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A PATIENT SIMULATOR FOR REPLAY OF URODYNAMIC SIGNALS

A.Gammie, L. Owen

There have been several recent publications highlighting concern over urodynamics quality in current practice and need for appropriate training in operating equipment and reporting results [1,2,3]. Often, difficulties are encountered by clinical staff uncomfortable with new software or technology, or lack of understanding of how measurement of urodynamic parameters are made and reported on their equipment. Thus, training should ideally be carried out on the machine and software that exist in their own department.

We have designed and built a prototype handheld device that enables this. Users or manufacturer representatives can inject prerecorded patient signals from our device into the actual machine they use, in the environment in which they work. Their urodynamic machine then displays the signals as if a patient is connected, simulating a real urodynamic test. The trainer selects the features and artefacts to introduce into the injected signal. The trainee can then be led through appropriate responses and troubleshooting, using replays of recorded actual tests and artefacts, in order to deliver improved quality of urodynamic assessments and reliable patient care. It is not proposed currently to simulate the urine flow rate, just the pressure measurements, as the latter are the main focus of the training usually offered. All common urodynamic features and artefacts have been selected from our library of actual tests. Trials of the device are ongoing.

Improving the quality of urodynamic testing through more relevant, effective training will contribute to improving a necessary stage in the patient journey, and it is known that training in urodynamics changes practice [4].

References

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