

Moderated Posters 8: Miscellaneous June 26, 2012, 1450-1600

MP-08.01

Preliminary Results of the Resident Manpower Survey by the CUA Socioeconomic Committee: Are We Training too Many Urologists?

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Introduction and Objectives: Urology residency training positions have increased in the last 10 years. Data on potential employment is limited and out of date. This study aims to assess perceptions of current Canadian Urology residents with respect to future manpower issues. Information is intended to help the Socioeconomic committee of the Canadian Urological Association (CUA) address the concerns of residents. This is the first of a two-part survey; the second will assess the division heads' future demand for urologists.

Methods: In this study, a multiple-choice questionnaire was emailed to program directors and dispersed to residents in Canadian Urologic Surgery programs in 2011. Consent was obtained from the CUA.

Results: There are 155 potential respondents with a current response rate of 19%. Currently, 72% of residents intend to stay where they are training. A majority (65%) intends to have full or part-time academic affiliation. Eighty percent intend to complete a fellowship. Fifty two percent believe there are too few jobs. Sixty nine percent believe supply is greater than demand for urology residents. A significant majority at 76% and 81% feel the CUA and residency programs should limit training spots respectively. Further, 31% feel not secure and 45% somewhat secure about the future job prospects. An overwhelming majority (97%) believes the CUA should help residents find employment, and 87% believe CUA should help with practice management and billing.

Conclusions: The preliminary results of this survey suggest that there is a resident perception of too many urologists being trained in Canada, and that the CUA should be involved in limiting residency positions. There appears to be insecurity about future employment and residents believe the CUA should have a role in addressing employment issues.

MP-08.02

Incorporating Patient Simulation into In-training Exams to Assess CanMEDS Competencies in Urology Residents

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Introduction and Objectives: As the Royal College of Physicians and Surgeons of Canada increasingly emphasizes a competency-based approach to resident education, residency programs must develop methods to directly evaluate CanMEDS roles. Incorporating patient simulation into assessments allows residents to demonstrate knowledge and skills in a safe, standardized environment. We developed a novel simulation station for use in a Urology in-training Objective Structured Clinical Exam (OSCE) to assess multiple CanMEDS competencies.

Methods: The OSCE was developed to assess the collaborator, communicator, and medical expert (including technical skills) CanMEDS roles. Residents had to interview a standardized patient and interact with a nurse to perform a cystoscopy and stent removal using a flexible cystoscope and bladder model. The bladder model was constructed with a papaya and double-J stent. Collaborator/communicator roles were assessed using global ratings, medical knowledge assessed using a checklist, and technical skills evaluated using a validated rating scale. Scores were compared between residents of different training levels to determine discriminative

validity. We noted equipment costs and assessed resident satisfaction with qualitative interviews.

Results: Nine urology residents participated in the exam (PGY 3-5). The scenario was easily run in the allocated 15-minute time slot. Disposable equipment cost was \$228 (papayas: \$4, double-J stents: \$214). Overall scores were similar between all levels. Technical skills scores were higher in PGY-5 residents (mean score 79%) as compared to PGY-3/4 residents (mean score 73%). Residents felt the station allowed for reasonable demonstration of competencies.

Conclusions: We successfully developed and implemented a novel OSCE station to assess multiple CanMEDS roles, including technical skills. This approach is feasible and relatively low cost, and could be adopted by Urology residency programs as part of routine assessment.

MP-08.03

The Newly Graduated Canadian Urologist: Underemployed and Overtrained?

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Introduction and Objectives: Newly graduated surgical specialists report difficulty obtaining employment. There is a perception among urology residents that fellowship training is becoming a requirement after residency, and that there are few job opportunities available upon graduation. The purpose of this study was to examine the postgraduate training patterns and employment choices of urology residents.

Methods: Canadian urology program directors were asked to complete a short summary of Canadian residents graduating from their programs between 1998-2009. Basic information on the fellowship, graduate degree(s), type of practice and location of practice was requested. Logistic regression models were used to evaluate for significant linear trends over time.

Results: Program director response rate was 100%. 258 Canadian urology residents graduated over the study period, with a median of 22 graduating/year. 72% of graduates completed a fellowship, of which 62% included protected research time. The most common subspecialty was MIS/endourology (39% of fellowships). There was a significant increase in fellowship training over time ($p < 0.0001$) mostly due to an increase in MIS/endourology fellowships. 11% of residents obtained a graduate degree during residency or fellowship; the acquisition of graduate degrees increased significantly over the study period.

Almost all graduates are currently employed; 34% are academic urologists. Among all graduates, 50% are practicing within 100km of their residency training site, 16% are practicing in the United States and 22% are practicing in a rural location. There has been no significant change in these proportions over time.

Conclusions: Fellowship training, especially in MIS/endourology, has become more common. Graduate degrees are becoming a more common addition to urologists' training. At this point there is no evidence that there has been a significant change in a urology resident's ability to obtain employment upon graduation.

MP-08.04**Trends in Matching to Urology Residency in Canada: Are We Becoming Non-competitive?**

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Introduction and Objectives: Urology is perceived as a competitive specialty choice. Declining undergraduate exposure and the preference for "lifestyle specialties" may jeopardize urology's popularity. Our objective was to assess trends in application & matching rates to urology compared to other surgical specialties.

Methods: We reviewed data collected by CaRMS and the Canadian Post-MD Education Registry since expansion in Canadian med school enrollment (2002-11). The following were examined: applicant preference, number of positions, gender patterns & match results. "Surgery" included Gen Surg, Ortho, Plastics, ENT and Urology.

Results: From 2002-11 CaRMS applicants increased from 1117 to 2528 (126%). The number of applicants selecting surgery 1st increased from 178 to 338 (90%). The number of surgery positions increased from 138 to 275 (100%). Urology positions increased from 15 to 31 (113%). Applicants to urology increased only 40% (30 to 42). The proportion of all CaRMS applicants selecting urology as their 1st choice decreased from 2.7% (30) to 1.7% (42). The ratio of 1st choice urology applicants to positions decreased from 2 to 1.35. The probability of matching urology as 1st choice increased from 50% to 75%. Female medical graduates increased from 51% to 58%. The female applicants selecting surgery 1st increased from 21% (49) to 41% (173). In contrast, females selecting urology 1st rose from 13% (4) to 17% (7).

Conclusions: Urology is becoming less competitive. Residency positions have doubled since 2002 while the number of applicants remains static. This trend was not reflected in other surgical subspecialties. Factors accounting for this may include poor undergraduate exposure, demand for specialties with controllable lifestyles, gender shifts in undergraduate medicine & lack of role models. The need for undergraduate exposure to urology and vetting of residency positions remains paramount.

MP-08.05**Video Laparoscopic Trainers vs. Less Expensive Simple Laparoscopic Trainers**

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Introduction and Objectives: Advancement of laparoscopic simulation has led to more sophisticated, but generally more costly, surgical trainers. We assessed how sophistication affects laparoscopic simulator efficacy to explore cost-effective alternatives to expensive models. A systematic review and meta-analysis was conducted to compare video laparoscopic trainers (VLTs) and simple laparoscopic trainers (SLTs) (mirror trainers & home-made webcam trainers) with regards to teaching laparoscopic skills.

Methods: A comprehensive search of MEDLINE and EMBASE yielded 864 citations after excluding duplicates. Narrative reviews, retrospective studies, surveys and historical articles were also excluded. Three independent reviewers performed full-text screening with disagreements settled by group consensus. Five papers satisfied inclusion criteria (study examines laparoscopic procedures/tasks and includes a direct comparison between a VLT and a SLT) and were included in the analysis. Quality assessment of included studies was completed. The following characteristics were assessed in all included studies: tasks performed, performance on the VLT and performance on the SLT. We examined only continuous data with calculation of the standard difference in means (Std diff means). Performance times were pooled using a random effects model and a chi-square test was employed to test for heterogeneity.

Results: Meta-analysis of the included papers compared post-training performance time between VLTs and SLTs for 2 laparoscopic tasks: suturing and object transfer. The table below summarizes our findings. No statistical difference in performance was found between VLTs and SLTs. As well, a meta-analysis of the 7 laparoscopic tasks assessed in the study

Table 1. MP-08.05

Outcomes	Number of Studies (Number of Participants)	Absolute Effect ^a (95%CI)	Quality of Evidence ^b
Suturing Time	3 (74)	-0.410 (-0.908 to 0.089)	High
Object Transfer Time	4 (122)	0.358 (-0.377 to 1.093)	High
Task Completion Time (Keyser et al.)	1 (22)	-0.298 (-0.618 to 0.022)	High

a: Standard difference in means; random effects model; b: Quality of evidence based on the GRADE system; CI: confidence interval.

by Keyser et al favoured the VLT over the SLT (Std diff means -1.82, 95%CI -0.61 to 0.02, $p=0.07$) (Table 1).

Conclusions: Our review shows that VLTs and SLTs are equally proficient in teaching laparoscopic skills, suggesting SLTs are a cost-effective alternative.

MP-08.06**Do Hunner's Ulcers Represent Bladder Ischemia?**

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Introduction and Objectives: Interstitial cystitis/painful bladder syndrome (IC/PBS) is a chronic inflammatory disorder of unclear etiology. Patients can be subtyped on the basis of ulcerative and non-ulcerative patients. There is a paucity of data on the location of Hunner's ulcers within the bladder. Recent data from hyperbaric oxygen therapy for IC/PBS suggest a role for ischemia in Hunner's ulcers. We studied Hunner's ulcers to determine if they represent possible bladder ischemia

Methods: Consecutive patients undergoing cystoscopy and hydrodistension for IC/PBS being evaluated. Presence and location of ulcers were noted and compared for age, sex, duration of symptoms, daytime voiding frequency, nocturia, mean voided volumes, interstitial cystitis symptom index, problem index, pain, urgency frequency (PUF) scores, anesthetic capacity. Fisher exact test and unpaired t-tests were used for statistics

Results: There were 127 consecutive subjects studied, 14 with ulcers (11%) and 112 without ulcers (89%). Ulcer subjects were older, had more severe symptoms, and had smaller voided and anesthetic capacities compared to non-ulcer subjects. Of the 14 subjects with ulcers, 7 were on the lateral wall alone, 3 were on the posterior wall alone, 3 were multifocal on the lateral wall and dome, and 1 was multifocal and on the posterior wall, dome, and trigone

Conclusions: Hunner's ulcer patients have smaller anesthetic bladder capacities than non-ulcer patients. These decreased volumes are evidence of decreased compliance compared to non-ulcer patients. Ulcers occurred in older patients compared to non-ulcer patients. These findings are consistent with decreased perfusion. We propose that Hunner ulcers represent the ischemic bladder's response to IC/PBS disease.

Table 1. MP-08.07

RCT	Intervention	n	ICSI	Pain
			mean change difference (CI or p-value)	mean change difference (CI or p-value)
	BCG	265	-0.18 (-0.42, 0.07)	0.28 (-0.52, -0.04)
	Amitriptyline	231	-1.5 (-2.5, -0.05)	-.04 (-1.0, 0.3)
	Mycophenolate mofetil	58	1.0 (-0.7, 2.6)	1.4 (0.2, 2.5)
	Alkalized lidocaine	102	-0.42 (-0.83, 0.0)	-0.40 (-0.81, 0.0)
	Chondroitin sulfate	65	-0.29 (-0.78, 0.20)	0.37 (-0.12, 0.87)
	Chondroitin sulfate	98	-0.10 (p=0.95)	-0.43 (p=0.53)
	Physical therapy	81	-1.0 (p=0.31)	-0.7 (p=0.27)
	Ca ²⁺ Channel $\alpha_2\delta$ Ligand	161	-1.58 (-3.24, 0.09)	-0.82 (-1.72, 0.08)
Open Label	Intervention	n	ICSI Δ from baseline (p-value)	Pain Δ from baseline (p-value)
	Pentosanpolysulfate	380	-3.0 to -3.8 (p<0.001)	n/a
	Chondroitin sulfate	53	-5.0 (p<0.001)	-2.6 (p<0.001)
	Lidocaine eluting device	18	-4.5 to -5.4 (p<0.001)	-3.6 to -4.9 (p<0.001)
	UPOINT directed Study	78		ongoing

ICSI: interstitial cystitis symptom index; CI: confidence interval; BCG: Bacillus Calmette-Guérin.

**MP-08.07
Trials and Tribulations of a Canadian Interstitial Cystitis Research Clinic**

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Introduction and Objectives: The clinical trial experience of the Queen's University Interstitial Cystitis Research Clinic in Kingston provides valuable lessons in management of patients with IC/Bladder Pain Syndrome.

Methods: Clinical treatment trials in IC/BPS undertaken over the past 8 years by our IC Research Clinic were critically reviewed for possible lessons learned.

Results: The Queen's University IC Research Centre designed, implemented and analyzed 12 national and international single and multi-centre clinical trials involving 2,144 patients as either the PI or co-PI research site. Results of the various trials evaluating novel or innovative therapies are listed in Table 1.

Conclusions: Eight years of personal clinical trial experience has led us to conclude that there will never be a single successful therapy for all patients with IC/BPS. We believe that phenotypically directed multi-modal therapy will be the key to treatment success in this enigmatic condition.

**MP-08.08
Cannabis (Marijuana) Use in Men with Chronic Prostatitis/Chronic Pelvic Pain Syndrome**

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Introduction and Objectives: To examine the prevalence, indication, dose and frequency of cannabis use among men with CP/CPPS.

Methods: Parallel online and clinic questionnaire surveys were conducted to assess cannabis use among men with CP/CPPS. As a check on study generalizability, comparisons between the online data (n=365) and clinic data (n=60) showed no clinically meaningful differences in the outcome variables of quality of life (QoL), suicidal ideation, pain and urinary symptoms were evident between these groups.

Results: 49% reported cannabis use (n=206). 29% (n=59) of these men indicated use for pain relief and 71% (n=147) for recreation. The pain users (age 38 +/- 14), were younger than recreational users (42 +/- 12) and individuals who reported never using cannabis (45 +/- 13)(p=0.001). More pain users reported cannabis was of pain reduction benefit in comparison to recreational users (X²=3.83, p=0.05). No differences were found

between recreational and pain users in degree of side effects (X²=4.43, p=0.22), reasons for stopping (X²=4.84, p=0.18), or use frequency (X²=5.48, p=0.07). There were no differences in dose smoked between the pain and recreational users (X²=5.80, p=0.12), but a difference was found in dose eaten between these two groups (20% of pain users consume more than 1 gm per dose vs. only 7% of recreational users (X²=12.51, p=0.002). Pain users reported more pain (F=4.04, p=0.05), poorer CP/CPPS QoL/impact (F=8.61, p=0.004), and more suicidal thoughts (F=6.59, p=0.01) than recreational users.

Conclusions: Cannabis use is prevalent (49%) in men with CP/CPPS, but not necessarily used for CP/CPPS symptoms. It is important that urologists understand the relevance of this data and question their patients on their use (and effect/impact on symptoms) of marijuana/cannabis. To our knowledge, this is the first study to attempt to document the prevalence and patterns of cannabis use in a CP/CPPS population.

**MP-08.09
The Clinical Spectrum of Anterior Urethral Stricture: Detailed Analysis of a Large Single Institution Cohort**

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Introduction and Objectives: It is generally assumed that patients with urethral stricture present primarily with lower urinary tract symptoms (LUTS). There is a paucity of data examining this clinical assumption. There is also no uniformly accepted clinical definition of urethral stricture or measure of treatment success. The objective of this study is to accurately delineate the clinical spectrum of anterior urethral stricture.

Methods: A retrospective analysis was performed on a cohort of 611 patients presenting with anterior urethral stricture over a 6-year period from July 2004 to June 2010. The primary (presenting) complaint and associated symptoms were classified according to one of ten clinical categories.

Results: The most common presenting complaint were LUTS as typically found in the AUA-SI (54.3%). Another 23.4% of patients presenting primarily with acute urinary retention. Symptoms other than LUTS or urinary retention accounted for 22.3% of presenting complaints. Additionally, 22.9% of patients experienced genitourinary pain, 50.7% of patients required emergent urologic treatment and 7.4% of patients presented with renal insufficiency or urethral abscess/necrotizing fasciitis directly related to urethral stricture.

Conclusions: Although many patients with urethral stricture present initially with LUTS or urinary retention, almost one-quarter of patients

present with a different primary concern. A patient-centred definition of urethral stricture should encompass more than the absence of LUTS or urinary retention. Urethral stricture is also not solely a “quality of life” condition as many patients present emergently or have a potentially life threatening condition directly related to the stricture.

MP-08.10

Impact of Radiotherapy on Surgical Repair and Outcomes in Patients with Rectourethral Fistula

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Introduction and Objectives: The majority of patients who present with rectourethral fistula acquired it as a complication of radiotherapy for prostate cancer or by iatrogenic injury of the rectum during prostatectomy. The study goal was to determine whether choice of operation and results following surgery for rectourethral fistula are influenced by prior radiotherapy.

Methods: Male patients who underwent surgery for rectourethral fistula from 1998-2010 were identified from a prospectively maintained database. Data regarding etiology, surgical treatment and outcomes were analyzed.

Results: Fifty patients were identified. Median age was 65 yrs and median follow-up of 17 months. The etiology of rectourethral fistula was XRT induced following therapy for prostate or rectal cancer in 29 patients. A total of 57 repairs were performed. XRT patients were approached transabdominally more often than non-radiated patients (91 vs. 9%). Primary fistula repair was more frequently attempted (76 vs. 24%) and more frequently successful in the non-XRT patients (81 vs. 10%). Patients with prior pelvic XRT were significantly more likely to receive permanent colostomy (71% vs. 4%) and cystectomy with conduit urinary diversion as part of management (76% vs. 24%). Of the 7 radiated patients who did not undergo cystectomy initially, 4 developed recurrent fistulas and received cystectomy and diversion. Of the 3 remaining patients with bladder preservation and XRT-induced rectourethral fistula, 2 patients demonstrated mixed urinary incontinence and total fill non-compliant bladders. The remaining patient developed total urinary incontinence.

Conclusions: Almost no patients with XRT-induced rectourethral fistula will avoid permanent suprapubic urinary diversion or colostomy. Bladder preservation led to recurrent fistula and poorly functioning bladders in all cases. In contrast, most patients with fistula not caused by XRT can have a successful transperineal repair avoiding a permanent stoma.

MP-08.11

Comprehension and Preferences for Graphical Representations of Quality of Life after Prostate Cancer Treatment

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Introduction and Objectives: Integration of quality of life (QoL) measurement into clinical prostate cancer (PCa) practice may enhance communication, improve satisfaction with care, and affect the timing of delivery of secondary therapies for the side effects of PCa treatment. We developed graphical representations of prostate cancer QoL (dashboards) and compared patients' comprehension and preferences among four alternative formats to those of prostate cancer providers.

Methods: We conducted interviews with PCa patients and providers, assessing health literacy, subjective numeracy, and graphic literacy with validated instruments. We then presented both groups with the candidate dashboards and assessed participants' comprehension, confidence in interpretation, helpfulness rating, and rank order preferences.

Results: Our study has included 29 PCa patients and 24 providers. Patients had a mean age of 71 years and most had at least a college degree (76%). The health literacy (mean score 6.9±0.26 out of 7), numeracy (mean score 4.3±0.94 out of 6), and graphic literacy (mean score 11.4±1.4 out of 13) of our patient sample was high. Comprehension did not vary by dashboard format. The pictographs exhibited lower helpfulness ratings ($p=0.001$). Preference elicitation strongly favored the bar graph format in patients (rank 1/4 in 52% of interviews, $p<0.001$) but there was equal preference for the table, bar and line formats among providers (each ranked 1/4 in 33% of interviews). The pictograph tested poorly in both groups (rank 4/4 in 69% and 75% of patients and providers respectively).

Conclusions: Among a high literacy and numeracy sample of PCa patients, comprehension and preference ranking strongly favored bar graph formats for QoL dashboards, although providers had no definite preference. Inclusion of lower literacy patients may yield different results. Future work will determine if clinical integration of these dashboards is associated with improved health outcomes.

MP-08.12

Population-based Assessment of Enterocystoplasty Complications among Adult Patients

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Introduction and Objectives: Enterocystoplasty is procedure that can be used to treat several types of bladder dysfunction. Our objective was to conduct a retrospective, population-based cohort study to identify the rate of urologic surgical procedures after enterocystoplasty among adult patients, and determine whether there are significant predictors associated with them.

Methods: A retrospective, population-based cohort was assembled using administrative data records; adult patients who underwent an enterocystoplasty between 1993-2009 were included. Administrative data sources were used to measure our primary exposures (neurogenic bladder, and concurrent catheterizable channel or anti-incontinence procedure) and primary outcome (urologic surgical procedures after enterocystoplasty). Multivariable Cox proportional hazards models were used (covariates: age, gender, Charlson score, and socioeconomic status).

Results: We identified 243 patients: 61% had neurogenic bladders, 20% had a simultaneous incontinence procedure, and 18% had creation of a catheterizable channel. Median follow-up was 7.8 (IQR 4.0-12.2) years. The proportion of patients who required a subsequent urologic procedure was 40% (0.098 procedures per person year of follow-up). A simultaneous incontinence procedure at the time of enterocystoplasty was a significant predictor (HR 1.47, 95% CI 1.02-2.12, $p=0.0414$) of future surgical procedures. Cystolitholapaxy was the most common subsequent procedure (25% of patients); a catheterizable channel conferred a significant risk of cystolitholapaxy (HR 2.92, 95% CI 1.461-5.85, $p=0.0024$).

Conclusions: Repeat urologic surgery is common after enterocystoplasty. Patients who require a simultaneous incontinence procedure at the time of enterocystoplasty are more likely to require future surgery. Patients with catheterizable channels have a significant risk for subsequent cystolitholapaxy.