Urology- are we leaving junior doctors behind? A prospective study

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Introduction
Urology accounts for 16% of all surgical admissions. In addition there are many more inpatients with urological needs. Recently there has been concern about the undergraduate and postgraduate exposure to urology. This prospective questionnaire based study aims to look at the perception of a small cohort of junior doctors on their own urology knowledge and confidence before and after a simple teaching intervention.

Methods
Foundation year (FY) 1 and 2 doctors, as well as general practice trainees (GPST), and core surgical trainees (CST), were sent an online survey enquiring about their exposure to, and knowledge of the management of urological patients. Following this a teaching session was devised addressing common urological problems and frequently asked questions. This was followed by further questionnaires looking into whether this simple intervention had improved confidence and patient care.

Results
The results showed that only 8% of junior doctors felt they had had sufficient teaching and exposure to urology, although 42% said they felt comfortable managing most urological problems on call. Over three quarters of the doctors felt further urology teaching would improve patient care, and 95% of them felt emergency urology was the most important subject to be taught. The majority preferred to have a lecture based teaching session rather than mentoring or simulation. Following the session, 93% of the doctors felt they would be more comfortable managing patients on the ward, with 0% saying the session was ‘not useful’.

Discussion
Our questionnaire supports other data suggesting that doctors do not feel they have sufficient exposure, in terms of basic knowledge and skills, to provide safe and effective care to patients with urological problems in the acute setting. This can be addressed effectively with a simple urological teaching programme delivered in 1 or 2 teaching sessions. This basic curriculum can be shared Deanery-wide subsequently.
Urology admissions into hospital have increased. In a busy city centre teaching hospital, urology now accounts for 16% of all surgical admissions, and 12% of acute surgical admissions (Royal Liverpool and Broadgreen University Hospital Trust data 2016). There are also many patients who are not admitted under urology itself but have urological needs that need to be dealt with on call. Many hospitals in the United Kingdom require the FY2, GP specialist trainee or core surgical trainee on-call, to admit - and commence management for urology patients, as well as general surgical patients.

Urology admissions in UK hospitals tend to comprise of severe infections pyelonephritis, urosepsis), as well as renal colic, haematuria with clot retention, and scrotal pathology including testicular torsion and epididymo-orchitis. Urological emergencies requiring immediate intervention include acute urinary retention, testicular torsion, obstructed solitary kidneys and sepsis, especially in the context stone disease. These must be recognised early as these conditions have increased morbidity and mortality.

There has been some concern recently regarding undergraduate, and also postgraduate exposure to urology (Slaughenhoupt 2014). We wanted to see if junior doctors in our cohort felt they had sufficient teaching and training in urology, would they want additional training and if so their preferred mode of delivery of this training.

This study was set out in 3 main parts:
Firstly, junior doctors were requested to fill in an online survey. It enquired about the doctor’s undergraduate and postgraduate exposure to urology. It also asks further as to whether these doctors felt comfortable managing urology patients on the ward and on-call.

The initial questionnaire showed that trainees wanted additional teaching delivered as part of the monthly teaching days for the training programmes. Following this a teaching session was set up for the foundation doctors as part of their curriculum. This focused on common urological presentations for patients attending the accident and emergency unit, as well as acute urological emergencies, and how they should be managed. There was also a small amount on practical skills that may be needed on call; such as techniques when inserting difficult catheters, and reduction of paraphimosis. All of these topics were selected according to the learning needs identified by trainees completing the initial questionnaire.

Feedback following the teaching session was completed in two waves. The first was a questionnaire completed on the day of the teaching to assess if trainees felt it had addressed their learning needs. The second wave of feedback was a further questionnaire four months following the teaching to assess if the initial benefits identified following teaching were maintained.

There were 24 replies to the first online survey, 92% were foundation doctors (either FY1 or FY2), with one CST and one GPST. In agreement with the other previous surveys 87.5% of these felt they had not...
had enough exposure to urology as an undergraduate. 66% reported having had no educational exposure as a postgraduate doctor, and a further 25% stated that any teaching they had had was either too little or of a low quality. This shows only 8% of the respondents felt they had had sufficient post-graduate exposure to urology.

The trainees were then asked whether they felt they were able to manage urological conditions on-call, and on the wards (to their current level). No-one felt they were able to manage all urological problems to the level reasonably expected of a doctor at their current grade. One quarter of the cohort (25%) admitted they needed help with most urological problems, one third (33%) felt they could manage some urological problems. The remaining 42% said they felt comfortable managing most urological conditions whilst on call.

The junior doctors were then asked whether they felt further teaching would be helpful, and also which urological topics they felt would be the most beneficial to cover. All responders felt that further teaching would be helpful, and they were then asked to say how future sessions would be helpful to them. Responders were invited to answer as many as were relevant. 79% felt that further education would improve patient care, with 33% and 66% feeling it would help with current and future training jobs respectively. 25% felt it would help with postgraduate exams, and 33% with professional development. Again being encouraged to choose all that applied 95% of trainees felt emergency urology would be beneficial, with 33% and 41% feeling that teaching on elective urological procedures and urological cancers respectively would help with their training. There was an area of free text where 2 trainees stated that teaching on difficult catheters would be of use.

Trainees were then asked how they thought training could be most effectively delivered. They were asked to give each teaching method a rank of one to ten. These were then averaged into a score and were ranked. The most popular method was through teaching sessions on the current syllabus (average 7.54) with 54% of the responders giving this the top mark. The least popular idea was mentoring (average 3.75).

Finally, respondents were asked whether they thought there were any barriers to urology training. Time seemed to be the most important factor with 45% of candidates respondents citing a lack of time as and barrier to training.

Having looked at the results it was decided to schedule a urology session in the current curriculum of teaching for junior trainees. This was a one-hour power-point based lecture with the opportunity to ask questions. It focused mainly on urological emergencies and common ward problems as well as a small amount on urological malignancies and some basic urological practical skills such as catheterisation. Following this the attenders were asked to fill in a feedback form. There were 29 responses from the doctors attending the teaching. 83% of these felt they were better suited to dealing with urology patients presenting as an emergency, and 93% reported feeling that they would be more confident managing urology patients on a ward.

The trainees were asked whether they felt the teaching had been useful; 83% responded ‘very useful’ and 17% ‘a bit useful’. No-one rated the teaching as ‘neither useful or not useful’ or ‘not useful’.

The final follow up questionnaire showed that the benefits of the teaching session were durable with 83% of respondents reporting that at 4 months they could remember most of the teaching. The greatest benefit reported by our cohort was in the management of ward based patients with urology problems with 67% reporting they were ‘a little more capable’ and 33% reporting they were ‘a lot more capable’ in the management of these patients. The reported benefits for the management of emergency urology appear to be more modest with 50% now reporting they could manage most urological emergencies.
Discussion

Foundation year doctors in the UK normally rotate through six different rotations during the two years. They must cover some surgery, and this may include either a urology job or cross cover of urology patients within their on-call responsibilities. Medical students rotate through specialities but there is no compulsory urology rotation in the curriculum. This has decreased exposure to and interest in urology as reported by Elsaigh et al. They showed that on a grading scale of 1-10 1357 medical students reported an average of 1.78 exposure to urology (Elsaigh, 2013). Although on a much smaller scale, the answers we received backs up this view, as responders showed that only 12.5% of them had received enough urology exposure as an undergraduate. Worryingly this didn’t seem to improve as students graduate to doctors.

Foundation year doctors have designated teaching time, which should cover a wide range of specialities. In the curriculum however, there is no specific guidance on what should be taught and there are no specifics to which specialities need to be highlighted. The curriculum does state that foundation year doctors should be competent in male and female catheterisation, but this is the only reference to urology in the foundation program. In our study only 8% felt they had received enough postgraduate training, leaving 58% feeling underprepared for seeing urology patients on the ward or on call. This was then brought to the attention of the Director of Medical Education who agreed that a urology teaching session should be arranged.

The study also raises another interesting point, that in an educational age where there seems to be a trend toward simulation-based training (Okuda, 2009; Aggarwal, 2010), the trainees felt that the best way to receive urology teaching was in lecture based formats, rather than ward based or problem based learning. This may be due to time constraints as although ward based teaching is often considered very useful, finding appropriate patients to cover a wide range of conditions is often time consuming and dependent on patient flow at the time. It may also be due to the location of the study. Carried out in Cheshire many of the junior doctors will have been through the problem based learning course at the University of Liverpool, and may feel that knowledge of the basic science underpinning urology is inferior to doctors who had more lecture based undergraduate education (Prince, 2003; Glew 2003). This could have led to a preference for more traditional lecture based teaching. Also, although excellent for more advanced urology specific procedures such as urinary catheterisation, simulation based training doesn’t give the basic knowledge of how to diagnose and treat acute urology problems.

Conclusion

In conclusion, urology, whether it be in the form of acute surgical admissions, or problems with catheterising a patient or reducing a paraphimosis on a medical ward is omnipresent in the life of a junior doctor. They are often the first port of call for such problems, and giving them the knowledge, skills and confidence to manage these patients safely is an essential part of foundation year training. We have shown that even simple and cheap interventions such as a single lecture, doctors’ confidence in dealing with these problems can be greatly increased, with 83% saying they were more equipped to deal with urological patients following teaching. It also shows that with basic science knowledge from undergraduate training, a small dose of urology education in post-graduate training can improve patient care. Such a programme has the potential to be rolled out Deanery-wide and shared with all foundation
and core trainees.

**Take Home Messages**

Urological problems are common reasons for admission to hospital. Junior doctors are often asked to deal with urological problems in patients admitted under other teams. This study shows that junior doctors themselves identified significant learning needs in urology. These learning needs can be met by the introduction of a targeted tutorial that can be incorporated into existing study days.

**Notes On Contributors**

Margaret Lyttle is a final year registrar in Urology in West Sector Health Education North West, UK. Margaret has a strong interest in Medical Education and attended the ESME course at AMEE conference in Barcelona 2016 where this study was presented as a poster.

Richard Jones is a Urology themed Core Surgical Trainee in West Sector Health Education North West, UK.

Rono Mukherjee is a consultant Urological Surgeon with a sub-speciality interest in Stone disease. He is clinical lead for Urology at Mid Cheshire NHS Foundation Trust, where this study was carried out. He combines his clinical and managerial commitments with being Assigned Educational Supervisor and a Clinical Supervisor for trainees.

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Appendices

Declaration of Interest

The author has declared that there are no conflicts of interest.