

Automated anesthesia systems - present and future with a specific perspective on developing countries

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This lecture will focus on the new trends in robotic anesthesia. Robotic anesthesia can be defined as any automated anesthesia, with limited or no manual input by the anesthesiologist. Automated anesthesia can be either manual automation, meaning replacement of manual tasks by automated systems, or pharmacologic automation, meaning the automated administration of drugs or automation of information systems.

The review is a narrative review based on the following search terms: 'automation', 'anesthesia', 'robotic', used in standard search engines, including pubmed and google.

In conclusion, very few manual robots have been designed and studied in anesthesia; most systems focus on automated needle insertions and intubation devices. The vast majority are automated systems as part of advanced monitoring procedures or automated drug application systems. There are 3 steps of development: identifying the need for automation, creation of decision support systems and automated systems, with the dominance of closed loop systems in the design process.

Closed loop administration of anesthetic drugs has moved from experimental status to real opportunities for anesthesiologists. There still is room for vast developments, covering all aspects of anesthetic tasks.

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Montreal, 10th of July, 2018