

## **Head-Mounted Display Evaluation by Anaesthetists Physically-Constrained with an Endoscopic Dexterity Trainer (59)**

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### **Aims**

We investigated whether the additional presentation of information on a head-mounted display (HMD), as opposed to standard monitoring alone, would affect the speed with which anaesthetists detect changes in patients' vital signs.

### **Background**

Previous simulator studies have shown that anaesthetists can detect critical patient events faster when monitoring with an HMD [1]. The "inattentive blindness" phenomenon found with head-up displays in aviation has also been replicated with HMDs [2], but there has been no evidence that this phenomenon would occur in anaesthesia patient monitoring [1].

### **Methods**

Twelve anaesthetists were required to monitor a computer-based simulated patient while concurrently navigating through a "maze" on a Dexter® Endoscopic Dexterity Trainer using an Olympus LF2 fibre-optic bronchoscope. The independent variable was the display condition: standard monitoring (control), or standard monitoring plus a Microvision Nomad HMD showing HR, SpO<sub>2</sub>, NIBP, ETCO<sub>2</sub> and capnography. The dependent variable was the time required to detect changes in the patient's vital signs. Participants performed two short scenarios with a different display condition assigned to each condition (counterbalanced). Four events were embedded within each scenario: ischaemia, excess sedation, anxious patient and hypovolaemia.

### **Results**

In the HMD condition, participants were significantly faster at detecting the anxious patient and hypovolaemia events, but significantly slower at detecting the excess sedation event, compared to the control condition. The difference in detection times for the ischaemia event was not significant.

### **Acknowledgements**

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### **References**

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