

Patient Monitoring with Head-Mounted Displays

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Abstract

Purpose of review. Head-mounted displays (HMDs) are head-worn display devices that project an information display over the wearer's field of view. This article reviews a recent program of research that investigates the advantages and disadvantages of monitoring with HMDs, and discusses the design considerations and implementation issues that must be addressed before HMDs can be clinically adopted.

Recent findings. HMDs let anesthesiologists spend a larger proportion of their time in the operating room looking towards the patient and surgical field, and a correspondingly smaller proportion of time looking at the standard monitors. Anesthesiologists can detect patient events faster with an HMD when they are busy performing procedures, but not during normal monitoring. There was no evidence of anesthesiologists' performance or monitoring behavior being affected by perceptual issues with the HMD, and no evidence that more events were missed with the HMD due to inattentional blindness.

Summary. Anesthesiologists may be able to monitor their patients more effectively when an HMD is used in conjunction with existing monitors, but several engineering and implementation issues need to be resolved before HMDs can be adopted in practice. Further research is needed on the design of information displays for HMDs.