Cureus
Part of SPRINGER NATURE

Open Access Original Article

A Dedicated Lower Urinary Tract Symptoms Clinic Compared With Routine Urology Clinics: Outpatient Efficiency and Clinical Decision-Making in a Retrospective Service Evaluation

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Review began 10/17/2026
Review ended 11/15/2026
Published 11/19/2026

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DOI: 10.7759/cureus.119930

Abstract

Background and objective

Men referred with lower urinary tract symptoms (LUTS) may require multiple investigations and outpatient attendances before a definitive management plan is established. Dedicated LUTS clinics incorporating structured assessment and relevant investigations at the initial consultation may streamline this pathway. The objective of this study is to compare outpatient efficiency and clinical decision-making between a dedicated male LUTS clinic and routine general urology clinics.

Methods

A retrospective comparative service evaluation was conducted at Countess of Chester Hospital NHS Foundation Trust, Chester, UK. Consecutive adult men referred from primary care for face-to-face assessment of LUTS alone were included. Sixty-two patients attending the dedicated LUTS clinic were compared with 78 patients attending routine urology clinics. Completion of the International Prostate Symptom Score (IPSS), uroflowmetry, and post-void residual (PVR) assessment at the initial consultation was evaluated, together with subsequent investigation, additional outpatient follow-up, discharge, medication modification, and listing for a procedure.

Results

IPSS assessment was completed more frequently in the dedicated clinic than in routine clinics (71.0% vs 30.8%; RR 2.31, 95% CI 1.59-3.34; $p < 0.001$), as were uroflowmetry and PVR assessment (79.0% vs 52.6% for each; RR 1.50, 95% CI 1.17-1.92; $p = 0.001$). Fewer patients required further investigation (25.8% vs 52.6%; RR 0.49, 95% CI 0.31-0.79; $p = 0.001$) or additional outpatient follow-up (24.2% vs 62.8%; RR 0.39, 95% CI 0.24-0.62; $p < 0.001$). Patients attending the dedicated clinic were more frequently listed for a procedure at the initial consultation (43.5% vs 14.1%; RR 3.09, 95% CI 1.67-5.72; $p < 0.001$). Discharge was numerically higher in the dedicated clinic (32.3% vs 23.1%; RR 1.40, 95% CI 0.81-2.40; $p = 0.225$), although the difference was not statistically significant.

Conclusion

A dedicated, structured LUTS clinic was associated with fewer subsequent investigations and follow-up appointments and more frequent definitive management decisions at the initial consultation. This model may improve outpatient pathway efficiency and facilitate earlier clinical decision-making.

Categories: Urology, Quality Improvement
Keywords: clinical decision-making, lower urinary tract symptoms, one-stop clinic, outpatient care, service evaluation, urology

Introduction

Lower urinary tract symptoms (LUTS) are common among ageing men. Approximately one-third of men experience moderate-to-severe LUTS, with prevalence increasing progressively with advancing age [1]. Beyond their high prevalence, LUTS are associated with substantial impairment in quality of life and place an increasing burden on healthcare services [2]. Male LUTS are multifactorial, although benign prostatic enlargement (BPE) and associated bladder outlet obstruction represent important causes in ageing men [3].

At specialist assessment, current national and international guidelines advocate a structured diagnostic approach for men presenting with LUTS. Recommended assessment includes a detailed medical history, physical examination, urinalysis, symptom assessment using the International Prostate Symptom Score (IPSS), uroflowmetry, and measurement of post-void residual urine (PVR) [4,5]. Assessment of prostate size using ultrasonography may further inform treatment selection, particularly when surgical intervention is

being considered [5].

Despite these recommendations, comprehensive assessment during the initial outpatient consultation is not always achievable in routine urology practice. Limited availability of diagnostic investigations at the point of consultation may delay clinical decision-making, resulting in additional investigations and repeat outpatient appointments before a definitive management plan can be established [6].

Dedicated or "one-stop" LUTS clinics aim to address these limitations by providing structured assessment and relevant investigations during a single attendance. Such pathways may reduce repeat outpatient appointments and facilitate earlier clinical decision-making [7]. However, comparative evidence evaluating dedicated male LUTS clinics against routine urology outpatient care remains limited.

At the Countess of Chester Hospital NHS Foundation Trust, a dedicated LUTS clinic was established incorporating IPSS assessment, uroflowmetry, PVR, and transrectal ultrasound (TRUS) prostate volume estimation. The aim of this study was to compare outpatient efficiency and clinical decision-making between the dedicated LUTS clinic and routine urology clinics, specifically examining requirements for additional investigations, discharge and follow-up rates, and progression to surgical management.

This article was previously presented as a meeting abstract at the Norman Gibbon Annual Urology Meeting on April 17, 2026.

Materials And Methods

Study design and setting

This retrospective comparative service evaluation was conducted within the Urology Department at Countess of Chester Hospital NHS Foundation Trust. A dedicated male LUTS clinic was introduced in June 2023 and operated on a fortnightly basis. The dedicated clinic was consultant-led and provided a structured assessment pathway for men referred with LUTS. Routine general urology clinics were delivered by consultants, urology registrars, and speciality doctors and accommodated patients presenting with a broad range of urological conditions, including both new referrals and follow-up patients.

In routine urology clinics, IPSS assessment and uroflowmetry were available; however, patients were not consistently instructed to attend with a full bladder, and TRUS assessment of prostate volume was not routinely available. In the dedicated LUTS clinic, patients underwent a structured assessment incorporating IPSS, uroflowmetry, PVR measurement, and TRUS assessment of prostate volume during the same visit when clinically indicated.

Patient selection

Eligible patients were consecutive adult men aged 18 years or older referred directly from primary care for face-to-face assessment of LUTS alone. We excluded telephone consultations, referrals from other secondary care specialties, and referrals that included additional urological symptoms requiring separate diagnostic evaluation, such as haematuria (visible or non-visible) or haematospermia. Men with known prostate or bladder cancer who had received radiotherapy were also excluded. Follow-up patients and those referred for other urological indications were excluded. Patients in whom the initial consultation identified a need for investigation of suspected urological cancer were excluded from the final analysis.

For the dedicated LUTS clinic cohort, all clinic lists from the introduction of the service in June 2023 to February 2024 were retrospectively reviewed. A total of 82 patient records were screened, of which 20 were excluded according to the eligibility criteria, leaving 62 patients for the final analysis.

For the comparator cohort, routine general urology clinic lists were retrospectively reviewed from June to December 2023, corresponding to the period following introduction of the dedicated LUTS clinic. A total of 674 patient records were screened, of which 596 were excluded according to the eligibility criteria, leaving 78 patients for the final analysis. The high proportion of exclusions in the routine clinic cohort reflects screening of general urology clinic lists, which included follow-up patients and patients attending for a wide range of urological conditions rather than LUTS alone. The different sampling periods reflected the greater frequency of routine general urology clinics compared with the fortnightly dedicated LUTS clinic.

Data collection

Electronic clinical records were retrospectively reviewed for all included patients. Baseline and pre-referral data collected included age, LUTS-directed medication prescribed in primary care, and whether digital rectal examination (DRE), prostate-specific antigen (PSA) testing, and renal tract ultrasound had been performed prior to urology assessment. LUTS-directed medications included alpha-blockers, 5-alpha-reductase inhibitors (5-ARIs), anticholinergic agents, and beta-3 adrenergic agonists.

At the initial urology consultation, completion of key LUTS assessment measures was recorded, including

IPSS assessment, uroflowmetry, and PVR measurement.

Management following the initial consultation was recorded, including initiation or modification of LUTS-directed medication, requirement for further investigation, requirement for additional outpatient follow-up, discharge from secondary care, and listing for surgical intervention. Discharge, listing for procedure, and additional outpatient follow-up were treated as mutually exclusive outcomes, while medication modification and further investigation could occur alongside any of these. Additional outpatient follow-up was defined as a further clinic appointment required for ongoing assessment or management of LUTS following the initial consultation, excluding routine postoperative follow-up.

Further investigations included flexible cystoscopy, renal tract ultrasound, uroflowmetry with PVR assessment within the urology unit, and urodynamic studies.

Process measures and clinical outcomes

Process measures included the proportions of patients in whom IPSS, uroflowmetry, and PVR assessment were completed at the initial urology consultation.

Clinical outcomes included the proportions of patients requiring further investigation, requiring additional outpatient follow-up, being discharged from secondary care, and being listed for surgical intervention following the initial consultation. Initiation or modification of LUTS-directed medication was recorded as an additional management measure.

Statistical analysis

Age was summarised as median with interquartile range (IQR) and compared between groups using the Mann-Whitney U test. Categorical variables were reported as frequencies and percentages and compared using Pearson's chi-squared test or Fisher's exact test, as appropriate. The corresponding test statistics (U or χ^2) and p-values were reported, with degrees of freedom provided for chi-squared tests. For key binary outcomes, relative risks (RRs) with 95% confidence intervals (CIs) were calculated where appropriate. All tests were two-sided, with $p < 0.05$ considered statistically significant.

Results

A total of 140 men were included, comprising 62 patients assessed in the dedicated LUTS clinic and 78 in routine urology clinics. Median age was similar between groups: 74 years (IQR 65-79) in the dedicated clinic versus 75 years (IQR 58-81) in routine clinics ($p = 0.901$). Pre-referral LUTS medication use was also comparable: 59/62 (95.2%) in the dedicated clinic versus 73/78 (93.6%) in routine clinics. Baseline and pre-referral characteristics are summarised in Table *1*.

Characteristic	Dedicated LUTS clinic (n=62)	Routine clinic (n=78)	Test statistic	p-value
Age, median (IQR), years	74 (65-79)	75 (58-81)	U = 2448.0	0.901
Any pre-referral LUTS medication	59 (95.2%)	73 (93.6%)	-	1.000*
Alpha-blocker	53 (85.5%)	69 (88.5%)	-	-
5-alpha-reductase inhibitor	31 (50.0%)	38 (48.7%)	-	-
Anticholinergic	11 (17.7%)	8 (10.3%)	-	-
Beta-3 agonist	3 (4.8%)	2 (2.6%)	-	-
DRE before urology review	51 (82.3%)	67 (85.9%)	$\chi^2 = 0.345$	0.557
PSA before urology review	47 (75.8%)	66 (84.6%)	$\chi^2 = 1.722$	0.189
Renal tract ultrasound before review	32 (51.6%)	32 (41.0%)	$\chi^2 = 1.560$	0.212

TABLE 1: Baseline and pre-referral characteristics of patients attending the dedicated LUTS clinic and routine urology clinics

Values are n (%) unless otherwise stated. Age was compared using the Mann–Whitney U test, and categorical comparisons were performed using Pearson's chi-square test (χ^2, df = 1) or Fisher's exact test, as appropriate. U denotes the Mann-Whitney U statistic.

*Two-sided Fisher's exact test. Medication classes are not mutually exclusive and are presented descriptively without individual hypothesis testing.

IQR: interquartile range; LUTS: lower urinary tract symptoms; DRE: digital rectal examination; PSA: prostate-specific antigen

At the initial consultation, IPSS assessment was completed more frequently in the dedicated LUTS clinic than in routine clinics: 44/62 (71.0%) versus 24/78 (30.8%), respectively (RR 2.31, 95% CI 1.59-3.34; p < 0.001). Uroflowmetry and PVR assessment were each performed in 49/62 (79.0%) patients in the dedicated clinic compared with 41/78 (52.6%) in routine clinics (RR 1.50, 95% CI 1.17-1.92; p = 0.001 for each). TRUS was performed in 31/62 (50.0%) patients attending the dedicated clinic and was not performed in the routine clinic group. Initial consultation assessments are summarised in Table *2*.

Assessment	Dedicated LUTS clinic (n=62)	Routine clinic (n=78)	RR (95% CI)	Test statistic	p-value
IPSS	44 (71.0%)	24 (30.8%)	2.31 (1.59-3.34)	$\chi^2 = 22.346$	<0.001
Uroflowmetry	49 (79.0%)	41 (52.6%)	1.50 (1.17-1.92)	$\chi^2 = 10.540$	0.001
PVR assessment	49 (79.0%)	41 (52.6%)	1.50 (1.17-1.92)	$\chi^2 = 10.540$	0.001
TRUS	31 (50.0%)	0 (0%)	-	-	-

TABLE 2: Assessments performed at the initial consultation in the dedicated LUTS clinic and routine urology clinics

Values are n (%). Between-group comparisons were performed using Pearson's chi-square test (χ^2, df = 1). TRUS was presented descriptively without hypothesis testing because its availability was a defining feature of the dedicated LUTS clinic model.

LUTS: lower urinary tract symptoms; RR: relative risk; CI: confidence interval; IPSS: International Prostate Symptom Score; PVR: post-void residual; TRUS: transrectal ultrasonography

Further investigations following the initial consultation were required less frequently in the dedicated clinic: 16/62 (25.8%) versus 41/78 (52.6%) in routine clinics (RR 0.49, 95% CI 0.31-0.79; p = 0.001). Similarly, fewer patients required an additional outpatient follow-up appointment: 15/62 (24.2%) versus 49/78 (62.8%) in routine clinics (RR 0.39, 95% CI 0.24-0.62; p < 0.001). Medication was started or modified in 15/62 (24.2%) patients in the dedicated clinic compared with 39/78 (50.0%) in routine clinics (RR 0.48, 95% CI 0.30-0.79; p = 0.002).

Patients attending the dedicated clinic were more likely to be listed for a procedure at the first consultation:

27/62 (43.5%) versus 11/78 (14.1%) in routine clinics (RR 3.09, 95% CI 1.67-5.72; p < 0.001). Discharge following the initial review occurred in 20/62 (32.3%) patients in the dedicated clinic compared with 18/78 (23.1%) in routine clinics; however, this difference was not statistically significant (RR 1.40, 95% CI 0.81-2.40; p = 0.225). Management decisions and clinical outcomes are summarised in Table 3.

Outcome	Dedicated LUTS clinic (n=62)	Routine clinic (n=78)	RR (95% CI)	Test statistic	p-value
Medication started or modified	15 (24.2%)	39 (50.0%)	0.48 (0.30-0.79)	$\chi^2 = 9.709$	0.002
Further investigation required	16 (25.8%)	41 (52.6%)	0.49 (0.31-0.79)	$\chi^2 = 10.246$	0.001
Additional outpatient follow-up required	15 (24.2%)	49 (62.8%)	0.39 (0.24-0.62)	$\chi^2 = 20.768$	<0.001
Discharged after initial review	20 (32.3%)	18 (23.1%)	1.40 (0.81-2.40)	$\chi^2 = 1.472$	0.225
Listed for surgery/procedure at initial review	27 (43.5%)	11 (14.1%)	3.09 (1.67-5.72)	$\chi^2 = 15.145$	<0.001

TABLE 3: Management decisions and outcomes following the initial consultation in the dedicated LUTS clinic and routine urology clinics

Values are n (%). Between-group comparisons were performed using Pearson's chi-square test (χ^2, df = 1). Discharge, listing for surgery/procedure, and additional outpatient follow-up were mutually exclusive categories, with each patient classified into one of these outcomes. Medication modification and further investigation could occur alongside any of these categories.

LUTS: lower urinary tract symptoms; RR: relative risk; CI: confidence interval

Discussion

This service evaluation suggests that a dedicated, structured LUTS clinic may improve outpatient pathway efficiency and facilitate earlier clinical decision-making compared with routine general urology clinics. Patients attending the dedicated clinic were more likely to undergo key LUTS assessments at their initial consultation, while fewer required subsequent investigations or additional outpatient follow-up. They were also more frequently listed for a procedure at the first consultation, while discharge was numerically higher but did not reach statistical significance.

Completion of objective LUTS assessment was greater in the dedicated clinic. IPSS assessment was completed in 71.0% of patients compared with 30.8% in routine clinics, while uroflowmetry and PVR assessment were each completed in 79.0% compared with 52.6%. This likely reflects the structured nature of the pathway, including patient preparation for uroflowmetry and access to relevant investigations during the same attendance. TRUS assessment of prostate volume was performed in half of dedicated-clinic patients when clinically indicated, rather than routinely in all patients, and was not routinely available in general urology clinics. Although TRUS availability was an inherent feature of the dedicated clinic model, the availability of prostate volume assessment alongside uroflowmetry and PVR data during the same attendance may have supported earlier assessment of suitability for different procedural options.

More complete initial assessment was accompanied by substantially lower requirements for further investigation (25.8% versus 52.6%) and additional outpatient follow-up (24.2% versus 62.8%). This suggests that integrating assessment and relevant investigations within a structured clinic may reduce progression through a multi-stage outpatient pathway. These findings are consistent with previous experience of one-stop urological services. Coull et al. estimated that a one-stop approach could reduce subsequent outpatient consultations and hospital attendances when relevant investigations were available alongside clinical assessment [6]. Although their population included a broader range of urological presentations and is therefore not directly comparable with the present LUTS-specific cohort, the underlying principle is similar: providing appropriate investigations at or around the initial consultation may allow management decisions to be reached without repeated outpatient visits.

The findings also align with recommendations from Getting It Right First Time (GIRFT), a UK national programme aimed at improving clinical quality and reducing unwarranted variation and inefficiency in healthcare. GIRFT supports streamlined one-stop pathways for men with LUTS and bladder outlet obstruction, with appropriate investigations incorporated into the pathway to minimise unnecessary stages

of outpatient care [7]. More recently, Ciudin et al. evaluated a high-efficiency one-stop diagnostic approach in patients with complex LUTS and reported reductions in waiting time, healthcare professional time, and patient hospital journeys compared with a conventional sequential pathway [8]. Their pathway involved a more complex patient population and more extensive diagnostic testing than the present service, so direct comparison is limited. Nevertheless, these findings support the broader principle that integrating clinical assessment and diagnostic investigations within a coordinated LUTS pathway may improve service efficiency. The reduction in subsequent investigations and outpatient follow-up in our study may also have implications for healthcare resource utilisation and potential cost savings, consistent with the wider aims of GIRFT guidance [7]. However, formal health-economic evaluation would be required to determine whether the dedicated clinic delivers measurable cost savings.

Patients attending the dedicated clinic were substantially more likely to be listed for a procedure at their initial consultation (43.5% versus 14.1%). This should not necessarily be interpreted as a greater underlying need for intervention. Rather, the availability of symptom assessment, uroflowmetry, PVR measurement and, where indicated, prostate volume assessment may have enabled a definitive management decision to be reached during the first attendance. Medication was started or modified less frequently in the dedicated clinic (24.2% versus 50.0%). As pre-referral LUTS medication use was already high in both groups, this finding should be interpreted cautiously and may reflect differences in management decisions following a more complete initial assessment.

Discharge following the initial consultation was numerically higher in the dedicated clinic (32.3% versus 23.1%), although the difference was not statistically significant. The direction of this finding is consistent with greater pathway resolution, but the relatively small number of discharge events and wide confidence interval limit the precision of the estimate. Importantly, discharge represents only one form of definitive decision-making. When considered alongside the higher rate of first-visit procedural listing and lower requirements for further investigation and follow-up, these findings suggest that the principal effect of the dedicated pathway may be earlier progression to definitive management.

Several limitations should be acknowledged. This was a retrospective, non-randomised, single-centre service evaluation, and the cohorts were sampled over different periods because of differences in clinic frequency. The relatively short study period and modest sample size may also limit the robustness and generalisability of the findings. Furthermore, as this evaluation was conducted within an NHS referral-based outpatient pathway, the findings may not be directly generalisable to healthcare systems where patients have direct access to specialist urology services or where referral pathways and diagnostic resources differ, particularly in resource-limited settings. Although age and available pre-referral characteristics were broadly similar, residual differences in case mix or symptom severity cannot be excluded. The dedicated clinic was consultant-led, whereas routine clinics were delivered by consultants, registrars, and speciality doctors; therefore, clinician experience may have influenced management decisions independently of clinic structure. Retrospective data collection was also dependent on the completeness of clinical documentation. Additionally, the outcomes represent decisions made at the initial consultation rather than completed investigations, subsequent attendance or completed procedures. Waiting times, patient satisfaction, longer-term outcomes, and formal health-economic measures were not assessed; therefore, potential cost savings cannot be inferred directly from these data.

Despite these limitations, this evaluation provides a direct comparison between a structured dedicated LUTS clinic and routine urology outpatient care within the same NHS organisation. Integrating structured symptom assessment and relevant investigations into the initial consultation was associated with fewer subsequent investigations and outpatient follow-up appointments and more frequent definitive management decisions at the first visit. Further larger-scale, multicentre prospective evaluation incorporating patient-reported outcomes, qualitative assessments of patient experience, completed treatment pathways, and health-economic measures would help establish whether these service-level benefits translate into improved patient experience, more efficient resource utilisation, and measurable cost savings.

Conclusions

A dedicated, structured LUTS clinic was associated with more complete initial assessment, fewer subsequent investigations and follow-up appointments, and more frequent definitive management decisions at the first visit. Integrating assessment and relevant investigations within a dedicated pathway may improve outpatient efficiency and facilitate earlier clinical decision-making. Further prospective evaluation is needed to assess patient experience, longer-term outcomes, and health-economic impact.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

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Disclosures

Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. **Animal subjects:** All authors have confirmed that this study did not involve animal subjects or tissue. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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