



# An Exploratory Examination of Medical Gas Booms Versus Traditional Headwalls in Intensive Care Unit Design

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## ABSTRACT:

Should power, medical gases, and monitoring and communications systems be located in a headwall or a ceiling-mounted boom in intensive care unit (ICU) rooms? Often, only the financial costs could be determined for the options, whereas data regarding its potential influence on teamwork, safety, and efficiency are lacking. Hence, purchase decisions are more arbitrary than evidence based. This study simulated care delivery in settings with a traditional headwall and a ceiling boom. Observed were the way the following elements were managed and the extent either system affected flexibility, ergonomics, and teamwork: tubing for intravenous fluids, medical gases, and suction drainage; monitoring leads and equipment power cords; and the medical equipment itself. Simulation runs involving 6 scenarios were conducted with the voluntary participation of 2 physicians, 2 nurse practitioners, 2 respiratory therapists, and 4 registered nurses at a children's tertiary care center in December 2007. Analysis suggests that booms have an advantage over headwalls in case of high-acuity ICU patients and when procedures are performed inside patient rooms. However, in case of lower-acuity ICU patients, as well as when procedures are not typically conducted in the patient room, booms may not provide a proportionate level of advantage when compared with the additional cost involved in its procurement.

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