

St Mary's Hospital Urogynaecology Unit- BLADDER RECORD CHART (FREQUENCY AND VOLUME)

Name Date

Approx time	Day 1			Day 2			Day 3			Day 4			Instructions																								
	IN	OUT	WET																																		
6.00am													<p>Instructions</p> <p>In When you have a drink, write the amount in ml in this column opposite the appropriate time.</p> <p>Out Measure the amount of urine passed in a jug, and record the amount in ml in this column opposite the appropriate time. If you are unable to measure place a tick in the column.</p> <p>Wet Place a X in this column each time you wet yourself. This includes one drop or enough to wet your clothes.</p> <p>EXAMPLE</p> <table border="1"> <thead> <tr> <th></th> <th>IN</th> <th>OUT</th> <th>WET</th> </tr> </thead> <tbody> <tr><td>6.00am</td><td>100</td><td></td><td></td></tr> <tr><td>7.00am</td><td></td><td>350</td><td>X</td></tr> <tr><td>8.00am</td><td></td><td></td><td></td></tr> <tr><td>9.00am</td><td>200</td><td>50</td><td></td></tr> <tr><td>10.00am</td><td></td><td></td><td>X</td></tr> </tbody> </table>		IN	OUT	WET	6.00am	100			7.00am		350	X	8.00am				9.00am	200	50		10.00am			X
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Figure 1. Four day Frequency-Volume chart.

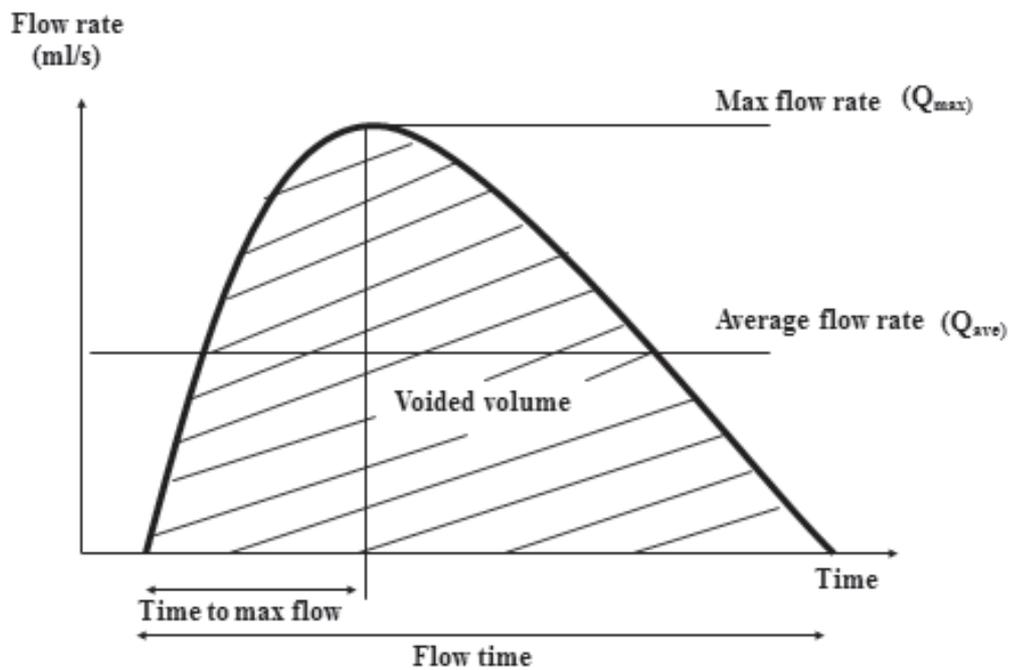


Figure 2. Uroflowmetry terminology.

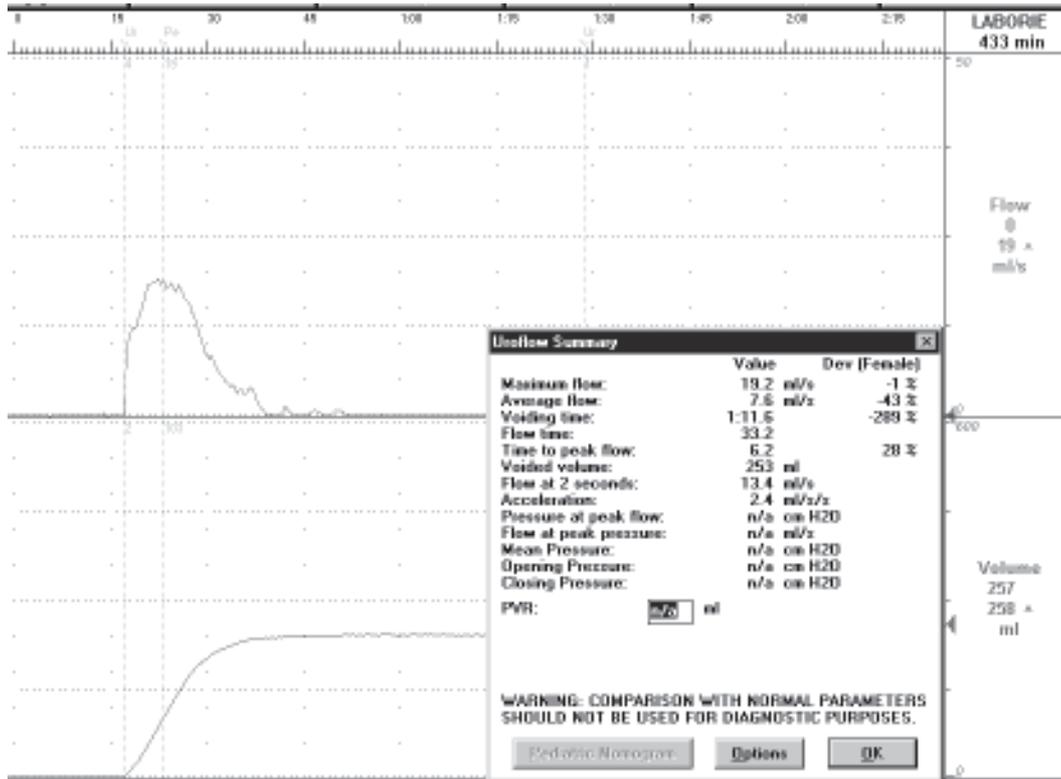


Figure 3. Normal Uroflowmetry.

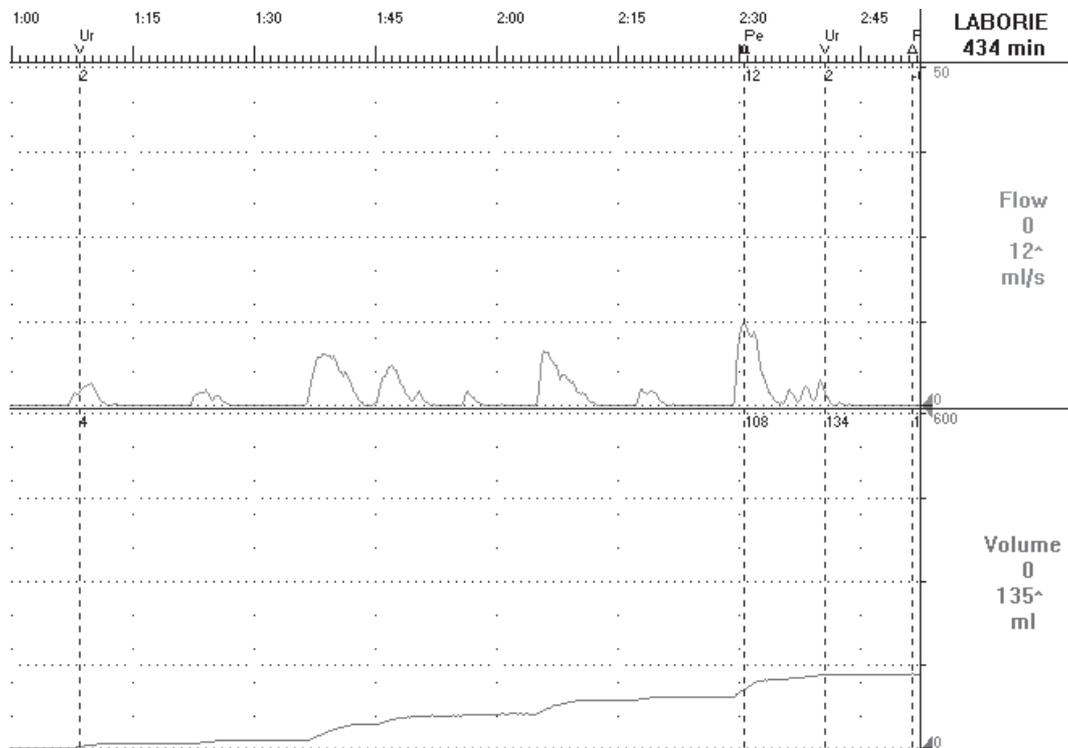


Figure 4. Interrupted uroflow in a patient with urthelial obstruction followingTVT.

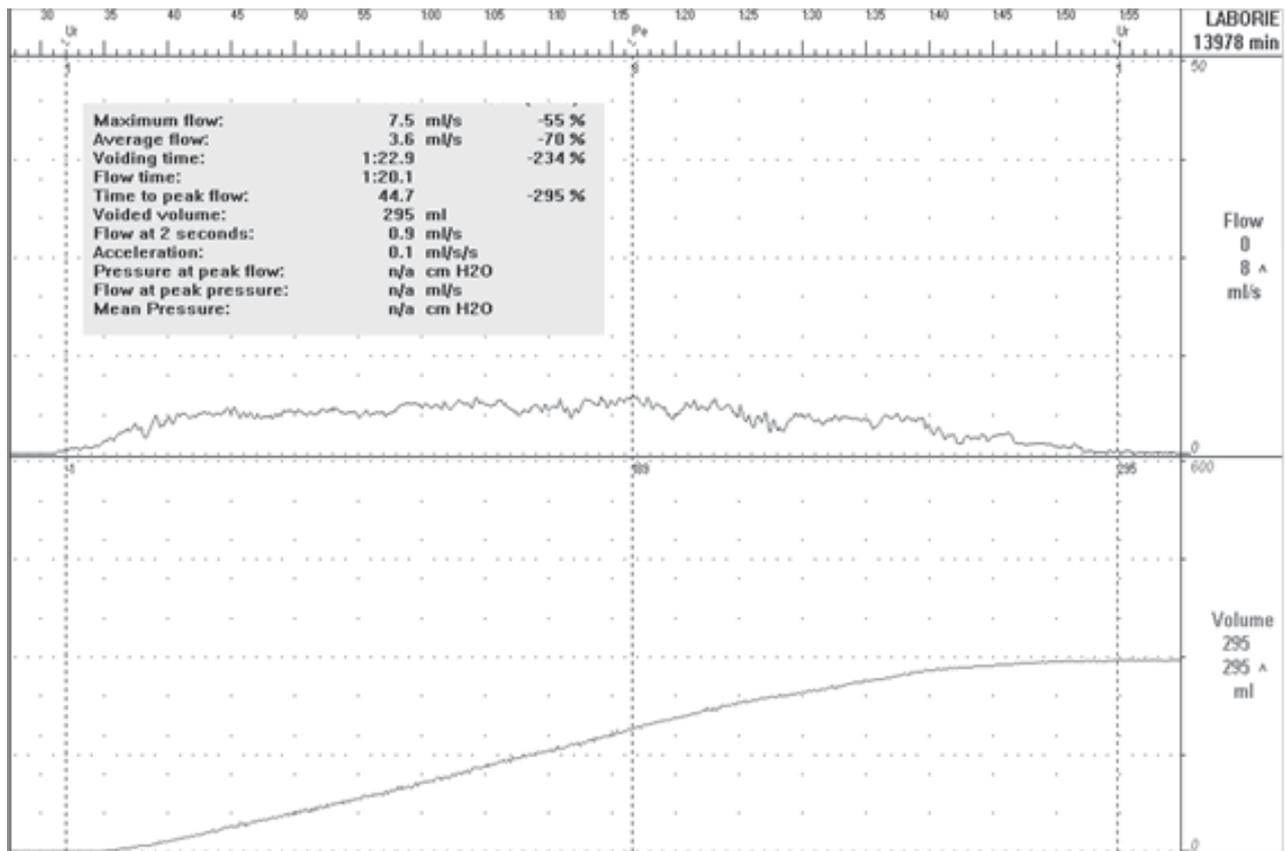


Figure 5. Prolonged uroflow in a patient with a large cystocele.

5. Urodynamics

Urodynamic studies are recommended for women with predominant SUI symptoms prior to surgery and women with mixed urinary incontinence. A good urodynamic practice comprises of three main Elements¹:

1. A clear indication for and appropriate selection of relevant test measurements and procedures.
2. Precise measurement with data quality control and complete documentation.
3. Accurate analysis and critical reporting of results.

The aim of clinical urodynamics is to reproduce symptoms whilst making precise measurements in order to identify the underlying causes for the symptoms, and to quantify the related pathophysiological processes. International Continence Society has produced guidelines and recommendation for good urodynamic practice and clinicians who perform urodynamics are advised to follow these recommendations¹.

Basic urodynamic studies consist of uroflowmetry, cystometry and pressure flow study. Uroflowmetry and pressure flow studies assess the voiding phase of micturition cycle whereas the cystometry assess the filling phase of the micturition cycle.

a. Uroflowmetry

Uroflowmetry is a simple, non-invasive and relatively inexpensive investigation. Patient should be advised to have a comfortably full bladder prior to uroflowmetry and be provided adequate privacy and time to void. Patients should be asked if their voiding was representative of their usual voiding and their view should be documented. Uroflowmetry should be followed by assessment of residual urine volume preferably by a bladder ultrasound scan. Prior to insert catheters for cystometry, urinalysis must be carried out and if there is evidence of infection cystometry should be abandoned until the infection is cleared.

Normal voiding takes place when the bladder outlet relaxes passively and the detrusor contracts

actively. An easily distensible bladder outlet with a normal detrusor contraction results in a smooth arc-shaped flow rate curve with high amplitude giving a typical “Bell shaped” curve (Figure 2 and 3). Any other shapes, such as curves that are flat, asymmetric, or have multiple peaks (fluctuating and/or intermittent), indicate abnormal voiding, but are not specific for its cause. A minimum voided volume of 200ml is essential for accurate interpretation of uroflowmetry. Maximum flow rate varies according to age and sex of the patient. The normal maximum flow rate for a female between 16-65 years is 15 ml/s or more. Abnormal

uroflowmetry with intermittent flow and prolonged flow are shown in Figures 3 and 4.

Cystometry, Pressure flow and advanced urodynamic techniques will be discussed in the next part.

Reference

1. Schafer W, Abrams P, Liao L, Mattiasson A, *et al.* Good urodynamic practices: Uroflowmetry, filling cystometry, and pressure-flow studies. *Neurology and Urodynamics* 2002; **21**: 261-74.