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Training in good urodynamic techniques is essential for delivering good urodynamic services. For this reason, the International Continence Society (ICS) has accredited courses in urodynamics across the world to promote good urodynamic practice. The practical element of the course is an important feature of the learning package, requiring demonstration equipment. However, the ICS stipulates that the course should be free of specific manufacturer involvement, which will never be possible while demonstration is given on a particular machine. We have therefore designed the Bristol Urodynamics Trainer to be a manufacturer-independent tool for instruction in urodynamic techniques.

The Bristol Urodynamics Trainer



Design

Dummy pressure transducers hold the dome, while optical sensors behind the taps pick up tap position. Sensors on the syringe handle register when a flush is being attempted. Vertical height is sensed ultrasonically. The rear panel controls when artefacts are to be introduced.

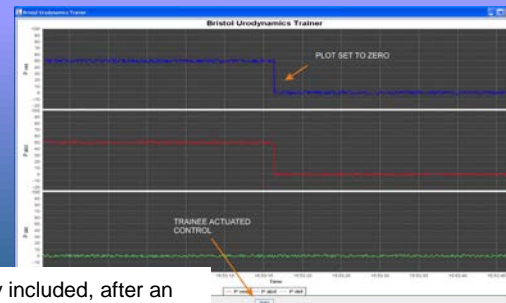
Design Process

Gather clinical teaching requirements

Mock-up & respecify

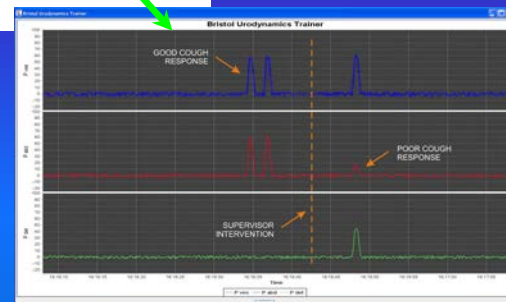
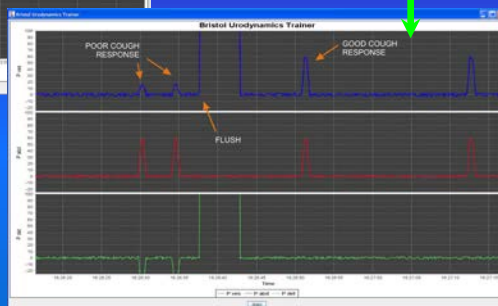
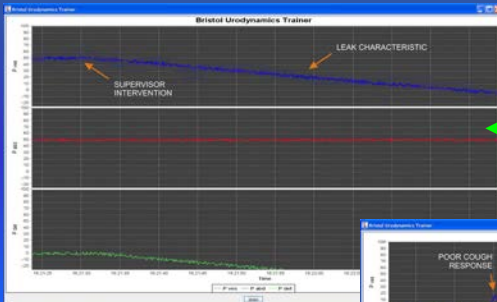
Trial working prototype and check specifications

Design pre-production prototype and trial



The teaching features finally included, after an iterative and consultative process, are:

- Setting reference level
- Correct tap positions
- Setting zero (before and during test)
- Cough (good, poor, absent)
- Correct resting pressure
- Leak in line
- React to flush



Summary

The device is now being manufactured and marketed by E2L Limited (www.e2l.uk.com) under a royalty agreement with the Bristol Urological Institute at North Bristol NHS Trust. It has been used as a generic demonstrator on three courses in the UK to date. Future developments are also under consideration.