conditions such as men with LUTS. The implementation of ANP-led LUTS clinics can reduce waiting time from GP referral and the need for urology out-patient attendance.

**Methods:** New patients were triaged by consultant urologists using agreed OSPIP criteria and key performance indicators. An extensive review of long waiting time patients was undertaken by a consultant urologist and appropriate patients were also triaged for review in the ANP-led clinic. The aim was to manage as many as possible “virtually” using IPSS and proforma questionnaires using an electronic database.

**Results:** 596 patients were reviewed via telephone assessment over six months. After the initial assessment, (389) 65% were discharged following lifestyle advice/education. 135 (22.5%) required lifestyle review or pharmacological modification. For 51 (8.5%) patients, a physical assessment was necessary. 21 (3.5%) were referred back to urology for various reasons (raised PSA, frank haematuria, need for flexible cystoscopy).

**Conclusion:** During the Covid era, introduction of an ANP-led male LUTS clinic has dramatically reduced the numbers initial and return attendance to urology outpatient clinics. Further work will be carried out in relation to patient satisfaction, GP education and expanding the ANP workforce.

**References**

**Abstract 14**
Mechanisms of promoting safer intrarenal pressure during flexible ureterorenoscopy

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**Introduction:** Elevated intrarenal pressure (IRP) during flexible ureterorenoscopy (FURS) is a predictor of postoperative complications. The aim of this study is to evaluate IRP during FURS in a porcine kidney model in order to determine the safest combination of irrigation device, ureteral access sheath (UAS) and irrigation system.

**Methods:** Urinary tracts were harvested from Landrace pigs slaughtered for the food chain. Two flexible ureteroscopes, 8.7Fr and 9.5Fr were evaluated. Irrigation systems evaluated included: TraxerFlow™ (Rocamed, France), SAPSTM single action pumping system (Boston Scientific, USA), Pathfinder Plus™ (Utah Medical, USA), and a manual “bag squeeze”. This experiment was conducted with no UAS, followed by an 11/13Fr UAS and then a 12/14Fr UAS. IRPs were measured in the prepared porcine kidney during all possible combinations of scope, UAS and irrigation system.

**Results:** Pressures were significantly reduced when using 12/14Fr UAS compared to 11/13Fr UAS (p = 0.006) and when using 11/13Fr UAS compared to no UAS (p = 0.02). Pressures were significantly reduced with the 8.7Fr scope compared to the 9.5Fr scope (p = 0.001). SAPSTM generates significantly greater IRP than TraxerFlow™, Pathfinder Plus™ and a “bag squeeze” (p < 0.05). The most dangerous combination was using the SAPSTM, no UAS and larger ureteroscope leading to an IRP of 100.6 ± 16.1 cmH20. The safest combination was using Pathfinder Plus™ with a 12/14Fr UAS and smaller ureteroscope giving an IRP of 11.6 ± 3.65 cmH20.

**Conclusion:** In order to maintain safe IRPs during FURS urologists should use large UAS, narrow ureteroscopes and be cautious in selection of an irrigation device.

**Abstract 15**
Development of a 3D-printed biodegradable sling for stress urinary incontinence surgery

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**Introduction:** The aim of this study is to design a biodegradable synthetic sling fabricated using 3D printed polycaprolactone (PCL) to be used for stress urinary incontinence (SUI) surgery and compare it to existing products.

**Methods:** PCL meshes were 3D printed using a fused deposition modelling (FDM) printer. A PCL-collagen composite scaffold was also fabricated for evaluation. Uniaxial tensiometry was performed to mechanically compare the candidate scaffolds with commercially available polypropylene (PP) mesh (Gyncare TVT™ Exact®) and acellular porcine dermal collagen (Pelvicol™). Murine mesenchymal stem cells (MSCs) were seeded onto PCL and PCL-collagen scaffolds and interval assessments of cell viability were performed.

**Results:** The PCL scaffold was significantly less stiff than PP (elastic modulus: 0.02 ± 0.01 MPa versus 0.06 ± 0.01 MPa, p = 0.0006) and Pelvicol™ (elastic modulus: 0.02 ± 0.01 MPa versus 0.13 ± 0.01 MPa, p < 0.0001). PCL also had an ultimate tensile strength closest to that of healthy native pelvic floor tissue when compared to PP and Pelvicol™ (1.52 ± 0.07 MPa versus 7.17 ± 0.25 MPa versus 5.47 ± 0.05 MPa). There was no difference between the PCL scaffolds and the PCL-collagen scaffolds in terms of mechanical properties. Viable cells were seen on PCL scaffolds at 28 days demonstrating that the new materials retained significant biological functionality.

**Conclusions:** The mechanical properties of PCL are more favourable for pelvic floor reconstructive surgery compared to PP and porcine collagen. In addition, PCL scaffolds provide good cellular biocompatibility indicating that PCL may integrate into tissues as it biodegrades.

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**Abstract 16**
The impact of COVID-19 on the management of renal colic including surgical interventions during the first wave of the pandemic

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**Introduction:** Management of renal colic has changed as a result of COVID-19, with an overall aim of reducing hospital admissions and preventing stone related morbidity. We aim to review how the treatment of acute renal colic has been affected by comparing similar times in 2019 to 2020.

**Methods:** A retrospective study of all new presentations of acute renal colic admissions during 01/04/2019–31/05/2019 were compared to 01/04/2020–31/05/2020, with data such as demographics of patients, clinical features, stone characteristics and treatment noted.

**Results:** 38 patients were admitted in 2019, compared to 40 in 2020. Urteric stones were commonly found in both years (79% in 2019 and 85% in 2020) than renal stones, with the majority of ureteric stones located distally.

The 2020 cohort saw more conservative management (25% vs 21%), as well as a decrease in emergency decompression (stent/nephrostomy)
with secondary intervention (uretrosopy (URS)/Percutaneous Nephrolithotomy (PCNL)) compared to 2019 (12.5%vs42%). There was also an increase in primary intervention (URS/PCNL) within 48 hours (42.5%vs23.8%) and 7 days (12.5%vs58%) during April to May 2020.

Conclusion: There is no doubt that COVID-19 has resulted in changes to acute stone management in order to avoid hospital stays and unnecessary surgeries by seeking conservative management. Earlier primary intervention was also more popular in order to minimise length of hospital stay as well as avoid morbidity and stent related complications. This showed an improved adherence to GIRFT guidance.

Abstract 17 Management of in-patient visible haematuria: A typical urology emergency with a high mortality

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Introduction: Visible haematuria (VH) is a familiar urological presentation in hospitals often requiring overnight admissions. There is a lack of consensus on managing VH as it differs from hospital to hospital. Our study’s objective was to review the in-hospital management patterns and 30-day outcomes of patients admitted with VH over a 1-year-period in a single-institution, aiming to clarify management for such cases in the future.

Methods: A retrospective cohort study was conducted on all patients admitted with VH in a single-institution over 1-year, excluding patients not requiring an overnight stay. A case note review was performed for patient demographics, VH investigations, and management.

Results: A total of 120 patients were admitted with VH over a span of 1-year. 89% (107/120) were males, with an average age of 78 years (36–97 years), an average ASA of 3, mean length-of-stay (LOS) was 5 days (1–31days) and 68% (82/120) had pre-existing urological conditions. 62% (74/120) required bladder irrigation for a mean duration of 3 days (1–16days). 10% (12/120) required an emergency cystoscopy washout to manage the bleeding, of which 4% (5/12) had malignancy noted. Over 8% (10/120) patients discharged had unplanned readmissions within 30 days. The 1-year mortality for this cohort was 23% (28/120) of which 21% (6/28) died within 30 days from discharge.

Conclusion: Inpatient VH affects a vulnerable patient cohort. There is no specific pathway guiding the inpatient management of VH; therefore, research is required to produce standardized pathways for managing VH, considering the high-risk patient cohort, the prolonged LOS, and high one-year mortality rate.

Abstract 18 Urol-1 Need: Evaluating the reception of a new urology m-learning app for medical students

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Introduction: The landscape of surgical education has been transformed recently, with a shift in paradigm from didactic lectures to e-learning, and more recently m-learning. Our aim was to develop a urology app for medical students to compliment traditional teaching whilst on urology rotation.

Methods: We developed a smartphone app called “Urology Med”. The app encompasses core urology topics subdivided into common urological presentations, examination, diseases, and devices. It also includes a checklist of “must-see” urology experiences, 5 interactive clinical cases, and 6 quizzes for self-assessment. Student’s reception of the app was elicited using post-rotation focus groups and questionnaires.

Results: Within one month of launch, the app was downloaded 435 times in 5 countries across 3 continents. Sixty students rotated through the urology department over a 6-month period. The questionnaire response rate was 93% (n = 56). All students (n = 56) rated the app 10/10 for user friendliness and believed the app met their clinical needs, with 87% of students (n = 49) stating that the content provided was appropriate for their level of study. Most (n = 54) used the app as an adjunct to traditional teaching, and 92% of students (n = 51) would like to see similar educational apps developed in other specialties. From the focus group discussion, it became apparent that the convenience of having a portable source of relevant urology content whilst on urology rotation was what students valued most about the app.

Conclusions: With the emergence of COVID 19, m-learning looks set to become even more important and it is clear that smartphone apps represent an increasingly significant clinical resource in surgical education.

Abstract 19 Complex urinary catheterisation on-call- How much time and money is wasted?

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Introduction: Complex urinary catheterisation is a common reason for urology consultation out of hours. Anecdotally, poorly stocked emergency urology equipment delays treatment on call. Our aim was to assess trainees’ access to specialist equipment and their perceived challenges with catheterisation on-call.

Methods: An electronic survey was distributed to urology trainees in Ireland (n = 48). The primary outcome was to assess difficulty locating specialist equipment (guidewires, dilators, SPC) and whether implementation of a pre-stocked “on-call Go-Bag” could improve efficiency out of hours. A secondary outcome was to assess trainees’ awareness of the cost of urology equipment.

Results: The response rate was 91.7% (n = 44). Forty trainees (90.4%) reported difficulty locating urology equipment on call, with an average time from arrival at the hospital to catheter insertion of over 30 minutes. Forty-one respondents (93.2%) believe time spent searching for emergency equipment led to a delay in treating patients, and 97.3% (n = 43) thought that locating urology equipment on call often takes longer than performing the procedure itself. Thirty-seven trainees (84.1%) admitted to storing urology equipment outside of the hospital to save time on call. Forty-two (95.4%) reported emergency equipment delays treatment on call. Our aim was to assess trainees’ access to specialist equipment and their perceived challenges with catheterisation on-call.

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Conclusions: Difficulty accessing specialist equipment on call for complex urinary catheterisation delays treatment. The introduction of an “on-call Go-Bag” would likely save time and money with less wastage of equipment.