

**Supervising New PGY-1 Residents:  
Faculty Expectations vs. Residents' Perceptions  
A Case Study**

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THESIS

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This thesis is dedicated to my husband and daughter, Darren and Evelyn Poole without whom I would not have accomplish this much.

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## **LIST OF ABBREVIATIONS**

CSs	Clinical supervisors
EPA	Entrustable professional activities
PGY-1s	First-year residents
SME	Subject matter expert

## SUMMARY

**BACKGROUND:** Postgraduate year-1 residents (PGY-1s) begin clinical practice in a setting where attending staff and senior residents are available to supervise their work. There is an expectation that, while being supervised and as they become more experienced, the PGY-1s will gradually take on more responsibilities and function independently.

**OBJECTIVE:** To determine the degree of agreement between the level of supervision expected by clinical supervisors (CSs) and the level of supervision reported by PGY-1s.

**METHODS:** Using a nominal group technique, subject matter experts (SMEs) from multiple specialties defined “entrustable professional activities” (EPAs) for PGY-1s, that is, a set of activities to be performed independently by PGY-1s by the end of their first year of residency, regardless of specialty. We then surveyed and compared CSs and PGY-1s from one institution regarding levels of supervision expected and received during the daytime and nighttime for each EPA.

**RESULTS:** The SMEs defined 10 EPAs (e.g., completing admission orders, obtaining informed consent), ratified by a national panel, and 113 CSs and 48 PGY-1s completed the survey. CSs had the same expectations regardless of the time of day. For three EPAs (managing intravenous fluids, obtaining informed consent, and obtaining advanced directives) the level of supervision reported by PGY-1s was lower than what CSs expected ( $p < 0.001$ ) regardless of the time of day (i.e., day versus night). For four more EPAs (initiating the management of critically ill patients, handing over the care of patients to colleagues, writing discharge prescriptions, and coordinating a patient discharge) the differences only occurred during nighttime work ( $p \leq 0.001$ ).

**CONCLUSION:** PGY-1s reported performing EPAs with less supervision than expected by CSs, especially during nighttime work. Using EPAs to guide the content of the undergraduate curriculum and during examinations could help better align CSs’ and PGY-1s’ expectations about early residency supervision.

**Key words:** Supervision, entrustable professional activities, first-year residents



## **I. BACKGROUND**

During residency, trainees acquire knowledge, skills, and attitudes in a supervised setting with graded responsibilities that move them towards becoming an independent practitioner. Kennedy et al. (2009) showed that residents, especially new ones, feel pressured very quickly to progress prematurely towards independent practice. Identity issues, including taking on more responsibilities than is expected of them, and organizational factors, such as acting rapidly without asking for help, were identified as possible causes for premature independence (Kennedy et al., 2007).

To maximize resident learning in the workplace and ensure patient safety, accrediting agencies require that residency programs provide suitable levels of supervision for their residents. If supervisors are unwilling to entrust trainees with appropriate levels of responsibility for designated activities, then learning is negatively impacted and trainees' development is slowed. Conversely, if supervisors place too much trust in trainees who are as yet unable to fulfill their expectations, both patient safety and educational efforts can be compromised (Cantillon and Macdermott, 2008; Kennedy et al., 2005). Entrusting a particular trainee with specific activities requires sound judgment by the supervisor. Learning theories have long supported the development of expertise through experiential learning, especially in the workplace (Vygotsky, 1978; Lave and Wenger, 1991; Plsek and Greenhalgh, 2001; Fraser and Greenhalgh, 2001; Engeström, 2001; Ericsson, 2002; Carraccio et al., 2008; Bleakley, 2011; Burford, 2012; Yardley et al., 2012). Residents will learn best when they are performing at the limit of their competence (Teunissen et al., 2007). Activity theory describes learning as an interaction that occurs between people and contexts in a social milieu (Engeström, 2001). Thus activities performed within a particular context must be understood between parties, in this case, between clinical supervisors and residents, in order to ensure that appropriate opportunities for learning take place. To better explain when an activity can be entrusted, ten Cate and Scheele (2007) developed the notion of "entrustable professional activities" (EPAs), that is, "the activities that together constitute the mass of critical elements

that operationally define a profession.” There is evidence in the literature that residents and supervisors do not always agree on the level of supervision needed for certain EPAs. For example, Sterkenburg et al. (2010) assessed six EPAs in anesthesiology and found that residents and supervisors had different expectations regarding when entrustment of residents was appropriate, what residents can actually do, and what residents think they can do safely. Understanding and reconciling these differences is vital when one considers that first-year residents (PGY-1s) are expected to take on more responsibilities in the first few weeks of residency than they had as medical students. Defining possible gaps between supervisor and PGY-1 expectations and identifying what actually occurs in the workplace are important steps in making sure that residents assume the level of responsibility expected by their clinical supervisors to ensure that patients receive optimal and safe care.

The purpose of this study was to determine the degree of agreement between the level of supervision expected by clinical supervisors (CSs) regarding a set of EPAs and the level of supervision PGY-1s report receiving.

## II. METHODS

### A. Defining EPAs

Eight faculty members from the University of Ottawa, with broad experience interacting with PGY-1s early in their training, were purposefully recruited as subject matter experts (SMEs) to define inpatient-care EPAs expected of any PGY-1s, regardless of specialty. The SMEs were recruited from family medicine, internal medicine, pediatrics, obstetrics-gynecology, and surgery. Each SME was involved in direct patient care, worked with residents, including PGY-1s, and were experienced medical educators. To help with EPA development, SMEs were provided with information pertinent to PGY-1 training, including objectives of training appropriate for the selected specialties. The SMEs participated in a nominal group process to define the EPAs. Subsequently and for validation purposes, a national group of nine medical educators familiar with expected levels of training and entrustment, independently reviewed the EPAs using email communication with the principal investigator (CT). The EPAs were then reviewed and finalized by the SMEs.

### B. Surveys

Two surveys were developed, one for the CSs and one for the PGY-1s, to determine the degree of agreement between the two groups regarding levels of supervision. The first survey asked the CSs what level of supervision they expected of PGY-1s the first time they performed the EPAs as a resident, during the daytime and at night (see an example in Box 1). The second survey asked PGY-1s what degree of supervision they recalled receiving the first time they performed the EPAs as a resident, during the daytime and at night. Based on Kilminster and Jolly's literature review (2000), "supervision" was defined as the provision of guidance or feedback in the context of patient care. A supervisor was defined as any person who is capable of performing the activity without supervision and who is able to teach or oversee the activity performed by a junior trainee. A supervisor can be an attending staff, a fellow, or a more senior resident.

## Box 1. Example of a survey item

**Clinical supervisor survey.**

What type of supervision would you expect a new PGY-1 to have to **obtain an informed consent** for the **first time** as a resident during the **daytime**? Choose only one option.

1. Should not perform the activity at all even with supervision.
2. Able to perform the activity with direct supervision .
3. Able to perform the activity with indirect supervision.
4. Able to perform the activity on their own without supervision.

**PGY-1 survey.**

The **first time** you **obtained an informed consent** as a PGY-1 resident during the **daytime**, what type of supervision did you have? Choose only one option.

1. Did not perform this activity as a resident during the daytime.
2. Performed the activity with direct supervision.
3. Performed the activity with indirect supervision.
4. Performed the activity on my own without supervision.

Ten Cate et al. (2010) used a 5-point scale to define the levels of entrustment, that is : (1) not allowed to perform the activity, (2) can perform it with full supervision, (3) can perform it with reactive supervision, (4) can perform it independently, and (5) are able to act as a supervisor. The fifth level was omitted because it was not relevant to the goals of the present study, resulting in a 4-point nominal scale of levels of supervision: (1) *not allowed to perform the activity*, that is, should not perform the activity at all even with supervision; (2) *direct supervision*, that is, when the supervisor is physically present and can directly intervene if necessary; (3) *indirect supervision*, that is, when the supervisor is aware that the resident is undertaking the activity but is not physically present, and; (4) *without supervision*, that is, when a supervisor does not need to be aware that the resident is doing the activity or directly observing the resident. During residency, “*without supervision*” always implies that post-hoc supervision occurs or is possible (Babbott, 2010).

Residents were also asked whether they would have preferred a different level of supervision at the time and whether they had previously performed the activity as a medical student. Lastly, demographic data was collected regarding gender, general area of training (medical or surgical specialty), and years in practice for clinical supervisors.

We invited, by email solicitation, all the attending physicians (approximately 250) who were CSs in the departments of Family Medicine, Medicine, Pediatrics, Obstetrics/Gynecology, and Surgery. The only inclusion criterion used was to have supervised PGY-1s on an inpatient ward rotation during the past year. All PGY-1s at the University of Ottawa at the end of their fourth month of PGY-1 residency (n=224) were invited to participate; by that time, they had likely encountered the EPAs. They were also solicited by email. Completion of at least one inpatient ward rotation was the sole resident inclusion criterion.

Both surveys were distributed through e-mail and available for a three-week period on a password-protected web-based platform (©FluidSurveys, Canada). Reminders were sent weekly. No incentives for participation were provided. By agreeing to complete the survey, participants consented to participate in the study. The study was approved by the University of Ottawa research ethics board and the University of Illinois at Chicago institutional review board, the latter as part of the Master's of Health Professions Education (MHPE) thesis requirements for the principal investigator (CT).

### C. Data Analysis

Response frequencies from CSs and PGY-1s regarding levels of supervision for each EPA were compared using Pearson chi-square statistics (IBM-SPSS, version 20.0.0). Comparison of responses was also done by gender and specialty groups. Daytime and nighttime responses within the CS and PGY-1 groups were compared using Bowker tests of symmetry (SAS, version 9.2). Significant type-I error rates were based on a Holm-Bonferroni correction, with values ranging from 0.003 (first comparison) to 0.05 (final comparison) (Holm, 1979).

### III. RESULTS

#### A. Defining EPAs

The eight local SMEs at the University of Ottawa defined and agreed on 10 EPAs that were subsequently ratified by a national panel of nine medical educators. The EPAs are: (1) *recognizing and initializing management of a critically-ill patient*; (2) *disclosing medical errors*; (3) *interpreting investigations (laboratory, ECG, radiographs) with proper communication of results to patients*; (4) *managing intravenous fluids*; (5) *handing over the care of patients to colleagues/other service*; (6) *writing a discharge prescription including medication reconciliation*; (7) *coordinating a patient discharge/transfer (including counseling of patient, organizing follow-up and completing discharge summary)*; (8) *writing admission and/or post-operative orders*; (9) *obtaining informed consent* and (10) *obtaining advanced directives/goals of care (code status)*.

#### B. Surveys

One-hundred-and-thirteen (113) CSs completed the survey, a 45.2% (113/250) response rate; 70 (62%) were men and 43 (38%) were women. Ninety-four (83%) CSs were from medical specialties while 19 (17%) were from surgical specialties. A quarter of the CSs had less than 5 years of experience (25%); 17% had 5 to 10 years; 19% had 11 to 15 years; and 39% had more than 15 years. The lack of data regarding gender and specialty proportions prevented any comparison with the sampled population. Forty-eight (48) PGY-1s completed the survey, a 21.4% response rate; 31 (65%) were women and 17 (35%) were men. There were significantly more PGY-1 women in the sample than in the sampled population (65% in sample vs. 55% actual;  $\chi^2(1)=7.44$ ,  $p=0.0064$ ). Forty (40) participants were from medical specialties while eight were from surgical specialties. These numbers are similar in proportion to those of the sampled population ( $\chi^2(1)=0.5433$ ,  $p=0.46$ ).

There was a technical problem such that the web-based survey did not record accurately the PGY-1 responses to one of the EPAs, *interpreting investigations*; consequently this EPA was excluded

from the analyses.

More than 80% of the residents encountered all of the EPAs, with the exception of *disclosing medical errors* (< 35%). Clinical supervisors preferred direct supervision for five of the EPAs (42-68% of all supervisors) compared to indirect supervision for the other four (46-65% of all supervisors); see Table 1. For each EPA, CSs reported similar levels of expectations regardless of the time of day ( $p=0.12-0.95$ ).

For one EPA, *writing admission/post-operative orders*, PGY-1s reported receiving the same level of supervision as expected by the CSs, irrespective of time of day (daytime:  $\chi^2(3)=8.556$ ,  $p=0.036$ ; nighttime:  $\chi^2(3)=4.910$ ,  $p=0.18$ ).

For three of the nine EPAs, PGY-1s reported performing the EPA with less supervision than was expected by the CSs, and some recalled performing the EPA without any supervision (31-54%), regardless of the time of day, namely: (1) *managing intravenous fluids* (daytime,  $\chi^2(3)=22.199$ ,  $p<0.001$ ; nighttime,  $\chi^2(3)=18.028$ ,  $p<0.001$ ), (2) *obtaining informed consent* (daytime,  $\chi^2(3)=29.755$ ,  $p<0.001$ ; nighttime,  $\chi^2(3)=37.039$ ,  $p<0.001$ ), and (3) *obtaining advanced directives* (daytime,  $\chi^2(3)=49.21$ ,  $p<0.001$ ; nighttime,  $\chi^2(3)=58.473$ ,  $p<0.001$ ). The differences between CSs and PGY-1s for performing these EPAs without supervision are illustrated in Figure 1, with odds ratios of 2.9 for *managing intravenous fluids*, 5.6 for *obtaining informed consent*, and 14.2 for *obtaining advanced directives*.

Table 1. Frequencies of responses to EPAs by level of supervision (% in parentheses)

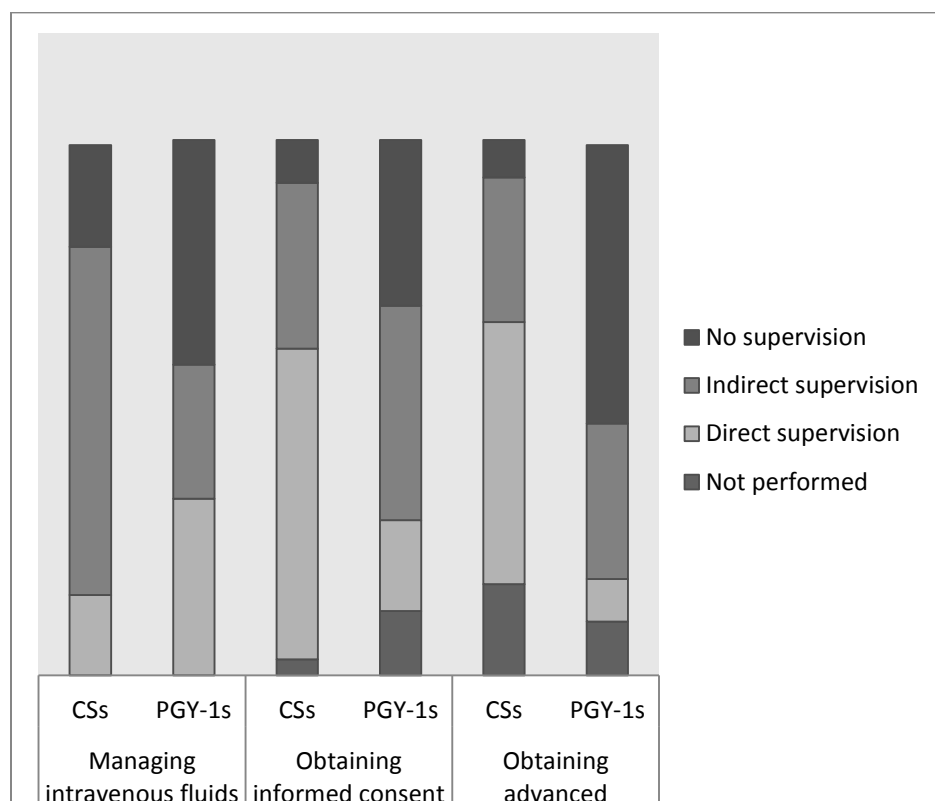
Entrustable Professional Activities <sup>1</sup>	Levels of supervision <sup>2</sup>	Clinical supervisor expectations		PGY-1 reported levels of supervision		Done during medical school
		Day	Night	Day	Night	
A. CS-PGY1 AGREEMENT:						
Writing admission and/or post-operative orders	1	0 (0)	1 (1)	3 (6)	3 (6)	41 (85)
	2	41 (36)	36 (32)	19 (40)	11 (23)	
	3	61 (54)	64 (57)	24 (50)	29 (60)	
	4	11 (10)	12 (11)	2 (4)	5 (10)	
C. CS-PGY1 DAY & NIGHTTIME DISAGREEMENTS						
Obtaining informed consent	1	4 (4)	5 (4)	6 (12)	10 (21)	38 (79)
	2	65 (58)	55 (49)	8 (17)	5 (10)	
	3	35 (31)	44 (39)	19 (40)	17 (35)	
	4	9 (8)	9 (8)	15 (31)	16 (33)	
Obtaining advanced directives/goals of care	1	19 (17)	19 (17)	5 (10)	13 (27)	32 (67)
	2	55 (49)	47 (42)	4 (8)	1 (2)	
	3	31 (27)	39 (35)	14 (29)	8 (17)	
	4	8 (7)	8 (7)	25 (52)	26 (54)	
Managing intravenous fluids	1	0 (0)	0 (0)	0 (0)	3 (6)	39 (81)
	2	17 (15)	17 (15)	16 (33)	5 (10)	
	3	74 (65)	72 (64)	12 (25)	19 (40)	
	4	22 (19)	24 (21)	20 (42)	21 (44)	
B. CS-PGY1 NIGHTTIME DISAGREEMENTS:						
Recognizing and initiating management of a critically-ill patient	1	12 (11)	13 (12)	5 (10)	6 (12)	24 (50)
	2	77 (68)	72 (64)	26 (54)	8 (17)	
	3	21 (19)	26 (23)	17 (35)	24 (50)	
	4	3 (3)	2 (2)	0 (0)	10 (21)	
Handing over the care of patients to colleagues/other services	1	0 (0)	1 (1)	1 (2)	9 (19)	41 (85)
	2	48 (42)	40 (35)	23 (48)	9 (19)	
	3	41 (36)	49 (43)	9 (19)	15 (31)	
	4	24 (21)	23 (20)	15 (31)	15 (31)	
Writing a discharge prescription, Including medication reconciliation	1	0 (0)	3 (3)	1 (2)	11 (23)	37 (77)
	2	45 (40)	42 (37)	14 (29)	1 (2)	
	3	52 (46)	50 (44)	24 (50)	23 (48)	
	4	16 (14)	18 (16)	9 (19)	13 (27)	
Coordinating a patient discharge/transfer	1	0 (0)	1 (1)	1 (2)	19 (40)	37 (77)
	2	40 (35)	36 (32)	9 (19)	1 (2)	
	3	64 (57)	66 (58)	28 (58)	20 (42)	
	4	9 (8)	10 (9)	10 (21)	8 (17)	
D. INSUFFICIENT PGY1 DATA TO JUDGE						
Disclosing medical errors	1	29 (26)	30 (27)	28 (65)	35 (81)	16 (37)
	2	68 (60)	59 (52)	4 (9)	0 (0)	
	3	14 (12)	22 (19)	6 (14)	6 (14)	
	4	2 (2)	2 (2)	5 (12)	2 (5)	

1. The entrustable professional activity “interpretation of investigations” is not included because of insufficient PGY-1 responses due to a technical problem.

2. See Box 1 for description of the levels of supervision.



Figure 1. Daytime Differences in Levels of Supervision between CSs and PGY-1s



For four EPAs, PGY-1s reported levels of supervision that were consistent with CSs' daytime expectations, namely: (1) *recognizing and initiating management of critically-ill patients* ( $\chi^2 (3)=6.348$ ,  $p=0.096$ ), (2) *handing over the care of patients* ( $\chi^2 (3)=7.309$ ,  $p=0.063$ ), (3) *writing a discharge prescription* ( $\chi^2 (3)=3.969$ ,  $p=0.265$ ), (4) *coordinating patient discharges* ( $\chi^2 (3)=10.167$ ,  $p=0.017$ ); see Table 1 for details. However, for nighttime, the PGY-1s' reported less supervision than expected from the CSs for these EPAs ( $p<0.001$  for each EPA). For example, for *recognizing and initiating management of critically-ill patients*, no one reported doing this activity without supervision during the day, while 21% ( $p<0.001$ ) reported managing these patients without supervision at night (odds ratio of 14.6).

For the ninth EPA, *having disclosed medical errors*, too few PGY-1s reported having performed this activity to allow any meaningful statistical comparison. Clinical supervisors either did not wish them to perform this activity (26%) or expected them to do so under direct supervision (60%).

The PGY-1 responses did not vary significantly by gender or broad specialty (p-values >0.003, using a Holm-Bonferroni correction). Female CSs preferred direct supervision of PGY-1s for *writing admission/post-operative orders* compared to males ( $\chi^2$  (3)=18.868; p<0.001). Expectations did not vary according to specialty types, except that CSs in medical specialties favored direct supervision for *writing discharge prescription* and *coordination of patient discharges* compared to their surgical colleagues ( $\chi^2$  (3)=17.565; p=0.001).

More than 75% of the PGY-1s reported having performed six of the nine EPAs as a medical student (see Table 1, last column). PGY-1s did not report performing the EPAs with less supervision if they had previously performed it as a medical student (p>0.013 using a Holm-Bonferroni correction). Half of the PGY-1s (50%) reported not having *recognized and initially managed a critically-ill patient* (even with supervision) as medical students but one in five PGY-1s (20%) reported having done so without supervision during the night the first time they performed it as a resident. About half of the PGY-1s (52%) reported *obtaining advanced directives* without supervision the first time they did this as a resident. Finally, a third of the PGY-1s (33%) reported never having *obtained advanced directives* as a medical student, or having *obtaining informed consent* and *writing a discharge prescription*. The PGY-1s would have preferred more supervision for *managing critically ill patients* at night (38%), *obtaining informed consent* during the day (21%), and *obtaining advanced directives* during the daytime and at night (26% and 29% respectively).

#### IV. DISCUSSION AND CONCLUSIONS

Entrustment is a collective activity wherein CSs and residents must understand each other's role and expectations in granting independence to trainees in assuming clinical responsibilities (Jones et al., 2011). In our study, CSs expected a higher level of supervision than PGY-1s reported receiving. This gap was most frequent when activities were performed at night, but unrelated to residents' experience during medical school. In addition, up to a third of the PGY-1s reported wanting more supervision than they received for 3 EPAs, that is, *recognizing and initiating the management of critically-ill patients*, *obtaining informed consent*, and *obtaining advanced directives*.

The EPAs in this study provide a basis for determining and analyzing the gaps between CS expectations and PGY-1 reported clinical activities occurring during the initial transition from medical school to residency. Newly arrived residents are immediately immersed in a work-place based learning setting with a new set of expectations and responsibilities. In this environment, residents should be given responsibilities commensurate with their abilities and should receive appropriate levels of supervision. There is a tacit need for CSs to 'watch closely but at a distance' and for residents to have the supervision they require for learning (Babbott, 2010). A mismatch of expectations between residents and CSs regarding levels of supervision could lead to miscommunication related to patient care, that can result in a breach in patient care, and may also lead to a missed opportunity of supervisor input for appropriate learning (Phitayakorn, 2007).

The gaps identified in this study may have occurred because certain EPAs had different meanings for different groups. For instance, CSs may interpret *managing intravenous fluid* as encompassing complex fluid management of a patient with diabetic ketoacidosis whereas PGY-1s may interpret it as deciding the rate to start maintenance fluid. Other discrepancies may have occurred when dealing with a clinical situation happening at a time when supervision was not readily available, for example *recognizing and initiating management of a critically ill patient* may have required immediate attention without time to inform a supervisor of one's action but may have resulted in a discussion after the fact.

The differences in expectations between CSs and residents for many of the EPAs in the present study, especially during nighttime, may also stem from the hidden curriculum. An important part of early residency training is socialization and identity formation. Kennedy et al. (2009) reported how residents are motivated to act independently as they take on the role and identity of a doctor. This motivation may implicitly drive them to perform activities with less supervision than expected. In addition, CSs may inadvertently promote residents' precipitated efforts to act independently by telling "in my day" stories when expectations regarding independence were different.

Minimizing the differences in expectations regarding supervision in the first months of residency is important to minimize the risk of impeding residents' learning and compromising patient safety. Curricular changes and assessment methods could be used to resolve these discrepancies. For example, Lypson et al. (2004) used an objective structured clinical examination to assess PGY-1s' preparedness for residency. The examination addressed issues such as the ability to make differential diagnoses, cross-cultural communication, and ability to obtain informed consent. They identified a gap between the residents' knowledge and skills and their ability to function at the level expected by program directors. Their study highlighted how residents are assumed to possess skills that they may not have acquired yet and thus identified critical learning needs. Other studies have examined pre-internship training as ways of preparing new PGY-1s for their upcoming role (Byrne et al., 2012; Fernandez et al., 2012; Cohen et al., 2013). Although these studies focused mostly on technical skills, not EPAs, they do illustrate how our results could be used to define program goals, develop assessment tools, and highlight individual learning needs for new PGY-1s. Similarly, the EPAs defined in our study could be used to build a blueprint for future curricular and assessment development.

The EPAs in this study were developed locally and then ratified nationally. Others have defined similar activities, such as patient handovers, admissions, and discharges, with comparable entrustment expectations (Boyce et al., 2011; ten Cate and Young, 2012). All the EPAs in our study, except for one, were performed by the majority of the PGY-1s, indicating that these EPAs were relevant for this study of incoming PGY-1s. The EPAs in our study are likely applicable to PGY-1s in other settings. However, a

selection bias may have occurred because of the moderate resident response rate and the higher rate responses by women residents. As we were unable to determine the baseline gender ratio for CSs, response bias may be present as well. Also, the EPAs in the survey were not described as goals and objectives to be attained as suggested by ten Cate (2013) but were simply named activities such as *managing intravenous fluids*. Because of the short-hand descriptions of the EPAs in our study, individual CSs and PGY-1s may have had varying personal interpretations of what each EPA meant.

In summary, it was possible to define inpatient-care EPAs that all new PGY-1 residents, regardless of specialty, are expected to perform. Based on the gaps identified between CSs expectations and PGY-1s reported experiences, EPAs may provide a more holistic and practical description of clinical tasks than traditional educational objectives and milestones expected of PGY-1s during early residency. The gaps identified also draw attention to the need for a better alignment between CSs' expectations and PGY-1s' understanding of their roles and responsibilities at the very beginning, and throughout, residency.

## V. REFERENCES

Babbott, S. 2010. Commentary: Watching closely at a distance: Key tensions in supervising resident physicians. *Academic Medicine : Journal of the Association of American Medical Colleges* 85 (9) (Sep): 1399-400.

Bleakley, A. 2011. Becoming a medical professional. In "Becoming" a professional., ed. L. Scanlon, 138 *Lifelong Learning Book Series*.

Boyce, P., C. Spratt, M. Davies, and P. McEvoy. 2011. Using entrustable professional activities to guide curriculum development in psychiatry training. *BMC Medical Education* 11 (Nov 23): 96,6920-11-96.

Burford, B. 2012. Group processes in medical education: Learning from social identity theory. *Medical Education* 46 (2) (Feb): 143-52.

Byrne, D., P. O'Connor, S. Lydon, and M. J. Kerin. 2012. Preparing new doctors for clinical practice: An evaluation of pre-internship training. *Irish Medical Journal* 105 (10) (Nov-Dec): 328-30.

Cantillon, P., and M. Macdermott. 2008. Does responsibility drive learning? lessons from intern rotations in general practice. *Medical Teacher* 30 (3): 254-9.

Carraccio, C. L., B. J. Benson, L. J. Nixon, and P. L. Derstine. 2008. From the educational bench to the clinical bedside: Translating the dreyfus developmental model to the learning of clinical skills. *Academic Medicine : Journal of the Association of American Medical Colleges* 83 (8) (Aug): 761-7.

Cohen, E. R., J. H. Barsuk, F. Moazed, T. Caprio, A. Didwania, W. C. McGaghie, and D. B. Wayne. 2013. Making july safer: Simulation-based mastery learning during intern boot cAMP. *Academic Medicine : Journal of the Association of American Medical Colleges* 88 (2) (Feb): 233-9.

Engeström, Y. 2001. Expansive learning at work: Toward an activity theoretical reconceptualization. *J.Educ.Work* 14 (1): 133-56.

Ericsson, K. A. 2002. Attaining excellence through deliberate practice: Insights from the study of expert performance. In *The pursuit of excellence through education.*, ed. M. E. Ferrari, 21 *Lawrence Erlbaum Associates*.

Fernandez, G. L., D. W. Page, N. P. Coe, P. C. Lee, L. A. Patterson, L. Skylizard, M. St Louis, M. H. Amaral, R. B. Wait, and N. E. Seymour. 2012. Boot cAMP: Educational outcomes after 4 successive years of preparatory simulation-based training at onset of internship. *Journal of Surgical Education* 69 (2) (Mar-Apr): 242-8.

Fraser, S. W., and T. Greenhalgh. 2001. Coping with complexity: Educating for capability. *BMJ (Clinical Research Ed.)* 323 (7316) (Oct 6): 799-803.

Holm, S. 1979. A simple sequentially rejective multiple test procedure. *Scand J Statist* 6 : 65-70.

Jones, M. D., Jr, A. A. Rosenberg, J. T. Gilhooly, and C. L. Carraccio. 2011. Perspective: Competencies, outcomes, and controversy--linking professional activities to competencies to improve resident education and practice. *Academic Medicine : Journal of the Association of American Medical Colleges* 86 (2) (Feb): 161-5.

Kennedy, T. J., G. Regehr, G. R. Baker, and L. A. Lingard. 2005. Progressive independence in clinical training: A tradition worth defending? *Academic Medicine : Journal of the Association of American Medical Colleges* 80 (10 Suppl) (Oct): S106-11.

Kennedy, T. J., L. Lingard, G. R. Baker, L. Kitchen, and G. Regehr. 2007. Clinical oversight: Conceptualizing the relationship between supervision and safety. *Journal of General Internal Medicine* 22 (8) (Aug): 1080-5.

Kennedy, T. J., G. Regehr, G. R. Baker, and L. A. Lingard. 2009. 'It's a cultural expectation...' the pressure on medical trainees to work independently in clinical practice. *Medical Education* 43 (7) (Jul): 645-53.

Kilminster, S. M., and B. C. Jolly. 2000. Effective supervision in clinical practice settings: A literature review. *Medical Education* 34 (10) (Oct): 827-40.

Lave, J. and Wenger, E. 1991. Legitimate peripheral participation. In *Situated learning: Legitimate peripheral participation.*, ed. Lave, J. and Wenger, E., 29-43 Cambridge University Press.

Lypson, M. L., J. G. Frohna, L. D. Gruppen, and J. O. Woolliscroft. 2004. Assessing residents' competencies at baseline: Identifying the gaps. *Academic Medicine : Journal of the Association of American Medical Colleges* 79 (6) (Jun): 564-70.

Phitayakorn, R., R. G. Williams, R. Yudkowsky, I. B. Harris, L. S. Hauge, W. D. Widmann, M. E. Sullivan, and J. D. Mellinger. 2008. Patient-care-related telephone communication between general surgery residents and attending surgeons. *Journal of the American College of Surgeons* 206 (4) (Apr): 742-50.

Plsek, P. E., and T. Greenhalgh. 2001. Complexity science: The challenge of complexity in health care. *BMJ (Clinical Research Ed.)* 323 (7313) (Sep 15): 625-8.

Sterkenburg, A., P. Barach, C. Kalkman, M. Gielen, and O. ten Cate. 2010. When do supervising physicians decide to entrust residents with unsupervised tasks? *Academic Medicine : Journal of the Association of American Medical Colleges* 85 (9) (Sep): 1408-17.

ten Cate, O. 2013. Nuts and bolts of entrustable professional activities. *J.Grad.Med.Educ.* 5 (1): 157-8.

ten Cate, O., and F. Scheele. 2007. Competency-based postgraduate training: Can we bridge the gap between theory and clinical practice? *Academic Medicine : Journal of the Association of American Medical Colleges* 82 (6) (Jun): 542-7.

ten Cate, O., L. Snell, and C. Carraccio. 2010. Medical competence: The interplay between individual ability and the health care environment. *Medical Teacher* 32 (8): 669-75.

ten Cate, O., and J. Q. Young. 2012. The patient handover as an entrustable professional activity: Adding meaning in teaching and practice. *BMJ Quality & Safety* 21 Suppl 1 (Dec): i9-12.

Teunissen, P. W., F. Scheele, A. J. Scherpbier, C. P. van der Vleuten, K. Boor, S. J. van Luijk, and J. A. van Diemen-Steen Voorde. 2007. How residents learn: Qualitative evidence for the pivotal role of clinical activities. *Medical Education* 41 (8) (Aug): 763-70.

Vygotsky, L. S. 1978. Interaction between learning and development. In *Mind in society: The development of higher psychological processes.*, eds. M. Cole, V. John-Steiner, S. Scribner and E. Souberman, 79-91 Harvard University Press.

Yardley, S., P. W. Teunissen, and T. Dornan. 2012. Experiential learning: AMEE guide no. 63. *Medical Teacher* 34 (2): e102-15.



## VI. VITA

### CLAIRE TOUCHIE MDCM, FRCPC

#### **Offices**

The Ottawa Hospital, General Campus  
Department of Medicine  
Division of General Internal Medicine and  
Infectious Diseases  
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Suite 100  
OTTAWA ON  
K1G 5A2

Tel: 613-521-6012 ext. 2543

Email: [ctouchie@mcc.ca](mailto:ctouchie@mcc.ca)

#### **Languages**

Fluent in English and French, spoken and written

#### **EDUCATION**

- 2009-present **Master's in Health Professions Education** (in progress), University of Illinois at Chicago
- 1993-1996 **Fellowship in Infectious Diseases and Medical Microbiology**, Dalhousie University
- 1990-1993 **Resident in Internal Medicine**, Royal Victoria Hospital / McGill University
- 1986-1990 **Doctorate of Medicine, MDCM**, McGill University
- 1983-1986 **B. Sc. With Major in Anatomical Sciences**, McGill University

#### **CERTIFICATION**

- 1996 **Infectious Diseases**, Royal College of Physicians and Surgeons of Canada
- 1996 **Medical Microbiology**, Royal College of Physicians and Surgeons of Canada
- 1994 **Internal Medicine**, Royal College of Physicians and Surgeons of Canada

## **CLINICAL WORK EXPERIENCE**

2008-present	<b>Associate Professor</b> , Divisions of General Internal Medicine and Infectious Diseases, University of Ottawa, Ottawa, Ontario
2000-2008	<b>Assistant Professor</b> , Divisions of General Internal Medicine and Infectious Diseases, University of Ottawa, Ottawa, Ontario
1996-2000	<b>Hospital GFT/University VPT, Assistant Professor</b> , Divisions of General Medicine and Infectious Diseases, Dalhousie University, Halifax, Nova Scotia
1996-2000	<b>Consultant Staff</b> , Division of Microbiology, Dalhousie University, Halifax, Nova Scotia
1997-2000	<b>Consulting Medical Staff</b> , Department of Obstetrics and Gynecology, Adult Internal Medicine and Infectious Diseases, IWK-Grace Health Centre, Halifax, Nova Scotia
1994-1997	<b>Attending Physician</b> , Sexually Transmitted Disease Clinic, Victoria General Hospital, Halifax, Nova Scotia

## **PROFESSIONAL ACTIVITIES**

Jan. 2013- present	<b>Medical Education Mentor</b> , Department of Medicine, University of Ottawa
Jan. 2012- present	<b>Chief Medical Education Advisor</b> , Medical Council of Canada
Dec. 2011- present	<b>Senior Research Associate</b> , Academy for Innovation in Medical Education (AIME), University of Ottawa
Feb. 2010-Dec. 2011	<b>Vice-Chair, Education</b> , Department of Medicine, University of Ottawa
Jan. 2003-Dec. 2011	<b>Vice-Chair of the Central Examination Committee</b> , Medical Council of Canada
Feb. 2007-Jan. 2010	<b>Program Director</b> , PGY4 General Internal Medicine, Department of Medicine, University of Ottawa
Jan. 2007-Sept. 2008	<b>Resident Objective Structured Clinical Examination (OSCE) Coordinator</b> , Department of Medicine, University of Ottawa
2006-2008	<b>Liaison Member for the Central Examination Committee</b> , Australia Medical Council/Medical Council of Canada Joint Evaluation Examination Development team, Medical Council of Canada
2003-2006	<b>Chair of the Evaluation Examination Composite Committee</b> , Medical Council of Canada

2002	<b>Chief Examiner</b> , Medical Council of Canada Qualifying Examination part II, University of Ottawa.
2002	<b>Consultant</b> , Royal College of Physicians and Surgeons of Canada
2001-2010	<b>Examination Board Member</b> , Internal Medicine Certification Examination, Royal College of Physicians and Surgeons of Canada
2000-2002	<b>Technical Advisor/Content Expert</b> , Medical Council of Canada
1998-2002	<b>Medicine Test Committee Member</b> , Medical Council of Canada Developed medicine multiple-choice questions for the national examination.
1998-1999	<b>Associate Program Director</b> , Core Internal Medicine Residency Training Program, Department of Medicine, Dalhousie University
1998	<b>Chief Examiner</b> , Medical Council of Canada Qualifying Examination part II, Dalhousie University

## **COMMITTEES**

2013-present	Canadian Medical Association Committee on Education and Professional Development – observer
2013-present	2015 Canadian Conference on Medical Education Scientific Program Committee
2012-present	International Collaboration on Competency-Based Medical Education
2012-present	Medical Council of Canada Medical Education Assessment Advisory Committee
2011-present	2014 Ottawa Conference on the Assessment of Competence in Medicine/Canadian Conference on Medical Education Scientific Program Oversight Committee
2011-present	Medical Council of Canada Technical Advisory Committee
2011-present	Canadian Association for Medical Education Principles of Assessment across the Continuum of Clinical Competence course Working Group, Lead
2011	University of Ottawa Faculty of Medicine, Undergraduate Curriculum Committee, non-voting member
2010-present	Canadian Leadership Institute for Medical Education (CLIME) Course Organizing Committee, member
2010-2012	Department of Medicine Promotion Committee, member
2010-2011	University of Ottawa Faculty of Medicine, Faculty Council, member
2010-2011	Department of Medicine Executive Committee, member

2010-2011	Department of Medicine Education Executive Committee, chair
2010-2011	Department of Medicine Education Advisory Committee, chair
2009-2011	Medical Council of Canada Examination Review Task Force, member
2009-present	University of Ottawa Annual AIME Research Day Committee, member
2008-present	Canadian Association for Medical Education, Board of Directors, Member.
2008-2009	University of Ottawa 2 <sup>nd</sup> Annual AIME Research Day Committee, Chair
2008-2010	Internal Medicine Specialty Committee, Royal College of Physicians and Surgeons of Canada, observer
2007-2010	GIM Program Directors Committee, Canadian Society of Internal Medicine, member
2005-2009	Better Prescribing Course Program Committee, member
2003-2004	Working Group on Women's Health Education, member
2002-2006	Ontario HIV Post-Exposure Prophylaxis Advisory Committee, member
2001-2006	Co-chair, Division of General Internal Medicine series "Club Med"
2001-2003	The University of Ottawa Faculty Career Development Implementation Team, member
2001-2010	Division of General Medicine Finance Committee, Recording secretary
2001-2006	Community-Acquired Pneumonia Care Pathway Implementation Team, TOH
2000-2010	Ottawa Hospital Antimicrobial Subcommittee
2000-2002	Ottawa Hospital Pharmacy and Therapeutics Committee
1998	Dalhousie University, Department of Medicine Medical Grand Rounds Committee
1998-1999	Dalhousie University, Faculty of Medicine Postgraduate Medical Education Committee
1998-1999	Pneumonia Clinical Pathway, Queen Elizabeth II HSC, Team Leader
1997-1999	Dalhousie University, Core Internal Medicine Residency Training Committee
1997-1998	Department of Medicine Nephrology Survey Committee.
1997-1999	Department of Medicine Professional Appraisal Committee

1997-1998	Dalhousie University, Department of Medicine Undergraduate Medical Education Committee
1996-1999	Queen Elizabeth II HSC Pharmacy and Therapeutics Committee
1996-1999	Annual Dalhousie Refresher Course Committee
1996-1999	Dalhousie University, Infectious Diseases and Medical Microbiology Residency Training Committee

### **GRANTS (PEER REVIEWED)**

2013	Medical Council of Canada, Research in Clinical Assessment Grant Can a first impression change within the context of an OSCE station? T.J. Wood, D. Pugh, <b>C. Touchie</b> , J. Chan, S. Humphrey-Murto \$31,578
2013	Department of Medicine Education Grants The True Impact of Patients and Workplace Related Barriers on Bedside Teaching <b>C. Touchie</b> , Melissa Rousseau, T.J. Wood \$13,640.00
2013	Department of Medicine Education Grants Progress Testing – is there a role for the OSCE D. Pugh, <b>C. Touchie</b> , S. Humphrey-Murto, T.J. Wood \$9,300.00
2012	Department of Medicine Education Grants The Accuracy of First Impression Ratings in an OSCE station T.J. Wood, J. Chan, S. Humphrey-Murto, D. Pugh, <b>C. Touchie</b> \$25,000.00
2012	Department of Medicine Education Grants The Mini-Mini Clinical evaluation Exercise – a shorter tool for competency-based assessment in the workplace. S. Humphrey-Murto, <b>C. Touchie</b> , D. Pugh, J. Chan, I. Desjardins, T.J. Wood \$24,908.00
2011	Department of Medicine Education Grants Designing a new Objective Structured Clinical Examination (OSCE) station to assess the Health Advocate role. Isabelle Desjardins, <b>Claire Touchie</b> , Debra Pugh, Sue Humphrey-Murto \$6,435.00.
2011	Department of Medicine Education Grants Proof of Concept: Effect of feedback in the Objective Structured Clinical Examination (OSCE)

- Marika Armstrong, **Claire Touchie**, Debra Pugh, Tim Wood, Sue Humphrey-Murto  
\$3,250.00.
- 2011 Department of Medicine Education Grants  
Development of a Feedback Rating Scale.  
Samantha Halman, Sue Humphrey-Murto, Tim Wood, Nancy Dudek, Deb Pugh, **Claire Touchie**  
\$9,495.00
- 2010 Department of Medicine Education Grant  
A Feasibility Study Evaluating the Use of eLearning to Support Quality Improvement Initiatives  
Alan Forster, Paul Hendry, Kathryn Suh, **Claire Touchie**, Stan Hamstra, Daniel Trottier, Catherine Code  
\$24,875.00  
Involvement: study design, grant editing
- 2010 AIME Education Research Grant and Department of Medicine Medical Education Grant  
Constructed-response versus selected-response formats-exploring cueing and effect on scores  
Isabelle Desjardins, Susan Humphrey-Murto, Debra Pugh, **Claire Touchie**  
\$4,332.00
- 2010 AIME Education Research Grant and Department of Medicine Medical Education Grant  
A Procedural Skills OSCE to Assess Multiple CanMEDS Roles,  
Debra Pugh, **Claire Touchie**, Sue Humphrey-Murto  
\$30,500
- 2009 Educational Initiatives in Residency Education, Postgraduate Medical Education, University of Ottawa  
Competency-Based Training: A Procedural Skills OSCE for Internal Medicine Residents  
Debra Pugh, **Claire Touchie**, Susan Humphrey-Murto  
\$12,000.00  
Involvement: Proposal review, budget development
- 2008 Medical Education Research/Medical Innovation Project Grant, Department of Medicine, University of Ottawa  
Teaching and Testing Procedural Skills – Survey of Canadian Internal Medicine Program Directors and Residents  
Debra Pugh, **Claire Touchie**, Cathy Code, Susan Humphrey-Murto  
\$3,320.00  
Involvement: Proposal review, budget development
- 2007 Educational Initiatives in Residency Education Fund, University of Ottawa  
Ongoing Technical Skills Assessment in Internal Medicine.  
Susan Humphrey-Murto, **Claire Touchie**, Debra Pugh  
\$11,295.00

- Involvement: Background topic review, proposal review, budget development
- 2007 Centre for Patient Safety Implementation Grant, The Ottawa Hospital  
Why are Physicians Hands Off about Hand Hygiene? Improving Physician Compliance with Hand Hygiene at The Ottawa Hospital.  
Kathryn Suh, Virginia Roth, Jim Worthington, Greg Rose, Josée Shymanski, Natalie Bruce, Alan Karovitch, **Claire Touchie**  
\$10,355.00  
Involvement: Critical review and suggestions
- 2006-2007 Medical Education Research Grant, Royal College of Physicians and Surgeons of Canada  
Assessment of Technical Skills in Internal Medicine Trainees.  
Marty Friedlich, **Claire Touchie**, Susan Humphrey-Murto, Tim Wood  
\$10,000.00  
Involvement: Background topic review, protocol writing, method development and budget development
- 2005 TOHAMO Academic Enrichment Fund  
Resident Evaluations: The use of encounter cards in ambulatory care.  
Sue Humphrey-Murto, Erin Keely, Stephanie Hoar, **Claire Touchie**, Yolanta Karpinski, Heather Lochnan, Tim Wood.  
\$12,000.00  
Involvement: Critical review and suggestions
- 2003-2005 Medical Education Research Grant, Royal College of Physicians and Surgeons of Canada  
The Structured Oral Examination: A Comparison of Reliability of Rater Pairs.  
**Claire Touchie**, Sue Humphrey-Murto, and Tim Wood  
\$31,050.00  
Involvement: Background topic review, protocol writing, method development and budget development

### **GRANTS (NON-PEER REVIEWED)**

- 2007 Research and Curriculum Innovation,  
Department of Medicine, University of Ottawa  
Assessment of Technical Skills in Internal Medicine Trainees.  
**Claire Touchie**, Marty Friedlich, Susan Humphrey-Murto, Tim Wood  
\$7,981.98

### **RESEARCH ETHICS CERTIFICATIONS**

- 2013 Division 5 Food and Drugs Regulation, Health Canada (March 20, 2013)
- 2012 CITI Collaborative Institutional Training Initiative – Refresher Course (UIC, June 25, 2012)
- 2012 CITI Collaborative Institutional Training Initiative – Canada GCP Curriculum (OHRI, June 17, 2012)

2011	Tri-Council Policy Statement TCPS 2: CORE Certificate of Completion (July 24, 2011)
2010	University of Illinois at Chicago (UIC) Independent Review Board Certification (July 2010)
2010	OHRI Good Clinical Practice Course

### **AWARDS (PEER REVIEWED)**

2012	Nominated for the <b>TOHAMO Professionalism Award</b> The Ottawa Hospital
2011	<b>Department of Medicine Vision Award</b> University of Ottawa, Department of Medicine
2008-2012	<b>Medical Education Career Award</b> University of Ottawa, Department of Medicine (\$60,000.00 per annum)
2008	<b>W. Dale Dauphinee Fellowship</b> Medical Council of Canada (\$25,000.00)
2008	Nominated for the <b>2008 PAIRO Excellence in Clinical Teaching Awards</b> Professional Association of Internes and Residents of Ontario (PAIRO).
2007	Nominated for the <b>Resident's Choice Clinical Teaching Award</b> University of Ottawa, Department of Medicine.
2005	Class of 2005 <b>Certificate of Appreciation</b> University of Ottawa, Faculty of Medicine.
2004-2007	<b>Medical Education Career Award</b> University of Ottawa, Department of Medicine (\$40,000.00 per annum)
2003	<b>First Annual Women's Health Teaching Award</b> University of Ottawa
1998-1999	<b>Excellence in Undergraduate Teaching Award</b> Dalhousie University, Department of Medicine (awarded yearly)
1997-1999	<b>Excellence in Postgraduate Teaching Award</b> Dalhousie University, Department of Medicine (awarded yearly)
1996	<b>Basic Science Poster Presentation Award</b> Dalhousie University, Department of Medicine Research Days
1994	<b>American Society of Microbiology Sustaining Member Travel Grant –</b> Awarded to residents demonstrating excellence in microbiology research.



1988

**Lange Medical Publication Award** for outstanding students for 1988.**PEER REVIEWED PUBLICATIONS****Submitted**

D. Pugh, **C. Touchie**, T.J. Wood, S. Humphrey-Murto. Progress Testing: Is there a role for the OSCE? (Submitted to Medical Education, September 2013)

D. Pugh, S.J. Hamstra, T.J. Wood, S. Humphrey-Murto, **C. Touchie**, R. Yudkowsky, G. Bordage. A Procedural Skills OSCE for Internal Medicine Residents to Assess Multiple Competencies. (Submitted to Advances in Health Sciences Education, September 2013)

**Accepted**

I. Desjardins, **C. Touchie**, D. Pugh, T.J. Wood, S. Humphrey-Murto. The Impact of Cueing on Written Examinations of Clinical Decision-Making. (In print in Medical Education, June 2013)

**Published**

**C. Touchie**, S. Humphrey-Murto, L. Varpio. Teaching and Assessing Procedural Skills: A Qualitative Study. BMC Medical Education, 2013; 13:69

N. Kekre, B. Djordjevic, **C. Touchie**. Hyperglycemia That Unravels Into Spontaneous Tumour Lysis Syndrome. Canadian Medical Association Journal 2012; 184:913-916. Epub April 10, 2012, doi: 10.1503/cmaj.111251

P.Leece, C.Kendall, **C.Touchie**, K.Pottie, J.Angel, J.Jaffey. Cervical cancer screening among HIV positive women: a retrospective cohort study from a tertiary care HIV clinic. Canadian Family Practice 2010; 56: e425-e431

S. Mulpuru, **C. Touchie**, J. Karpinski and S. Humphrey-Murto. Co-existent Wegener's Granulomatosis and Goodpasture's disease. Journal of Rheumatology 2010; 37(8):1786-1787

K.W. Eva, T.J. Wood, J. Riddle, **C. Touchie** and G. Bordage. How clinical features are presented matters to weaker diagnosticians. Medical Education. 2010; 44(8):775-785.

A.C. Jacques, P. Giguère, G. Zhang, **C. Touchie** and Charles J.L. la Porte. Atazanavir-Associated Choledocholithiasis Leading to Acute Hepatitis in a Patient Infected with Human Immunodeficiency Virus. The Annals of Pharmacotherapy 2010;40 DOI 10.1345/aph.1M489

**C. Touchie**, S. Humphrey-Murto, M. Ainslie, K. Myers and T.J. Wood. Two Models of Raters in a Structured Oral Examination: Does it make a Difference? Advances in Health Sciences Education 2010; 15(1):97-108 (published on-line summer 2009), DOI 10.1007/s10459-009-9175-1

S. Humphrey-Murto, S. Smee, **C. Touchie** and T.J. Wood. Does the Gender of the Standardized Patient Influence Candidate Performance in an OSCE examination? Medical Education 2009; 43:521-525

S. Humphrey-Murto, N. Khalidi, C.D. Smith, E. Kaminska, **C. Touchie**, E. Keely and T.J. Wood. Resident Evaluations: the Use of Daily Evaluation Forms in Rheumatology Ambulatory Care. *Journal of Rheumatology* 2009; 36:1298-1303

M.B. Marks, J. Nuth, T.J. Wood, **C. Touchie**, H. O'Brien and A. Dugan. Assessing Change in Clinical Teaching Skills: Are we up for the Challenge? *Teaching and Learning in Medicine* 2008; 20:288-294

H. Abdulaziz, **C. Touchie**, B. Toye and J. Karsh. Haverhill Fever with Spine Involvement. *J Rheumatol* 2006;33:1409-1410

M. Mojibian, H. Chakir, A.J. MacFarlane, D.E. Lefebvre, J.R. Webb, **C. Touchie**, J. Karsh, J. Crookshank and F.W. Scott. Immune Reactivity to a GIIb1 Homologue in a Highly Wheat Sensitive Patient with Type 1 Diabetes and Celiac Disease. *Diabetes Care* 2006; 29:1108-1110

J.J. Moeller, M. Ma, P. Hernandez, T.J. Marrie, **C. Touchie** and W. Patrick. Discharge Delay in Patients with community-Acquired Pneumonia Managed on a Critical Pathway. *Canadian Journal of Infect Dis and Med Microbiol* 2006; 17:109-113

S. Humphrey-Murto, S. Smee, **C. Touchie**, R. Birtwhistle, T.J. Wood and D. Blackmore. Influencing Judgment: A Comparison of Physician Examiners and Trained Assessors in a High Stake OSCE Setting. *Academic Medicine* 2005; 80 (supplement):S59-S62

S. Humphrey-Murto, T.J. Wood and **C. Touchie**. Why do Physicians Volunteer to be OSCE Examiners? *Medical Teacher* 2005; 27:172-174

S. Humphrey-Murto, D.C. Smith, **C. Touchie** and T.J. Wood. Teaching the Musculoskeletal Examination: Are Patient Educators as Effective as Rheumatology Faculty? *Teaching and Learning in Medicine* 2004; 16:175-180

A.S. Johnson, **C. Touchie**, D.J.M. Haldane and K.R. Forward. Four-Day Incubation for Detection of Bacterial Blood Cultures Using Bactec® 9240. *Diagn Microbiol Infect Dis*. 2000;38:195-199

**C. Touchie** and T.J. Marrie. Comparison of Community Acquired Pneumonia Requiring Admission to Hospital in HIV and non-HIV Infected Patients. *Can J. Infect Dis*. 1996; 7:253-258

### **INVITED ARTICLES**

S. Card, N. Kassam, **C. Touchie**, J. Trahey. General Internal Medicine Training Programs: What is the Proposal? *Canadian Journal of General Internal Medicine* 2010; 5:60-61

### **TEXTBOOK CHAPTERS**

S. Humphrey-Murto, S. Smee, **C. Touchie**. Objective Structured Clinical Examinations in *The Oxford Textbook of Medical Education* (Ed: K. Walsh), Oxford: Oxford University Press (2012, In print)

**C. Touchie**. *Rhodococcus equi* and *Bordetella bronchiseptica*. p.877-883 In: Thomas J. Marrie (Ed.): Community-Acquired Pneumonia. Plenum Publishing Corporation, 2001

Marrie T.J., **C. Touchie**, B.L. Johnston, D.R. Forward, K.L. Slayter, S. Lee, P. Hoffman. *Infectious Disorders*. p.1003-1028 In: S.G. Carruthers, B.B. Hoffman, K.L. Melmon and D.W. Nierenberg (Eds):

Melmon and Morelli's Clinical Pharmacology. McGraw-Hill, 2000

**C. Touchie** and T.J. Marrie. Respiratory Tract Infections. p. 475-492. In: K.B. Crossley and G.L. Archer (Eds): The Staphylococci in Human Disease. Churchill-Livingstone, New York, 1997.

### **BOOKLET**

**C. Touchie.** Guidelines for the Development of Multiple Choice Questions. Medical Council of Canada. 2005 (updated 2010) [http://www.mcc.ca/Objectives\\_Online/](http://www.mcc.ca/Objectives_Online/)

### **REVIEW BOARDS**

#### **Grants**

2010 - 2011	Academy for Innovation in Medical Education (AIME) grants University of Ottawa, Faculty of Medicine Internal Reviewer of medical education grants
2010	CHEO Research Institute Internal Funding Competition 2010 Children's Hospital of Eastern Ontario External reviewer of submitted grants
2008	Department of Medicine Medical Education Research/Medical Innovation Project Grants, University of Ottawa Hospital Internal Reviewer of medical education grants
2007	Medical Council of Canada Research Fund External reviewer of submitted grants

#### **Conference Abstracts**

2012	2012 Simulation Summit External reviewer of submitted abstract
2008-2013	Canadian Conference on Medical Education External reviewer of submitted abstracts

#### **Journals**

2011	Advances in Health Sciences Education Review scientific merit of submitted articles on an occasional basis
2010-2013	Medical Education Review scientific merit of submitted articles on an occasional basis
2007	Canadian Journal of Infectious Diseases and Medical Microbiology Review scientific merit of submitted articles on an occasional basis

## **MEDICAL EDUCATION MENTORSHIP/SUPERVISION**

Students, Residents and other learners:

July-August 2011 Literature Review:	Amanda Soto (MCC intern, Boston U.) Practice Analysis Studies: A Literature Review of Definitions, Concepts, Features, and Methodologies.
July 2011-June 2013 Review of Literature:	Jennifer Holyoke (resident, uOttawa) Program Evaluation of a Medicine Clerkship: Academic versus Community Centres; Assessment of the Manager and Collaborator CanMEDS roles.
Project:	Program Evaluation of a Medicine Clerkship: Academic versus Community Centres
July-December 2011 Project:	Katie Giles (resident, uOttawa) Developing a model for restricted duty hours in the Internal Medicine Program
2010-present Project:	Marika Armstrong (resident, uOttawa) Proof of Concept: Effect of feedback in the Objective Structured Clinical Examination (OSCE)
2010-June 2012 Project:	Samantha Halman (resident, uOttawa) Development of a Feedback Rating Scale
2009-2011 Project 1: Project 2:	Isabelle Desjardins (resident and staff, uOttawa) The Impact of Cueing Compared to Test Learning Designing a new Objective Structured Clinical Examination (OSCE) station to assess the Health Advocate role.

Mentorship of Medical Educators:

2013	Nadine Gauthier (cardiology)
2013	Melissa Rousseau (GIM)
2012-2013	Samantha Halman (GIM)
2011-2013	Isabelle Desjardins (GIM)
2011-2013	James Chan (GIM)
2008-2012	Debra Pugh (GIM)

## **PUBLISHED ABSTRACTS**

D. Pugh, S.J. Hamstra, T.J. Wood, S. Humphrey-Murto, **C. Touchie**, R. Yudkowsky, G. Bordage. A Procedural Skills OSCE for Internal medicine Residents to Assess Multiple Competencies. Canadian Conference on Medical Education, Québec City, Canada, April 2013. Abstract published in Medical Education 2013; 47 (Suppl. 1): 51

D. Pugh, S. Humphrey-Murto, C. Code, **C. Touchie**. Teaching and Testing Procedural Skills – a Survey of Canadian Internal Medicine Program Directors and Residents, Oral Presentation, International Conference on Residency Education, RCPSC, Ottawa, Canada, September 2010. Abstract published in Open Medicine 2010; 4 (3 Suppl):29

S. Halman, D. Pugh, T. Wood, **C. Touchie**, S. Humphrey-Murto. Are we really measuring communication skills in the OSCE? Oral Presentation, International Conference on Residency Education, RCPSC, Ottawa, Canada, September 2010. Abstract published in Open Medicine 2010; 4 (3 Suppl):18-19

I. Desjardins, **C. Touchie**, D. Pugh, T.J. Wood, S. Humphrey-Murto. Why didn't I think of that? The impact of cueing compared to test learning. Oral presentation, Canadian Conference on Medical Education, St-John's, Newfoundland, May 2010. Abstract published in Medical Education 2010; 44 (Suppl. 2): 48

D. Pugh, **C. Touchie**, S. Humphrey-Murto. Constructed-response versus selected-response – do students change their answers based on format? Oral presentation, Canadian Conference on Medical Education, Edmonton, Alberta, May 2009. Abstract published in Medical Education 2009, 43; S1: 10-11. Medical Education 2009, 43 (suppl. 1): 1-27

## **ABSTRACTS/ORAL PRESENTATIONS**

**C. Touchie**, A. De Champlain, D. Pugh, S. Downing, G. Bordage. Supervising New PGY-1 Residents : Faculty Expectations vs. Resident Perceptions – A Case Study. Presented at the AIME Medical Education Day 2013, Ottawa, ON, April 2013

J. Holyoke, M. Forgie, J.J. Leddy, **C. Touchie**. Program Evaluation of a Community vs. Tertiary Care Internal Medicine Clerkship. Presented at the AIME Medical Education Day 2013, Ottawa, ON, April 2013

D. Pugh, S.J. Hamstra, T.J. Wood, S. Humphrey-Murto, **C. Touchie**, R. Yudkowsky, G. Bordage. A Procedural Skills OSCE for Internal medicine Residents to Assess Multiple Competencies. Presented at the AIME Medical Education Day 2013, Ottawa, ON, April 2013

I. Desjardins, **C. Touchie**, D. Pugh, T.J. Wood, S. Humphrey-Murto. Measuring Advocacy in the OSCE: Lessons Learned. Presented at the AIME Medical Education Day 2012, Ottawa, ON, March 2012

D. Pugh, **C. Touchie**, T.J. Wood, S. Humphrey-Murto. Validating a new rating scale in a formative resident OSCE. Presented at the AIME 4<sup>th</sup> Annual Medical Education Day, Ottawa ON, April 2011

C. Touchie, M. Friedlich, S. Humphrey-Murto, P. Murphy, T. Wood. Direct Observation of Procedural Skills in an Objective Structured Clinical Exam (OSCE). Presented at the National Council on Measurement in Education (NCME), New Orleans, Louisiana. April 2011

**C. Touchie**, E. Colson, H. McLauchlan, A. Pandya, B. Robin. How MHPE Students Create a Work/Life

Balance : Intention vs. Reality. Presented at the Annual MHPE Summer Conference, University of Illinois at Chicago, Chicago, Illinois, July 2010

S. Halman, D. Pugh, T. Wood, **C. Touchie**, Sue Humphrey-Murto. Are we really measuring communication skills in the OSCE? Oral presentation, Resident Research Day, Department of Medicine, University of Ottawa 2010

I. Desjardins, **C. Touchie**, D. Pugh, T.J. Wood, S. Humphrey-Murto. “Why didn’t I think of that?” – The Impact of Cueing Compared to Test Learning. Presented at the Department of Medicine Resident Research Day, University of Ottawa, April 2010

D. Pugh, S. Humphrey-Murto, C. Code, **C. Touchie**. Teaching and Testing Procedural Skills – a Survey of Canadian Internal Medicine Program Directors and Residents. AIME Medical Education Day, University of Ottawa 2010

S. Halman, Debra Pugh, T. Wood, **C. Touchie**, Sue Humphrey-Murto. Are we really measuring communication skills in the OSCE? AIME Medical Education Day, University of Ottawa 2010. Won best oral presentation, Junior Educator category.

I. Desjardins, **C. Touchie**, D. Pugh, T.J. Wood, S. Humphrey-Murto. “Why didn’t I think of that?” – The Impact of Cueing Compared to Test Learning. Presented at AIME Annual Medical Education Day, Ottawa, April 2010

D. Pugh, **C. Touchie**, S. Humphrey-Murto. Constructed-Response vs. Selected-Response, Do students change their Answers Based on Format? Presented at Research in Medical Education (RIME/AAMC), Boston, Massachusetts, November 2009

M. Friedlich, S. Humphrey-Murto, **C. Touchie**, T.J. Wood. Assessment of Technical Skills in Internal Medicine Trainees. Presented at Research in Medical Education (RIME/AAMC), San Antonio, Texas, November 2008

**C. Touchie**, S. Humphrey-Murto, M. Friedlich, L. Varpio. Acceptability of Technical Skills Assessment in Internal Medicine Residency Training: A Qualitative Approach. Presented at the Canadian Association for Medical Education Annual Meeting, Montreal, Quebec, May 2008.

S. Humphrey-Murto, T.J. Wood, E. Keely, D. Smith, **C. Touchie**, S. Hoar, J. Karpinski, H. Lochnan. Resident Evaluations: The Use of Evaluation Cards in Rheumatology Ambulatory Care. Presented at the Canadian Association for Medical Education Annual Meeting, Montreal, Quebec, May 2008.

D. Pugh, **C. Touchie**, S. Humphrey-Murto. Internal Medicine: Teaching and Testing. Presented at AIME 1<sup>st</sup> Annual Medical Education Day, Ottawa, April 2008.

**C. Touchie**, S. Humphrey-Murto, M. Friedlich and L. Varpio. Acceptability of Technical Skills Assessment in Internal Medicine Residency Training A Qualitative Approach. Presented at AIME 1<sup>st</sup> Annual Medical Education Day, Ottawa, April 2008

S. Humphrey-Murto, **C. Touchie**, T.J. Wood, S. Smee and R. Birtwhistle. The Effect of Standardized Patient Gender in the OSCE: Does it make a Difference? Presented at the Canadian Association for Medical Education Annual Meeting, Victoria, BC, May 2007

**C. Touchie** and S. Humphrey-Murto, M. Ainslie, K. Myers and T.J. Wood. Two Models of Examiners in

a Structured Oral Examination: Does it Make a Difference? Presented at Research in Medical Education (RIME/AAMC), Seattle WA, October 2006

**C. Touchie**, T.O. Maguire, R. Wassef and A.P. Boulais. A Comparison of Two Standard Setting Methods. Presented at the Association for Medical Education in Europe Annual Meeting, Amsterdam, September 2005

S. Humphrey-Murto, S. Smee, **C. Touchie**, R. Birtwhistle, T.J. Wood and D. Blackmore. A Comparison of Physician Examiners and Trained Assessors in a High Stake OSCE Setting. Presented at the Canadian Association for Medical Education Annual Meeting, Saskatoon, May 2005.

S. Humphrey-Murto, **C. Touchie**, S. Smee and T.J. Wood. Extended Match compared to Short Answer formats in the written portion of an OSCE. Presented at the Canadian Association for Medical Education Annual Meeting, Saskatoon, May 2005.

**C. Touchie**, T.J. Wood, N. Kushwaha, A.P. Boulais, S. Humphrey-Murto, R.F. Bloch, D. Blackmore. SIMLETS: Interactive Multimedia Technology in a Clinical Reasoning Skills Examination. Presented at Research in Medical Education (RIME/AAMC), Washington DC, November 2003

B. Marks, J. Nuth, T.J. Wood, **C. Touchie**, H. O'Brien and A. Dugan. Can I Give You a Little Feedback? Impact of a Faculty Development Workshop for Clinical Supervisors. Presented at Research in Medical Education (RIME/AAMC), Washington DC, November 2003

S. Humphrey-Murto, D.C. Smith, **C. Touchie** and T.J. Wood. Teaching the Musculoskeletal Examination: Are Patient Educators as Effective as Rheumatology Faculty. Presented at Research in Medical Education (RIME/AAMC), Washington DC, November 2003

**C. Touchie**, S. Humphrey-Murto and T.J. Wood. The Evaluation of Two Clinical Skills Curricula using an OSCE. Presented at the 10<sup>th</sup> Ottawa Conference in Medical Education, Ottawa, Ontario, July 2002.

S. Humphrey-Murto, T.J. Wood and **C. Touchie**. Why do Physicians Volunteer to be OSCE Examiners? Presented at the 10<sup>th</sup> Ottawa Conference in Medical Education, Ottawa, Ontario, July 2002.

K.R. Forward, R.N. Bethune, **C. Touchie** and L. Johnston. Use of Arbitrarily Primed PCR (AP-PRC) as a Guide to the Application of the Infection Control Practices for an Outbreak of *Stenotrophomonas maltophilia*. Presented at the Canadian Association for Clinical Microbiology and Infectious diseases 65<sup>th</sup> conjoint meeting in Infections Diseases, St. John's, Newfoundland, October 1997.

B.L. Johnson, D. Haase, T.J. Marrie, W.F. Schlech, **C. Touchie**, D. Haldane, and K.R. Forward. Management and Outcome of Candidemia at a Tertiary Care Centre. Annual Royal College of Physicians and Surgeons of Canada Annual Meeting, Halifax, Nova Scotia, September 1996.

### **ABSTRACTS/POSTER PRESENTATIONS/NATIONAL AND INTERNATIONAL**

S. Halman, S. Humphrey-Murto, N. Dudek, T. Wood, D. Pugh, **C. Touchie**. Development of a Feedback Rating Scale. Presented at the Canadian Conference on Medical Education, Québec City, Qc, April 2013

T.J. Wood, D. Pugh, S. Hamstra, **C. Touchie**, S. Humphrey-Murto, R. Yudkowsky, G. Bordage. Comparing Standard Setting Methods for a Procedural Skills Objective Structured Clinical Examination. Presented at the AIME Medical Education Day 2013, Ottawa, ON, April 2013 and at the Canadian Conference on Medical Education, Québec City, Qc, April 2013

J. Holyoke, M. Forgie, J.J. Leddy, **C. Touchie**. Community vs. Tertiary Care Internal Medicine Clerkship: a Preliminary Report. Department of Medicine Resident Research Day, University of Ottawa, May 2012 and follow-up study of same title in May 2013

S. Halman, D. Pugh, **C. Touchie**, N. Dudek, T.J. Wood, S. Humphrey-Murto. Development of a Feedback Rating Scale. Department of Medicine Resident Research Day, University of Ottawa, May 2012

I. Desjardins, **C. Touchie**, D. Pugh, T.J. Wood, S. Humphrey-Murto. Measuring Advocacy in the OSCE: Lessons Learned. Presented at the Canadian Conference on Medical Education, Banff, AB, April 2012

S. Halman, D. Pugh, **C. Touchie**, N. Dudek, T.J. Wood, S. Humphrey-Murto. Development of a Feedback Rating Scale. Presented at the AIME Medical Education Day 2012, Ottawa, ON, March 2012

**C. Touchie**, S. Humphrey-Murto, L. Varpio, I. Bowmer. Does the Canadian National Licensure Objective Structured Examination Fulfill its Intended Purpose? Perspectives of Stakeholders. Presented at the AIME 4<sup>th</sup> Annual Medical Education Day, Ottawa ON, April 2011

**C. Touchie**, S. Humphrey-Murto, L. Varpio, I. Bowmer. Does the Canadian National Licensure Objective Structured Examination Fulfill its Intended Purpose? Perspectives of Stakeholders. Presented at Research in Medical Education (RIME/AAMC), Washington D.C, November 2010

I. Desjardins, **C. Touchie**, D. Pugh, T.J. Wood, S. Humphrey-Murto. “Why didn’t I think of that?” – The Impact of Cueing Compared to Test Learning Presented at Research in Medical Education (RIME/AAMC), Washington D.C, November 2010.

R.S. Lee, T. Bennett, A.-P. Boulais, **C. Touchie**. Professionalism Assessment with Multiple-Choice Questions (MCQs): Believe it or not? Presented at the Canadian Conference on Medical Education, St. John’s, Newfoundland, May 2010.

D. Pugh, S. Humphrey-Murto, C. Code, **C. Touchie**. Teaching and Testing Procedural Skills – a Survey of Canadian Internal Medicine Program Directors and Residents, Poster presentation Canadian Conference on Medical Education, St John’s, Newfoundland May 2010.

R.S. Lee, T. Bennett, A.-P. Boulais, **C. Touchie**. Professionalism Assessment with Multiple-Choice Questions (MCQs): Believe it or not? Conference for the Association of Medical Educators of Europe, Malaga, Spain, September 2009.

**C. Touchie**, S. Humphrey-Murto, M. Friedlich, L. Varpio. Acceptability of Technical Skills Assessment in Internal Medicine Residency Training: A Qualitative Approach. Presented at Research in Medical Education (RIME/AAMC), San Antonio, Texas, November 2008

D. Pugh, **C. Touchie**, S. Humphrey-Murto. Procedural Skills in Internal Medicine - Teaching and Testing. Poster presentation at: The New International Conference on Residency Education, Ottawa, September 2008

M. Friedlich, **C. Touchie**, S. Humphrey-Murto, P. Murphy, T. Wood, Assessment of Technical Skills in Internal Medicine Trainees. Poster presentation at: The New International Conference on Residency Education, Ottawa, September 2008



S. Humphrey-Murto, **C. Touchie**, M. Friedlich, T.J. Wood, University of Ottawa. Internal Medicine Residents Lack confidence in Procedural Skills. Poster Presentation: at the Canadian Association for Medical Education Annual Meeting, Montreal, Quebec, May 2008.

S. Mulpuru, G. Knoll, **C. Touchie**, S. Humphrey-Murto. Simultaneous Development of Wegner's Granulomatosis and Goodpasture's Syndrome: A case Presentation and Literature Review. Poster Presented at the Canadian Rheumatology Association Annual Meeting, Mont Tremblant, Quebec, March 2008.

S. Humphrey-Murto, **C. Touchie**, M. Friedlich, T.J. Wood. Internal Medicine Residents Lack Confidence in Knee Aspiration, Poster Discussion Group. Canadian Rheumatology Association Annual Meeting, Mont Tremblant, Quebec, March 2008.

F-A. Sarazin and **C. Touchie**. Chronic Severe executive and neurobehavioral dysfunction post recovery from hypothyroidism: A long-term follow up case study. Poster Presentation at the 36<sup>th</sup> Annual Meeting of the International Neuropsychological Society, Waikoloa, Hawaii, USA, February 2008.

**C. Touchie**, S. Humphrey-Murto, M. Ainslie, K. Myers and T.J. Wood. Two Models of Examiners in a Structured Oral Examination: Does it Make a Difference? Presented at the Canadian Association for Medical Education Annual Meeting, Victoria, 2007.

P. Leece, **C. Touchie**, K. Pottie and C. Kendall. A retrospective cohort study of cervical cytology screening among HIV-positive women. University of Ottawa, Student Poster Day, Ottawa, ON October 2006

P.Leece, K. Pottie, C. Kendall, **C. Touchie** and P. Topp. Developing and Implementing a Preventive Care Checklist to Reduce Disparities in Preventive Care for HIV Positive Immigrant Women. XVI International AIDS Conference, Toronto, ON, August 2006

**C. Touchie**, A. Johnson, D.J.M. Haldane and K.R. Forward. Four-Day Incubation for Detection of Bacterial Blood Cultures Using Bactec® 9240. Presented at the Canadian Association for Clinical Microbiology and Infectious Diseases 65<sup>th</sup> conjoint meeting in Infectious Diseases, St. John's, Newfoundland, October 1997.

**C. Touchie**, G.J. Tyrrell, D.J. Haldane and K.R. Forward. Comparison of ID32 Strep (ID32), API-20 Strep (API) and AMS-Vitek Gram Positive Identification Cards (GPI) for the Identification of Enterococcus Species. Presented at the Canadian Association for Clinical Microbiology and Infectious Diseases 65<sup>th</sup> conjoint meeting in Infectious Diseases, St. John's, Newfoundland, October 1997.

**C. Touchie**, G.J. Tyrrell, G.M. Drisdelle, D.J. Haldane and K.R. Forward. Evaluation of Lim Broth as a Selective media for the Detection of Enterococcus Species in Stool. Presented at Intersciences Conference on antimicrobial agents and chemotherapy, New Orleans, LA, September 1996.

**C. Touchie**, G.J. Tyrrell, D.J. Haldane, W.A. Kennedy, J. MacDonald and K.R. Forward, A Comparison of a New Rapid ID 32 Strep (ID32), with API-20 Strep (API), AMS-Vitek Gram Positive Identification Cards (GPI) and Micro-Scan Rapid PosID Panels (MS) for the Species Identification of Vancomycin-Resistant Enterococci (VRE). Presented at Intersciences Conference on antimicrobial agents and chemotherapy, New Orleans, LA, September 1996.

**C. Touchie**, S.H.S. Lee, and K.R. Forward. Hepatitis B: A Quality Assurance Perspective survey from

1990-1993. Presented at the Canadian Association for Clinical Microbiology and Infectious Diseases conjoint meeting on Infectious Diseases, Winnipeg, Manitoba, November 1995.

**C. Touchie** and T.J. Marrie, Comparison of Community-Acquired Pneumonia in HIV and non HIV Patients. Clin Invest Med 1995. 17(4)Supp. B: B82. Presented at the Royal college of Physicians and Surgeons of Canada Meeting, Toronto, Ontario, September 1994.

## **INVITED LECTURES AND WORKSHOPS**

- 2013      Blueprint Impacts, Challenges and Opportunities, 101st Annual Meeting of the Medical Council of Canada, Ottawa, Ontario, September 2013 (45 mins. Workshop – 25 participants)
- 2013      Gap and Issues: Dimensions, Definitions and Specifications, 101st Annual Meeting of the Medical Council of Canada, Ottawa, Ontario, September 2013 (75 mins. Workshop – 25 participants)
- 2013      MCC Blueprint: Building Consensus, 101st Annual Meeting of the Medical Council of Canada, Ottawa, Ontario, September 2013 (90 mins. Workshop – 100 participants)
- 2013      Defining the New MCC Blueprint, 101st Annual Meeting of the Medical Council of Canada, Ottawa, Ontario, September 2013 (45 mins. Lecture – 100 participants)
- 2013      Valorisation des activités et travaux pédagogiques, Forum international pédagogique de la science de la santé, Montréal, Québec, May 2013 (90 mins. Workshop – 16 participants)
- 2013      Validité : Documenter la qualité de vos évaluations, Canadian Conference on Medical Education, Québec City, Québec, April 2013 (3 hour pre-conference workshop – 5 participants)
- 2013      Giving Effective Feedback, Health Educator Scholars Program, University of Ottawa, March 2013 (2 hour workshop – 15 participants)
- 2013      Reconciliation of PGY-1 Supervision using Entrustable Professional Activities: Implications for the Future, Department of Medicine Grand Rounds, University of Ottawa, March 2013 (1 hour lecture – 30 participants)
- 2013      Habits of Successful Medical Education Scholars: What Every Medical Educator Should Know, Faculty Development workshop, University of Ottawa, February 2013 (2 hours workshop – 8 participants)
- 2013      Scholarship in Medical Education: Making the Most of What We Do, Canadian Leadership Institute for Medical Education, Ottawa, Ontario, February 2013 (3 hour workshop – 48 participants)
- 2013      Blueprinting and Choosing appropriate Tools for Assessment of Student Performance: Integrating a Curriculum, Medical Council of Canada Centennial Workshop, University

- of Saskatchewan, Saskatoon, January 2013 (3 hour workshop – 30 participants)
- 2013 Assessment of Clinical Decision making: Using a Key-featured Approach, Medical Council of Canada Centennial Workshop, University of Saskatchewan, Saskatoon, January 2013 (3 hour workshop – 30 participants)
- 2013 MCOs: Writing, Reviewing and Assessing Quality Items, Health Educator Scholars Program, University of Ottawa, January 2013 (2 hour workshop – 15 participants)
- 2012 Multiple-Choice Item Development Workshop, Department of Pediatrics, University of Ottawa, October 2012 (full-day workshop – 10 participants)
- 2012 The Development of Multiple-Choice Questions using the Key-features Approach, Medical Council of Canada Centennial Workshop, McGill University, Montreal, Qc, September 2012 (3 hour workshop - ~40 participants)
- 2012 Évaluation des compétences cliniques: Évaluer la validité des résultats, Association of Medical Education in Europe/Société internationale francophone d'éducation médicale, Lyon, France, August 2012 (1h45min workshop - 19 participants)
- 2012 Blueprinting and Choosing Appropriate tools for Assessment of Student Performance: A Start to the Charting of the C's, Medical Council of Canada Centennial Workshop, Dalhousie University Faculty of Medicine Summer Institute, Charting the Seven C's: Advancing Education through Assessment. Halifax, NS, June 2012 (3 hour workshop – 60 participants)
- 2012 The Art of Writing Good Multiple-Choice Questions for High-Stakes Exams, Medical Council of Canada Centennial Workshop, Northern Ontario School of Medicine, Thunder Bay (videoconferenced to Sudbury), Ontario, May 2012 (3 hour workshop – 25 participants)
- 2012 Giving Feedback: Moving Beyond the Sandwich, University of Ottawa Faculty of Medicine New Staff Orientation Day, March and Sept. 2012 (1 hour workshop each time – total participants: 50)
- 2012 HIV infection in Women. HIV Interest Group. University of Ottawa, Ottawa, January 2012 (participants: ~25)
- 2011 GEA/GSA Small Group Discussion: Habits of Successful Medical Education Scholars - What every medical educationalist should know. American Association of Medical Colleges Annual Meeting, Denver, CO, November 2011 (90 minute workshop - participants: ~100)
- 2011 Giving Feedback: Moving Beyond the Sandwich, Department of Medicine Postgraduate Lecture series (2 hour workshop - participants: 16)
- 2011 Hyperglycemia That Unravels Into Spontaneous Tumour Lysis Syndrome, Department of Medicine Grand Rounds (participants: ~50)
- 2011 Developing Clinical Decision Making Questions: A Key Feature Approach, Undergraduate Medical Education Working Group, Canadian Society of Otolaryngology,

- Head and Neck Surgery (2 hour workshop - participants: 25)
- 2011 Giving Feedback: Moving Beyond the Sandwich, Faculty of Medicine New Staff Orientation Day (1 hour workshop - participants: 25)
- 2011 Scholarship in Medical Education: Making the Most of What We Do. Faculty Development, Canadian Leadership Institute for Medical Education, Ottawa (participants: 46)
- 2010 HIV infection in Women. HIV Interest Group. University of Ottawa, Ottawa (participants: 60)
- 2010 Giving Feedback: Moving Beyond the Sandwich, Department of Medicine Grand Rounds, University of Ottawa, (participants: ~100)
- 2010 Research in Medical Education, Faculty Development Workshop, International Conference on Resident Education, Ottawa (participants: 36)
- 2010 Giving Feedback: Moving Toward Improved Observational Assessments, Faculty Development, University of Illinois at Chicago, Chicago (participants: 24)
- 2010 Giving Feedback: How to say what you mean to say! Faculty Development Workshop, University of Ottawa (participants: 12)
- 2010 HIV in Pregnancy. Obstetrics-Gynecology Residents Half-Day, University of Ottawa (participants: 15)
- 2009 Tough Situations: An Approach to Providing Feedback. Workshop for Internal Medicine Residents, University of Ottawa. (participants: 18)
- 2009 Using a Key Features' Approach for the Development of Clinical Decision Making Questions, Faculty of Medicine, University of Ottawa
- 2008 Common Therapeutic Interactions, The Better Prescribing Course, University of Ottawa
- 2008 AAMC/RIME Highlights. AIME Rounds. University of Ottawa
- 2008 HIV: A Primer for Physiotherapists, Division of Physiotherapy, The Ottawa Hospital Rehabilitation Centre
- 2007 Teaching at the Bedside: Managing the Variability in Learner Experience and Teaching Environment. The Challenges of teaching at the Faculty of Medicine Annual Faculty Development ½ Day University of Ottawa, Department of Medicine.
- 2007 HIV and AIDS in Women and Children- A contemporary Canadian Perspective. Public Lecture sponsored by the GoGo for Grannies, Ottawa.
- 2006 Problem Employees – An Approach to providing feedback 6<sup>th</sup> OAHSLP, University of Ottawa Leadership Program, Department of Medicine
- 2006 HIV: A Primer for Primary Care, Department of Family Medicine Grand Rounds

(CHEB), University of Ottawa

- 2006 Care of women with HIV, Department of Family Medicine lecture series, The Ottawa Hospital
- 2005 C. difficile Associated Diarrhea “CDAD”, Department of Medicine, General Medicine Rounds, The Ottawa Hospital
- 2005 Effective Feedback Workshop, Faculty Development Full-Day, Faculty of Medicine, University of Ottawa
- 2005 Multiple-Choice Question Development Workshop, Faculty of Medicine, University of Ottawa (Sponsored by the Medical Council of Canada)
- 2005 Chasing Zebras, Internal Medicine Day, University of Ottawa
- 2004 Multiple-Choice Question Development Workshop, Faculty of Medicine, McMaster University (Sponsored by the Medical Council of Canada)
- 2003 Penicillins VS Fluoroquinolones: The Old and the New; Better Prescribing Practices, University of Ottawa
- 2003 Pneumonia: An Update 2003, Pembroke Regional Hospital (Sponsored by Janssen-Ortho Inc.)
- 2003 Medical Student to Fellow: Dealing with Multiple Learners at Varying Levels, Half-Day Faculty Development Workshop on Clinical Teaching Skills, University of Ottawa
- 2002 Pneumonia Clinical Pathway: The Ottawa Hospital Department of Family Medicine (Civic Campus), The University of Ottawa
- 2002 Giving and Receiving Feedback: A Workshop for Post-Graduate Clinical Supervisors. The University of Ottawa
- 2001 Teaching Clinical Skills The 2<sup>nd</sup> Annual Faculty Development Day, Faculty of Medicine, Continuing Medical Education, The University of Ottawa
- 2001 Update on Acute Exacerbation of COPD Club Med, Division of General Internal Medicine Lecture Series
- 2001 Doc, there’s a bug in my pregnancy! What should I do? Dalhousie Internal Medicine Residents Annual Retreat, White Point Beach Lodge, Nova Scotia
- 2000 The CapitalL Study: A Controlled Trial of a Critical Pathway for Treatment of Community-acquired Pneumonia, Ottawa (Sponsored by Janssen-Ortho Inc.)
- 2000 Teach While You Work: Bedside, O.R. or Clinic, The 1st Annual Faculty Development Day, Faculty of Medicine, Continuing Medical Education, The University of Ottawa
- 1999 A 1999 Update on Influenza, General Medicine, “Talking to Ourselves” series, Queen Elizabeth II Health Sciences Center, Dalhousie University

- 1999 The Good, The Bad and The Ugly: The Art of Giving Grand Rounds, Medicine Grand Rounds, QEII HSC, Dalhousie University
- 1999 The Pneumonia Clinical Pathway: Does it Make a Difference? Family Medicine, Society of Nova Scotia Annual Meeting, Inverary Inn, Baddeck, Nova Scotia
- 1999 The Pneumonia Clinical Pathway: Does It Make A Difference? Canadian Society of Hospital Pharmacists - Nova Scotia Branch Annual General Meeting, QEII HSC, Halifax
- 1999 The Case Presentation: A Model for Lecturing, Dalhousie University Internal Medicine Annual Retreat, The Westin Nova Scotia, Halifax
- 1999 Pneumonia - New Therapeutic Options: A Ketolide and An Everninomycin, Infectious Diseases Supper Club
- 1999 Cytokines and Chemokines: An Update, Emerging Pathogens Lecture Series, Division of Infectious Diseases
- 1999 The Pneumonia Clinical Pathway, Family Medicine Grand Rounds, QEII HSC, Dalhousie University
- 1998 Pneumonia, An Update, Colchester Regional Hospital, Truro, Nova Scotia (Sponsored by Janssen-Ortho.)
- 1998 The Clinical Microbiology Lab in the 90's - A Molecular Era, Department of Veterans Affairs, North Texas Health Care System in Halifax, Nova Scotia (Organized by Dr. J.W. Smith)
- 1998 Basic Immunology. Preceptorship for AMGEN CANADA Inc., Halifax, Nova Scotia
- 1998  $\beta$ -lactamases, Emerging Pathogens Lecture Series, Division of Infectious Diseases
- 1998 COPD and Antibiotics, Halifax, Nova Scotia (Sponsored by Bayers Inc.)
- 1998 An Update on Community-acquired Pneumonia, Halifax, Nova Scotia (Sponsored by Pfizer)
- 1998 The Art of Clinical Examination, Department of Medicine Academic Half Day, Dalhousie University
- 1998 Teaching the Teachers: Survival Skills, Workshop for Physicians, Department of Medicine, Dalhousie University
- 1997 *Stenotrophomonas* at the QEII: Why so Much? Infectious Diseases Supper Club, Dalhousie University
- 1997 Methicillin-Resistant *Staphylococcus aureus*, Medicine Grand Rounds, Department of Medicine, Dalhousie University
- 1997 Antibiotic Resistance - Clinical Day on Therapeutics and Infectious Disease, The

Medical Society of Prince Edward Island, Charlottetown, PEI

- 1997      Opportunistic Infections in HIV, Clinical Day on Therapeutics and Infectious Disease,  
The Medical Society of Prince Edward Island, Charlottetown
- 1997      Sepsis, Department of Medicine Academic Half Day, Dalhousie University
- 1996      Vancomycin-Resistant Enterococci, Infectious Diseases Supper Club, Dalhousie  
University

**CONTINUING PROFESSIONAL DEVELOPMENT – LEADERSHIP DEVELOPMENT**

- 2012      Strategic Planning – Physician Management Institute (Advanced Level)  
2.5 days
- 2011      Dollars and Sense – Physician Management Institute (Advanced Level)  
2.5 days
- 2009      Canadian Leadership Institute for Medical Education (CLIME)  
4 days