



# **Review of Relativity Methodology Report**

**CANDI Relativity Implementation Committee (CRIC)**

**April 18, 2012**

**Ontario Medical Association**



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## Executive Summary

The CANDI relativity methodology currently in use by the OMA was approved by Council in 2009, was developed based on extensive input and consultation from all Sections over a long period of time. It was the CRICs view that any changes to this methodology would be made only if there was a request or argument put forth by a Section that provided evidence to substantiate their claims, or where CRIC could review other existing data/evidence to support the submission, and that were fair and equitable.

Based on input from OMA Sections' Executives, during the consultation period of November 2011 to April 2012, and an assessment of available data and information, the CRIC is recommending that the following three modifications be made to the CANDI relativity methodology.

**1. An introduction of an hours-of-work modifier.**

- The Committee recognized that until the PwC Study, there was a total lack of data on daily hours of work by OHIP Specialty. The Committee reviewed the new data collected by the PwC and while the Committee expressed concerns regarding the small sample size for some specialties, the Committee was in general agreement that the estimated hours of work were reasonable. To address the issue of the small sample size for some specialties, the Committee reviewed several options and opted to replace the specialty-level estimate with the estimate for the corresponding Assembly to which the specialty belongs.

**2. A modification to the overhead modifier.**

- The CRIC recommends that the calculation of the overhead ratio in the CANDI methodology be updated to include the most recent overhead data from OHRC (OMA Human Resources Committee) surveys for 2009 and 2011, and be modified to add the overhead data from the PwC Study, and that the estimates from these sources be combined into a single weighted average by OHIP specialty using the number of survey responses as appropriate weights.

**3. A modification to the gross daily fee-for-service income for the Laboratory Medicine group.**

- The CRIC recommends that the fee-for-service component of the adjusted net daily income for the Laboratory Medicine group be adjusted to reflect the discount of fee-for-service payment to Laboratory physicians in the private community laboratories.

No other modifications to the existing CANDI relativity methodology are recommended.

The impact of our proposed modifications, based on the assumption that 1% of physician services payment pool was available for relativity allocation, is presented in the next table. It must be emphasized that this is a hypothetical example, as the actual allocation available in the future depends on the bilateral negotiations between the Ministry of Health and Long-Term Care and the OMA.

## Impact of Proposed CANDI Modifications on Hypothetical 1% Relativity Allocation

OHIP Specialty		Current CANDI	Proposed CANDI	Difference
00	Family Practice and Practice in General	1.5%	1.2%	-0.3%
01	Anesthesiology	0.0%	0.0%	0.0%
02	Dermatology	0.1%	0.6%	0.5%
03	General Surgery	0.0%	0.0%	0.0%
04	Neurosurgery	0.3%	1.2%	0.9%
05	Community Medicine	1.0%	1.0%	0.0%
06	Orthopedic Surgery	0.0%	0.6%	0.6%
07	Geriatric Medicine	3.0%	3.5%	0.5%
08	Plastic Surgery	0.4%	1.8%	1.4%
09	Cardiovascular and Thoracic Surgery	0.0%	0.1%	0.1%
13	Internal Medicine	2.0%	2.3%	0.3%
18	Neurology	2.3%	2.0%	-0.3%
19	Psychiatry	3.0%	2.6%	-0.4%
20	Obstetrics and Gynecology	0.6%	1.3%	0.7%
22	Genetics	1.0%	1.0%	0.0%
23	Ophthalmology	0.0%	0.0%	0.0%
24	Otolaryngology	0.0%	0.0%	0.0%
26	Pediatrics	1.7%	1.8%	0.1%
31	Physical Medicine and Rehabilitation	2.2%	2.5%	0.3%
33	Diagnostic Radiology	0.0%	0.0%	0.0%
34	Radiation Oncology	0.0%	0.0%	0.0%
35	Urology	0.0%	0.2%	0.2%
41	Gastroenterology	0.0%	0.0%	0.0%
47	Respirology	2.0%	2.6%	0.6%
48	Rheumatology	2.6%	2.1%	-0.5%
60	Cardiology	0.0%	0.0%	0.0%
61	Hematology	3.3%	3.0%	-0.3%
62	Clinical Immunology and Allergy	1.0%	1.0%	0.0%
63	Nuclear Medicine	0.0%	0.0%	0.0%
64	General Thoracic Surgery	2.5%	4.8%	2.3%
EM	Emergency Medicine group	0.6%	1.6%	1.0%
LM	Laboratory Medicine group	0.0%	0.5%	0.5%
<b>Specialists only</b>		<b>0.8%</b>	<b>0.9%</b>	<b>0.1%</b>
<b>All Physicians</b>		<b>1.0%</b>	<b>1.0%</b>	<b>0.0%</b>

## 1. Introduction

### Current Relativity Methodology

The issue of income relativity has long been a concern for physicians and the Ontario Medical Association. The methodology used by the OMA to address this important issue prior to the 2008 Physician Services Agreement was the Relative Value Implementation Committee (RVIC) methodology. Since then, two working groups were created to revisit the relativity methodology: the RVIC Methodology Review Working Group and the CANDI Relativity Implementation Committee (CRIC).

The RVIC Methodology Review Working Group had a mandate to review the RVIC methodology. After extensive analysis and consultations with the OMA sections, this Working Group developed a new methodology known as the Comparison of Average Net Daily Income (CANDI)<sup>1</sup>. This methodology was approved by OMA Council in fall 2009 and is currently used for relativity-based allocation purposes.

### The CANDI Relativity Implementation Committee (CRIC)

This Committee was created in February 2010 with a mandate to implement the recommendations from the RVIC Methodology Review Working Group, which included the initiation and oversight of research studies on income, overhead, and hours of work. In the fall of 2011, the OMA Board extended the mandate of this Committee<sup>2</sup> to conduct the review of relativity requested by Council and present a report in spring 2012<sup>3</sup>.

The CRIC is composed of the following members:

Dr. Gail Beck, Chair  
Dr. Alicia (Lee) Donohue, General & Family Practice Assembly Director  
Dr. Alan Hudak, Chair of Council  
Dr. Wayne Tanner, Surgical Assembly Director  
Dr. Virginia Walley, Diagnostic Assembly Director  
Dr. Doug Weir, Medical Assembly Director  
Dr. Scott Wooder, General & Family Practice Assembly Director

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<sup>1</sup> The report is available at <https://www.oma.org/Member/Resources/Documents/2009RVICReportToCouncil.pdf>.

<sup>2</sup> Board Motion October 2011: “That the Board recommend to Council that CRIC proceed with its consultation plan and bring a recommendation to the Spring 2012 meeting of Council regarding modifications to the CANDI methodology”. - Carried, Oct 2011

<sup>3</sup> “That Council approve that the relativity methodology be reviewed and presented to Council in the Spring of 2012”. - Carried, Nov 2009

Following November 2011 Council, the CRIC solicited written feedback from all OMA Sections' Executives on the elements of the CANDI relativity methodology and the PricewaterhouseCoopers (PwC) Study of Income, Overhead, and Hours of Work. Written feedback was received from twenty-one Sections. For transparency purposes, the Sections' submissions were made available to all OMA members<sup>4</sup>. Following this, the CRIC reviewed the Section's submissions and put forth a draft report (March 9, 2012) with recommendations regarding both the CANDI relativity methodology and the use of data collected in the PwC Study.

CRIC sought further input on its draft report from all OMA Sections. Furthermore, CRIC met with OMA Sections that had requested meetings, as well as participating in Assembly meetings.

### **Organization of This Report**

This report has two main parts. The first part, presented in Section 2, relates to the review of CANDI relativity methodology. This includes a detailed review of elements that constitute the current CANDI methodology. The main purpose of this part is to determine what, if any, changes to the CANDI relativity methodology are required based on the Sections' submissions, the best available evidence, and the principles of fairness and equity. The second part, presented in Section 3, relates to the PwC Study of Income, Overhead, and Hours of Work. The main purpose of this part is to determine whether data collected in the Study may be used to improve accuracy of constituent elements of the CANDI methodology. It must be emphasized that the two parts of this report address different, although complementary, issues. Specifically, the first part addresses the issue of relativity methodology, while the second part addresses some issues of data availability and accuracy.

The report concludes with a summary of recommendations in Section 4. These recommendations will be considered by OMA Council in May 2012. In the case that the recommendations in this report are not approved by the Council, the current CANDI methodology will continue as the approved methodology for relativity-based allocation purposes going forward.

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<sup>4</sup> See <https://www.oma.org/Member/Resources/AgreementCentre/Pages/Relativity.aspx>.

## 2. Review of CANDI Relativity Methodology

The CANDI methodology uses the adjusted net daily income to determine the relative income position of each OHIP Specialty<sup>5</sup>. The adjusted net daily income consists of five distinct elements: the gross daily income, the non-fee-for-service modifier, the overhead modifier, the opportunity cost modifier, and the skill acquisition modifier. In this section, we review each of these elements using a three-step approach. First, we define and explain how each element is currently used in the CANDI methodology. Second, we summarize the feedback received from the OMA Sections' executives for each element. Lastly, we present the CRIC review and decisions for each element.

In addition, we also review the feedback received on the CANDI methodology that is not specifically addressed to any of the five elements of the adjusted net daily income.

To reiterate, it was the CRIC's view that any changes to the current CANDI methodology would be made only if there was a request or argument put forth by a Section that provided evidence to substantiate their claims, or where CRIC could review other existing data/evidence to support the submission, and that were fair and equitable.

### 2.1 Gross Daily Income

**Current CANDI** The Gross Daily Income (GDI) is defined as the average daytime, weekday fee-for-service billings per physician for each OHIP specialty. This definition excludes weekends, holidays, days with no billings, and after-hour billings during weekdays. This is an attempt to estimate a gross 'daytime' income. The data source for the GDI is the OHIP claims database that includes fee-for-service billings by all physicians in Ontario.

#### *After-Hours Income*

**Section Submissions** Some Sections expressed concern that the exclusion of after-hours income may provide an unfair advantage to those sections that are well remunerated with premiums for after-hours work by artificially decreasing their average daytime income. Further, the premiums exist to balance for the inconvenience that is inherent in after-hours work. Therefore, it was proposed that income earned during any day and time be included in the calculation of the adjusted net daily income. In addition, the CANDI methodology implicitly defines a daytime as a period between 7 AM and 5 PM, based on the Schedule of Benefit's definition of evenings and nights. The concerns were expressed that these start and finish times are not representative for most physicians. Lastly, some Sections expressed concerns that the lack of after-hour premium codes for some specialties is a limitation to this approach because income earned during after-hours cannot be identified and excluded from the calculation.

**CRIC Review** The CRIC examined the new data on hours of work made available by the PwC study. These data, presented in Figure 1, show that the definition of daytime work from 7AM to 5PM is fairly representative for most physician as was presumed by the RVIC Methodology Review Working Group, although some physicians typically start their work before 7AM and some typically finish after 5PM. In addition, the intent of focusing on the daytime income is to capture

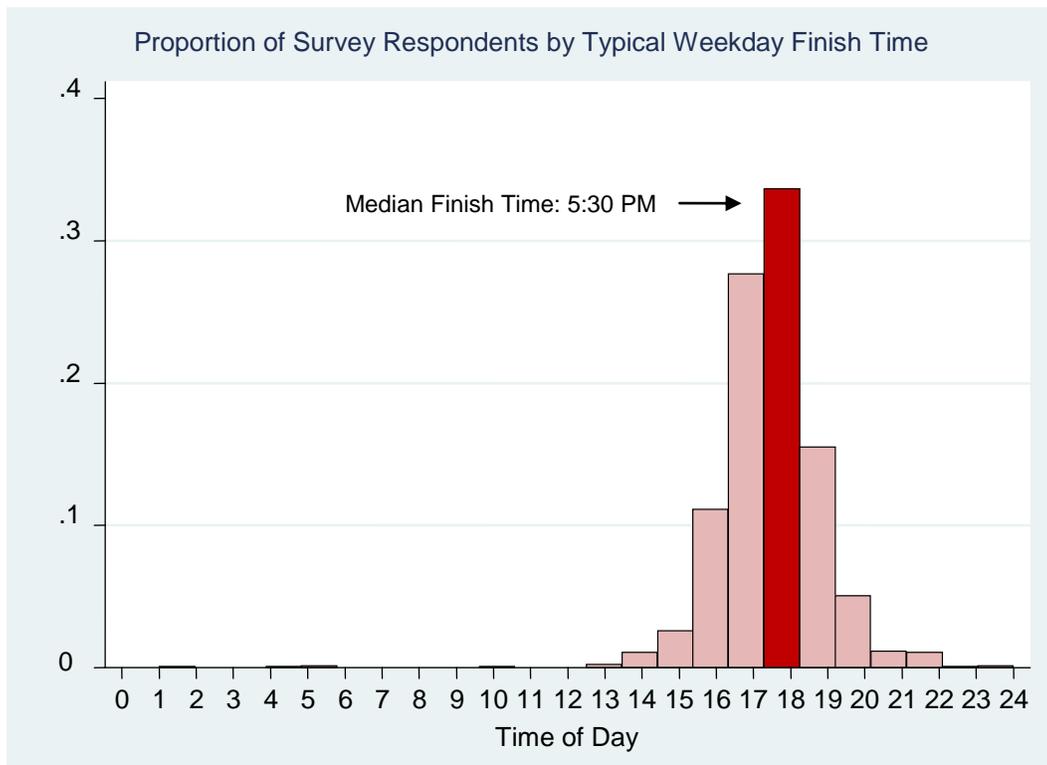
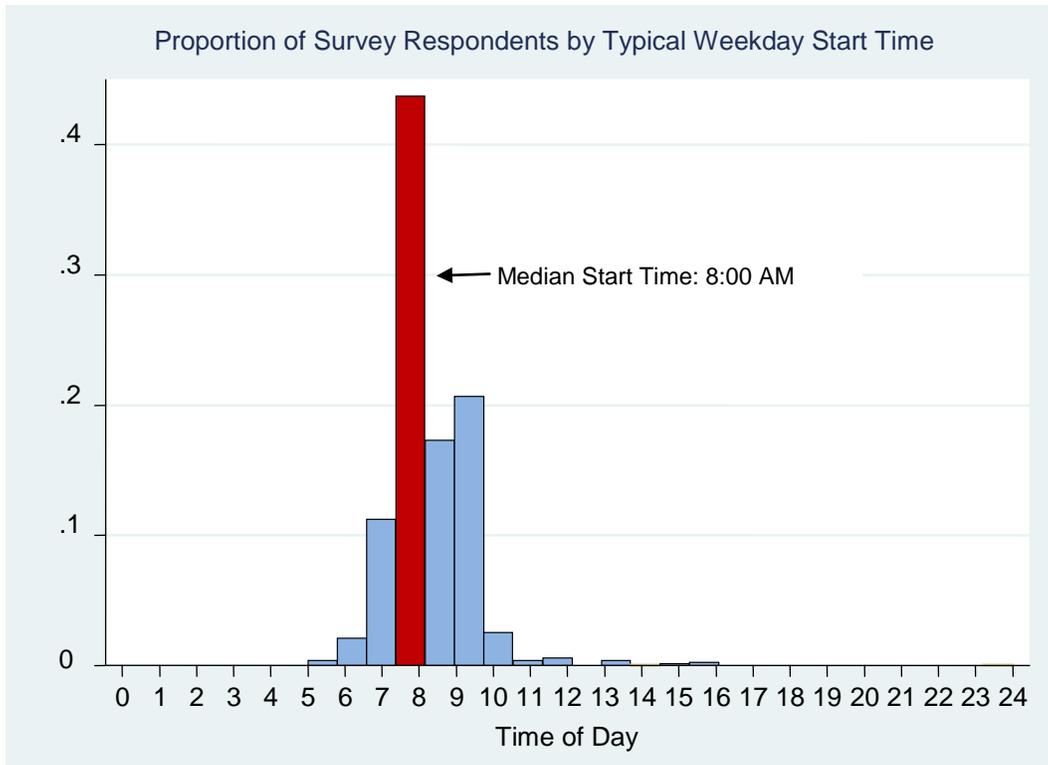
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<sup>5</sup> The report is available at <https://www.oma.org/Member/Resources/Documents/2009RVICReportToCouncil.pdf>.

income that physicians earn during their regular hours of work. This was the view of the RVIC Methodology Review Working Group and we believe it is still valid. No new information was presented to persuade us to change the current methodology. With respect to the lack of after-hour premium codes for some specialties, the CRIC recognizes that this is an on-going problem and recommends that this issue be contemplated through improvements in the Schedule of Benefit that would make it easier to identify the after-hour billings.

**Decision 1:**                    **No change is recommended to the CANDI methodology in terms of treatment of after-hours income.**

**Figure 1**



Source: Calculations based on the Study of Physician Income, Hours of Work and Overhead Expenses for the Ontario Medical Association, PricewaterhouseCoopers, October 2011.

Note: Excludes physicians in the Emergency Medicine group. For the EM group, see Figure 2.

## *Post Call Days*

**Section Submissions** Some Sections argued that due to demanding on-call days, physicians are unable to work post-call and/or pre-call days. These days are recorded as zero-billing days and therefore they are not included in the calculation of the average gross daily income in the CANDI methodology. As a result of these lost billing opportunities, physicians in these specialties have fewer working days available to them in a year than other physicians who do not have this burden. In addition, it was suggested that surgical-related specialists are at risk of having their OR days cancelled for a number of administrative reasons including lack of nursing, lack of beds, lack of a surgeon and occasionally lack of cases. Again, these days would be recorded as zero-billing days and they also represent a lost opportunity.

**CRIC Review** The CRIC acknowledges that this is an important issue, but also recognizes that it is difficult to differentiate between a post-call and a pre-call day and a day with zero billings for other reasons such as vacation or sickness. Furthermore, the analysis based on the OHIP claims data, presented in Table 1, shows that the incidence of days with zero billings following an evening or night shift (post-call days) is relatively low for almost all specialties. While this ratio is relatively higher for some specialties (e.g. Anesthesiology), it is still relatively small in magnitude (about 4.5%) to have any impact on the relativity allocation, even if this ratio is double its current size to include the possibility of pre-call days. Also this data has not changed significantly since it was originally considered when CANDI was developed. In this analysis, a 'post-call day' is identified as a day with zero billings when either the physician billed any evening after-hour codes during the previous day or the physician billed any night after-hour codes during the same day. The CRIC also reviewed the same analysis using days with less than \$100 and less than \$200 as a definition of a post-call day, rather than \$0, and found that the ratio increases slightly but proportionally across specialties, which implies that the relativity allocation, if any, would be minimally affected. In addition, while this methodology can potentially identify post-call and pre-call days, it is hard to identify days when physicians have their OR days cancelled for administrative reasons. Lastly, the CRIC had some conceptual difficulties with adjusting physician income downward for some zero billing days when the physician does not work, as they have opportunity to do other activities which are also valuable.

**Decision 2:** **No change is recommended to the CANDI methodology in terms of treatment of zero-billing days.**

**Table 1:  
Post-call Days by OHIP Specialty, Fiscal 2010/11**

OHIP Specialty	Percent 'Post-Call' Days (\$0 cut off)	Percent 'Post-Call' Days (\$100 cut off)	Percent 'Post-Call' Days (\$200 cut off)
00	Family Practice and Practice in General	0.8%	1.4%
01	Anaesthesia	4.5%	5.0%
02	Dermatology	0.6%	0.6%
03	General Surgery	1.3%	2.2%
04	Neurosurgery	1.0%	1.9%
06	Orthopaedic Surgery	1.6%	2.7%
07	Geriatrics	0.4%	0.5%
08	Plastic Surgery	2.4%	3.1%
09	Cardiac Surgery	0.8%	2.2%
13	Internal and Occupational Medicine	0.8%	1.0%
18	Neurology	1.2%	1.4%
19	Psychiatry	0.5%	0.5%
20	Obstetrics and Gynaecology	1.5%	2.4%
23	Ophthalmology	0.9%	1.1%
24	Otolaryngology	1.3%	1.9%
26	Paediatrics	0.8%	1.1%
31	Physical Medicine and Rehabilitation	0.1%	0.1%
33	Diagnostic Radiology	0.3%	0.5%
34	Radiation Oncology	0.2%	0.3%
35	Urology	1.5%	2.5%
41	Gastroenterology	0.9%	1.1%
47	Respiratory Disease	0.6%	0.7%
48	Rheumatology	0.4%	0.6%
60	Cardiology	0.7%	0.9%
61	Haematology	0.3%	0.5%
62	Clinical Immunology	0.9%	1.1%
63	Nuclear Medicine	0.1%	0.1%
64	General Thoracic Surgery	0.8%	1.4%
	All Physicians	1.0%	1.5%

Source: OHIP claims database, Fiscal 2010/11.

- Notes: (1) Percent Post-Call days is the ratio of 'post-call' days, defined below, to the number of total weekday days with positive daytime billings. The 'post-call day' is identified as a day with \$X billings when either the physician billed any evening after-hour codes during the previous day or the physician billed any night after-hour codes during the same day, where X is 0, 100, and 200, respectively for each column.
- (2) Endocrinology and Metabolism, Nephrology, Medical Oncology, and Infectious Disease are included in Internal Medicine. Vascular Surgery is included in General Surgery. Microbiology and Clinical Biochemistry are included in Laboratory Medicine.

## *Technical Fees*

**Current CANDI** The current CANDI methodology excludes technical fees from the adjusted net daily income. The technical fees, as they are commonly understood, are intended to compensate physicians for their cost of providing a professional service. The Schedule of Benefits indicates the technical component of a service “includes as a constituent element providing the premises, equipment, supplies and personnel used to perform the common and specific elements of the service” (*SOB July 1, 2003, General Preamble GP-3*). In general terms, the technical component fee payment is intended to cover the capital and operational costs of rendering a diagnostic service and is not considered as ‘income’ to physicians.

**Section Submissions** Concerns were raised that not all components of technical fees may be related to the technical components only. For instance, the question was raised about privately physician-owned diagnostic facilities in which technical fees may cover not only the cost of the technician and the machine but also an element of “profit” (for administrative burden) to the physician. In addition, if the capital costs and depreciation of equipment are included in the expense side of a practice, then any income earned through technical fees should also be included on the income side. Some Sections also requested that the impact of HST be considered in evaluating the impact of technical fees on physician income.

**CRIC Review** The CRIC reviewed the OHIP data on the technical fees by specialty (see Table 2). The Committee noted that under the 2008 Physician Services Agreement, the technical fees were segregated from the physician services payment budget, also most technical fees payments go to facilities rather than physicians. In addition, there is little objective and comprehensive evidence on the relationship between the costs incurred by the physician and the technical fees. While for some physicians these fees may be in excess of the costs for technical components, for other physicians the reverse may be true. Lastly, there is a lack of accurate and comprehensive data to determine how much of the technical fees are received by individual physicians.

**Decision 3:** **No change is recommended to the CANDI methodology in terms of treatment of technical fees.**

**Table 2:  
Total Technical Fees by OHIP Specialty, Fiscal 2010/11**

OHIP Specialty	Total Technical Fees
00 Family Practice and Practice in General	\$18,615,535
01 Anaesthesia	\$200,561
02 Dermatology	\$261
03 General Surgery	\$8,185,734
04 Neurosurgery	\$521,315
05 Community Medicine	
06 Orthopaedic Surgery	\$68,932
07 Geriatrics	\$103,793
08 Plastic Surgery	\$1,575
09 Cardiac Surgery	\$2,601,910
12 Emergency Medicine	\$79,095
13 Internal and Occupational Medicine	\$102,855,267
15 Endocrinology and Metabolism	\$338,932
16 Nephrology	\$76,978
17 Vascular Surgery	\$4,869,443
18 Neurology	\$7,460,631
19 Psychiatry	\$12,311,908
20 Obstetrics and Gynaecology	\$19,539,388
22 Genetics	
23 Ophthalmology	\$8,372,712
24 Otolaryngology	\$12,130,775
26 Paediatrics	\$7,220,795
28 Laboratory Medicine	\$3,485,739
29 Microbiology	\$345,425
30 Clinical Biochemistry	
31 Physical Medicine and Rehabilitation	\$1,480,224
33 Diagnostic Radiology	\$451,460,790
34 Radiation Oncology	\$73
35 Urology	\$1,490,111
41 Gastroenterology	\$243,813
44 Medical Oncology	\$2,853
46 Infectious Disease	\$14,344
47 Respiratory Disease	\$21,680,455
48 Rheumatology	\$249,766
60 Cardiology	\$106,936,131
61 Haematology	\$31,493
62 Clinical Immunology	\$158,221
63 Nuclear Medicine	\$41,762,416
64 General Thoracic Surgery	\$20,527
All Physicians	\$834,917,919

Source: OHIP claims database, Fiscal 2010/11.

Notes: (1) Total technical fees are not shown for specialties with less than five physicians.

## 2.2 Non-Fee-for-Service Modifier

**Current CANDI** The Non-Fee-for-Service (NFFS) modifier adjusts the gross daily income for income received from non-fee-for-service sources, such as the alternative payment plans (APP), payments to primary care physicians in patient enrolment models such as capitation and Comprehensive Care Management (CCM) fee, Hospital On-Call (HOCC), Workplace Safety and Insurance Board (WSIB) claims, mental health sessionals fees and psychiatric stipends, Assertive Community Treatment (ACT), Divested Provincial Psychiatric Hospitals (DPPH), Ontario Psychiatric Outreach Program (OPOP), and Pediatric Hospital Stabilization Fund. The data for these income sources come from various administrative sources provided by the Ministry of Health and Long-Term Care to the OMA through the data sharing agreement. Except for the primary care payments, all other payments are available only at the level of OHIP specialty and not at the level of individual physicians. Income received from these sources is pro-rated in the current CANDI methodology to reflect only clinical daytime weekday income.

The RVIC Methodology Review Working Group was of the view that other sources of income, such as private or non-OHIP work, not be included in the income comparison. It was felt that including this income would result in a disincentive to provide OHIP services by reducing the comparative relativity of those groups with other sources of non-OHIP income.

### *Non-Insured Income*

**Section Submissions** The CANDI methodology currently excludes private pay and uninsured claims from the calculation of daily income, which may favour those specialties that have significant income from these sources. Therefore, some Sections proposed including private pay and uninsured income.

**CRIC Review** The CRIC identified several concerns with changing the current CANDI methodology to include private pay and uninsured income. First, including this source of income may create adverse incentives to reallocate clinical time from insured to non-insured services. Secondly, there is a lack of detailed data on the private pay and uninsured claims. This is particularly problematic because all other elements in the CANDI methodology, such as overhead expenses, are specific to insured services only. Lastly, the CRIC also noted that private pay and uninsured claims represent a relatively small share of total income (on average, about 2% for all physicians). For example, the data from the PwC Study, presented in Table 3 below, shows that this share ranges between 0.1 and 3.4 between OMA Assemblies<sup>6</sup>. As a result, including this source of income may have a negligible overall impact on relativity.

**Decision 4:** **No change is recommended to the CANDI methodology in terms of treatment of private pay and uninsured claims.**

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<sup>6</sup> The data are shown by the Assembly only because of the small sample sizes by the OHIP specialty. While these data are informative, it must be acknowledged that it may mask variation within each Assembly between different specialties. However, the extent to which this is true cannot be reliably determined because of the small sample sizes.

**Table 3:  
Percent Private Income, by OMA Assembly**

Assembly	Percent Private Income	Survey Sample (MDs)
Medical	1.4%	465
Surgical	3.6%	298
Diagnostic	0.1%	43
Family Medicine	2.1%	439
All Physicians	2.0%	1,245

Source: Calculations based on the Study of Physician Income, Hours of Work and Overhead Expenses for the Ontario Medical Association, PricewaterhouseCoopers, October 2011.

Notes: (1) Private income refers to payment for patient services delivered by a physician, that are not covered or paid for by OHIP, or are delivered to uninsured individuals. Physicians may charge patients for these services.  
 (2) Income is reported for the most recently completed fiscal year. For the vast majority of survey respondents, this is 2009 or 2010.  
 (3) Estimates are weighted by specialty, age, and gender, where the weights were derived based on the distribution of the physician population in the Ontario Physician Human Resources Centre (OPHRDC) database. For more details, see Appendix G in the PwC Report.

## *Hospital On-Call Coverage (HOCC)*

**Section Submissions** Some sections argued that HOCC should not be included in the CANDI methodology because it is payment for being available to provide timely access to medical care to hospital patients only during after-hours. As such, HOCC is not part of physician daytime income and should be completely excluded from the CANDI income calculations.

**CRIC Review** The CRIC reviewed the data on the HOCC payment by specialty, as well as the CCM payment for primary care physicians that is conceptually in many aspects similar to HOCC (see Table 4). The Committee noted that in practice physicians may receive the HOCC payment for being available during regular hours. In addition, the new proposal for restructuring the HOCC from an annual payment to a shift-based payment provides for funding during both regular and after-hours. This joint proposal for per-diem HOCC fees has been approved by both the Ministry of Health and Long-Term Care and the OMA and is expected to be implemented within the next agreement. In addition, the Committee acknowledged that the current CANDI methodology already pro-rates HOCC payment to apply only for weekday daytime only. Specifically, HOCC payments are pro-rated by a factor of 0.298, the ratio of 50/168, where 50 indicates 5 days per week and 10 hours per day, and 168 indicates total hours in a 7 day week. Lastly, the Committee noted that it is conceptually difficult to exclude HOCC from the daily income without making appropriate adjustment to the inclusion of the CCM fee.

**Decision 5:** **No change is recommended to the CANDI methodology in terms of treatment of Hospital On-Call Coverage (HOCC) payment.**

**Table 4:  
Distribution of HOCC and CCM by OHIP Specialty, Fiscal 2010/11**

OHIP Specialty	HOCC	CCM
00 Family Practice and Practice in General	\$34,329,082	\$302,324,726
01 Anaesthesia	\$24,435,857	
02 Dermatology		
03 General Surgery	\$16,340,088	
04 Neurosurgery	\$2,633,654	
05 Community Medicine		
06 Orthopaedic Surgery	\$11,396,218	
07 Geriatrics	\$309,266	
08 Plastic Surgery	\$6,936,828	
09 Cardiac Surgery	\$2,162,647	
12 Emergency Medicine	\$14,142,608	
13 Internal and Occupational Medicine	\$25,390,766	
15 Endocrinology and Metabolism	\$808,115	
16 Nephrology	\$1,065,842	
17 Vascular Surgery	\$3,026,441	
18 Neurology	\$3,059,307	
19 Psychiatry	\$10,964,584	
20 Obstetrics and Gynaecology	\$17,563,374	
22 Genetics		
23 Ophthalmology	\$6,292,547	
24 Otolaryngology	\$5,550,099	
26 Paediatrics	\$10,510,401	
28 Laboratory Medicine		
29 Microbiology		
30 Clinical Biochemistry		
31 Physical Medicine and Rehabilitation		
33 Diagnostic Radiology	\$2,242,721	
34 Radiation Oncology		
35 Urology	\$9,612,346	
41 Gastroenterology	\$1,213,871	
44 Medical Oncology		
46 Infectious Disease		
47 Respiratory Disease	\$919,464	
48 Rheumatology		
60 Cardiology	\$4,603,045	
61 Haematology	\$1,162,761	
62 Clinical Immunology		
63 Nuclear Medicine		
64 General Thoracic Surgery	\$3,596,105	
All Physicians	\$220,268,037	\$302,324,726

Source: HOCC Program Expenditures; Architected Payment Rules.

Note: HOCC includes payments for enhanced HOCC programs at Levels I, II, and III.

## 2.2 Overhead Modifier

**Current CANDI** The overhead modifier adjusts the gross daily income for expenses that physicians incur for earning their clinical income. The current CANDI methodology uses two data sources to estimate the overhead modifier for each OHIP specialty: the 1997 Canada Customs and Revenue Agency (CCRA) tax files available at the OHIP specialty level and the self-reported data from the 2003-2007 OMA Human Resources Committee (OHRC) surveys.

### *Overhead for non-OHIP services*

**Section Submissions** Issues were raised in the submissions that the overhead calculations do not appropriately account for the overhead related to non-OHIP services. For physicians providing both publicly-funded and privately-funded services, a substantial portion of the overhead may be related to the latter, yet in the CANDI formula and data, it may all be captured on the public side. Essentially, it was felt that many sections have substantial non-OHIP sources of revenue and that a large portion of their overhead is required to support those revenue sources. It was proposed in the submissions that it is unfair to have the full overhead attributed to their OHIP incomes for the purposes of relativity.

**CRIC Review** The CRIC acknowledged that it is important that the CANDI methodology include only overhead expenses that are related to clinical, insured work. The Committee also reviewed the overhead estimates from the CRA, the OHRC surveys for more recent years (2009 and 2011), and the PwC study (see Table 5). These data shows that the estimates from the different sources are reasonably close to each other. This result suggests that the currently used data sources, the CRA tax files and the OHRC surveys, may be fruitfully combined with the detailed overhead data from the PwC Study to produce more accurate estimates of overhead data because of the increase in the sample size, especially because the PwC Study explicitly excludes overhead paid for any non-insured income.

**Table 5:  
Overhead Ratio by OHIP Specialty**

OHIP Specialty		Overhead Ratio Estimates				Survey Sample Size			Weighted Overhead Ratio
		1997 CRA	PwC	2009 OHRC	2011 OHRC	PwC	2009 OHRC	2011 OHRC	
00	GP/FP	41.0%	35.8%	30.9%	27.7%	439	407	528	32.8%
01	Anaesthesia	18.1%	18.4%	11.3%	11.0%	119	67	87	14.5%
02	Dermatology	41.9%	42.0%	41.6%	40.0%	27	28	9	41.5%
03	General Surgery	35.8%	25.3%	25.4%	23.7%	40	52	33	28.6%
04	Neurosurgery	41.5%	30.8%	21.0%		7	3		33.2%
05	Community Medicine		35.8%	15.0%	10.4%	4	2	7	18.9%
06	Orthopaedic Surgery	36.8%	29.6%	28.5%	28.9%	30	57	32	29.4%
07	Geriatrics	33.7%	12.7%	22.8%	3.2%	9	8	6	27.0%
08	Plastic Surgery	43.0%	36.4%	30.7%	31.3%	8	17	5	34.4%
09	Cardiac Surgery	26.5%	29.0%	31.8%	22.1%	4	8	2	29.6%
12	Emergency Medicine	21.8%	24.3%	12.7%	10.1%	92	63	57	17.4%
13	Internal Medicine	35.4%	24.2%	24.0%	15.9%	62	48	41	28.3%
18	Neurology	34.8%	40.3%	29.6%	20.1%	14	26	15	29.7%
19	Psychiatry	28.6%	21.2%	20.3%	15.6%	114	71	88	22.9%
20	Obs&Gynaecology	40.9%	32.0%	33.3%	29.3%	33	71	37	32.7%
22	Genetics		7.6%	2.5%	15.3%	5	4	4	8.4%
23	Ophthalmology	35.3%	29.0%	42.4%	40.5%	8	53	23	40.6%
24	Otolaryngology	44.8%	31.4%	36.2%	38.2%	15	23	18	35.8%
26	Paediatrics	41.3%	30.9%	27.8%	20.6%	50	90	62	33.0%
28	Laboratory Medicine		7.0%	4.7%	8.3%	36	29	24	6.6%
31	Physical Medicine	37.6%	15.8%	20.7%	14.2%	9	15	9	30.1%
33	Diagnostic Radiology	32.5%	11.2%	17.3%	20.1%	5	31	18	26.0%
34	Radiation Oncology	8.6%	5.8%	12.5%	4.9%	12	13	4	8.7%
35	Urology	39.0%	38.4%	30.6%	27.5%	28	22	13	33.5%
41	Gastroenterology	32.0%	36.8%	25.1%	30.1%	25	30	19	30.3%
47	Respiratory Disease	32.5%	32.6%	28.2%	24.6%	14	10	14	28.5%
48	Rheumatology	37.8%	32.0%	33.0%	29.0%	8	24	11	31.8%
60	Cardiology	29.4%	25.7%	31.8%	21.5%	14	30	13	27.9%
61	Haematology	27.4%	25.7%	11.2%	19.3%	4	19	6	21.9%
62	Clinical Immunology	41.8%	25.7%	35.0%	43.0%	2	11	4	35.8%
63	Nuclear Medicine	37.0%	25.7%	20.0%	22.6%	2	8	2	29.6%
64	General Thoracic S.	32.8%	27.5%	26.0%	20.0%	6	5	2	26.2%
All Physicians			29.5%	26.8%	24.3%	1,245	1,346	1,224	26.9%

Sources: Canada Revenue Agency (CRA); Ontario Human Resources Committee (OHRC) Surveys; and the Study of Physician Income, Hours of Work and Overhead Expenses for the Ontario Medical Association, PwC.

Notes: (1) The weighted overhead ratio is the weighted average of PwC Survey, 2009 OHRC, and 2011 OHRC surveys, using the sample size as weights. This weighted average is capped from below at 0.8 CRA, as per the current CANDI methodology.

(2) Shaded cells in the PwC column represent specialties with fewer than five responses or a response rate for the specialty less than 5%, for which there is less confidence that the estimates are representative of the sample population. These specialties are assigned their assembly's average overhead ratio.

(3) Endocrinology and Metabolism, Nephrology, Medical Oncology, and Infectious Disease are included in Internal Medicine. Vascular Surgery is included in General Surgery. Microbiology and Clinical Biochemistry are included in Laboratory Medicine.

## *Accuracy of Overhead Data*

**Section Submissions** The main concern expressed was that the overhead data in the current CANDI methodology are not accurate because they are either outdated (the CCRA 1997 tax files) or based on self-reported surveys (the OHRC Surveys). There were also questions about reliability of the estimates from the PwC Study because of the small response rate for many specialties. In addition, concerns were raised with regards to income splitting, such as salary to spouses or relatives. Some Sections believed that these payments, as well as dividends from Medical Corporations, should be excluded from the overhead calculations, and that only salaries paid out in an arms-length manner be considered as overhead for the purposes of relativity.

**CRIC Review** The CRIC noted that the data gathered through the PwC survey and site visits were obtained directly from data used for physician's tax returns. The Committee also noted that the overall overhead estimates between the PwC Study and the previous CANDI estimates are very close, although there was some variation at the specialty level. The Committee also considered the importance of the sample size and using the PwC as a single source for the overhead data. The Committee also recognized the importance of using the most current, reliable data that accurately measures overhead. The Committee also discussed various options of combining data from all known sources to improve accuracy of overhead estimates. The Committee concluded that combining the different sources of data may improve reliability due to increase in the sample size and also improve accuracy because of new and detailed data collected by the PwC and that this option is preferable to using any one single source of data alone.

**Decision 6:** That the calculation of the overhead ratio in the CANDI methodology be updated to include the most recent overhead data from OHRC surveys for 2009 and 2011, and be modified to add the overhead data from the PwC Study, and that the estimates from these sources be combined into a single weighted average by OHIP specialty using the number of survey responses as appropriate weights.

## 2.3 Opportunity Cost and Skill Acquisition Modifiers

**Current CANDI** The opportunity cost modifier and the skill acquisition modifier adjust the gross daily income for the lost opportunity and the value of additional skills, respectively, acquired through medical training. The opportunity cost is based on an actuarial study conducted by the Rotman School of Business<sup>7</sup>. This cost varies by the OHIP specialty, with an overall average of about 2.7% per additional year of training. The skill acquisition modifier is estimated at 4% per year of additional training, equal across all specialties<sup>8</sup>. The CANDI methodology uses the minimum years of training by the Royal College of Physicians and Surgeons of Canada to determine the length of medical training for each OHIP specialty.

### *Years of Medical Training*

**Section Submissions** A number of Sections argued that the CANDI methodology should use the total average years of training because using the minimum years of training may send a negative message to new graduates and because in many specialties additional training is expected, and sometimes required, for many work opportunities.

**CRIC Review** The CRIC reviewed the latest data from the Canadian Post M.D. Education Registry (CAPER) for 2010 (see Table 6). The Committee noted that the median and minimum years of post M.D. training are identical for most OHIP specialties. The Committee also recognized the problem with relying on the CAPER data, which shows the years of training for the most recent graduates only. As such, this training data is not representative for the majority of physicians currently practicing in Ontario. The Committee also noted that although the actual years of training may vary across specialties, the minimum years of training is what is required of each physician to be able to practice. The Committee also acknowledged that the CAPER data and the RCPSC currently represent the best data sources on the length of medical training.

**Decision 7: No change is recommended to the CANDI methodology in terms of treatment of the years of medical training for the calculation of opportunity cost and skill acquisition modifiers.**

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<sup>7</sup> See <https://www.oma.org/Member/Resources/Documents/2009OntarioMedicalTraining.pdf>.

<sup>8</sup> The CRIC committee conducted an extensive review of the literature, both in Canada and other countries, to determine the appropriate value of the skill acquisition modifier. This review concluded that there is no consensus on a single best value of this modifier, as its estimates vary widely and depend on the specific jurisdiction studied, the methodology, the data sources, and the time period. Further details are available upon request from OMA Economics.

**Table 6:  
Minimum and Median Years of Training by OHIP Specialty**

OHIP Specialty	Minimum Years	Median Years	Difference	
00	Family Practice and Practice in General	2	2	0
01	Anaesthesia	5	5	0
02	Dermatology	5	5	0
03	General Surgery	5	5	0
04	Neurosurgery	6	7	1
05	Community Medicine	5	5	0
06	Orthopaedic Surgery	5	5	0
07	Geriatrics	5	5	0
08	Plastic Surgery	5	5	0
09	Cardiac Surgery	6	7.25	1.25
12	Emergency Medicine	3	3	0
13	Internal and Occupational Medicine	4	6	2
15	Endocrinology and Metabolism	5	5	0
16	Nephrology	5	5	0
17	Vascular Surgery	7	7	0
18	Neurology	5	6	1
19	Psychiatry	5	5	0
20	Obstetrics and Gynaecology	5	5	0
22	Genetics	5	6	1
23	Ophthalmology	5	5.5	0.5
24	Otolaryngology	5	5	0
26	Paediatrics	4	6	2
28	Laboratory Medicine	5	5	0
29	Microbiology	5	6	1
30	Clinical Biochemistry	5	5	0
31	Physical Medicine and Rehabilitation	5	5	0
33	Diagnostic Radiology	5	6	1
34	Radiation Oncology	5	6	1
35	Urology	5	5	0
41	Gastroenterology	5	5	0
44	Medical Oncology	6	6	0
46	Infectious Disease	5	5	0
47	Respiratory Disease	5	5	0
48	Rheumatology	5	5.5	0.5
60	Cardiology	6	7	1
61	Haematology	5	5	0
62	Clinical Immunology	5	5	0
63	Nuclear Medicine	5	6	1
64	General Thoracic Surgery	7	8	1

Sources: The Royal College of Physicians and Surgeons of Canada for the minimum years; The Canadian Post M.D. Education Registry (CAPER) for the median years (special request).

## 2.4 Emergency Medicine and Laboratory Medicine

**Current CANDI** In the current CANDI methodology, the Emergency Medicine group and the Laboratory Medicine group are treated differently than other specialties. The specific methodologies for these two groups are described in detail in the original CANDI report and for convenience reproduced here in Appendices 3 and 4<sup>9</sup>.

**Section Submissions (LM)** The Section on Laboratory Medicine expressed concerns about the current calculation of overhead. Specifically, the Section claimed that virtually all of the fee-for-service work is performed in the private community laboratories, which uniformly discount the payments to laboratory physicians by an average of 33%. The Section requested that the fee-for-service component of the adjusted net daily income for the Laboratory medicine group be appropriately adjusted to reflect this cost.

**CRIC Review** The CRIC discussed the Section's submission and was in agreement with the request. The Committee recognized that this cost would not be captured in the available overhead data or identified separately in the fee-for-service claims. At the CRIC request, the Section provided written evidence that such discount of fee-for-service payment occurs at the private community laboratories.

**Decision 8:** That the fee-for-service component of the adjusted net daily income for the Laboratory Medicine group be adjusted to reflect the discount of fee-for-service payment to Laboratory physicians in private community laboratories.

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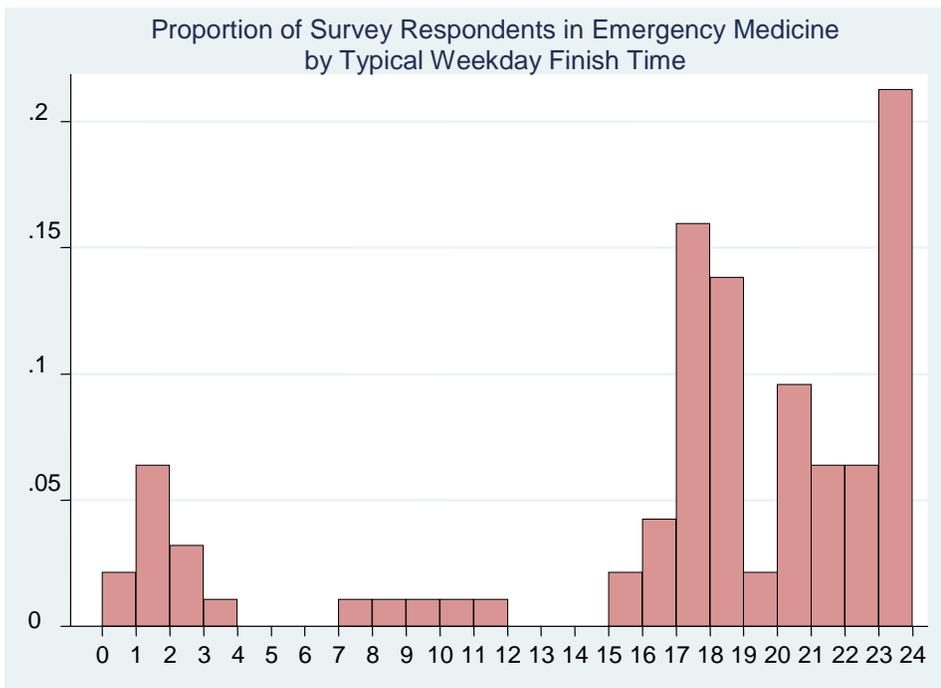
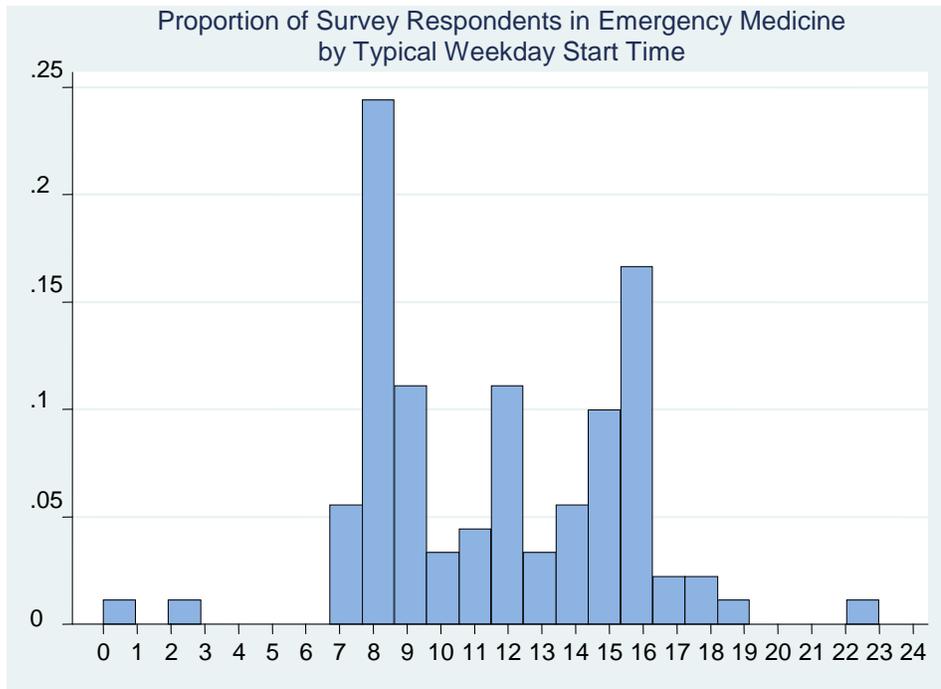
<sup>9</sup> See <https://www.oma.org/Member/Resources/Documents/2009RVICReportToCouncil.pdf>.

**Section Submissions (EM)** In its submission, the Section on Emergency Medicine recommended that the CANDI Methodology remove all evening procedures (and evening procedure premiums) from the calculation of income for the “Emergency Medicine” Specialty Group. The Section disagreed with the assertion that evening procedures are not more difficult than daytime procedures. The Section further stated that: *“It is more physiologically difficult to perform a procedure at 11 pm than it is at 11 am. This is why surgeons and anaesthetists are paid a 50% premium for procedures performed from 1700 to 2400 hrs on weekday, non-holiday evenings. This is why our Section was recently successful in obtaining recognition for and securing funding for unsociable hours procedure premiums (E412 and E413) to recognize the inherently greater difficulty and sacrifice required to perform a procedure on evenings, weekends and overnights.”*

**CRIC Review** The CRIC understands that the current CANDI methodology attempts to approximate what the Emergency Medicine physicians would earn if they worked during daytime only on a regular basis. To this end, income earned during any time of the day is considered, without limiting it to the daytime period only, but to make this comparison fair with other specialties, evening and night premiums were excluded and evening and night assessments were pro-rated to their day values. Further, the night procedures were excluded but the evening procedures (net of any evening premiums) were included. The CRIC also reviewed the new data collected from the PwC Study on the regular start and finish time for the sample of Emergency Medicine physicians (see Figure 2). These data shows that there is significant variation in the start and finish time for the Emergency Medicine physicians, in contrast to all other specialties, and reiterates the need to develop a unique solution for the Emergency Medicine group. The solution described above was the approach adopted by the RVIC Methodology Review Working Group and we believe it is still valid. Further, no new information was presented to persuade us to alter the current methodology.

**Decision 9:** **No change is recommended to the CANDI methodology in terms of evening procedure income for the Emergency Medicine group. The CRIC recommends that the 24-hour window continue to be used to calculate the income measure, with appropriate adjustment for hours to reflect work over the same 24-hour window (see also Decision 12).**

**Figure 2:**



Source: Calculations based on the Study of Physician Income, Hours of Work and Overhead Expenses for the Ontario Medical Association, PricewaterhouseCoopers, October 2011.

## 2.5 Other

### *OHIP Specialty Analysis*

**Current CANDI** The current CANDI methodology is based on the OHIP specialty.

**Section Submissions** Some OMA Sections proposed that the analysis by OHIP specialty that is currently used in the CANDI methodology may not be appropriate because of considerable variation within each OHIP specialty in the type of practice, the location of practice (e.g. rural and urban), the payment model (e.g. fee-for-service, alternative payment plans), etc. Some Sections therefore requested that the analysis be conducted at a more disaggregate level than the OHIP Specialty. On the other hand, some Sections felt that it would be more appropriate to lump several OHIP specialties together because of their similarity and because some of these specialties are relatively small.

**CRIC Review** The CRIC acknowledges that there exist variations within OHIP specialties and that the choice of appropriate unit of comparison is an important decision in the relativity process. The choice of the OHIP specialty as the unit of comparison has been previously made by the RVIC Methodology Review Working Group on several grounds, which we believe are still valid. First, the vast majority of data used in the CANDI methodology is available only at the level of the OHIP specialty, such as income, overhead, and years of training. In addition, the CANDI methodology addresses the question of inter-sectional relativity, while the intra-sectional relativity may be better addressed through other mechanisms, such as the MSPC allocation process, through which changes to specific payment elements such as fee codes can be made, and through various flow-through mechanisms for non-fee-for-service, alternative payment plans, and primary care. This approach reflects the fact that the CANDI methodology is a fee-for-income approach rather than a fee-for-service approach. In the fee-for-income approach, the relativity methodology does not adjust the values of individual fee codes, but rather identifies a pool of funds that are to be used for such code adjustments. To assist the intra-sectional relativity process, through MSPC or some similar process, any additional analysis by a specific subspecialty may be requested from the OMA Economics to inform the allocation process. In addition to these grounds, the CRIC Committee also noted that the new OHIP specialties (such as Nephrology, Medical Oncology, Endocrinology, Infectious Disease, and Vascular Surgery) that were previously part of a larger specialty will be treated separately in the CANDI methodology, which will in part address the previous concerns of these sections. As new subspecialties receive the OHIP specialty status, the CANDI methodology will be automatically adjusted to accommodate these changes as the data becomes available.

**Decision 10:** **No change is recommended to the CANDI methodology in terms of treatment the OHIP specialty analysis.**

## *Other Modifiers*

**Current CANDI** The current CANDI methodology is based only on four modifiers: the non-fee-for-service modifier, the overhead modifier, the opportunity cost modifier, and the skill acquisition modifier.

**Section Submissions** Some sections proposed that the CANDI methodology introduces additional modifiers, such as those related to quality of life (financial and personal sacrifices, divorce rates), lack of opportunity to practice part time, longevity of practice, and the complexity, risk, and intensity of practice.

**CRIC Review** The CRIC noted that some of these proposals are already reflected, at least in part, in the opportunity cost and skill-acquisition modifiers, such as lifespan, longevity of practice, and variation in skills across different specialties. Furthermore, the Committee recognized the lack of data for most of these modifiers. Lastly, the Committee was reminded of the failed effort of the RBRVS (Resource-based Relative Value Scale) relativity methodology that specifically tried to capture risk, intensity, and complexity of practice.

**Decision 11:** No change is recommended to the CANDI methodology in terms of treatment of additional modifiers related to quality of life, opportunity to practice part time, longevity of practice, complexity, risk, and intensity.

## *Hours of Work*

**Current CANDI** The current CANDI methodology is based on a daytime income, where the daytime is defined as the period between 7 AM and 5 PM. Because the OHIP claims data does not contain information on the time of service, the CANDI methodology cannot determine precisely how many hours each physician works during the daytime period. Therefore, the CANDI methodology implicitly assumes that all physicians work full 10 hours between 7 AM and 5 PM.

**Section Submissions** There are widespread concerns that the CANDI methodology does not adjust the daily income for the hours of work which are expected to vary across OHIP specialties. This concern was one of the main reasons why the OMA Council requested that a study be conducted to provide data on this issue.

**CRIC Review** The CRIC acknowledges the importance of incorporating hours of work in income relativity comparison and the limitation of the current CANDI methodology in this respect. The Committee also recognizes that until the PwC Study, there was a total lack of data on hours of work by OHIP Specialty. The Committee reviewed the new data collected by the PwC (see Table 7). While the Committee expressed concerns regarding the small sample size for some specialties, the Committee was in general agreement that the estimated hours of work were reasonable. To address the issue of the small sample size, the Committee reviewed several options, including the option of replacing the specialty-level estimate with the estimate for the corresponding assembly to which the specialty belongs.

**Decision 12:** That the current CANDI methodology introduces a specialty-level hours of work modifier based on the 7AM-5PM period using the data collected in the PwC Study, with appropriate adjustments for the specialties with small response rates. Specifically, for specialties with small sample size, we recommend using their Assembly average. For the Emergency Medicine group, we recommend using the hours worked over the entire 24-hour period to correspond with the definition of their income measure over the same time period (see also Decision 9).

**Table 7:  
Clinical Weekday Daytime Hours of Work by OHIP Specialty**

OHIP Specialty	Survey Sample	Mean Hours of Work	Overall Mean (=7.3/Mean Hours)	
00	Family Practice and Practice in General	439	7.1	1.03
01	Anaesthesia	119	8.2	0.89
02	Dermatology	27	7.7	0.95
03	General Surgery	40	7.8	0.94
04	Neurosurgery	7	8.1	0.90
05	Community Medicine	4	7.1	1.03
06	Orthopaedic Surgery	30	8.7	0.84
07	Geriatrics	9	7.5	0.97
08	Plastic Surgery	8	8.8	0.83
09	Cardiac Surgery	4	8.2	0.89
12	Emergency Medicine	92	8.2	0.89
13	Internal and Occupational Medicine	62	7.4	0.99
18	Neurology	14	6.9	1.05
19	Psychiatry	114	6.8	1.07
20	Obstetrics and Gynaecology	33	8.0	0.92
22	Genetics	5	7.0	1.04
23	Ophthalmology	8	8.2	0.89
24	Otolaryngology	15	7.7	0.95
26	Paediatrics	50	7.2	1.01
28	Laboratory Medicine	36	7.5	0.97
31	Physical Medicine and Rehabilitation	9	7.5	0.98
33	Diagnostic Radiology	5	7.3	1.00
34	Radiation Oncology	12	6.7	1.09
35	Urology	28	8.7	0.84
41	Gastroenterology	25	8.3	0.88
47	Respiratory Disease	14	7.9	0.93
48	Rheumatology	8	7.0	1.04
60	Cardiology	14	7.1	1.03
61	Haematology	4	7.1	1.03
62	Clinical Immunology	2	7.1	1.03
63	Nuclear Medicine	2	7.1	1.03
64	General Thoracic Surgery	6	9.2	0.80
All Physicians		1,245	7.3	1.00

Source: The Study of Physician Income, Hours of Work and Overhead Expenses for the Ontario Medical Association, PricewaterhouseCoopers, October 2011, Tables 2 and 3.

Notes: (1) Shaded cells represent specialties with fewer than five responses or a response rate for the specialty less than 5%, for which there is less confidence that the estimates are representative of the sample population. These specialties are assigned their assembly's average clinical hours.

(2) Emergency Medicine group is assigned hours based on a 24-hour day.

(3) Endocrinology and Metabolism, Nephrology, Medical Oncology, and Infectious Disease are included in Internal Medicine. Vascular Surgery is included in General Surgery. Microbiology and Clinical Biochemistry are included in Laboratory Medicine.

### 3. The PwC Study of Income, Overhead and Hours of Work

**Summary** As mentioned previously, the CRIC engaged PricewaterhouseCoopers (PwC) to collect data on physician income, hours of work, and overhead costs, which may be used by the OMA to assist in determining income relativity between OHIP Specialities and refine the income relativity model. These data was collected to measure income, hours, and overhead that pertains to daytime, weekday, clinical insured work at the level of individual physician. The PwC Study included two components: an on-line survey of all active physicians for whom the OMA had electronic contact information, and selected follow-up site visits and interviews with Survey respondents to validate self-reported data and to obtain a better overall understanding of their respective practice environment and characteristics. The PwC study was completed in the fall of 2011 and the results were presented to OMA Council in November 2011<sup>10</sup>.

**Section Submissions** The feedback from the Sections revolved around three main themes. First, many of the Sections expressed a concern with the small response rate in the PwC Study. Specifically, the survey achieved an overall response rate of 8.6%, which many Sections considered to be too small to draw valid inference, especially at the level of each OHIP Specialty. Second, some Sections raised a concern about the validity and reliability of self-reported survey data in obtaining accurate estimates of income, overhead, and hours of work. Third, some Sections were concerned about the representativeness of survey. Specifically, the survey was offered only to physicians with valid e-mail addresses. In addition, the survey response rates by specialty seem to be negatively correlated with the specialty's relativity position. Further, some Sections expressed concerns that the site visits were not particularly thorough as they only validated the survey responses and did not represent a formal audit.

**CRIC Review** The CRIC acknowledges all three main concerns raised by the Sections related to the sample size, the self-reported data, and the non-randomness of the responses. However, the Committee noted that these concerns should be evaluated in light of the following considerations. First, the Survey was a complex, relatively long survey asking respondents for confidential and sensitive information. Second, the response rate in this Survey is not out of line with other surveys the OMA conducted at the same time or similar studies in other provinces (see Table 8). Third, many important surveys use self reported data, such as the Canadian Census and the National Household Survey (both administered by Statistics Canada), the National Physician Survey, and the OHRC surveys administered by the OMA. Data from self-reported surveys can be seen as an essential tool in policy making and decision processes. Fourth, the PwC included a number of tests to assess potential response bias, such as examining responses from early and late responders and weighting the estimates using the distribution of physicians by age, sex, and specialty. Fifth, any physician that preferred to fill out the survey by hand was encouraged to do so and the results were manually entered by the PwC team. As the OMA membership number is approximately twenty-four thousand, email was decided to be the most efficient way of reaching all of the members.

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<sup>10</sup> See <https://www.oma.org/Member/Resources/Documents/OMASurveyFinalReportForCouncilOct2011.pdf>.

**Table 8:  
Response Rates of Physician Surveys**

Survey Year	Response Rate
OMA Membership Survey 2010	12%
B.C. Medical Association – Overhead Cost Study 2005	8.5%
Ontario Human Resources Committee Survey 2011	8.2%

In light of these considerations, the CRIC reviewed the Survey results and discussed several alternative approaches to using the collected data. Three main conclusions emerged. First, the PwC study is just a tool that can be used to inform the relativity process, but in itself it does not represent the relativity methodology. Therefore, the question is whether and how to use the PwC Study to potentially improve the CANDI methodology. Second, the PwC presents new data related to hours of work that were not available previously. In addition, it presents a more detailed overhead data than currently exists. However, the income data collected in the PwC Study is in general inferior to the data currently available through the OHIP claims and other administrative databases from the Ministry of Health and Long-Term Care that contains comprehensive information on physician payments for all physicians in Ontario (i.e. it is the population data rather than a sample). Third, due to concerns related to the sample size, the data from the PwC Study must be appropriately adjusted for specialties with small response rates. While the Committee considered several options, it was of the opinion that the best approach would be to use the assembly estimates in place of specialty-level estimates for the specialties with small response rates.

**Decision 13: That the data on hours of work and overhead collected in the PwC Study be utilized in the CANDI methodology, with appropriate adjustments as described in Decisions 6 and 12.**

#### 4. Concluding Comments and Recommendation

While the issue of income relativity is of great importance to physicians in Ontario, it must be recognized that it is an ideal that can only be approximated through continued effort. This involves better data collection, mutual consensus, communication, and compromise. With this understanding, the CRIC reviewed the current relativity methodology in light of the feedback from the OMA Sections and the new data collected by the PwC Study.

Most recommendations presented in this report are to continue with the current CANDI methodology that was thoughtfully developed by the RVIC Methodology Review Working Group in broad consultation with the OMA Sections and Assemblies and accepted by the OMA Council. However, the CRIC recommends three changes: an adjustment to the overhead modifier (Decision 6), an introduction of an hours-of-work modifier (Decision 12), and an adjustment to the gross daily fee-for-service income for the Laboratory Medicine group (Decision 8). These decisions were proposed in large part because new data on hours of work was made available through the PwC Study.

While it is hoped that these recommendations will be evaluated for their conceptual merit, the Committee recognizes that the impact of these recommendations on the relativity allocation plays an important practical consideration. For completeness, we therefore present the impact of the proposed recommendations based on the assumption that 1% of physician services payment pool was available for the relativity allocation (see Table 9 and Appendix 2). It must be emphasized that this is a hypothetical example; the actual available relativity allocation in any given year is determined by the bilateral negotiations process between the MOHLTC and the OMA.

##### **Recommendation Summary**

**The CRIC recommends that the CANDI relativity methodology be adjusted to reflect Decisions 6, 8, and 12, as outlined in this report.**

**Table 9:  
Impact of Proposed Recommendations on Hypothetical 1% Relativity Allocation**

OHIP Specialty		Current CANDI	Proposed CANDI	Difference
00	Family Practice and Practice in General	1.5%	1.2%	-0.3%
01	Anesthesiology	0.0%	0.0%	0.0%
02	Dermatology	0.1%	0.6%	0.5%
03	General Surgery	0.0%	0.0%	0.0%
04	Neurosurgery	0.3%	1.2%	0.9%
05	Community Medicine	1.0%	1.0%	0.0%
06	Orthopedic Surgery	0.0%	0.6%	0.6%
07	Geriatric Medicine	3.0%	3.5%	0.5%
08	Plastic Surgery	0.4%	1.8%	1.4%
09	Cardiovascular and Thoracic Surgery	0.0%	0.1%	0.1%
13	Internal Medicine	2.0%	2.3%	0.3%
18	Neurology	2.3%	2.0%	-0.3%
19	Psychiatry	3.0%	2.6%	-0.4%
20	Obstetrics and Gynecology	0.6%	1.3%	0.7%
22	Genetics	1.0%	1.0%	0.0%
23	Ophthalmology	0.0%	0.0%	0.0%
24	Otolaryngology	0.0%	0.0%	0.0%
26	Pediatrics	1.7%	1.8%	0.1%
31	Physical Medicine and Rehabilitation	2.2%	2.5%	0.3%
33	Diagnostic Radiology	0.0%	0.0%	0.0%
34	Radiation Oncology	0.0%	0.0%	0.0%
35	Urology	0.0%	0.2%	0.2%
41	Gastroenterology	0.0%	0.0%	0.0%
47	Respirology	2.0%	2.6%	0.6%
48	Rheumatology	2.6%	2.1%	-0.5%
60	Cardiology	0.0%	0.0%	0.0%
61	Hematology	3.3%	3.0%	-0.3%
62	Clinical Immunology and Allergy	1.0%	1.0%	0.0%
63	Nuclear Medicine	0.0%	0.0%	0.0%
64	General Thoracic Surgery	2.5%	4.8%	2.3%
EM	Emergency Medicine group	0.6%	1.6%	1.0%
LM	Laboratory Medicine group	0.0%	0.5%	0.5%
<b>Specialists only</b>		0.8%	0.9%	0.1%
<b>All MDs</b>		1.0%	1.0%	0.0%

- Notes: (1) 'Current CANDI' represents the current relativity methodology; 'Proposed CANDI' represents the current methodology with Decisions 6, 8, and 12.  
(2) Emergency Medicine group includes OHIP Specialty Emergency Medicine and physicians in General and Family Practice that are either affiliated with an EDFA program or work as FFS Emergency Medicine physicians.  
(3) Laboratory Medicine group includes OHIP Specialties Laboratory Medicine, Microbiology, and Clinical Biochemistry.  
(4) The new OHIP specialties of Endocrinology and Metabolism, Nephrology, Medical Oncology, and Infectious Disease are included in the Internal Medicine group. The new OHIP specialty of Vascular Surgery is included in the General Surgery group.  
(5) Community Medicine and Genetics are assigned the overall average increase, as per the current CANDI methodology.

### Appendix 1: Summary of Decisions

No.	Issue	Decisions
1	After-Hours Income	No change.
2	Post-Call Days	No change.
3	Technical Fees	No change.
4	Non-Insured Income	No change.
5	HOCC	No change.
6	Overhead Ratio	That the calculation of the overhead ratio in the CANDI methodology be updated to include the most recent overhead data from OHRC surveys for 2009 and 2011, and be modified to also add the overhead data from the PwC Study, and that the estimates from these sources be combined into a single weighted average by OHIP specialty using the number of survey responses as appropriate weights.
7	Years of Training	No change.
8	Laboratory Medicine group	That the fee-for-service component of the adjusted net daily income for the Laboratory Medicine group be adjusted to reflect the discount of fee-for-service payment to Laboratory physicians in private community laboratories.
9	Emergency Medicine group	No change is recommended to the CANDI methodology in terms of evening procedure income for the Emergency Medicine group. The CRIC recommends that the 24-hour window continue to be used to calculate the income measure, with appropriate adjustment for hours to reflect work over the same 24-hour window (see also Decision 12).
10	OHIP Specialty	No change.
11	Other Modifiers	No change.
12	Hours of Work	That the current CANDI methodology introduces a specialty-level hours of work modifier based on the 7AM-5PM period using the data collected in the PwC Study, with appropriate adjustments for the specialties with small response rates. Specifically, for specialties with small sample size, we recommend using their Assembly average. For the Emergency Medicine group, we recommend using the hours worked over the entire 24-hour period to correspond with the definition of their income measure over the same time period (see also Decision 9).
13	PwC Study	No change.

Note: Shaded rows highlight decisions that require changes to the current CANDI methodology.

Appendix 2: Detailed Calculations for CANDI Relativity Allocation using 1.0% Hypothetical Example

OHIP Specialty		MODIFIERS					RELATIVITY ADJUSTMENT				
		Gross Daily Income	Non-Fee-for-Service	Overhead	Opportunity Cost	Skill Acquisition	Hours of Work	Adjusted Net Daily Income	Adjustment (\$)	Adjustment (%)	Scaled to Budget of 1%
		A	B	C	D	E	F	$G = A*B*C*D*E*F$	$H = \max\{0, \$938 - G\}$	$I = H/G$	$J = I*(0.01/0.147)$
00	Family Practice	\$763	1.52	0.67	1.000	1.00	1.03	\$803	\$135	17%	1.2%
01	Anesthesiology	\$1,618	1.05	0.86	0.923	0.88	0.89	\$1,050	\$0	0%	0.0%
02	Dermatology	\$1,900	1.02	0.58	0.910	0.88	0.95	\$862	\$76	9%	0.6%
03	General Surgery	\$1,648	1.07	0.71	0.927	0.88	0.94	\$965	\$0	0%	0.0%
04	Neurosurgery	\$1,609	1.18	0.67	0.877	0.80	0.90	\$801	\$137	17%	1.2%
05	Community Medicine										
06	Orthopedic Surgery	\$1,623	1.09	0.71	0.930	0.88	0.84	\$858	\$80	9%	0.6%
07	Geriatric Medicine	\$1,038	1.09	0.73	0.880	0.88	0.97	\$621	\$317	51%	3.5%
08	Plastic Surgery	\$1,538	1.10	0.66	0.918	0.88	0.83	\$744	\$194	26%	1.8%
09	Cardiovascular/Thoracic Surgery	\$1,931	1.10	0.70	0.888	0.79	0.89	\$934	\$4	0%	0.0%
13	Internal Medicine	\$1,193	1.06	0.72	0.926	0.84	0.99	\$698	\$240	34%	2.3%
18	Neurology	\$1,267	1.09	0.70	0.850	0.84	1.05	\$728	\$210	29%	2.0%
19	Psychiatry	\$991	1.11	0.77	0.854	0.88	1.07	\$682	\$256	38%	2.6%
20	Obstetrics and Gynecology	\$1,463	1.06	0.67	0.931	0.88	0.92	\$786	\$152	19%	1.3%
22	Genetics										
23	Ophthalmology	\$2,633	1.06	0.59	0.937	0.86	0.89	\$1,189	\$0	0%	0.0%
24	Otolaryngology	\$1,833	1.12	0.64	0.928	0.88	0.95	\$1,022	\$0	0%	0.0%
26	Pediatrics	\$1,199	1.19	0.67	0.921	0.84	1.01	\$747	\$191	26%	1.8%
31	Physical Medicine/Rehabilitation	\$1,143	1.14	0.70	0.869	0.88	0.98	\$683	\$255	37%	2.5%
33	Diagnostic Radiology	\$2,392	1.02	0.74	0.922	0.84	1.00	\$1,398	\$0	0%	0.0%
34	Radiation Oncology	\$1,361	1.29	0.91	0.885	0.84	1.09	\$1,299	\$0	0%	0.0%
35	Urology	\$1,836	1.08	0.67	0.935	0.88	0.84	\$912	\$26	3%	0.2%
41	Gastroenterology	\$2,488	1.02	0.70	0.944	0.88	0.88	\$1,292	\$0	0%	0.0%
47	Respirology	\$1,223	1.05	0.72	0.908	0.88	0.93	\$682	\$256	38%	2.6%
48	Rheumatology	\$1,347	1.02	0.68	0.855	0.86	1.04	\$716	\$222	31%	2.1%

OHIP Specialty		Gross Daily Income	MODIFIERS				RELATIVITY ADJUSTMENT				
			Non-Fee-for-Service	Overhead	Opportunity Cost	Skill Acquisition	Hours of Work	Adjusted Net Daily Income	Adjustment (\$)	Adjustment (%)	Scaled to Budget of 1%
		A	B	C	D	E	F	$G = A*B*C*D*E*F$	$H = \max\{0, \$938-G\}$	$I = H/G$	$J = I*(0.01/0.147)$
60	Cardiology	\$2,324	1.06	0.72	0.869	0.80	1.03	\$1,271	\$0	0%	0.0%
61	Hematology	\$840	1.22	0.78	0.897	0.88	1.03	\$651	\$287	44%	3.0%
62	Clinical Immunology and Allergy										
63	Nuclear Medicine	\$2,172	1.03	0.70	0.915	0.84	1.03	\$1,247	\$0	0%	0.0%
64	General Thoracic Surgery	\$1,547	1.06	0.74	0.751	0.76	0.80	\$552	\$386	70%	4.8%
EM	Emergency Medicine group	\$1,100	1.00	0.83	0.973	0.96	0.89	\$755	\$183	24%	1.6%
LM	Laboratory Medicine group	\$1,203	1.00	0.93	0.918	0.88	0.97	\$880	\$58	7%	0.5%
	Specialists	\$1,516	1.08	0.73	0.908	0.86	0.97	\$938	\$130	13.9%	0.9%
	All Physicians	\$1,181	1.25	0.72	0.950	0.93	0.99	\$928	\$137	14.7%	1.0%

### Notes

A - Gross Daily Income	= Average weekday (Monday to Friday) daytime (7AM-5PM) fee-for-service billings per physician. This excludes billing on weekends, holidays, days with no billings, and after-hour billings during weekdays.
B – Non-Fee-For-Service	= Ratio of total income to non-fee-for-service (NFFS) income only. NFFS income includes the alternative payment plans (APP), payments to primary care physicians in patient enrolment models such as capitation and Comprehensive Care Management (CCM) fee, Hospital On-Call (HOCC), Workplace Safety and Insurance Board (WSIB) claims, mental health sessionals fees and psychiatric stipends, Assertive Community Treatment (ACT), Divested Provincial Psychiatric Hospitals (DPPH), Ontario Psychiatric Outreach Program (OPOP), and Pediatric Hospital Stabilization Fund
C – Overhead	= 1 – overhead ratio, where the overhead ratio is calculated as the weighted average of PwC Survey, 2009 OHRC, and 2011 OHRC surveys, using the sample size as weights. This weighted average is capped from below at 0.8 CRA, as per the current CANDI methodology. See also Table 5 in this report.
D-Opportunity cost	= 1-(years of medical training*opportunity cost per year for each year over 2 years), where years of medical training comes from the minimum years of training from the Royal College of Physicians and Surgeons of Canada (see Table 6 in this report) and the opportunity cost modifier comes from the actuarial study by the Rotman Business School (see <a href="https://www.oma.org/Member/Resources/Documents/2009OntarioMedicalTraining.pdf">https://www.oma.org/Member/Resources/Documents/2009OntarioMedicalTraining.pdf</a> ).
E-Skill Acquisition	= 1-(years of medical training*skill acquisition modifier per year for each year over 2 years), where years of medical training comes from the minimum years of training from the Royal College of Physicians and Surgeons of Canada (see Table 6 in this report) and the skill acquisition modifier is set at 0.04 for each specialty.
F-Hours of Work	=7.3/specialty-specific daytime hours of work, where 7.3 is the average for all physicians and daytime is defined as 7AM to 5PM. See Table 7.
H – Adjustment (\$)	= the all specialists' average (\$938) minus the specialty-specific ANDI, or 0 if negative.
J-Scaled to Budget	= percent adjustment times the available budget, where the available budget is equal to 1% divided by 14.7% (the all physicians' required adjustment if funding was available to make full adjustment).

### Appendix 3: Emergency Medicine Group

The 'Emergency Medicine' physician group includes the following physicians:

1. All Emergency Medicine consultants (OHIP Specialty 12)
2. GP/FPs who participate in EDFAFA
3. GP/FPs who bill at least 50% in H-codes

The average daily billing for this group is the weighted average of FFS physicians' and EDFAFA physician's daily billings. The weight assigned to the FFS part is 19 percent, which is the ratio of total H-codes FFS billings to total of EDFAFA Funding plus total H-codes

The daily billings for FFS physicians exclude weekends and holidays. It also converts all evening and night assessment into their day values. Associated procedures for evening codes are included, but those for night assessment are excluded.

The daily billings are trimmed by 5 percent from each tail of the distribution. The daily billings for EDFAFA physicians are constructed in exactly the same way as for FFS physicians, but based on shadow billings of EDFAFA physicians. An additional 25% was then added to the shadow billings as this is the current premium being paid to EDFAFA physicians over and above the EDFAFA contract. This total of 125% of shadow billings was used as a reasonable representation of income for EDFAFA physicians. (Note that all evening, weekend, holiday and night H codes were converted to weekday daytime codes in performing this calculation). To ensure reliability of shadow billings, only facilities with over 25,000 ER visits annually were included and only facilities with relatively large ratios of shadow billings-to-total contract value were assessed.

## Appendix 4: Laboratory Medicine Group

The 'Laboratory Medicine' physician group consist of physicians in OHIP Specialty Laboratory Medicine (28), Microbiology (29), and Clinical Biochemistry (30).

The average daily billings are a weighted average of FFS billings (discounted at 33% as per Recommendation 8) and estimated daily income for LMFFA (Laboratory Medicine Funding Framework Agreement), where the weight on FFS (0.13) is the FFS billings by the Lab Medicine group divided by the total of (discounted) FFS billings and LMFFA funding.

The estimated daily income for LMFFA is based on total annual funding for LMFFA per 1 FTE, divided by the annual days of work (47 weeks, accounting for 4 weeks of vacation and CME, and 5 days per week). Adjustment for after-hours billings, weekends, and holidays was estimated at 20%.

The estimated daily income for FFS physicians is estimated using a sample of physicians with total annual professional billings over 300K. After-hours billings and billings on weekends and holidays are excluded. There is a further adjustment of 20% to account that Lab Medicine do not have specific after-hours codes to identify after-hours billings. The days in the lowest and highest 5 percentiles of distribution of daily billings are also excluded. The billings are also discounted at 33% as per Recommendation 8 in this report.