1st Uroweek workshop in Ndola, Zambia

Dates of visit: 15th – 21st September 25

Workshop: TURPs and transperineal prostate biopsies

Team members: Nick Campain, Nish Bedi, Mike Ng and Rustam Karanjia

Background

Ndola Teaching hospital has 800 beds and acts as a tertiary referral centre for Urology across a very large area with two units of Urology, headed up by Dr. Mumba Chalwe. Following a successful scoping visit by Nick last year to Ndola Teaching hospital, an established online teaching programme and regular MDTs between the Zambia urology residents and Urolink helped plan and prepare for this visit. This included making a rough timetable for the week incorporating operating, teaching sessions, visits and meetings with hospital management and a list of patients who were available for the procedures. It was clear a phenomenal amount of work had gone into preparation, which also included a 2nd simultaneously running theatre for open cases.

The primary aims of the week were to deliver equipment and training to help establish a local service for transurethral prostate resection and local-anaesthetic transperineal prostate biopsies. Particular emphasis was placed on pre-operative diagnostics, using a flexible cystoscope and a mobile Bluetooth Clarius® transrectal ultrasound as adjuncts before TURP. We had also prepared multiple presentations on TURP (indications, workup, complications, bleeding etc), transperineal biopsies and other endoscopic procedures (TURBT etc) for the team which we would end up doing during any spare moment between cases. As the week progressed, these tools proved increasingly valuable in refining case selection, especially during this early learning curve. The Ndola team had also prepared several open cases, including transvesical prostatectomy and urethroplasties, for bidirectional learning which was fantastic. **A full operating list is included at the end of the report.**

Travel

Travel was overall really quite straightforward. Zambia no longer requires visas for UK citizens, even at the airport when arriving. Although there are no direct flights to Ndola, it can be easily reached in two flights in a variety of ways. Nish and I went via Johannesburg (11h) and then to Ndola (2h20) whereas Nick and Mike went via Adis Ababa (8h) then Ndola (4h). We managed to arrive within 30 minutes of each other and were picked up by Dr. Mumba Chalwe, the Urology lead, and her husband Simba. There were also plenty of taxi options. The team were so excited about us hitting the ground running that we were given a tour of the hospital, theatres, wards and introduced to the patients before even going to our hotels! Although bleary eyed at the time, it certainly paid dividends for the days after. The first two days would solely be focused on TURP and the final three on both resection and on prostate cancer.

Touchdown in Ndola!

Accommodation

We stayed at the Urban Hotel in Ndola. Strangely, the name and sign to the hotel changed midway through our stay! The road between the hospital and the hotel was under construction during our visit and precluded walking (about 20 minutes). Instead, we were picked up by a taxi organised by Dr. Chalwe in the morning and dropped back by the Zambian residents in the afternoon when the day had finished. The hotel was clean with excellent WiFi, food and very pretty surroundings. The road beyond the hotel provided a scenic and quiet route for an evening run, which was very safe.

The road to our hotel was fairly obliterated.

Food

Breakfast was served buffet style at the hotel with a wide variety of choices – fruit, cereals and pastries were staples, but various hot food was also available (chicken stir fry, onion rings and bacon were also on offer!) Although the choice of food was less predictable, it was all high quality. In the hospital, lunch was laid on for the team by the catering staff and was Nshima (a maize-based food, pictured) with various sides. You rolled this into a ball and ate it with your hands and it was always delicious. Dinner, due to our late finishes, would be at the hotel and was also excellent. The local beers included Castle Lager and the famous Mosi. Highlights of dinner included watching both Nick and Nish accidentally eat multiple Scotch bonnet chillis after mistaking them for tomatoes.

A classical Nshima lunch dish

What we brought

Being my first Urolink trip, I was sure that I would forget something extremely important but thankfully I surprised myself. Several sets of scrubs, a scrub cap and shoes came in very handy. A formal shirt and shoes were required for the post-operative board round. Between the four of us, we managed to collect a wide variety of expired medical disposables, most of which were related to TURPs / prostate biopsies. Further equipment that was in short supply and could have been helpful included bladder syringes, instillagel, silicone catheters (they had none at all) and irrigation tubing. Thankfully, most of the troubleshooting of equipment and shortfalls had been addressed in the pre-visit MDT meetings, which meant the week could start very smoothly. Otherwise, antimalarials and the usual things were all that was required.

Workshop background

The burden of both benign and malignant prostatic disease in Zambia is high. Being a tertiary referral centre, the catchment area is extremely large, serving approximately 3 million people, with a multitude of languages of which the main ones are English, Bemba and Nyanja. It is not uncommon for patients to travel hundreds of kilometers for treatment. This includes patients requiring regular catheter changes, which are fortnightly, as only Latex catheters are available.

In Ndola, the only BPH procedure offered prior to this workshop was transvesical prostatectomy (Freyer's), with patients staying on average 5 days post op with a drain before going home and then coming back for TWOC at 2 weeks. The procedure is however contraindicated in patients with known or suspected prostate cancer, leaving many men catheter dependent indefinitely.

Diagnosis of prostate cancer in Sub Saharan Africa is typically late (>45% patients have T4 disease at diagnosis) with the majority presenting with metastatic symptoms. This is thought to be due to many factors, including a lack of awareness, as well as the taboo nature of discussing anything to do with reproductive organs (there is no word for prostate in Bemba)! Interestingly, many Zambian men subsequently do not know if they have a family history of prostate cancer as it is not something patients generally talk about with their children. PSA tests are not routinely offered and cost about £5 (the average monthly salary is £110). Anecdotally, the team felt there was often significant variation between labs, and on occasions when we were present patients only had qualitative results (ie low risk) rather than a numerical one.

Currently, and unfortunately, histological diagnosis of prostate cancer is required by insurance companies for treatment (excluding surgical ADT), meaning frail or even unfit patients must undergo biopsies to get treatment. These are typically performed finger guided, or very occasionally under ultrasound guidance transrectally. Therefore, the potential benefits of establishing a TURP and local anaesthetic transperineal prostate biopsy service include:

- Reducing morbidity, length of stay and catheter dwell time for patients suffering with suspected BPH compared to transvesical prostatectomy
- Providing a surgical option for patients with prostate cancer who have LUTS or are catheter dependent despite ADT
- Allowing for improved accuracy of prostate sampling and reduced risk of post biopsy sepsis, all whilst being performed in an outpatient setting

Day 1

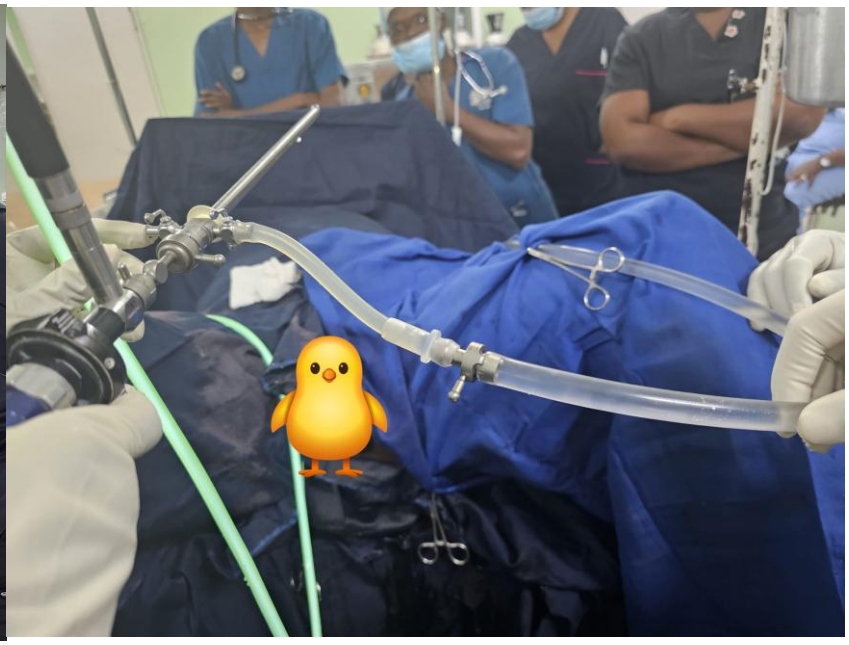
We had a planned start for 8am on Monday but a late pickup from the taxi at the hotel meant we started slightly later. We were introduced to Dr. Banda, the Senior Medical Superintendent, and the week's aims were outlined before going up to theatres. After several excellent talks from Mike regarding the different steps for performing TURP, it was time to scrub for the 1st case.

Mike taking the team through TURP techniques and getting familiar with the equipment

In Ndola, all patients aged ≥15 had a spinal anaesthetic (a single bolus of lidocaine intra-thecally) before being positioned in lithotomy. Anaesthetists often worked between several theatres at any one time, meaning there was no anaesthetic support for long lengths of time intraoperatively.

To empower team members and improve efficiency, the registrars and residents were all given roles during TURP including equipment monitoring, irrigation duty, resection timer, operating surgeon and scrub assistant. From our point of view, it was fascinating to see the patient setup,

positioning and non-technical skills associated with the operating theatre that were so different to the NHS. It was also brilliant to see the team adapting and problem-solving equipment issues as well as using a slightly bizarre arrangement of irrigation tubing, a custom welded irrigation bin, Ellick tubing and metal adaptors to make an effective irrigation delivery system! 5% or 10% dextrose was used as irrigating fluid as 1.5% glycine was not available. These only came in 500ml bottles and generated a lot of plastic. Equipment, including disposables, was sterilised in Cidex in between cases. Resections were all limited to 45 minutes to reduce TUR syndrome risk.

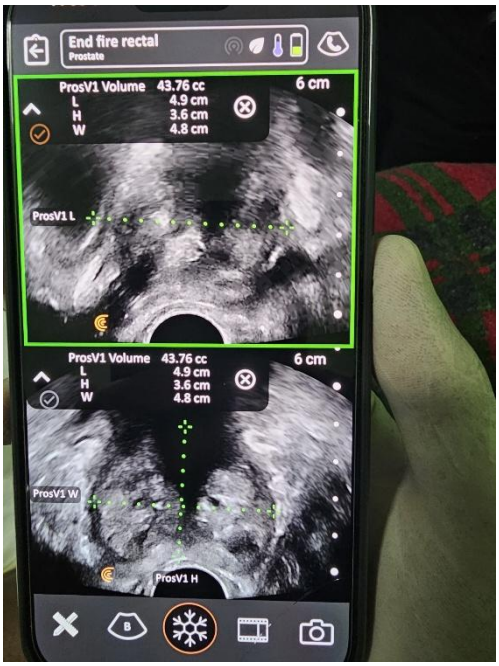


Left: Two metal drums were welded together and autoclaved to provide a large sterile vessel for irrigation.

Right: tubing sizes were quite different but a combination of Ellick adaptors and thinner tubing meant we got there in the end without much leakage!

Although most patients had had a prior transabdominal ultrasound to assess prostate volume, a routine TRUS was completed with the mobile scanner to assess anatomy for all patients, and a flexible cystoscopy was performed if haematuria or if bladder stones were suspected.

These, along with clinical history, helped select which patients would be better served with traditional open prostatectomy/stone removal rather than endoscopic treatment. It changed management for approximately 50% of patients, highlighting to the team its major importance in workup prior to TURP.

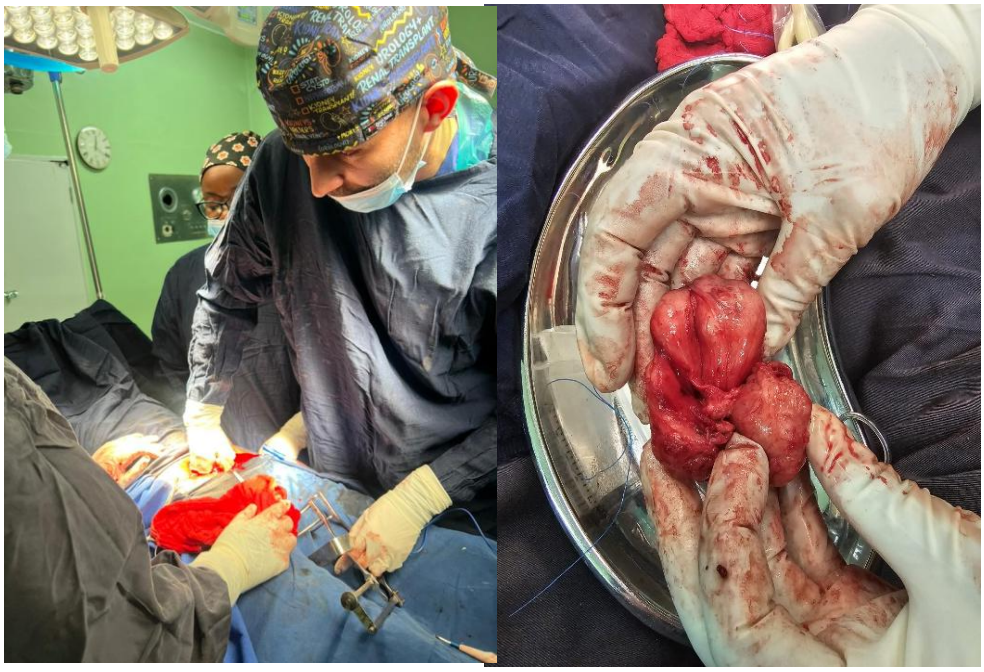


A pre-operative TRUS using the Clarius® ultrasound probe demonstrating a 44cc prostate – an excellent size during early learning of TURP.

Our 1st patient had failed medical treatment for BPH (which includes those who can no longer afford tamsulosin and/or finasteride). His prostate volume was 63cc, with a large intravesical median lobe. Despite some faulty diathermy and poor views, a good channel was made by Mumba and Nish by resecting the median lobe alone. The faulty diathermy allowed for demonstrating effective team working and troubleshooting, something that would come in very handy over the week! The 2nd TURP that day was for failed TWOC and was a much smaller size, 43cc, allowing for better teaching and full resection, including implementing non-technical teamworking skills and a pre-operative checklist.

Nish Bedi remaining calm as the monopolar diathermy cut out regularly on the 1st day!

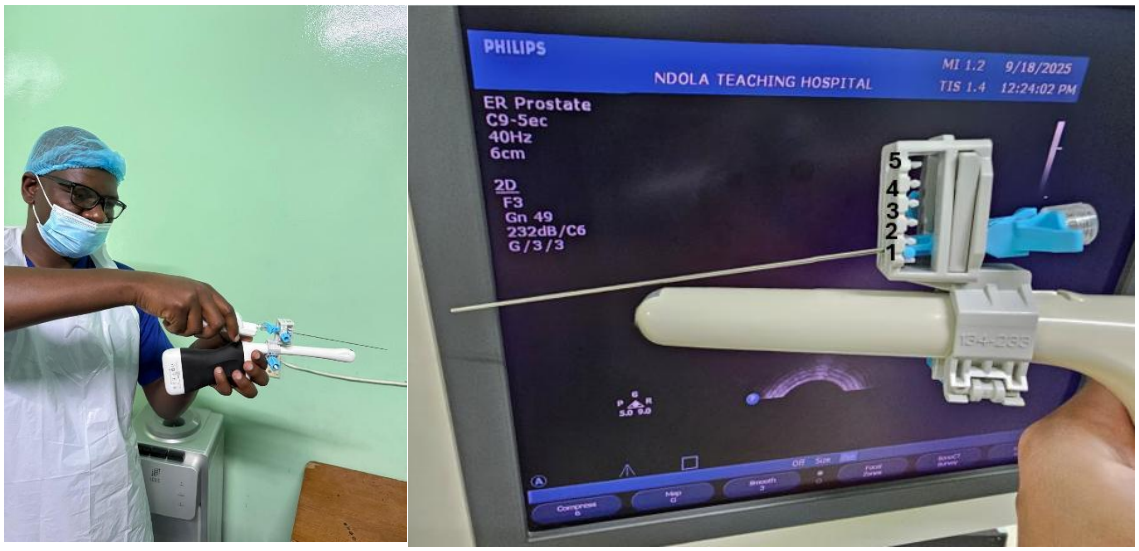
In the Open theatre, Mike and I watched an anastomotic urethroplasty in between endoscopic cases and assisted with our first ever TVPs. This was an incredible opportunity to see operations less commonly seen in the UK as well as demonstrate the bidirectional nature of learning on offer for UK residents.



A Freyer's prostatectomy for a big prostate with large intra-vesical median lobe. The anterior commissure is broken with the index finger and released from the capsule in a sweeping motion.

Day 2

The engineers had identified and fixed the issues with the pedals, allowing for a completely functional TURP set, which would remain that way for the remainder of the trip! The day started with further teaching sessions on managing the complications of TURP as well as highlighting the importance of patient selection. Currently, the lack of an outpatient urology department limits pre-operative assessment but a potential space in the outpatient Eye department is hoped to become a Urological investigations Unit in the future. Meanwhile, several other SIM sessions on using transrectal ultrasound for measuring prostate volume and performing TP biopsy were ongoing.

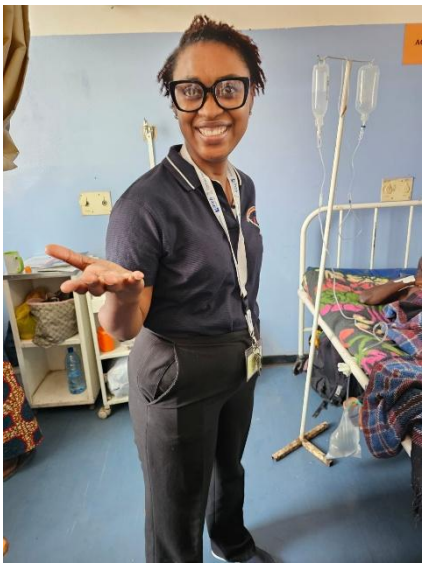


Makani demonstrating how to adjust the Pivot pro to allow transperineal needle visualisation after firing using an end on probe.

The first endoscopic case that day was a 28yo with an enormous pelvic mass, 10x9x8cm size, which was indenting the bladder. A private MRI (about £100 or a month's salary) suspected this to be of prostate origin, or possibly a sarcoma. Previous biopsies were inconclusive. A flexible cystoscopy showed no bladder involvement and allowed an opportunity to perform the 1st TP biopsy with a large target. Although the only transrectal ultrasound probe was end fire, with some modifications using a Pivot Pro, it could be adjusted to see the needle when entering transperineally in the longitudinal axis (Photo). Multiple cores were taken under spinal anaesthetic by the team, which was a great result.

Annie and the team performing a transrectal prostate volume for a gentleman prior to prostate biopsy.

Two further TURPs were performed that day as well as two further transvesical prostatectomies. On the board round, the previous TURP patients were seen and TWOC'd on day one, a stark contrast to those who underwent TVP. Dr. Chalwe's first solo TURP had crystal clear urine post op, much to her delight (**pictured**). Sadly, they can't all be like that! Often patients were kept an extra day or two as many lived far from the hospital and would otherwise have had to make their own way home using public transport.



Days 3 – 4

The cases booked on these days included channel TURPs, bladder stones and prostate biopsies. The team at this point had really improved their management of both the equipment and use of checklists, which was excellent to see as well as their skills using the TRUS for prostate volume measurement and flexible cystoscopy. These had on multiple occasions helped change management by assessing prostate size before starting, as well as evaluating the size of any bladder stones to determine whether they could be removed endoscopically. By this time, several of the residents were getting hands on with resection and ultrasound measurements largely without much help. Dr. Chalwe performed two TP prostate biopsies back-to-back, both excellently, with careful specimen collection from the scrub team to highlight just how far all had come. In the open theatre, a 6yo child underwent a circumcision due to his mother's concern regarding difficulty retracting his foreskin. On examination, he had

some glandular adhesions only, which we would normally release either in clinic or under a short sedation, but his mother was still adamant she would prefer circumcision. This was performed under a (rare) general anaesthetic using a straight clamp, diathermy and simple sutures. The cosmetic result was, to my surprise, quite good considering it took only 5 minutes. Although I'm not sure it would look quite so good on a BXO phimosis!

Mumba Chalwe mastering transperineal prostate biopsies under local anaesthetic.

In an unexpected twist later that afternoon, the Provincial Health Director of the Copperbelt Dr. Mwinuna (junior only to the Health minister of Zambia) came with Dr. Banda in a surprise visit to see the team. Nick managed to make the local news talking about TURPs and the special relationship between Ndola and Urolink. A natural politician in the making.

The Ndola Urology team with Senior Medical Superintendent Dr. Banda and Dr. Mwinuna the Provincial Health Director of Ndola and Copperbelt

A post operative board round on Day 4 yielded two further successful TWOCs for men who had been catheter dependent for 5 and 6 years respectively. During this time, they had undergone 125 and 150 catheter changes each, travelling long distances every two weeks. Both were understandably enormously grateful, and this put into sharp focus the enormous benefit these operations can bring to people's lives.

Day 5

On the final day (planned finish of 12pm), just one TP biopsy was performed and although there was a 2nd biopsy planned, after discussion we decided to cancel this. On further review, he had had two prior negative biopsies in the last 3 years, both of which times his PSA was higher, and we agreed this was unlikely to be helpful. Another example of discussion and case selection resulting in a positive outcome for patients! The remainder of our time focused around a talk / debate about prostate cancer in Zambia. What started out as a teaching session quickly turned into a discussion regarding the barriers to PSA testing, understanding of the

disease and the stigma associated with discussing anything to do with prostates, as it is considered highly rude. For this reason, clinic appointments can often take a long time for residents to explain to patients about LUTS and prostate cancer. Opinions differed hugely as well: when residents were quizzed about PSA testing, there was a 50:50 split about whether they would recommend their father to take one. The debate really highlighted the inherent difficulties Zambia and Sub Saharan Africa need to overcome if they are to improve outcomes and earlier diagnosis.

After a final meeting with the hospital management and donation of many pieces of kit, the last afternoon and evening was spent having enormous fun on safari at Baluba game resort and later at the local bar with the team, who had really opened up over the course of the week. The night descended and it was lucky that the hotel was within walking distance!

Baluba Game resort and safari

Summary

The four of us all agreed that this was a hugely successful trip. It is a glowing example of how clear preparation on both the Ndola and Urolink side helped anticipate equipment and logistical problems to hit the ground running. More than this, we were phenomenally impressed with the attitude of not just the consultants and registrars, but also the interns, to learn and develop their operative and non-technical skills. Allowing for unavoidable inefficiencies, it was hard to think on areas to improve. Going forward, we hope to continue this link for many years to come. We have also explained the importance of data collection, auditing and research in demonstrating this improvement for senior management as well as for patients. We hope that this can be presented at BAUS sometime in the future, not least so we can return the favour of hosting us! We have provisionally planned a webinar in 6-8 weeks to get an update on the trip and to find out about the outcomes of the patients who underwent TURP and prostate biopsies. We also hope to see how things are going and how we can support going forward in the next few months.

Impact on my own practice

It sometimes takes going to a resource poor setting to remind you just how lucky we are within the NHS. Broadly speaking, patients in the UK get equal care and to a good standard. In Ndola, most treatment requires self-funding or insurance meaning there are often barriers to healthcare for the poorest and leaves clinicians having to make challenging decisions or turn patients away, something we never have to stomach. Despite this, and the significant resource constraints, the resourcefulness of the team was pretty inspiring to get around these obstacles. On top of this, many of the doctors have 2nd jobs to help make ends meet. Coming back to the UK, I have felt an immense sense of gratitude that I don't have to undertake any of these difficulties. I have also found I have subconsciously been trying to avoid opening extra equipment to avoid waste! Finally, I have found myself enjoying work more: a pause from the

chaos of NHS, and seeing the carefree nature of the team in Ndola has really helped sharpen my perspective and be a helpful reset; something that the rest of the team have all expressed as well.

Personal reflections

Despite always wanting to be a part of Urolink, I wasn't sure how I could be helpful or what expertise I could offer, and therefore always found a reason not to get involved. I think this is probably the best thing I have done in my training – the experience has been a hugely rewarding one and the teaching has been completely bidirectional. We all gained an enormous amount from the week. Beyond the many open cases, it provided opportunities to rotate during teaching of the doctors, take part in additional teaching sessions, and address areas that might otherwise have been overlooked, particularly the non-technical aspects. I will always be extremely grateful to the Ndola team and the Urolink team for the experience as well as TUF, who's generous Fellowship made it financially possible for me. And to anyone who's considering a TUF fellowship, please don't hesitate. You won't regret it!

Theatre lists

UROLOGY WEEK .

THEATRE MONDAY OT LIST-(15.09.25)

S/N	Name	Sex/ age	Ward	Indication	Procedure	Prostate size	Remarks	OT	STAFF (S, A, EQ, R)	Findings
1.	[redacted]	M/65	MFPW	BPH failed medical treatment, h/o urosepsis, -ve Prostate biopsy x2	TRUS Vol, flexi +/ TVP	Median lobe, 63gr	FBC,group and save ,CXR,ECG	T4	MCK, ML,LN, AM	Median lobe resection
2.		M/31	MSW	USD- ?posterior urethra	ante+ posterior cystoscopy + Urethroplasty	N/a	FBC,group and save ,CXR,ECG	T5	BC, NC, NN, MN	EPA done single stage
3		M/53	MSW	BPH failed medical treatment	TURP	43gr	FBC,group and save ,CXR,ECG	T4	MCK, ML,LN, AM	Medianlobe and lateral Chanels
4.		M/67	MSW	BPH failed medical treatment	TURP	N/A	FBC,group and save ,CXR,ECG	T4		**POSTPONED**
5.		M/68	MSW	BPH failed medical treatment + Hematuria	Abu scope, Trus vol + TURP	Median lobe, 80 gr	FBC,group and save ,CXR,ECG	T4	CM, LN	TVP
6		M/65	MSW	BPH failed medical treatment	TVP		FBC,group and save ,CXR,ECG	T5	HM/NN/NB	Enucleated

THEATRE TUESDAY OT LIST-(16.09.25)

S/N	Name	Sex/ age	Ward	Indication	Procedure	Prostate size	Remarks	OT	STAFF (S, A, EQ, R)	Findings
1	[redacted]	M/28	MOW	Pelvic Mass on MRI / CT. symptomatic	Cystoscope +/- biopsy	N/A	6.75/9.8/268 O+ ,CXR,ECG	T4	BC,RK, ML	10cm pelvic mass
2		M/77	MOW	BPH failed medical treatment	TVP	122gr	6.46/14.2/303 A+ ,CXR,ECG	T5	CM, KM, RK	Prostate removed, post op desaturation
3		M/ 67	MSW	BPH with failed medical treatment	TURP	30gr	Fbc, group and save . CXR, ECG	T4	MCK,BC, NC	Avascular small prostate
4		M/73	MOW	BPH failed medical treatment	TURP	60gr	7.46/12.3/198 B+ CXR,ECG	T4	NL, BC, NB	Vascular prostate , Median lobe
5		M/65	MOW	BPE with failed medical treatment, Purple urine bag syndrome	TVP	86gr	4.79/12.6/176 B+ ,CXR,ECG	T5	CM, RK, KM	Previous SPC, moderate adhesions

THEATRE WEDNESDAY OT LIST-(17.09.25)

S/N	Name	Sex/ age	Ward	Indication	Procedure	Remarks	Prostate size	OT	STAFF (S, A, EQ, R)	Findings
1	[redacted]	M/70	MOW	BOO in mPCa	Chanel TURP	FBC, CXR	46gr	T4	MCK, ML, HM, NB	post surgical ADT on cathether, failed TWOCx 2
2		M/86	Mow	BPH with suspected prostate ca	Transperineal guided prostate biopsy	Fbc, Group and save, CXR	-	T5	MCK, NB, RK	Hard cT4 , 6 cores taken
3		M/81	MOW	BOO secondary to mPCa	Chanel TURP	FBC, Goup and save, CXR, ECG	84grm	T4	BC, NL, NC, AM, NN	post surgical ADT on Arbiterone

THEATRE THURSDAY OT LIST-(18.09.25)

S/N	Name	Sex/ age	Ward	Indication	Procedure	Remarks	Prostate size	OT	STAFF (S, A, EQ, R)	Findings
1	[redacted]	M/70	MOW	BOO in mPCa: post surgical ADT on cathether, failed TWOCx 2	Cystolitholapaxy, Chanel TURP	FBC, CXR	46gr	T4	MCK, ML, RK	Encrusted catheter piece, large lateral lobes of prostate
2		M/70	MOW	Bladder stone in Prostate CA	Cystolitholapaxy	Fbc, Group and save, CXR	Confirmed metastatic Pca	T5	NN, ML, NC	Soft stone crushed with stone crusher
3		M/52	MOW	Hematuria with raised PSA	TP biopsy, flexi scope	FBC	PSA 52ng/ml	T5	MCK, BC ,NB, RK	Clear bladder , flat prostate
4		M/65	MFPW	BPH with bladder stone	TVP	Fbc, Group and save, CXR	120 gr	T5	HM, CM, NB, MN	120gr prostate, small bladder stone
5		M/65	MOW	Raised PSA, Negative blind Bx	TP biopsy	FBC	-	T5	MCK, BC ,NB, RK	8 cores taken

THEATRE FRIDAY OT LIST-(19.09.25)

S/N	Name	Sex/ age	Ward	Indication	Procedure	Remarks	OT	STAFF (S, A, EQ, R)	Findings
1	[redacted]	M/62	MSW	Raised PSA	Transperineal guided prostate biopsy	FBC	T5	MCK, ML, HM, NB	8 cores taken, huge prostate
2		M/	MSW	Raised PSA	Transperineal guided prostate biopsy	FBC	T5	MCK, NB, RK	Benign prostate

TOTALS: 25 PATIENTS IN CLINIC, 20 THETARE CASES DONE

LEGEND: S- surgeon A -assistant Eq- equipment R-runner

MCK- DR CHALWE HM- DR MUNKASU NC- DR CAMPAIN RK- DR KARANJIA

ML DR LUNGU NN- DR NSHINKA NB- DR BEDI MN- DR MIKE

LN- DR NTAMBO BC- DR CHIPILI DN- DR NYANTA