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Title Page

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Interns' perceptions of exposure to urology during medical school education in Victoria, Australia.

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Medical student competence in managing common urological presentations and procedures has been shown to be variable and in many cases inadequate (1). There has been no contribution to the literature from an Australian study, however studies from Canada and the USA have demonstrated that there is considerable room for improvement in the education of medical students on basic urological concepts (1-3).

The need for a measurable, validated minimum urological competency is widely accepted. Interns across Australia are expected to be proficient in urological history taking, examination and the performance of simple procedures such as indwelling catheter insertion. They are also expected to be familiar with characteristics of a presentation that mandate specialist urology involvement. A lack of confidence in this regard could lead to substandard care, and an inappropriate use of resources.

A study in Canada demonstrated that 44% of final year medical students considered their urological education insufficient (3). On a positive note, it has been shown that as little as one week of a

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mandatory urology rotation has the ability to significantly improve practical urology skills and knowledge, confidence with assessment of urological patients, and also improved recognition of when to involve a specialist urology unit (4).

In this study we intended to assess medical student experience and comfort in performing basic urological assessment and common procedures prior to commencement of their internship year.

With appropriate permissions, a questionnaire based on that used by Hoag et al. (3) was distributed to all medical students at two Victorian hospitals (Austin Health and Barwon Health) in the week prior to commencement of internship in January 2015. It anonymously surveyed student demographics, and exposure to urology teaching throughout medical school. It also captured data regarding comfort and perceived ability to diagnose and manage basic urological presentations. A Likert scale (1-very unfamiliar, to 5-very familiar) for student responses accompanied the majority of questions. A sample set of questions used in the questionnaire is included in Table 1. De-identified survey responses were tabulated.

77 medical students completed the survey. 61 were completed at Austin Health and 16 at Barwon Health. 90.2% of students stated that they did not complete a formal urology rotation during their medical schooling.

Medical student responses to set questions outlining familiarity with common urological presentations, procedures and investigations are summarized in Table 2, below.

Overall there was a wide variability in the recorded responses. Important clinical presentations where interns reported a low mean familiarity score (less than 3 out of 5) included scrotal pain (2.88),

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epididymitis (2.49) and prostatitis (2.58). Similarly, when analyzing procedural skills, students were far more comfortable with catheterization (both male and female) than the other listed procedures. With regard to urological investigation, students on average only reported a mean score greater than 3 out of 5 for urinalysis.

Our study has identified key areas for improvement in urological education. Common emergency department urology encounters such as scrotal pain and prostatitis as well as the performance of a manual bladder washout scored amongst the lowest in our questionnaire, all within the realm of what an intern can reasonably expect to face in an emergency department rotation.

These preliminary results emphasize the need for further evaluation of student preparation for internship and the implementation of urological teaching as part of medical curriculum. Moving forward, the preliminary results presented in this study would need validation by an objective assessment of medical student abilities to assess whether the assumption that perceived ability correlates to actual ability holds true as well as allowing reliable analysis of the efficacy of implementing more structured urological education to medical students.

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Presentation, Procedure, Investigation	Mean response (out of 5)
Adult UTI	3.96
BPH	3.79
Sexual history	3.74
Urinalysis (investigation)	3.74
Male IDC (procedure)	3.68
Urinary incontinence	3.45
Female IDC (procedure)	3.39
Haematuria	3.14
Nephrolithiasis	3.13
Scrotal pain	2.88
Prostate cancer	2.77
Erectile dysfunction	2.66
Scrotal mass	2.66
Prostatitis	2.58
Epididymitis	2.49
CTKUB (investigation)	2.44
US bladder (investigation)	2.32
US renal (investigation)	2.25
Urodynamics (investigation)	2.18
Semen analysis (investigation)	1.93
Manual bladder washout (procedure)	1.85
Paraphimosis reduction (procedure)	1.79
SPC change (procedure)	1.22

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Table 2: Medical student self-reported mean scores for various urology presentations, procedures and investigations

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Please rate your comfort with your approach to dealing with the following clinical scenarios:

	Least Comfortable				Most Comfortable
Haematuria	1	2	3	4	5
Adult Urinary Tract Infection	1	2	3	4	5
Symptoms of BPH	1	2	3	4	5
Epididymitis	1	2	3	4	5
Prostatitis	1	2	3	4	5
Erectile Dysfunction	1	2	3	4	5
Urinary Incontinence	1	2	3	4	5
Nephrolithiasis	1	2	3	4	5
Prostate Cancer	1	2	3	4	5
Pediatric Urinary Tract Infection	1	2	3	4	5
Acute Scrotal pain	1	2	3	4	5
Scrotal Masses	1	2	3	4	5
Male Factor Subfertility	1	2	3	4	5

Table 1. Sample question and response format taken from questionnaire.

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