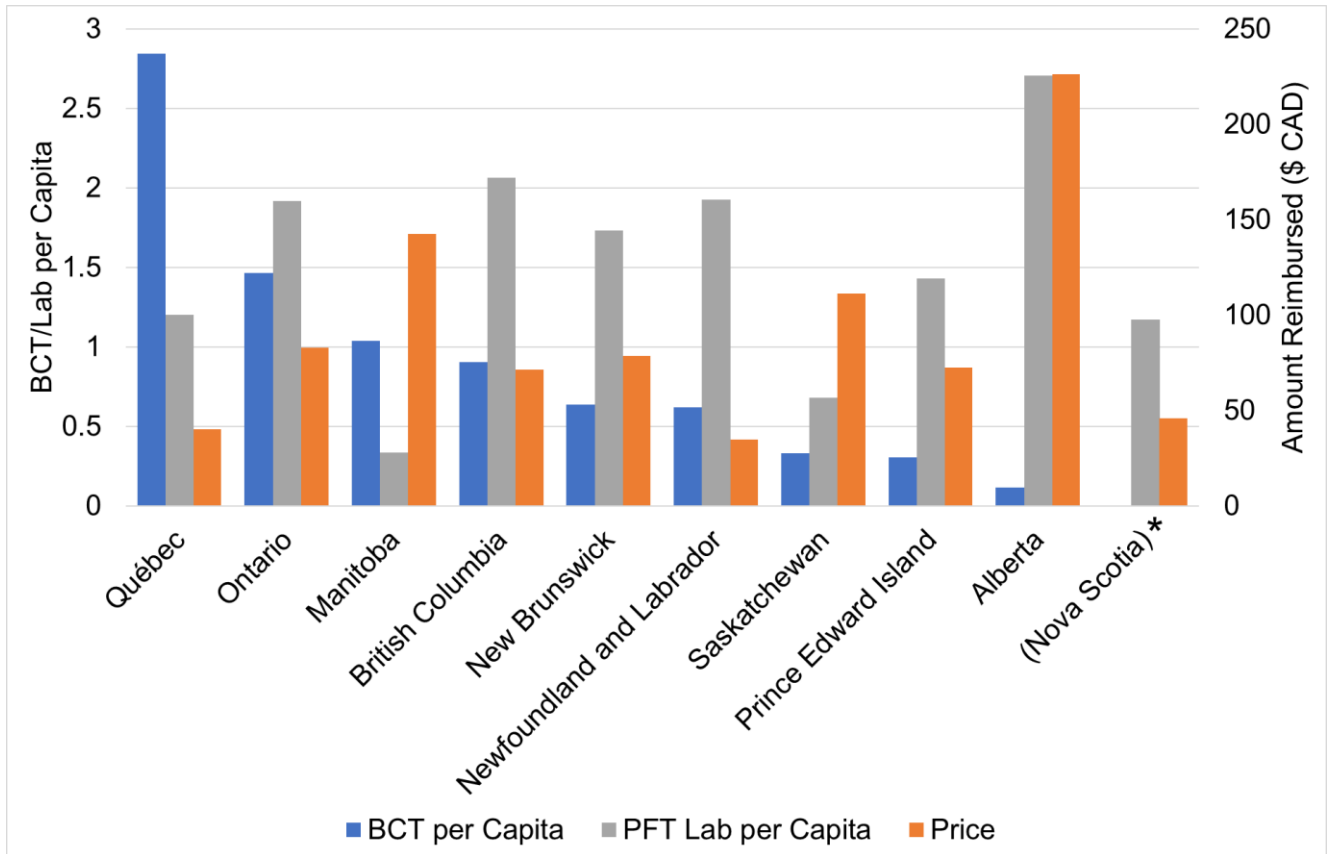
<sup>d</sup> This cell was marked as “Too small for reporting – less than 6”. It was assumed to be 5.

**Supplementary File 4: Data Sources (Access to Information Requests)**

<b>Province</b>	<b>Source for: Number of medical claims for bronchial challenge testing</b>
Alberta	Alberta Health Care Insurance Plan (AHCIP), Physician Claims data; Methods and Analysis Unit/Health Analytics Branch/Health System Accountability and Performance Division/Alberta Health
British Columbia	Finance and Decision Support Branch, British Columbia Ministry of Health
Manitoba	Fee-For-Service/Insured Benefits, Health Workforce Secretariat, Manitoba Health, Healthy Living and Seniors
New Brunswick	Health Workforce Information and Analysis, New Brunswick Department of Health
Newfoundland and Labrador	Medical Affairs and Training/Audit and Claims Integrity; Department of Health and Community Services, Government of Newfoundland and Labrador
Nova Scotia	Health Info, Medicare Programs, Nova Scotia Provincial Programs
Ontario	Ontario Ministry of Health and Long-Term Care, Claims History Database
Prince Edward Island	Chronic Disease Prevention and Management Manager, Health PEI – Community Health
Québec	Direction de l'analyse et de la gestion de l'information, Régie de l'assurance maladie du Québec
Saskatchewan	Fee For Service and Statistics Division, Saskatchewan Ministry of Health

<b>Province</b>	<b>Source for: Number of pulmonary function testing laboratories</b>	<b>Number of PFT Lab</b>
Newfoundland and Labrador	Department of Health and Community Services	10
Prince Edward Island	Association of Prince Edward Island Respiratory Therapists	2
Nova Scotia	Jamey Urquhart, Canadian Association of Cardio-Pulmonary Technologist	11
New Brunswick	Horizon Health & Vitalité Health Networks	13
Québec	Ordre professionnel des inhalothérapeutes du Québec	93
Ontario	Health Services Branch, Ministry of Health & Long-Term Care	244
Manitoba	Dr. Zoheir Bshouty, Medical Director of PFT lab, Health Sciences Centre, Winnipeg	4
Saskatchewan	Saskatchewan Ministry of Health	7
Alberta	College and Association of Respiratory Therapists of Alberta	95
British Columbia	College of Physicians and Surgeons of British Columbia	89

**Supplementary File 5: Comparison of numbers of bronchial challenge tests and pulmonary function laboratories per capita, and amount reimbursed to physician**



**Supplementary Figure.** *Primary Axis (left):* Average number of bronchial challenge tests per 1000 population (2000-2014) and number of pulmonary function laboratory per 1,000,000 population. *Secondary Axis (right):* reimbursement amount for physicians making a financial claim for BCT. \* Nova Scotia had no data available for number of BCT.