

Glucose Monitoring in Acute Care: Technologies on the Horizon

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Abstract

Current glucose monitoring technology appears inadequate for the management of diabetic surgical and in critically ill patients requiring intensive insulin therapy. Subcutaneous sensors measure interstitial fluid glucose, and this technology has not yet been shown to provide the timely and accurate measurements necessary for intravenous insulin administration in surgical and critical care patients on intensive insulin therapy. Technologies under development that may be more suitable for surgical and intensive care unit patients are the automated intermittent type glucose monitors and central catheter glucose monitors. Improved accuracy, patient safety, incorporation of control algorithms, and alleviation of added nursing labor are important factors for consideration with future acute care glucose monitors. Hospital costs for these monitors are difficult to estimate but may be relatively low if their use can be related to better patient outcome, reduced labor costs, and increased job satisfaction for the nursing staff.

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Abbreviations: (DTM) Diabetes Technology Meeting, (FDA) Food and Drug Administration, (ICU) intensive care unit, (IIT) intensive insulin therapy

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